



Evaluation, Measurement, and Verification Report for Virginia Electric and Power Company (Dominion Energy)

Case No. PUR-2019-00201 (Virginia)
Docket No. E-22 Sub 589 (North Carolina)
VOLUME 3 OF 5
PUBLIC VERSION

Date: May 14, 2021
Prepared by DNV Energy Insights USA Inc. (DNV)





APPENDIX D. PROGRAM TO DATE NET ENERGY SAVINGS TABLES FOR VIRGINIA AND NORTH CAROLINA PROGRAMS 2010-2020

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May 14 2021

Program:	Residential Income & Age Qualifying Home Improvement
DSM Phase:	4
Type:	
Program Life in years	
Starting from 2015:	14.0
Starting from 2018:	15.0

Table 1 Participation Program Participants												
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2015	January	0	0	0		0	0	0	0		0	0
2015	February	0	0	0		0	0	0	0		0	0
2015	March	0	0	0		0	0	0	0		0	0
2015	April	0	0	0		0	0	0	0		0	0
2015	May	0	0	0		0	0	0	0		0	0
2015	June	0	0	0		0	0	0	0		0	0
2015	July	0	0	0		0	0	0	0		0	0
2015	August	0	0	0		0	0	0	0		0	0
2015	September	0	0	0		0	0	0	0		0	0
2015	October	44	0	44		44	0	0	0		0	44
2015	November	712	0	756		756	0	0	0		0	756
2015	December	767	0	1,523		1,523	0	0	0		0	1,523
2016	January	114	0	1,637		1,637	0	0	0		0	1,637
2016	February	224	0	1,861		1,861	0	0	0		0	1,861
2016	March	295	0	2,156		2,156	0	0	0		0	2,156
2016	April	544	0	2,700		2,700	0	0	0		0	2,700
2016	May	319	0	3,019		3,019	0	0	0		0	3,019
2016	June	623	0	3,642		3,642	0	0	0		0	3,642
2016	July	638	0	4,280		4,280	20	0	20	20	20	4,300
2016	August	1,891	0	6,171		6,171	12	0	32	32	32	6,203
2016	September	769	0	6,940		6,940	9	0	41	41	41	6,981
2016	October	904	0	7,844		7,844	25	0	66	66	66	7,910
2016	November	1,566	0	9,410		9,410	37	0	103	103	103	9,513
2016	December	516	0	9,926		9,926	54	0	157		157	10,083
2017	January	428	0	10,354		10,354	42	0	199		199	10,553
2017	February	202	0	10,556		10,556	16	0	215		215	10,771
2017	March	737	0	11,293		11,293	12	0	227		227	11,520
2017	April	507	0	11,800		11,800	13	0	240		240	12,040
2017	May	617	0	12,417		12,417	6	0	246		246	12,663
2017	June	585	0	13,002		13,002	4	0	250		250	13,252
2017	July	443	0	13,445		13,445	2	0	252		252	13,697
2017	August	252	0	13,697		13,697	4	0	256		256	13,953
2017	September	101	0	13,798		13,798	2	0	258		258	14,056
2017	October	513	0	14,311		14,311	0	0	258		258	14,569
2017	November	822	0	15,133		15,133	7	0	265		265	15,398
2017	December	763	0	15,896		15,896	22	0	287		287	16,183

Table 1		Energy Savings										
Year	Month	Net kWh										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2015	January			0		0			0		0	0
2015	February			0		0			0		0	0
2015	March			0		0			0		0	0
2015	April			0		0			0		0	0
2015	May			0		0			0		0	0
2015	June			0		0			0		0	0
2015	July			0		0			0		0	0
2015	August			0		0			0		0	0
2015	September			0		0			0		0	0
2015	October	1,825		1,825		1,825			0		0	1,825
2015	November	43,106		44,931		44,931			0		0	44,931
2015	December	20,684		65,615		65,615			0		0	65,615
2016	January	3,631		69,246		69,246			0		0	69,246
2016	February	5,519		74,765		74,765			0		0	74,765
2016	March	11,453		86,218		86,218			0		0	86,218
2016	April	15,292		101,510		101,510			0		0	101,510
2016	May	7,940		109,450		109,450			0		0	109,450
2016	June	17,718		127,168		127,168			0		0	127,168
2016	July	19,386		146,554		146,554	779		779	779	779	147,333
2016	August	50,978		197,532		197,532	498		1,277	1,277	1,277	198,809
2016	September	24,586		222,118		222,118	435		1,712	1,712	1,712	223,830
2016	October	22,140		244,258		244,258	998		2,710	2,710	2,710	246,969
2016	November	45,168		289,427		289,427	2,372		5,082	5,082	5,082	294,509
2016	December	14,555		303,982		303,982	2,010		7,092	7,092	7,092	311,073
2017	January	15,494		319,475		319,475	2,758		9,850		9,850	329,325
2017	February	3,927		323,402		323,402	696		10,546		10,546	333,948
2017	March	31,043		354,445		354,445	735		11,281		11,281	365,726
2017	April	14,799		369,244		369,244	475		11,756		11,756	381,000
2017	May	20,750		389,994		389,994	288		12,044		12,044	402,038
2017	June	14,720		404,714		404,714	180		12,223		12,223	416,937
2017	July	9,294		414,008		414,008	121		12,345		12,345	426,353
2017	August	8,028		422,037		422,037	365		12,710		12,710	434,746
2017	September	2,272		424,309		424,309	354		13,064		13,064	437,373
2017	October	12,427		436,736		436,736			13,064		13,064	449,800
2017	November	16,075		452,811		452,811	291		13,355		13,355	466,166
2017	December	14,098		466,910		466,910	1,077		14,432		14,432	481,342

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant				
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP				
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC		NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2015	January			0		0				0		0	0				-			-
2015	February			0		0				0		0	0				-			-
2015	March			0		0				0		0	0				-			-
2015	April			0		0				0		0	0				-			-
2015	May			0		0				0		0	0				-			-
2015	June			0		0				0		0	0				-			-
2015	July			0		0				0		0	0				-			-
2015	August			0		0				0		0	0				-			-
2015	September			0		0				0		0	0				-			-
2015	October	2		2		2				2		2	2	41		41	0.05			0.05
2015	November	36		38		38				38		38	38	59		59	0.05			0.05
2015	December	26		64		64				64		64	64	43		43	0.04			0.04
2016	January	4		68		68				68		68	68	42		42	0.04			0.04
2016	February	9		78		78				78		78	78	40		40	0.04			0.04
2016	March	14		92		92				92		92	92	40		40	0.04			0.04
2016	April	20		112		112				112		112	112	38		38	0.04			0.04
2016	May	10		122		122				122		122	122	36		36	0.04			0.04
2016	June	23		145		145				145		145	145	35		35	0.04			0.04
2016	July	24		169		169	1		1	1		1	170	34	39	34	0.04	0.05		0.04
2016	August	69		239		239	1		2	2		2	240	32	40	32	0.04	0.05		0.04
2016	September	28		267		267	1		2	2		2	269	32	42	32	0.04	0.05		0.04
2016	October	31		297		297	1		3	3		3	301	31	41	31	0.04	0.05		0.04
2016	November	67		365		365	3		6	6		6	371	31	49	31	0.04	0.06		0.04
2016	December	18		383		383	2		8	8		8	391	31	45	31	0.04	0.05		0.04
2017	January	16		399		399	3		11	11		11	410	31	49	31	0.04	0.06		0.04
2017	February	6		404		404	1		12	12		12	416	31	49	31	0.04	0.06		0.04
2017	March	29		434		434	1		13	13		13	447	31	50	31	0.04	0.06		0.04
2017	April	17		450		450	1		13	13		13	464	31	49	31	0.04	0.06		0.04
2017	May	23		474		474	0		14	14		14	487	31	49	31	0.04	0.06		0.04
2017	June	17		491		491	0		14	14		14	505	31	49	31	0.04	0.06		0.04
2017	July	12		503		503	0		14	14		14	517	31	49	31	0.04	0.06		0.04
2017	August	7		510		510	0		14	14		14	525	31	50	31	0.04	0.06		0.04
2017	September	3		513		513	0		14	14		14	528	31	51	31	0.04	0.06		0.04
2017	October	13		527		527	0		14	14		14	541	31	51	31	0.04	0.06		0.04
2017	November	21		548		548	0		15	15		15	563	30	50	30	0.04	0.06		0.04
2017	December	18		566		566	1		16	16		16	582	29	50	30	0.04	0.06		0.04

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G
2018	January	2	0	15,898		15,898	1	0	288		288	16,186
2018	February	0	0	15,898		15,898	0	0	288		288	16,186
2018	March	0	0	15,898		15,898	0	0	288		288	16,186
2018	April	0	0	15,898		15,898	0	0	288		288	16,186
2018	May	0	0	15,898		15,898	0	0	288		288	16,186
2018	June	0	0	15,898		15,898	0	0	288		288	16,186
2018	July	0	0	15,898		15,898	0	0	288		288	16,186
2018	August	0	0	15,898		15,898	0	0	288		288	16,186
2018	September	75	0	15,973		15,973	0	0	288		288	16,261
2018	October	100	0	16,073		16,073	0	0	288		288	16,361
2018	November	387	0	16,460		16,460	0	0	288		288	16,748
2018	December	577	0	17,037		17,037	0	0	288		288	17,325
2019	January	76	0	17,113		17,113	0	0	288		288	17,401
2019	February	16	0	17,129		17,129	0	0	288		288	17,417
2019	March	16	0	17,145		17,145	0	0	288		288	17,433
2019	April	615	0	17,760		17,760	6	0	294		294	18,054
2019	May	219	0	17,979		17,979	0	0	294		294	18,273
2019	June	734	0	18,713		18,713	25	0	319		319	19,032
2019	July	293	0	19,006		19,006	77	0	396	77	396	19,402
2019	August	435	0	19,441		19,441	4	0	400	81	400	19,841
2019	September	564	0	20,005		20,005	20	0	420	101	420	20,425
2019	October	869	0	20,874		20,874	0	0	420	101	420	21,294
2019	November	1,036	0	21,910		21,910	0	0	420	101	420	22,330
2019	December	1,024	0	22,934		22,934	0	0	420		420	23,354
2020	January	4	0	22,938		22,938	1	0	421		421	23,359
2020	February	426	0	23,364		23,364	1	0	422		422	23,786
2020	March	97	0	23,461		23,461	3	0	425		425	23,886
2020	April	27	0	23,488		23,488	7	0	432		432	23,920
2020	May	1	0	23,489		23,489	1	0	433		433	23,922
2020	June	168	0	23,657		23,657	0	0	433		433	24,090
2020	July	38	0	23,695		23,695	3	0	436		436	24,131
2020	August	7	0	23,702		23,702	0	0	436		436	24,138
2020	September	55	0	23,757		23,757	1	0	437		437	24,194
2020	October	8	0	23,765		23,765	2	0	439		439	24,204
2020	November	120	0	23,885		23,885	0	0	439		439	24,324
2020	December	96	0	23,981		23,981	0	0	439		439	24,420

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2018	January	58		466,968		466,968	48		14,480		14,480	481,448
2018	February			466,968		466,968			14,480		14,480	481,448
2018	March			466,968		466,968			14,480		14,480	481,448
2018	April			466,968		466,968			14,480		14,480	481,448
2018	May			466,968		466,968			14,480		14,480	481,448
2018	June			466,968		466,968			14,480		14,480	481,448
2018	July			466,968		466,968			14,480		14,480	481,448
2018	August			466,968		466,968			14,480		14,480	481,448
2018	September	1,718		468,686		468,686			14,480		14,480	483,166
2018	October	3,662		472,349		472,349			14,480		14,480	486,829
2018	November	14,789		487,137		487,137			14,480		14,480	501,617
2018	December	9,624		496,761		496,761			14,480		14,480	511,241
2019	January	1,555		498,316		498,316			14,480		14,480	512,797
2019	February	236		498,552		498,552			14,480		14,480	513,033
2019	March	329		498,882		498,882			14,480		14,480	513,362
2019	April	8,205		507,087		507,087	174		14,654		14,654	521,741
2019	May	3,918		511,005		511,005			14,654		14,654	525,659
2019	June	11,954		522,959		522,959	460		15,114		15,114	538,073
2019	July	4,343		527,302		527,302	2,878		17,992	2,878	17,992	545,294
2019	August	8,539		535,841		535,841	107		18,100	2,985	18,100	553,941
2019	September	8,565		544,405		544,405	706		18,806	3,691	18,806	563,211
2019	October	16,215		560,620		560,620			18,806	3,691	18,806	579,426
2019	November	15,654		576,274		576,274			18,806	3,691	18,806	595,080
2019	December	17,407		593,681		593,681			18,806		3,691	612,487
2020	January	45		593,726		593,726	2		18,807		3,693	612,533
2020	February	6,385		600,112		600,112	43		18,850		3,736	618,962
2020	March	1,539		601,650		601,650	80		18,930		3,816	620,581
2020	April	413		602,064		602,064	241		19,171		4,057	621,235
2020	May	6		602,070		602,070	51		19,222		4,108	621,292
2020	June	1,766		603,836		603,836			19,222		4,108	623,058
2020	July	615		604,450		604,450	46		19,268		4,154	623,718
2020	August	87		604,537		604,537			19,268		4,154	623,805
2020	September	427		604,963		604,963	17		19,285		4,171	624,248
2020	October	163		605,126		605,126	70		19,355		4,240	624,481
2020	November	2,518		607,645		607,645			19,355		4,240	626,999
2020	December	925		608,570		608,570			19,355		4,240	627,924

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2018	January	0		566		566	0		16		16	582	29	50	30	0.04	0.06	0.04
2018	February			566		566			16		16	582	29	50	30	0.04	0.06	0.04
2018	March			566		566			16		16	582	29	50	30	0.04	0.06	0.04
2018	April			566		566			16		16	582	29	50	30	0.04	0.06	0.04
2018	May			566		566			16		16	582	29	50	30	0.04	0.06	0.04
2018	June			566		566			16		16	582	29	50	30	0.04	0.06	0.04
2018	July			566		566			16		16	582	29	50	30	0.04	0.06	0.04
2018	August			566		566			16		16	582	29	50	30	0.04	0.06	0.04
2018	September	2		568		568			16		16	584	29	50	30	0.04	0.06	0.04
2018	October	3		570		570			16		16	586	29	50	30	0.04	0.06	0.04
2018	November	15		585		585			16		16	601	30	50	30	0.04	0.06	0.04
2018	December	9		594		594			16		16	610	29	50	30	0.03	0.06	0.04
2019	January	2		596		596			16		16	612	29	50	29	0.03	0.06	0.04
2019	February	0		597		597			16		16	612	29	50	29	0.03	0.06	0.04
2019	March	1		597		597			16		16	613	29	50	29	0.03	0.06	0.04
2019	April	21		618		618	1		17		17	635	29	50	29	0.03	0.06	0.04
2019	May	8		625		625			17		17	642	28	50	29	0.03	0.06	0.04
2019	June	17		642		642	1		18		18	660	28	47	28	0.03	0.06	0.03
2019	July	6		649		649	10		28	10	28	677	28	45	28	0.03	0.07	0.03
2019	August	21		669		669	0		29	10	29	698	28	45	28	0.03	0.07	0.04
2019	September	14		683		683	2		31	13	31	714	27	45	28	0.03	0.07	0.03
2019	October	28		712		712			31	13	31	743	27	45	27	0.03	0.07	0.03
2019	November	26		738		738			31	13	31	769	26	45	27	0.03	0.07	0.03
2019	December	39		777		777			31		31	808	26	45	26	0.03	0.07	0.03
2020	January	0		778		778	0		31		31	809	26	45	26	0.03	0.07	0.03
2020	February	19		796		796	0		31		31	828	26	45	26	0.03	0.07	0.03
2020	March	6		802		802	0		31		31	834	26	45	26	0.03	0.07	0.03
2020	April	2		804		804	1		32		32	836	26	44	26	0.03	0.08	0.03
2020	May	0		804		804	0		33		33	837	26	44	26	0.03	0.08	0.03
2020	June	7		811		811			33		33	844	26	44	26	0.03	0.08	0.04
2020	July	1		813		813	0		33		33	846	26	44	26	0.03	0.08	0.04
2020	August	0		813		813			33		33	846	26	44	26	0.03	0.08	0.04
2020	September	1		814		814	0		33		33	847	25	44	26	0.03	0.08	0.04
2020	October	1		815		815	0		33		33	848	25	44	26	0.03	0.08	0.04
2020	November	6		821		821			33		33	855	25	44	26	0.03	0.08	0.04
2020	December	3		824		824			33		33	857	25	44	26	0.03	0.08	0.04

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			1,523		1,523			-		-	1,523
2016			8,403		8,403			157		157	8,560
2017			5,970		5,970			130		130	6,100
2018			1,141		1,141			1		1	1,142
2019			5,897		5,897			132		101	6,029
2020			1,047		1,047			19		19	1,066

Table 3. EM&V Data Annualized by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			1,523		1,523			-		-	1,523
2016			8,403		8,403			157		157	8,560
2017			5,970		5,970			130		130	6,100
2018			1,141		1,141			1		1	1,142
2019			5,897		5,897			132		101	6,029
2020			1,047		1,047			19		19	1,066

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
		Program Participants									
			VA PPI					NC PPI			System
2015			1,523					-			1,523
2016			9,926					157			10,083
2017			15,896					287			16,183
2018			15,514					288			15,802
2019			13,008					263			13,271
2020			8,085					152			8,237

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
		Program Participants									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			1,523		1,523			-		-	1,523
2016			9,926		9,926			157		157	10,083
2017			15,896		15,896			287		287	16,183
2018			17,037		17,037			288		288	17,325
2019			22,934		22,934			420		101	23,354
2020			23,981		23,981			439		120	24,420

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
		Program Participants								
			VA IRP					NC IRP		System IRP
2015			1,523					-		1,523
2016			9,926					157		10,083
2017			15,896					287		16,183
2018			17,037					288		17,325
2019			22,934					420		23,354
2020			23,981					439		24,420
2021			23,981					439		24,420
2022			23,981					439		24,420
2023			23,981					439		24,420
2024			23,981					439		24,420
2025			23,981					439		24,420
2026			23,981					439		24,420
2027			23,981					439		24,420
2028			23,981					439		24,420
2029			23,981					439		24,420
2030			23,981					439		24,420
2031			23,981					439		24,420
2032			23,981					439		24,420
2033			23,981					439		24,420
2034			23,981					439		24,420
2035			23,981					439		24,420
2036			23,981					439		24,420

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			112,372		112,372			-		-	112,372
2016			1,184,845		1,184,845			18,652		18,652	1,203,497
2017			1,130,307		1,130,307			61,565		61,565	1,191,872
2018			57,761		57,761			579		579	58,340
2019			413,790		413,790			25,415		24,147	439,205
2020			114,570		114,570			4,423		4,423	118,993

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			787,384		787,384			-		-	787,384
2016			2,860,394		2,860,394			85,103		85,103	2,945,497
2017			1,955,136		1,955,136			88,081		88,081	2,043,217
2018			358,220		358,220			579		579	358,799
2019			1,163,044		1,163,044			51,903		44,295	1,214,947
2020			178,656		178,656			6,590		6,590	185,246

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
		Net Energy (kWh) for PPI								
			VA PPI					NC PPI		System
2015			112,372					-		112,372
2016			1,972,230					18,652		1,990,881
2017			4,778,085					146,669		4,924,754
2018			4,873,291					173,763		5,047,054
2019			2,727,146					114,075		2,841,221
2020			1,635,834					56,905		1,692,738

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			112,372		112,372			0		0	112,372
2016			1,972,230		1,972,230			18,652		18,652	1,990,881
2017			4,778,085		4,778,085			146,669		146,669	4,924,754
2018			5,660,675		5,660,675			173,763		173,763	5,834,438
2019			6,374,924		6,374,924			199,178		168,950	6,574,102
2020			7,238,748		7,238,748			230,089		48,718	7,468,837

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2015			112,372					-		112,372
2016			2,084,602					18,652		2,103,253
2017			6,862,687					165,320		7,028,007
2018			12,523,362					339,083		12,862,445
2019			18,898,286					538,261		19,436,548
2020			26,137,034					768,350		26,905,385
2021			33,439,868					1,000,607		34,440,475
2022			40,742,703					1,232,863		41,975,566
2023			48,045,537					1,465,119		49,510,656
2024			55,348,371					1,697,375		57,045,746
2025			62,651,206					1,929,631		64,580,837
2026			69,954,040					2,161,887		72,115,927
2027			77,256,874					2,394,144		79,651,018
2028			84,559,709					2,626,400		87,186,108
2029			91,750,171					2,858,656		94,608,827
2030			97,080,775					3,072,260		100,153,036
2031			99,605,525					3,157,848		102,763,373
2032			101,305,445					3,216,920		104,522,364
2033			102,947,604					3,275,413		106,223,016
2034			103,875,514					3,308,491		107,184,005
2035			103,939,600					3,310,658		107,250,258
2036			103,939,600					3,310,658		107,250,258

Table 2. EM&V Data Incremental by Vintage Year												Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2015			64		64			-		-	64	74	-	74	0.04	-	0.04
2016			318		318			8		8	327	141	119	141	0.04	0.05	0.04
2017			183		183			7		7	191	189	474	195	0.03	0.06	0.03
2018			28		28			0		0	28	51	579	51	0.02	0.05	0.02
2019			183		183			15		13	199	70	193	73	0.03	0.11	0.03
2020			47		47			2		2	49	109	233	112	0.04	0.12	0.05

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2015			64		64			-		-	64	517	-	517	0.04	-	0.04
2016			318		318			8		8	327	340	542	344	0.04	0.05	0.04
2017			183		183			7		7	191	327	678	335	0.03	0.06	0.03
2018			28		28			0		0	28	314	579	314	0.02	0.05	0.02
2019			183		183			15		13	199	197	393	202	0.03	0.11	0.03
2020			47		47			2		2	49	171	347	174	0.04	0.12	0.05

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2015			64					-		64		-			-	
2016			383					8		391		119			0.05	
2017			566					16		582		511			0.06	
2018			530					16		546		603			0.06	
2019			395					22		417		434			0.09	
2020			258					17		275		374			0.11	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant				IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant				Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System	
2015			64		64			-		-	64	74	-	74	0.04	-	0.04	
2016			383		383			8		8	391	199	119	197	0.04	0.05	0.04	
2017			566		566			16		16	582	301	511	304	0.04	0.06	0.04	
2018			594		594			16		16	610	332	603	337	0.03	0.06	0.04	
2019			777		777			31		13	808	278	474	281	0.03	0.07	0.03	
2020			824		824			33		15	857	302	524	306	0.03	0.08	0.04	

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)												IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2015			64					-			64	74	-	74	0.04	-	0.04
2016			383					8			391	210	119	209	0.04	0.05	0.04
2017			566					16			582	432	576	434	0.04	0.06	0.04
2018			594					16			610	735	1,177	742	0.03	0.06	0.04
2019			777					31			808	824	1,282	832	0.03	0.07	0.03
2020			824					33			857	1,090	1,750	1,102	0.03	0.08	0.04
2021			824					33			857	1,394	2,279	1,410	0.03	0.08	0.04
2022			824					33			857	1,699	2,808	1,719	0.03	0.08	0.04
2023			824					33			857	2,003	3,337	2,027	0.03	0.08	0.04
2024			824					33			857	2,308	3,866	2,336	0.03	0.08	0.04
2025			824					33			857	2,613	4,396	2,645	0.03	0.08	0.04
2026			824					33			857	2,917	4,925	2,953	0.03	0.08	0.04
2027			824					33			857	3,222	5,454	3,262	0.03	0.08	0.04
2028			824					33			857	3,526	5,983	3,570	0.03	0.08	0.04
2029			824					33			857	3,826	6,512	3,874	0.03	0.08	0.04
2030			824					33			857	4,048	6,998	4,101	0.03	0.08	0.04
2031			824					33			857	4,154	7,193	4,208	0.03	0.08	0.04
2032			824					33			857	4,224	7,328	4,280	0.03	0.08	0.04
2033			824					33			857	4,293	7,461	4,350	0.03	0.08	0.04
2034			824					33			857	4,332	7,536	4,389	0.03	0.08	0.04
2035			824					33			857	4,334	7,541	4,392	0.03	0.08	0.04
2036			824					33			857	4,334	7,541	4,392	0.03	0.08	0.04

Program:	Residential Appliance Recycling
DSM Phase:	7
Type:	
Program Life in years	
Starting from 2019:	8.0

Table 1		Participation											
Year	Month	Program Participants											
		VA						NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System	
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP E+G	
2019	January	0	0	0		0	0	0		0	0	0	
2019	February	0	0	0		0	0	0		0	0	0	
2019	March	0	0	0		0	0	0		0	0	0	
2019	April	0	0	0		0	0	0		0	0	0	
2019	May	0	0	0		0	0	0		0	0	0	
2019	June	0	0	0		0	0	0		0	0	0	
2019	July	0	0	0		0	0	0		0	0	0	
2019	August	0	0	0		0	0	0		0	0	0	
2019	September	252	0	252		252	0	0		0	252	252	
2019	October	656	0	908		908	0	0		0	908	908	
2019	November	424	0	1,332		1,332	0	0		0	1,332	1,332	
2019	December	247	0	1,579		1,579	0	0		0	1,579	1,579	
2020	January	288	0	1,867		1,867	0	0		0	1,867	1,867	
2020	February	136	0	2,003		2,003	0	0		0	2,003	2,003	
2020	March	125	0	2,128		2,128	0	0		0	2,128	2,128	
2020	April	5	0	2,133		2,133	0	0		0	2,133	2,133	
2020	May	0	0	2,133		2,133	0	0		0	2,133	2,133	
2020	June	0	0	2,133		2,133	0	0		0	2,133	2,133	
2020	July	104	0	2,237		2,237	0	0		0	2,237	2,237	
2020	August	68	0	2,305		2,305	0	0		0	2,305	2,305	
2020	September	33	0	2,338		2,338	0	0		0	2,338	2,338	
2020	October	17	0	2,355		2,355	0	0		0	2,355	2,355	
2020	November	86	0	2,441		2,441	0	0		0	2,441	2,441	
2020	December	110	0	2,551		2,551	0	0		0	2,551	2,551	

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2019	January			0		0			0		0	0
2019	February			0		0			0		0	0
2019	March			0		0			0		0	0
2019	April			0		0			0		0	0
2019	May			0		0			0		0	0
2019	June			0		0			0		0	0
2019	July			0		0			0		0	0
2019	August			0		0			0		0	0
2019	September	9,274		9,274		9,274			0		0	9,274
2019	October	24,236		33,510		33,510			0		0	33,510
2019	November	18,795		52,305		52,305			0		0	52,305
2019	December	10,470		62,776		62,776			0		0	62,776
2020	January	14,457		77,233		77,233			0		0	77,233
2020	February	6,033		83,266		83,266			0		0	83,266
2020	March	4,996		88,262		88,262			0		0	88,262
2020	April	96		88,358		88,358			0		0	88,358
2020	May			88,358		88,358			0		0	88,358
2020	June			88,358		88,358			0		0	88,358
2020	July	4,270		92,628		92,628			0		0	92,628
2020	August	2,354		94,982		94,982			0		0	94,982
2020	September	1,585		96,567		96,567			0		0	96,567
2020	October	842		97,409		97,409			0		0	97,409
2020	November	3,986		101,395		101,395			0		0	101,395
2020	December	4,785		106,180		106,180			0		0	106,180

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2019	January			0		0			0		0	0			-			-
2019	February			0		0			0		0	0			-			-
2019	March			0		0			0		0	0			-			-
2019	April			0		0			0		0	0			-			-
2019	May			0		0			0		0	0			-			-
2019	June			0		0			0		0	0			-			-
2019	July			0		0			0		0	0			-			-
2019	August			0		0			0		0	0			-			-
2019	September	17		17		17			0		0	17	37		37	0.07		0.07
2019	October	44		60		60			0		0	60	37		37	0.07		0.07
2019	November	34		94		94			0		0	94	39		39	0.07		0.07
2019	December	19		113		113			0		0	113	40		40	0.07		0.07
2020	January	26		139		139			0		0	139	41		41	0.07		0.07
2020	February	11		150		150			0		0	150	42		42	0.07		0.07
2020	March	9		159		159			0		0	159	41		41	0.07		0.07
2020	April	0		159		159			0		0	159	41		41	0.07		0.07
2020	May			159		159			0		0	159	41		41	0.07		0.07
2020	June			159		159			0		0	159	41		41	0.07		0.07
2020	July	8		166		166			0		0	166	41		41	0.07		0.07
2020	August	4		171		171			0		0	171	41		41	0.07		0.07
2020	September	3		173		173			0		0	173	41		41	0.07		0.07
2020	October	2		175		175			0		0	175	41		41	0.07		0.07
2020	November	7		182		182			0		0	182	42		42	0.07		0.07
2020	December	9		191		191			0		0	191	42		42	0.07		0.07

Table 2. EM&V Data Incremental by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			1,579		1,579			-		-	1,579
2020			972		972			-		-	972

Table 3. EM&V Data Annualized by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			1,579		1,579			-		-	1,579
2020			972		972			-		-	972

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Program Participants											
			VA PPI					NC PPI			System
2019			1,579					-			1,579
2020			2,551					-			2,551

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			1,579		1,579			-		-	1,579
2020			2,551		2,551			-		-	2,551

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
Program Participants											
			VA IRP					NC IRP			System IRP
2019			1,579					-			1,579
2020			2,551					-			2,551
2021			2,551					-			2,551
2022			2,551					-			2,551
2023			2,551					-			2,551
2024			2,551					-			2,551
2025			2,551					-			2,551
2026			2,551					-			2,551
2027			2,551					-			2,551
2028			2,551					-			2,551
2029			2,551					-			2,551

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			157,865		157,865			-		-	157,865
2020			349,689		349,689			-		-	349,689

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			753,308		753,308			-		-	753,308
2020			520,855		520,855			-		-	520,855

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Net Energy (kWh) for PPI										
			VA PPI					NC PPI		System
2019			157,865					-		157,865
2020			1,102,997					-		1,102,997

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			157,865		157,865			0		0	157,865
2020			1,102,997		1,102,997			0		0	1,102,997

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Net Energy (kWh)										
			VA IRP					NC IRP		System IRP
2019			157,865					-		157,865
2020			1,260,862					-		1,260,862
2021			2,535,025					-		2,535,025
2022			3,809,187					-		3,809,187
2023			5,083,350					-		5,083,350
2024			6,357,512					-		6,357,512
2025			7,631,675					-		7,631,675
2026			8,905,838					-		8,905,838
2027			10,022,135					-		10,022,135
2028			10,193,301					-		10,193,301
2029			10,193,301					-		10,193,301

Table 2. EM&V Data Incremental by Vintage Year												Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2019			113		113			-		-	113	100	-	100	0.07	-	0.07
2020			78		78			-		-	78	360	-	360	0.08	-	0.08

Table 3. EM&V Data Annualized by Vintage Year												Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2019			113		113			-		-	113	477	-	477	0.07	-	0.07
2020			78		78			-		-	78	536	-	536	0.08	-	0.08

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)												PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2019			113					-			113		-			-	
2020			191					-			191		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)												IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant			Net kWh/Participant		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2019			113		113			-		-	113	100	-	100	0.07	-	0.07
2020			191		191			-		-	191	432	-	432	0.07	-	0.07

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)												IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant			Net kWh/Participant		
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2019			113					-			113	100	-	100	0.07	-	0.07
2020			191					-			191	494	-	494	0.07	-	0.07
2021			191					-			191	994	-	994	0.07	-	0.07
2022			191					-			191	1,493	-	1,493	0.07	-	0.07
2023			191					-			191	1,993	-	1,993	0.07	-	0.07
2024			191					-			191	2,492	-	2,492	0.07	-	0.07
2025			191					-			191	2,992	-	2,992	0.07	-	0.07
2026			191					-			191	3,491	-	3,491	0.07	-	0.07
2027			191					-			191	3,929	-	3,929	0.07	-	0.07
2028			191					-			191	3,996	-	3,996	0.07	-	0.07
2029			191					-			191	3,996	-	3,996	0.07	-	0.07

Program:	Residential Efficient Products Marketplace
DSM Phase:	7
Type:	
Program Life in years	
Starting from 2019:	16.5

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2019	January	0	0	0		0	0	0	0		0	0
2019	February	0	0	0		0	0	0	0		0	0
2019	March	0	0	0		0	0	0	0		0	0
2019	April	0	0	0		0	0	0	0		0	0
2019	May	0	0	0		0	0	0	0		0	0
2019	June	0	0	0		0	0	0	0		0	0
2019	July	0	0	0		0	0	0	0		0	0
2019	August	145,184	0	145,184		145,184	0	0	0		0	145,184
2019	September	484,071	0	629,255		629,255	0	0	0		0	629,255
2019	October	593,243	0	1,222,498		1,222,498	0	0	0		0	1,222,498
2019	November	640,871	0	1,863,369		1,863,369	0	0	0		0	1,863,369
2019	December	643,896	0	2,507,265		2,507,265	0	0	0		0	2,507,265
2020	January	238,091	0	2,745,356		2,745,356	3,238	0	3,238		3,238	2,748,594
2020	February	207,288	0	2,952,644		2,952,644	4,429	0	7,667		7,667	2,960,311
2020	March	206,900	0	3,159,544		3,159,544	8,236	0	15,903		15,903	3,175,447
2020	April	152,549	0	3,312,094		3,312,094	6,213	0	22,115		22,115	3,334,209
2020	May	224,143	0	3,536,236		3,536,236	10,920	0	33,035		33,035	3,569,271
2020	June	165,230	0	3,701,466		3,701,466	7,010	0	40,045		40,045	3,741,511
2020	July	136,780	0	3,838,247		3,838,247	5,845	0	45,889		45,889	3,884,136
2020	August	191,330	0	4,029,576		4,029,576	8,549	0	54,438		54,438	4,084,014
2020	September	165,629	0	4,195,206		4,195,206	6,680	0	61,118		61,118	4,256,324
2020	October	185,274	0	4,380,479		4,380,479	7,555	0	68,673		68,673	4,449,153
2020	November	266,804	0	4,647,284		4,647,284	9,577	0	78,251		78,251	4,725,534
2020	December	199,382	0	4,846,666		4,846,666	8,242	0	86,493		86,493	4,933,158

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2019	January			0		0			0		0	0
2019	February			0		0			0		0	0
2019	March			0		0			0		0	0
2019	April			0		0			0		0	0
2019	May			0		0			0		0	0
2019	June			0		0			0		0	0
2019	July			0		0			0		0	0
2019	August	256,820		256,820		256,820			0		0	256,820
2019	September	851,183		1,108,003		1,108,003			0		0	1,108,003
2019	October	981,761		2,089,764		2,089,764			0		0	2,089,764
2019	November	1,080,285		3,170,049		3,170,049			0		0	3,170,049
2019	December	1,088,725		4,258,774		4,258,774			0		0	4,258,774
2020	January	448,175		4,706,949		4,706,949	6,443		6,443		6,443	4,713,393
2020	February	410,123		5,117,072		5,117,072	8,460		14,904		14,904	5,131,976
2020	March	408,314		5,525,386		5,525,386	15,322		30,225		30,225	5,555,612
2020	April	296,371		5,821,758		5,821,758	10,422		40,647		40,647	5,862,405
2020	May	437,351		6,259,109		6,259,109	18,680		59,327		59,327	6,318,435
2020	June	321,553		6,580,662		6,580,662	11,772		71,099		71,099	6,651,760
2020	July	267,552		6,848,213		6,848,213	9,539		80,638		80,638	6,928,851
2020	August	371,629		7,219,842		7,219,842	14,406		95,044		95,044	7,314,886
2020	September	323,572		7,543,414		7,543,414	11,425		106,470		106,470	7,649,884
2020	October	358,327		7,901,741		7,901,741	13,208		119,677		119,677	8,021,419
2020	November	506,302		8,408,043		8,408,043	16,318		135,995		135,995	8,544,038
2020	December	368,022		8,776,065		8,776,065	13,712		149,707		149,707	8,925,772

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2019	January			0		0			0		0	0			-			-
2019	February			0		0			0		0	0			-			-
2019	March			0		0			0		0	0			-			-
2019	April			0		0			0		0	0			-			-
2019	May			0		0			0		0	0			-			-
2019	June			0		0			0		0	0			-			-
2019	July			0		0			0		0	0			-			-
2019	August	282		282		282			0		0	282	2		2	0.00		0.00
2019	September	934		1,216		1,216			0		0	1,216	2		2	0.00		0.00
2019	October	1,078		2,294		2,294			0		0	2,294	2		2	0.00		0.00
2019	November	1,186		3,480		3,480			0		0	3,480	2		2	0.00		0.00
2019	December	1,195		4,675		4,675			0		0	4,675	2		2	0.00		0.00
2020	January	493		5,168		5,168	7		7		7	5,175	2	2	2	0.00	0.00	0.00
2020	February	452		5,620		5,620	9		16		16	5,636	2	2	2	0.00	0.00	0.00
2020	March	450		6,070		6,070	17		33		33	6,103	2	2	2	0.00	0.00	0.00
2020	April	328		6,398		6,398	12		45		45	6,442	2	2	2	0.00	0.00	0.00
2020	May	482		6,879		6,879	21		65		65	6,945	2	2	2	0.00	0.00	0.00
2020	June	355		7,234		7,234	13		78		78	7,312	2	2	2	0.00	0.00	0.00
2020	July	296		7,531		7,531	11		89		89	7,619	2	2	2	0.00	0.00	0.00
2020	August	410		7,941		7,941	16		105		105	8,046	2	2	2	0.00	0.00	0.00
2020	September	360		8,301		8,301	13		117		117	8,419	2	2	2	0.00	0.00	0.00
2020	October	398		8,700		8,700	15		132		132	8,832	2	2	2	0.00	0.00	0.00
2020	November	562		9,261		9,261	18		150		150	9,411	2	2	2	0.00	0.00	0.00
2020	December	409		9,670		9,670	15		165		165	9,835	2	2	2	0.00	0.00	0.00

Table 2. EM&V Data Incremental by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			2,507,265		2,507,265			-		-	2,507,265
2020			2,339,401		2,339,401			86,493		86,493	2,425,894

Table 3. EM&V Data Annualized by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			2,507,265		2,507,265			-		-	2,507,265
2020			2,339,401		2,339,401			86,493		86,493	2,425,894

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
		Program Participants									
			VA PPI					NC PPI			System
2019			2,507,265					-			2,507,265
2020			4,846,666					86,493			4,933,158

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
		Program Participants									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			2,507,265		2,507,265			-		-	2,507,265
2020			4,846,666		4,846,666			86,493		86,493	4,933,158

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Program Participants										
			VA IRP					NC IRP		System IRP
2019			2,507,265					-		2,507,265
2020			4,846,666					86,493		4,933,158
2021			4,846,666					86,493		4,933,158
2022			4,846,666					86,493		4,933,158
2023			4,846,666					86,493		4,933,158
2024			4,846,666					86,493		4,933,158
2025			4,846,666					86,493		4,933,158
2026			4,846,666					86,493		4,933,158
2027			4,846,666					86,493		4,933,158
2028			4,846,666					86,493		4,933,158
2029			4,846,666					86,493		4,933,158
2030			4,846,666					86,493		4,933,158
2031			4,846,666					86,493		4,933,158
2032			4,846,666					86,493		4,933,158
2033			4,846,666					86,493		4,933,158
2034			4,846,666					86,493		4,933,158
2035			4,846,666					86,493		4,933,158
2036			4,846,666					86,493		4,933,158
2037			4,846,666					86,493		4,933,158
2038			4,846,666					86,493		4,933,158

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			10,883,411		10,883,411			-		-	10,883,411
2020			29,602,961		29,602,961			910,176		910,176	30,513,137

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			51,105,293		51,105,293			-		-	51,105,293
2020			54,207,486		54,207,486			1,796,481		1,796,481	56,003,966

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2019			10,883,411					-		10,883,411
2020			80,708,254					910,176		81,618,429

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2019			10,883,411		10,883,411			0		0	10,883,411
2020			80,708,254		80,708,254			910,176		910,176	81,618,429

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2019			10,883,411					-		10,883,411
2020			91,591,665					910,176		92,501,841
2021			196,904,443					2,706,657		199,611,100
2022			302,217,222					4,503,137		306,720,359
2023			407,530,000					6,299,618		413,829,618
2024			512,842,778					8,096,099		520,938,877
2025			618,155,557					9,892,580		628,048,136
2026			723,468,335					11,689,060		735,157,395
2027			828,781,113					13,485,541		842,266,654
2028			934,093,892					15,282,022		949,375,914
2029			1,039,406,670					17,078,503		1,056,485,173
2030			1,144,719,448					18,874,983		1,163,594,432
2031			1,250,032,227					20,671,464		1,270,703,691
2032			1,355,345,005					22,467,945		1,377,812,950
2033			1,460,657,783					24,264,425		1,484,922,209
2034			1,565,970,562					26,060,906		1,592,031,468
2035			1,671,283,340					27,857,387		1,699,140,727
2036			1,738,282,433					29,502,322		1,767,784,755
2037			1,746,436,908					29,791,639		1,776,228,546
2038			1,746,436,908					29,791,639		1,776,228,546

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2019			4,675		4,675			-		-	4,675	4	-	4	0.00	-	0.00
2020			4,995		4,995			165		165	5,160	13	11	13	0.00	0.00	0.00

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2019			4,675		4,675			-		-	4,675	20	-	20	0.00	-	0.00
2020			4,995		4,995			165		165	5,160	23	21	23	0.00	0.00	0.00

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2019			4,675					-		4,675		-			-	
2020			9,670					165		9,835		11			0.00	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2019			4,675		4,675			-		-	4,675	4	-	4	0.00	-	0.00
2020			9,670		9,670			165		165	9,835	17	11	17	0.00	0.00	0.00

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2019			4,675					-			4,675	4	-	4	0.00	-	0.00
2020			9,670					165			9,835	19	11	19	0.00	0.00	0.00
2021			9,670					165			9,835	41	31	40	0.00	0.00	0.00
2022			9,670					165			9,835	62	52	62	0.00	0.00	0.00
2023			9,670					165			9,835	84	73	84	0.00	0.00	0.00
2024			9,670					165			9,835	106	94	106	0.00	0.00	0.00
2025			9,670					165			9,835	128	114	127	0.00	0.00	0.00
2026			9,670					165			9,835	149	135	149	0.00	0.00	0.00
2027			9,670					165			9,835	171	156	171	0.00	0.00	0.00
2028			9,670					165			9,835	193	177	192	0.00	0.00	0.00
2029			9,670					165			9,835	214	197	214	0.00	0.00	0.00
2030			9,670					165			9,835	236	218	236	0.00	0.00	0.00
2031			9,670					165			9,835	258	239	258	0.00	0.00	0.00
2032			9,670					165			9,835	280	260	279	0.00	0.00	0.00
2033			9,670					165			9,835	301	281	301	0.00	0.00	0.00
2034			9,670					165			9,835	323	301	323	0.00	0.00	0.00
2035			9,670					165			9,835	345	322	344	0.00	0.00	0.00
2036			9,670					165			9,835	359	341	358	0.00	0.00	0.00
2037			9,670					165			9,835	360	344	360	0.00	0.00	0.00
2038			9,670					165			9,835	360	344	360	0.00	0.00	0.00

Program:	Residential Home Energy Assessment
DSM Phase:	7
Type:	
Program Life in years	
Starting from 2020:	12.4

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2020	January	410	0	410		410	0	0	0		0	410
2020	February	147	0	557		557	0	0	0		0	557
2020	March	194	0	751		751	0	0	0		0	751
2020	April	154	0	905		905	2	0	2		2	907
2020	May	62	0	967		967	6	0	8		8	975
2020	June	7	0	974		974	1	0	9		9	983
2020	July	110	0	1,084		1,084	0	0	9		9	1,093
2020	August	192	0	1,276		1,276	0	0	9		9	1,285
2020	September	295	0	1,571		1,571	2	0	11		11	1,582
2020	October	370	0	1,941		1,941	3	0	14		14	1,955
2020	November	467	0	2,408		2,408	1	0	15		15	2,423
2020	December	330	0	2,738		2,738	2	0	17		17	2,755

Table 1		Energy Savings										
Year	Month	Net kWh										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2020	January	49,287		49,287		49,287			0		0	49,287
2020	February	19,526		68,813		68,813			0		0	68,813
2020	March	22,957		91,770		91,770			0		0	91,770
2020	April	20,104		111,875		111,875			17		17	111,891
2020	May	7,248		119,122		119,122	143		160		160	119,282
2020	June	1,416		120,538		120,538	13		173		173	120,711
2020	July	11,725		132,263		132,263			173		173	132,436
2020	August	21,105		153,368		153,368			173		173	153,542
2020	September	34,179		187,547		187,547	33		207		207	187,754
2020	October	41,654		229,201		229,201	357		564		564	229,765
2020	November	63,191		292,392		292,392	169		733		733	293,125
2020	December	38,319		330,711		330,711	561		1,294		1,294	332,005

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2020	January	37		37		37			0		0	37	120		120	0.09		0.09
2020	February	14		51		51			0		0	51	124		124	0.09		0.09
2020	March	25		76		76			0		0	76	122		122	0.10		0.10
2020	April	18		94		94	0		0		0	94	124	8	123	0.10	0.01	0.10
2020	May	9		103		103	1		1		1	104	123	20	122	0.11	0.07	0.11
2020	June	1		104		104	0		1		1	105	124	19	123	0.11	0.06	0.11
2020	July	12		116		116			1		1	117	122	19	121	0.11	0.06	0.11
2020	August	23		139		139			1		1	140	120	19	119	0.11	0.06	0.11
2020	September	39		178		178	0		1		1	179	119	19	119	0.11	0.06	0.11
2020	October	55		234		234	0		1		1	234	118	40	118	0.12	0.05	0.12
2020	November	55		289		289	0		1		1	290	121	49	121	0.12	0.06	0.12
2020	December	40		329		329	0		1		1	330	121	76	121	0.12	0.07	0.12

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			2,738		2,738			17		17	2,755

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			2,738		2,738			17		17	2,755

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants									
			VA PPI					NC PPI		System
2020			2,738					17		2,755

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			2,738		2,738			17		17	2,755

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2020			2,738					17		2,755
2021			2,738					17		2,755
2022			2,738					17		2,755
2023			2,738					17		2,755
2024			2,738					17		2,755
2025			2,738					17		2,755
2026			2,738					17		2,755
2027			2,738					17		2,755
2028			2,738					17		2,755
2029			2,738					17		2,755
2030			2,738					17		2,755
2031			2,738					17		2,755
2032			2,738					17		2,755
2033			2,738					17		2,755
2034			2,738					17		2,755

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			1,886,889		1,886,889			3,494		3,494	1,890,383

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			3,968,533		3,968,533			15,530		15,530	3,984,063

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2020			1,886,889					3,494		1,890,383

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			1,886,889		1,886,889			3,494		3,494	1,890,383

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2020			1,886,889					3,494		1,890,383
2021			5,855,422					19,024		5,874,446
2022			9,823,955					34,554		9,858,510
2023			13,792,488					50,085		13,842,573
2024			17,761,021					65,615		17,826,636
2025			21,729,554					81,145		21,810,699
2026			25,698,087					96,675		25,794,763
2027			29,666,620					112,205		29,778,826
2028			33,635,153					127,736		33,762,889
2029			37,603,687					143,266		37,746,952
2030			41,572,220					158,796		41,731,016
2031			45,540,753					174,326		45,715,079
2032			48,947,880					189,506		49,137,386
2033			49,606,663					194,127		49,800,791
2034			49,606,663					194,127		49,800,791

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			329		329			1		1	330	689	206	686	0.12	0.07	0.12

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			329		329			1		1	330	1,449	914	1,446	0.12	0.07	0.12

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2020			329					1		330		206			0.07	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			329		329			1		1	330	689	206	686	0.12	0.07	0.12

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2020			329					1			330	689	206	686	0.12	0.07	0.12
2021			329					1			330	2,139	1,119	2,132	0.12	0.07	0.12
2022			329					1			330	3,588	2,033	3,578	0.12	0.07	0.12
2023			329					1			330	5,037	2,946	5,025	0.12	0.07	0.12
2024			329					1			330	6,487	3,860	6,471	0.12	0.07	0.12
2025			329					1			330	7,936	4,773	7,917	0.12	0.07	0.12
2026			329					1			330	9,386	5,687	9,363	0.12	0.07	0.12
2027			329					1			330	10,835	6,600	10,809	0.12	0.07	0.12
2028			329					1			330	12,285	7,514	12,255	0.12	0.07	0.12
2029			329					1			330	13,734	8,427	13,701	0.12	0.07	0.12
2030			329					1			330	15,183	9,341	15,147	0.12	0.07	0.12
2031			329					1			330	16,633	10,254	16,593	0.12	0.07	0.12
2032			329					1			330	17,877	11,147	17,836	0.12	0.07	0.12
2033			329					1			330	18,118	11,419	18,077	0.12	0.07	0.12
2034			329					1			330	18,118	11,419	18,077	0.12	0.07	0.12

Program:	Non-residential Lighting Systems & Controls
DSM Phase:	3
Type:	
Program Life in years	
Starting from 2014:	9.0

Table 1		Participation											
Year	Month	Program Participants											System System Cum for IRP
		VA					NC						
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] =Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D		
2014	January	0	0	0		0	0	0	0	0	0	0	
2014	February	0	0	0		0	0	0	0	0	0	0	
2014	March	0	0	0		0	0	0	0	0	0	0	
2014	April	0	0	0		0	0	0	0	0	0	0	
2014	May	0	0	0		0	0	0	0	0	0	0	
2014	June	0	0	0		0	0	0	0	0	0	0	
2014	July	0	0	0		0	0	0	0	0	0	0	
2014	August	0	0	0		0	0	0	0	0	0	0	
2014	September	0	0	0		0	0	0	0	0	0	0	
2014	October	14	0	14		14	0	0	0	0	14	14	
2014	November	63	0	77		77	0	0	0	0	77	77	
2014	December	41	0	118		118	0	0	0	0	118	118	
2015	January	50	0	168		168	0	0	0	0	168	168	
2015	February	48	0	216		216	0	0	0	0	216	216	
2015	March	68	0	284		284	0	0	0	0	284	284	
2015	April	71	0	355		355	1	0	1	1	356	356	
2015	May	112	0	467		467	0	0	1	1	468	468	
2015	June	110	0	577		577	1	0	2	2	579	579	
2015	July	78	0	655		655	0	0	2	2	657	657	
2015	August	127	0	782		782	0	0	2	2	784	784	
2015	September	278	0	1,060		1,060	3	0	5	5	1,065	1,065	
2015	October	162	0	1,222		1,222	5	0	10	10	1,232	1,232	
2015	November	62	0	1,284		1,284	1	0	11	11	1,295	1,295	
2015	December	75	0	1,359		1,359	2	0	13	13	1,372	1,372	
2016	January	104	0	1,463		1,463	1	0	14	14	1,477	1,477	
2016	February	53	0	1,516		1,516	1	0	15	15	1,531	1,531	
2016	March	113	0	1,629		1,629	2	0	17	17	1,646	1,646	
2016	April	71	0	1,700		1,700	1	0	18	18	1,718	1,718	
2016	May	124	0	1,824		1,824	0	0	18	18	1,842	1,842	
2016	June	160	0	1,984		1,984	10	0	28	28	2,012	2,012	
2016	July	141	0	2,125		2,125	1	0	29	1	29	2,154	2,154
2016	August	139	0	2,264		2,264	16	0	45	17	45	2,309	2,309
2016	September	66	0	2,330		2,330	1	0	46	18	46	2,376	2,376
2016	October	74	0	2,404		2,404	5	0	51	23	51	2,455	2,455
2016	November	92	0	2,496		2,496	2	0	53	25	53	2,549	2,549
2016	December	66	0	2,562		2,562	3	0	56		56	2,618	2,618

Table 1		Energy Savings										
Year	Month	Net kWh										System
		VA		VA Cum. for Net Lost Revenue (NLR)		NC		NC Cum. for Net Lost Revenue (NLR)		System Cum for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2014	January			0		0			0		0	0
2014	February			0		0			0		0	0
2014	March			0		0			0		0	0
2014	April			0		0			0		0	0
2014	May			0		0			0		0	0
2014	June			0		0			0		0	0
2014	July			0		0			0		0	0
2014	August			0		0			0		0	0
2014	September			0		0			0		0	0
2014	October	16,087		16,087		16,087			0		0	16,087
2014	November	117,366		133,453		133,453			0		0	133,453
2014	December	143,613		277,065		277,065			0		0	277,065
2015	January	56,266		333,331		333,331			0		0	333,331
2015	February	102,277		435,608		435,608			0		0	435,608
2015	March	227,785		663,393		663,393			0		0	663,393
2015	April	203,103		866,496		866,496	1,886		1,886		1,886	868,382
2015	May	337,569		1,204,065		1,204,065			1,886		1,886	1,205,951
2015	June	595,390		1,799,456		1,799,456			1,886		1,886	1,801,342
2015	July	158,951		1,958,407		1,958,407			1,886		1,886	1,960,293
2015	August	199,910		2,158,317		2,158,317			1,886		1,886	2,160,203
2015	September	290,990		2,449,307		2,449,307	6,919		8,805		8,805	2,458,111
2015	October	448,610		2,897,917		2,897,917	20,902		29,707		29,707	2,927,624
2015	November	124,664		3,022,581		3,022,581	840		30,547		30,547	3,053,127
2015	December	219,455		3,242,036		3,242,036	2,372		32,919		32,919	3,274,955
2016	January	253,371		3,495,407		3,495,407	698		33,617		33,617	3,529,024
2016	February	172,025		3,667,432		3,667,432	2,198		35,815		35,815	3,703,247
2016	March	289,450		3,956,882		3,956,882	53,113		88,928		88,928	4,045,810
2016	April	189,306		4,146,188		4,146,188	14,388		103,316		103,316	4,249,504
2016	May	271,746		4,417,934		4,417,934			103,316		103,316	4,521,250
2016	June	540,509		4,958,443		4,958,443	15,346		118,662		118,662	5,077,105
2016	July	419,112		5,377,555		5,377,555	4,953		123,616	4,953	123,616	5,501,170
2016	August	492,090		5,869,645		5,869,645	50,346		173,962	55,299	173,962	6,043,607
2016	September	273,973		6,143,618		6,143,618	3,323		177,284	58,622	177,284	6,320,902
2016	October	259,413		6,403,031		6,403,031	19,306		196,590	77,928	196,590	6,599,621
2016	November	471,215		6,874,246		6,874,246	8,575		205,165	86,503	86,503	7,079,411
2016	December	210,614		7,084,860		7,084,860	22,210		227,375		108,712	7,312,235

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2014	January			0		0			0		0	0			-			-
2014	February			0		0			0		0	0			-			-
2014	March			0		0			0		0	0			-			-
2014	April			0		0			0		0	0			-			-
2014	May			0		0			0		0	0			-			-
2014	June			0		0			0		0	0			-			-
2014	July			0		0			0		0	0			-			-
2014	August			0		0			0		0	0			-			-
2014	September			0		0			0		0	0			-			-
2014	October	41		41		41			0		0	41	1,149		1,149	2.95		2.95
2014	November	295		336		336			0		0	336	1,733		1,733	4.36		4.36
2014	December	363		699		699			0		0	699	2,348		2,348	5.92		5.92
2015	January	137		836		836			0		0	836	1,984		1,984	4.98		4.98
2015	February	266		1,102		1,102			0		0	1,102	2,017		2,017	5.10		5.10
2015	March	657		1,759		1,759			0		0	1,759	2,336		2,336	6.19		6.19
2015	April	499		2,257		2,257	5		5		5	2,262	2,441	1,886	2,439	6.36	4.99	6.35
2015	May	841		3,098		3,098			5		5	3,103	2,578	1,886	2,577	6.63	4.99	6.63
2015	June	1,517		4,615		4,615			5		5	4,620	3,119	943	3,111	8.00	2.49	7.98
2015	July	394		5,009		5,009			5		5	5,014	2,990	943	2,984	7.65	2.49	7.63
2015	August	462		5,471		5,471			5		5	5,476	2,760	943	2,755	7.00	2.49	6.98
2015	September	673		6,143		6,143	15		20		20	6,164	2,311	1,761	2,308	5.80	4.08	5.79
2015	October	1,114		7,257		7,257	45		66		66	7,323	2,371	2,971	2,376	5.94	6.59	5.94
2015	November	294		7,551		7,551	2		68		68	7,619	2,354	2,777	2,358	5.88	6.16	5.88
2015	December	620		8,171		8,171	5		73		73	8,244	2,386	2,532	2,387	6.01	5.63	6.01
2016	January	741		8,912		8,912	2		75		75	8,987	2,389	2,401	2,389	6.09	5.37	6.08
2016	February	538		9,450		9,450	6		81		81	9,531	2,419	2,388	2,419	6.23	5.43	6.23
2016	March	804		10,253		10,253	157		238		238	10,492	2,429	5,231	2,458	6.29	14.02	6.37
2016	April	525		10,779		10,779	43		281		281	11,060	2,439	5,740	2,474	6.34	15.61	6.44
2016	May	758		11,537		11,537			281		281	11,818	2,422	5,740	2,455	6.32	15.61	6.42
2016	June	1,488		13,024		13,024	36		317		317	13,341	2,499	4,238	2,523	6.56	11.32	6.63
2016	July	1,221		14,246		14,246	14		331	14	331	14,577	2,531	4,263	2,554	6.70	11.41	6.77
2016	August	1,322		15,568		15,568	113		443	127	443	16,011	2,593	3,866	2,617	6.88	9.85	6.93
2016	September	785		16,353		16,353	9		452	135	452	16,805	2,637	3,854	2,660	7.02	9.83	7.07
2016	October	694		17,047		17,047	57		510	193	510	17,557	2,663	3,855	2,688	7.09	9.99	7.15
2016	November	1,309		18,356		18,356	28		538	221	538	18,894	2,754	3,871	2,777	7.35	10.15	7.41
2016	December	581		18,937		18,937	56		593		593	19,530	2,765	4,060	2,793	7.39	10.60	7.46

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G
2017	January	81	0	2,643		2,643	1	0	57		29	2,700
2017	February	78	0	2,721		2,721	1	0	58		30	2,779
2017	March	86	0	2,807		2,807	2	0	60		32	2,867
2017	April	81	0	2,888		2,888	5	0	65		37	2,953
2017	May	87	0	2,975		2,975	6	0	71		43	3,046
2017	June	78	0	3,053		3,053	0	0	71		43	3,124
2017	July	66	0	3,119		3,119	0	0	71		43	3,190
2017	August	77	0	3,196		3,196	1	0	72		44	3,268
2017	September	64	0	3,260		3,260	3	0	75		47	3,335
2017	October	78	0	3,338		3,338	3	0	78		50	3,416
2017	November	57	0	3,395		3,395	1	0	79		51	3,474
2017	December	35	0	3,430		3,430	0	0	79		51	3,509
2018	January	13	0	3,443		3,443	0	0	79		51	3,522
2018	February	60	0	3,503		3,503	2	0	81		53	3,584
2018	March	32	0	3,535		3,535	13	0	94		66	3,629
2018	April	22	0	3,557		3,557	5	0	99		71	3,656
2018	May	40	0	3,597		3,597	5	0	104		76	3,701
2018	June	47	0	3,644		3,644	6	0	110		82	3,754
2018	July	48	0	3,692		3,692	3	0	113		85	3,805
2018	August	64	0	3,756		3,756	0	0	113		85	3,869
2018	September	66	0	3,822		3,822	0	0	113		85	3,935
2018	October	134	0	3,956		3,956	4	0	117		89	4,073
2018	November	47	0	4,003		4,003	0	0	117		89	4,120
2018	December	76	0	4,079		4,079	5	0	122		94	4,201
2019	January	161	0	4,240		4,240	0	0	122		94	4,362
2019	February	176	0	4,416		4,416	12	0	134		106	4,550
2019	March	85	0	4,501		4,501	14	0	148		120	4,649
2019	April	0	0	4,501		4,501	5	0	153		125	4,654
2019	May	0	0	4,501		4,501	7	0	160		132	4,661
2019	June	0	0	4,501		4,501	2	0	162		134	4,663
2019	July	0	0	4,501		4,501	4	0	166	4	138	4,667
2019	August	0	0	4,501		4,501	0	0	166	4	138	4,667
2019	September	0	0	4,501		4,501	4	0	170	8	142	4,671
2019	October	0	0	4,501		4,501	3	0	173	11	145	4,674
2019	November	0	0	4,501		4,501	10	0	183	21	21	4,684
2019	December	0	0	4,501		4,501	1	0	184		22	4,685

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2017	January	397,897		7,482,756		7,482,756	4,332		231,707		113,044	7,714,463
2017	February	273,625		7,756,381		7,756,381	2,872		234,579		115,917	7,990,961
2017	March	432,898		8,189,279		8,189,279	9,476		244,056		125,393	8,433,335
2017	April	341,740		8,531,020		8,531,020	16,494		260,550		141,887	8,791,569
2017	May	304,194		8,835,213		8,835,213	30,000		290,550		171,887	9,125,763
2017	June	225,040		9,060,253		9,060,253			290,550		171,887	9,350,803
2017	July	182,221		9,242,475		9,242,475			290,550		171,887	9,533,024
2017	August	379,332		9,621,807		9,621,807	7,559		298,109		179,447	9,919,916
2017	September	407,718		10,029,525		10,029,525	28,033		326,141		207,479	10,355,667
2017	October	557,435		10,586,961		10,586,961	1,473		327,615		208,952	10,914,575
2017	November	448,585		11,035,546		11,035,546	1,107		328,722		210,060	11,364,268
2017	December	192,416		11,227,962		11,227,962	43		328,765		210,103	11,556,727
2018	January	54,229		11,282,191		11,282,191			328,765		210,103	11,610,956
2018	February	234,156		11,516,348		11,516,348	27,318		356,083		237,421	11,872,431
2018	March	163,120		11,679,467		11,679,467	17,262		373,346		254,683	12,052,813
2018	April	70,803		11,750,270		11,750,270	1,932		375,278		256,616	12,125,548
2018	May	295,086		12,045,356		12,045,356	2,077		377,355		258,693	12,422,712
2018	June	207,463		12,252,820		12,252,820	4,240		381,596		262,933	12,634,415
2018	July	216,181		12,469,001		12,469,001	45,099		426,694		308,032	12,895,695
2018	August	158,671		12,627,672		12,627,672			426,694		308,032	13,054,366
2018	September	210,809		12,838,481		12,838,481			426,694		308,032	13,265,175
2018	October	424,905		13,263,385		13,263,385	7,929		434,623		315,961	13,698,009
2018	November	215,586		13,478,971		13,478,971			434,623		315,961	13,913,594
2018	December	383,181		13,862,152		13,862,152	195,846		630,470		511,807	14,492,621
2019	January	704,467		14,566,618		14,566,618			630,470		511,807	15,197,088
2019	February	1,183,691		15,750,310		15,750,310	25,689		656,158		537,496	16,406,468
2019	March	561,195		16,311,505		16,311,505	44,723		700,881		582,218	17,012,385
2019	April			16,311,505		16,311,505	45,990		746,871		628,208	17,058,375
2019	May			16,311,505		16,311,505	19,312		766,183		647,521	17,077,688
2019	June			16,311,505		16,311,505	5,595		771,778		653,115	17,083,283
2019	July			16,311,505		16,311,505	16,419		788,197	16,419	669,534	17,099,701
2019	August			16,311,505		16,311,505	351		788,547	16,769	669,885	17,100,052
2019	September			16,311,505		16,311,505	3,738		792,285	20,507	673,622	17,103,789
2019	October			16,311,505		16,311,505	8,134		800,419	28,641	681,756	17,111,923
2019	November			16,311,505		16,311,505	4,481		804,900	33,122	33,122	17,116,404
2019	December			16,311,505		16,311,505	2,322		807,221		35,444	17,118,726

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2017	January	779		19,716		19,716	0		593		277	20,309	2,831	4,065	2,857	7.46	10.41	7.52
2017	February	564		20,279		20,279	0		593		277	20,873	2,851	4,044	2,875	7.45	10.23	7.51
2017	March	832		21,112		21,112	25		619		302	21,730	2,917	4,068	2,942	7.52	10.31	7.58
2017	April	664		21,775		21,775	39		657		340	22,433	2,954	4,008	2,977	7.54	10.11	7.60
2017	May	611		22,387		22,387	81		739		422	23,125	2,970	4,092	2,996	7.52	10.40	7.59
2017	June	353		22,740		22,740			739		422	23,479	2,968	4,092	2,993	7.45	10.40	7.52
2017	July	323		23,063		23,063			739		422	23,802	2,963	4,092	2,988	7.39	10.40	7.46
2017	August	675		23,738		23,738	15		754		437	24,492	3,011	4,140	3,035	7.43	10.48	7.49
2017	September	857		24,595		24,595	66		820		503	25,415	3,077	4,349	3,105	7.54	10.93	7.62
2017	October	1,154		25,749		25,749	5		825		508	26,574	3,172	4,200	3,195	7.71	10.58	7.78
2017	November	1,076		26,826		26,826	3		828		511	27,653	3,251	4,161	3,271	7.90	10.48	7.96
2017	December	482		27,308		27,308	0		828		511	28,135	3,273	4,162	3,293	7.96	10.48	8.02
2018	January	93		27,401		27,401			828		511	28,229	3,277	4,162	3,297	7.96	10.48	8.01
2018	February	438		27,839		27,839	64		892		575	28,731	3,288	4,396	3,313	7.95	11.01	8.02
2018	March	190		28,029		28,029	44		936		619	28,965	3,304	3,972	3,321	7.93	9.96	7.98
2018	April	101		28,130		28,130	3		939		623	29,069	3,303	3,791	3,317	7.91	9.49	7.95
2018	May	666		28,796		28,796	3		942		625	29,738	3,349	3,628	3,357	8.01	9.06	8.04
2018	June	349		29,145		29,145	5		947		630	30,092	3,362	3,469	3,366	8.00	8.61	8.02
2018	July	386		29,531		29,531	111		1,058		741	30,589	3,377	3,776	3,389	8.00	9.36	8.04
2018	August	309		29,841		29,841			1,058		741	30,899	3,362	3,776	3,374	7.94	9.36	7.99
2018	September	425		30,266		30,266			1,058		741	31,324	3,359	3,776	3,371	7.92	9.36	7.96
2018	October	930		31,196		31,196	14		1,072		755	32,268	3,353	3,715	3,363	7.89	9.16	7.92
2018	November	357		31,553		31,553			1,072		755	32,625	3,367	3,715	3,377	7.88	9.16	7.92
2018	December	810		32,363		32,363	532		1,605		1,288	33,968	3,398	5,168	3,450	7.93	13.15	8.09
2019	January	1,363		33,726		33,726			1,605		1,288	35,331	3,436	5,168	3,484	7.95	13.15	8.10
2019	February	1,686		35,412		35,412	41		1,645		1,328	37,057	3,567	4,897	3,606	8.02	12.28	8.14
2019	March	897		36,309		36,309	122		1,767		1,450	38,076	3,624	4,736	3,659	8.07	11.94	8.19
2019	April			36,309		36,309	118		1,885		1,568	38,194	3,624	4,882	3,665	8.07	12.32	8.21
2019	May			36,309		36,309	46		1,931		1,614	38,240	3,624	4,789	3,664	8.07	12.07	8.20
2019	June			36,309		36,309	9		1,940		1,623	38,250	3,624	4,764	3,664	8.07	11.98	8.20
2019	July			36,309		36,309	45		1,985	45	1,669	38,295	3,624	4,748	3,664	8.07	11.96	8.21
2019	August			36,309		36,309	1		1,986	46	1,670	38,296	3,624	4,750	3,664	8.07	11.97	8.21
2019	September			36,309		36,309	4		1,991	51	1,674	38,300	3,624	4,660	3,662	8.07	11.71	8.20
2019	October			36,309		36,309	19		2,010	70	1,693	38,320	3,624	4,627	3,661	8.07	11.62	8.20
2019	November			36,309		36,309	11		2,021	80	80	38,330	3,624	4,398	3,654	8.07	11.04	8.18
2019	December			36,309		36,309	0		2,021		80	38,330	3,624	4,387	3,654	8.07	10.98	8.18

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]	[F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]	[H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	E+G	
2020	January	0	0	4,501		4,501	0	0	184		22	4,685	
2020	February	0	0	4,501		4,501	5	0	189		27	4,690	
2020	March	0	0	4,501		4,501	12	0	201		39	4,702	
2020	April	0	0	4,501		4,501	0	0	201		39	4,702	
2020	May	0	0	4,501		4,501	0	0	201		39	4,702	
2020	June	0	0	4,501		4,501	0	0	201		39	4,702	
2020	July	0	0	4,501		4,501	0	0	201		39	4,702	
2020	August	0	0	4,501		4,501	0	0	201		39	4,702	
2020	September	0	0	4,501		4,501	0	0	201		39	4,702	
2020	October	0	0	4,501		4,501	0	0	201		39	4,702	
2020	November	0	0	4,501		4,501	0	0	201		39	4,702	
2020	December	0	0	4,501		4,501	0	0	201		39	4,702	

Table 1		Energy Savings										
Year	Month	Net kWh										System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2020	January			16,311,505		16,311,505	1,313		808,535		36,757	17,120,039
2020	February			16,311,505		16,311,505	14,152		822,686		50,909	17,134,191
2020	March			16,311,505		16,311,505	19,642		842,328		70,550	17,153,833
2020	April			16,311,505		16,311,505			842,328		70,550	17,153,833
2020	May			16,311,505		16,311,505			842,328		70,550	17,153,833
2020	June			16,311,505		16,311,505			842,328		70,550	17,153,833
2020	July			16,311,505		16,311,505			842,328		70,550	17,153,833
2020	August			16,311,505		16,311,505			842,328		70,550	17,153,833
2020	September			16,311,505		16,311,505			842,328		70,550	17,153,833
2020	October			16,311,505		16,311,505			842,328		70,550	17,153,833
2020	November			16,311,505		16,311,505			842,328		70,550	17,153,833
2020	December			16,311,505		16,311,505			842,328		70,550	17,153,833

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA		VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired										
2020	January			36,309		36,309	5		2,026		86	38,335	3,624	4,394	3,654	8.07	11.01	8.18
2020	February			36,309		36,309	29		2,054		114	38,364	3,624	4,353	3,653	8.07	10.87	8.18
2020	March			36,309		36,309	33		2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	April			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	May			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	June			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	July			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	August			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	September			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	October			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	November			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17
2020	December			36,309		36,309			2,087		147	38,396	3,624	4,191	3,648	8.07	10.38	8.17

Table 2. EM&V Data Incremental by Vintage Year											
		Program Participants									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2014		118		118			-		-	118
	2015		1,241		1,241			13		13	1,254
	2016		1,203		1,203			43		28	1,246
	2017		868		868			23		23	891
	2018		649		649			43		43	692
	2019		422		422			62		22	484
	2020		-		-			17		17	17

Table 3. EM&V Data Annualized by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			118		118			-		-	118
2015			1,241		1,241			13		13	1,254
2016			1,203		1,203			43		28	1,246
2017			868		868			23		23	891
2018			649		649			43		43	692
2019			422		422			62		22	484
2020			-		-			17		17	17

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
		Program Participants								
			VA PPI					NC PPI		System
2014			118					-		118
2015			1,359					13		1,372
2016			2,562					56		2,618
2017			3,312					79		3,391
2018			2,720					109		2,829
2019			1,939					128		2,067
2020			1,071					122		1,193

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)												
		Program Participants										
				VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2014			118		118			-		-	118
	2015			1,359		1,359			13		13	1,372
	2016			2,562		2,562			56		28	2,618
	2017			3,430		3,430			79		51	3,509
	2018			4,079		4,079			122		94	4,201
	2019			4,501		4,501			184		22	4,685
	2020			4,501		4,501			201		39	4,702

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2014			118					-		118
2015			1,359					13		1,372
2016			2,562					56		2,618
2017			3,430					79		3,509
2018			4,079					122		4,201
2019			4,501					184		4,685
2020			4,501					201		4,702
2021			4,501					201		4,702
2022			4,501					201		4,702
2023			4,501					201		4,702
2024			4,501					201		4,702
2025			4,501					201		4,702
2026			4,501					201		4,702
2027			4,501					201		4,702
2028			4,501					201		4,702
2029			4,501					201		4,702
2030			4,501					201		4,702

Table 2. EM&V Data Incremental by Vintage Year											
		Net Incremental Energy (kWh)									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2014		426,605		426,605			-		-	426,605
	2015		17,706,128		17,706,128			111,408		111,408	17,817,536
	2016		23,490,812		23,490,812			1,192,620		1,021,133	24,683,432
	2017		26,580,861		26,580,861			723,396		723,396	27,304,257
	2018		14,330,571		14,330,571			1,027,040		1,027,040	15,357,611
	2019		27,086,154		27,086,154			1,488,273		1,205,657	28,574,427
	2020		-		-			367,845		367,845	367,845

Table 3. EM&V Data Annualized by Vintage Year												
		Net kWh										
				VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2014			3,324,785		3,324,785			-		-	3,324,785
	2015			35,579,643		35,579,643			395,028		395,028	35,974,671
	2016			46,113,890		46,113,890			2,333,469		1,304,549	48,447,359
	2017			49,717,225		49,717,225			1,216,685		1,216,685	50,933,910
	2018			31,610,279		31,610,279			3,620,453		3,620,453	35,230,732
	2019			29,392,235		29,392,235			2,121,023		425,323	31,513,258
	2020			-		-			421,281		421,281	421,281

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Net Energy (kWh) for PPI										
			VA PPI					NC PPI		System
2014			426,605					-		426,605
2015			21,030,913					111,408		21,142,321
2016			62,395,240					1,587,648		63,982,888
2017			108,274,394					3,451,893		111,726,287
2018			110,161,686					4,577,194		114,738,880
2019			108,413,658					6,325,411		114,739,069
2020			61,002,514					6,109,321		67,111,835

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Net Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2014		426,605		426,605			0		0	426,605
	2015		21,030,913		21,030,913			111,408		111,408	21,142,321
	2016		62,395,240		62,395,240			1,587,648		1,350,323	63,982,888
	2017		111,599,179		111,599,179			3,451,893		2,027,944	115,051,071
	2018		149,066,114		149,066,114			4,972,222		3,548,273	154,038,336
	2019		193,431,975		193,431,975			9,053,908		6,323,729	202,485,883
	2020		195,738,057		195,738,057			10,054,503		793,169	205,792,559

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Net Energy (kWh)										
			VA IRP					NC IRP		System IRP
2014			426,605					-		426,605
2015			21,457,518					111,408		21,568,925
2016			83,852,758					1,699,056		85,551,813
2017			195,451,936					5,150,948		200,602,885
2018			344,518,050					10,123,170		354,641,220
2019			537,950,026					19,177,078		557,127,104
2020			733,688,082					29,231,581		762,919,663
2021			929,426,139					39,339,519		968,765,658
2022			1,125,164,195					49,447,457		1,174,611,652
2023			1,320,475,647					59,555,395		1,380,031,043
2024			1,495,182,791					69,551,926		1,564,734,716
2025			1,628,525,608					78,072,216		1,706,597,823
2026			1,712,664,485					84,728,261		1,797,392,746
2027			1,759,336,428					89,863,978		1,849,200,405
2028			1,761,642,509					90,918,008		1,852,560,517
2029			1,761,642,509					90,971,443		1,852,613,952
2030			1,761,642,509					90,971,443		1,852,613,952

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			699		699			-		-	699	3,615	-	3,615	5.92	-	5.92
2015			7,472		7,472			73		73	7,545	14,268	8,570	14,209	6.02	5.63	6.02
2016			10,766		10,766			520		277	11,286	19,527	27,735	19,810	8.95	12.10	9.06
2017			8,371		8,371			234		234	8,605	30,623	31,452	30,645	9.64	10.18	9.66
2018			5,056		5,056			777		777	5,833	22,081	23,885	22,193	7.79	18.07	8.43
2019			3,946		3,946			416		80	4,362	64,185	24,004	59,038	9.35	6.71	9.01
2020			-		-			66		66	66	-	21,638	21,638	-	3.90	3.90

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			699		699			-		-	699	28,176	-	28,176	5.92	-	5.92
2015			7,472		7,472			73		73	7,545	28,670	30,387	28,688	6.02	5.63	6.02
2016			10,766		10,766			520		277	11,286	38,332	54,267	38,882	8.95	12.10	9.06
2017			8,371		8,371			234		234	8,605	57,278	52,899	57,165	9.64	10.18	9.66
2018			5,056		5,056			777		777	5,833	48,706	84,197	50,911	7.79	18.07	8.43
2019			3,946		3,946			416		80	4,362	69,650	34,210	65,110	9.35	6.71	9.01
2020			-		-			66		66	66	-	24,781	24,781	-	3.90	3.90

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2014			699					-		699		-			-	
2015			8,171					73		8,244		8,570			5.63	
2016			18,937					593		19,530		28,351			10.60	
2017			26,609					828		27,436		43,695			10.48	
2018			24,192					1,531		25,724		41,993			14.05	
2019			17,373					1,427		18,800		49,417			11.15	
2020			9,002					1,259		10,261		50,076			10.32	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/ Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			699		699			-		-	699	3,615	-	3,615	5.92	-	5.92
2015			8,171		8,171			73		73	8,244	15,475	8,570	15,410	6.01	5.63	6.01
2016			18,937		18,937			593		277	19,530	24,354	28,351	24,440	7.39	10.60	7.46
2017			27,308		27,308			828		511	28,135	32,536	43,695	32,787	7.96	10.48	8.02
2018			32,363		32,363			1,605		1,288	33,968	36,545	40,756	36,667	7.93	13.15	8.09
2019			36,309		36,309			2,021		80	38,330	42,975	49,206	43,220	8.07	10.98	8.18
2020			36,309		36,309			2,087		147	38,396	43,488	50,022	43,767	8.07	10.38	8.17

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/ Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2014			699					-			699	3,615	-	3,615	5.92	-	5.92
2015			8,171					73			8,244	15,789	8,570	15,721	6.01	5.63	6.01
2016			18,937					593			19,530	32,729	30,340	32,678	7.39	10.60	7.46
2017			27,308					828			28,135	56,983	65,202	57,168	7.96	10.48	8.02
2018			32,363					1,605			33,968	84,461	82,977	84,418	7.93	13.15	8.09
2019			36,309					2,021			38,330	119,518	104,223	118,917	8.07	10.98	8.18
2020			36,309					2,087			38,396	163,006	145,431	162,254	8.07	10.38	8.17
2021			36,309					2,087			38,396	206,493	195,719	206,033	8.07	10.38	8.17
2022			36,309					2,087			38,396	249,981	246,007	249,811	8.07	10.38	8.17
2023			36,309					2,087			38,396	293,374	296,295	293,499	8.07	10.38	8.17
2024			36,309					2,087			38,396	332,189	346,029	332,781	8.07	10.38	8.17
2025			36,309					2,087			38,396	361,814	388,419	362,951	8.07	10.38	8.17
2026			36,309					2,087			38,396	380,508	421,534	382,261	8.07	10.38	8.17
2027			36,309					2,087			38,396	390,877	447,084	393,280	8.07	10.38	8.17
2028			36,309					2,087			38,396	391,389	452,328	393,994	8.07	10.38	8.17
2029			36,309					2,087			38,396	391,389	452,594	394,006	8.07	10.38	8.17
2030			36,309					2,087			38,396	391,389	452,594	394,006	8.07	10.38	8.17

Program:	Non-residential Lighting Systems & Controls
DSM Phase:	7
Type:	
Program Life in years	
Starting from 2020:	10.6

Table 1 Participation													
Program Participants													
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC		NC Cum. for IRP (New + Retired) [G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	System	
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				System Cum for IRP E+G	
2020	January	0	0	0		0	0	0	0		0	0	
2020	February	0	0	0		0	0	0	0		0	0	
2020	March	83	0	83		83	0	0	0		0	83	
2020	April	41	0	124		124	1	0	1		1	125	
2020	May	30	0	154		154	1	0	2		2	156	
2020	June	31	0	185		185	3	0	5		5	190	
2020	July	16	0	201		201	1	0	6		6	207	
2020	August	41	0	242		242	0	0	6		6	248	
2020	September	42	0	284		284	0	0	6		6	290	
2020	October	34	0	318		318	0	0	6		6	324	
2020	November	33	0	351		351	3	0	9		9	360	
2020	December	55	0	406		406	0	0	9		9	415	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				System Cum for IRP
2020	January			0		0			0		0	0
2020	February			0		0			0		0	0
2020	March	171,079		171,079		171,079			0		0	171,079
2020	April	95,944		267,023		267,023	1,063		1,063		1,063	268,087
2020	May	175,994		443,017		443,017	986		2,049		2,049	445,066
2020	June	195,656		638,673		638,673	474		2,523		2,523	641,196
2020	July	79,280		717,953		717,953	3,389		5,912		5,912	723,865
2020	August	249,943		967,895		967,895			5,912		5,912	973,808
2020	September	294,948		1,262,844		1,262,844			5,912		5,912	1,268,756
2020	October	63,730		1,326,574		1,326,574			5,912		5,912	1,332,486
2020	November	190,674		1,517,248		1,517,248	610		6,522		6,522	1,523,770
2020	December	185,459		1,702,706		1,702,706			6,522		6,522	1,709,229

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2020	January			0		0			0		0	0			-			-
2020	February			0		0			0		0	0			-			-
2020	March	240		240		240			0		0	240	2,061		2,061	2.90		2.90
2020	April	135		376		376	0		0		0	376	2,153	1,063	2,145	3.03	-	3.01
2020	May	330		706		706	0		0		0	706	2,877	1,025	2,853	4.58	-	4.52
2020	June	313		1,019		1,019	1		1		1	1,021	3,452	505	3,375	5.51	0.27	5.37
2020	July	103		1,122		1,122	0		1		1	1,123	3,572	985	3,497	5.58	0.22	5.43
2020	August	449		1,571		1,571			1		1	1,573	4,000	985	3,927	6.49	0.22	6.34
2020	September	467		2,038		2,038			1		1	2,039	4,447	985	4,375	7.18	0.22	7.03
2020	October	84		2,122		2,122			1		1	2,123	4,172	985	4,113	6.67	0.22	6.55
2020	November	378		2,500		2,500	2		4		4	2,503	4,323	725	4,233	7.12	0.42	6.95
2020	December	314		2,814		2,814			4		4	2,818	4,194	725	4,119	6.93	0.42	6.79

Table 2. EM&V Data Incremental by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			406		406			9		9	415

Table 3. EM&V Data Annualized by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			406		406			9		9	415

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Program Participants											
			VA PPI					NC PPI			System
2020			406					9			415

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			406		406			9		9	415

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
Program Participants											
			VA IRP					NC IRP			System IRP
2020			406					9			415
2021			406					9			415
2022			406					9			415
2023			406					9			415
2024			406					9			415
2025			406					9			415
2026			406					9			415
2027			406					9			415
2028			406					9			415
2029			406					9			415
2030			406					9			415
2031			406					9			415
2032			406					9			415

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			9,015,012		9,015,012			42,330		42,330	9,057,342

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			20,432,475		20,432,475			78,269		78,269	20,510,744

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
	Net Energy (kWh) for PPI										
			VA PPI					NC PPI			System
2020			9,015,012					42,330			9,057,342

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			9,015,012		9,015,012			42,330		42,330	9,057,342

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA IRP					NC IRP			System IRP
2020			9,015,012					42,330			9,057,342
2021			29,447,487					120,599			29,568,086
2022			49,879,961					198,868			50,078,830
2023			70,312,436					277,137			70,589,574
2024			90,744,911					355,407			91,100,317
2025			111,177,385					433,676			111,611,061
2026			131,609,860					511,945			132,121,805
2027			152,042,335					590,215			152,632,549
2028			172,474,809					668,484			173,143,293
2029			192,907,284					746,753			193,654,037
2030			212,901,656					823,959			213,725,615
2031			217,946,396					834,872			218,781,269
2032			217,946,396					834,872			218,781,269

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			2,814		2,814			4		4	2,818	22,204	4,703	21,825	6.93	0.42	6.79

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			2,814		2,814			4		4	2,818	50,326	8,697	49,423	6.93	0.42	6.79

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2020			2,814					4			2,818		4,703			0.42	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			2,814		2,814			4		4	2,818	22,204	4,703	21,825	6.93	0.42	6.79

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2020			2,814					4			2,818	22,204	4,703	21,825	6.93	0.42	6.79
2021			2,814					4			2,818	72,531	13,400	71,248	6.93	0.42	6.79
2022			2,814					4			2,818	122,857	22,096	120,672	6.93	0.42	6.79
2023			2,814					4			2,818	173,183	30,793	170,095	6.93	0.42	6.79
2024			2,814					4			2,818	223,510	39,490	219,519	6.93	0.42	6.79
2025			2,814					4			2,818	273,836	48,186	268,942	6.93	0.42	6.79
2026			2,814					4			2,818	324,162	56,883	318,366	6.93	0.42	6.79
2027			2,814					4			2,818	374,489	65,579	367,789	6.93	0.42	6.79
2028			2,814					4			2,818	424,815	74,276	417,213	6.93	0.42	6.79
2029			2,814					4			2,818	475,141	82,973	466,636	6.93	0.42	6.79
2030			2,814					4			2,818	524,388	91,551	515,001	6.93	0.42	6.79
2031			2,814					4			2,818	536,814	92,764	527,184	6.93	0.42	6.79
2032			2,814					4			2,818	536,814	92,764	527,184	6.93	0.42	6.79

Program:	Non-residential Small Business Improvement
DSM Phase:	5
Type:	
Program Life in years	
Starting from 2016:	14.0

Table 1		Participation											
Year	Month	Program Participants											System
		VA					NC					System Cum for IRP	
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] =Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D		
2016	January	0	0	0		0	0	0	0		0	0	0
2016	February	0	0	0		0	0	0	0		0	0	0
2016	March	0	0	0		0	0	0	0		0	0	0
2016	April	0	0	0		0	0	0	0		0	0	0
2016	May	0	0	0		0	0	0	0		0	0	0
2016	June	0	0	0		0	0	0	0		0	0	0
2016	July	0	0	0		0	0	0	0	0	0	0	0
2016	August	0	0	0		0	0	0	0	0	0	0	0
2016	September	0	0	0		0	0	0	0	0	0	0	0
2016	October	4	0	4		4	0	0	0	0	0	0	4
2016	November	34	0	38		38	0	0	0	0	0	0	38
2016	December	29	0	67		67	0	0	0		0	67	67
2017	January	73	0	140		140	0	0	0		0	140	140
2017	February	37	0	177		177	0	0	0		0	177	177
2017	March	92	0	269		269	0	0	0		0	269	269
2017	April	101	0	370		370	0	0	0		0	370	370
2017	May	165	0	535		535	0	0	0		0	535	535
2017	June	101	0	636		636	1	0	1		1	637	637
2017	July	89	0	725		725	1	0	2		2	727	727
2017	August	89	0	814		814	0	0	2		2	816	816
2017	September	40	0	854		854	0	0	2		2	856	856
2017	October	74	0	928		928	0	0	2		2	930	930
2017	November	38	0	966		966	0	0	2		2	968	968
2017	December	38	0	1,004		1,004	5	0	7		7	1,011	1,011
2018	January	28	0	1,032		1,032	0	0	7		7	1,039	1,039
2018	February	77	0	1,109		1,109	1	0	8		8	1,117	1,117
2018	March	36	0	1,145		1,145	1	0	9		9	1,154	1,154
2018	April	37	0	1,182		1,182	1	0	10		10	1,192	1,192
2018	May	38	0	1,220		1,220	3	0	13		13	1,233	1,233
2018	June	65	0	1,285		1,285	9	0	22		22	1,307	1,307
2018	July	36	0	1,321		1,321	9	0	31		31	1,352	1,352
2018	August	47	0	1,368		1,368	0	0	31		31	1,399	1,399
2018	September	33	0	1,401		1,401	0	0	31		31	1,432	1,432
2018	October	54	0	1,455		1,455	11	0	42		42	1,497	1,497
2018	November	35	0	1,490		1,490	0	0	42		42	1,532	1,532
2018	December	24	0	1,514		1,514	1	0	43		43	1,557	1,557

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				System Cum for IRP
2016	January			0		0			0		0	0
2016	February			0		0			0		0	0
2016	March			0		0			0		0	0
2016	April			0		0			0		0	0
2016	May			0		0			0		0	0
2016	June			0		0			0		0	0
2016	July			0		0			0	0	0	0
2016	August			0		0			0	0	0	0
2016	September			0		0			0	0	0	0
2016	October	3,202		3,202		3,202			0	0	0	3,202
2016	November	10,951		14,153		14,153			0	0	0	14,153
2016	December	36,750		50,902		50,902			0	0	0	50,902
2017	January	66,459		117,361		117,361			0		0	117,361
2017	February	24,535		141,896		141,896			0		0	141,896
2017	March	98,470		240,365		240,365			0		0	240,365
2017	April	69,281		309,646		309,646			0		0	309,646
2017	May	133,180		442,826		442,826			0		0	442,826
2017	June	97,421		540,247		540,247	1,049		1,049		1,049	541,296
2017	July	117,803		658,050		658,050	3,982		5,031		5,031	663,081
2017	August	104,019		762,069		762,069			5,031		5,031	767,100
2017	September	93,147		855,216		855,216			5,031		5,031	860,248
2017	October	167,604		1,022,821		1,022,821			5,031		5,031	1,027,852
2017	November	99,941		1,122,762		1,122,762			5,031		5,031	1,127,793
2017	December	67,313		1,190,075		1,190,075	7,873		12,904		12,904	1,202,979
2018	January	64,722		1,254,797		1,254,797			12,904		12,904	1,267,701
2018	February	144,592		1,399,389		1,399,389	2,963		15,867		15,867	1,415,256
2018	March	80,223		1,479,612		1,479,612	1,746		17,613		17,613	1,497,225
2018	April	86,331		1,565,943		1,565,943	2,643		20,256		20,256	1,586,200
2018	May	52,809		1,618,753		1,618,753	17,548		37,805		37,805	1,656,557
2018	June	431,732		2,050,485		2,050,485	17,101		54,905		54,905	2,105,390
2018	July	51,128		2,101,613		2,101,613	8,161		63,066		63,066	2,164,679
2018	August	50,638		2,152,251		2,152,251			63,066		63,066	2,215,317
2018	September	55,251		2,207,502		2,207,502			63,066		63,066	2,270,568
2018	October	101,831		2,309,334		2,309,334	25,309		88,375		88,375	2,397,709
2018	November	70,766		2,380,100		2,380,100			88,375		88,375	2,468,475
2018	December	49,891		2,429,991		2,429,991	2,085		90,460		90,460	2,520,451

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW					NC					System Cum for IRP	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		VA	NC	System	VA	NC	System
2016	January			0		0			0		0	0			-			-
2016	February			0		0			0		0	0			-			-
2016	March			0		0			0		0	0			-			-
2016	April			0		0			0		0	0			-			-
2016	May			0		0			0		0	0			-			-
2016	June			0		0			0		0	0			-			-
2016	July			0		0			0	0	0	0			-			-
2016	August			0		0			0	0	0	0			-			-
2016	September			0		0			0	0	0	0			-			-
2016	October	6		6		6			0	0	0	6	800		800	1.58		1.58
2016	November	17		24		24			0	0	0	24	372		372	0.62		0.62
2016	December	99		122		122			0		0	122	760		760	1.83		1.83
2017	January	162		285		285			0		0	285	838		838	2.03		2.03
2017	February	61		346		346			0		0	346	802		802	1.95		1.95
2017	March	262		608		608			0		0	608	894		894	2.26		2.26
2017	April	186		794		794			0		0	794	837		837	2.14		2.14
2017	May	302		1,095		1,095			0		0	1,095	828		828	2.05		2.05
2017	June	252		1,347		1,347	0		0		0	1,347	849	1,049	850	2.12	-	2.12
2017	July	298		1,645		1,645	7		7		7	1,652	908	2,516	912	2.27	3.36	2.27
2017	August	280		1,925		1,925			7		7	1,932	936	2,516	940	2.37	3.36	2.37
2017	September	248		2,173		2,173			7		7	2,180	1,001	2,516	1,005	2.54	3.36	2.55
2017	October	388		2,561		2,561			7		7	2,567	1,102	2,516	1,105	2.76	3.36	2.76
2017	November	260		2,821		2,821			7		7	2,828	1,162	2,516	1,165	2.92	3.36	2.92
2017	December	183		3,004		3,004	24		30		30	3,034	1,185	1,843	1,190	2.99	4.33	3.00
2018	January	178		3,182		3,182			30		30	3,212	1,216	1,843	1,220	3.08	4.33	3.09
2018	February	357		3,538		3,538	4		34		34	3,573	1,262	1,983	1,267	3.19	4.27	3.20
2018	March	193		3,731		3,731	7		41		41	3,772	1,292	1,957	1,297	3.26	4.56	3.27
2018	April	208		3,939		3,939	7		48		48	3,987	1,325	2,026	1,331	3.33	4.84	3.35
2018	May	131		4,070		4,070	49		98		98	4,168	1,327	2,908	1,344	3.34	7.53	3.38
2018	June	1,154		5,224		5,224	45		143		143	5,367	1,596	2,496	1,611	4.07	6.50	4.11
2018	July	136		5,360		5,360	19		162		162	5,522	1,591	2,034	1,601	4.06	5.24	4.08
2018	August	140		5,500		5,500			162		162	5,662	1,573	2,034	1,584	4.02	5.24	4.05
2018	September	127		5,627		5,627			162		162	5,789	1,576	2,034	1,586	4.02	5.24	4.04
2018	October	269		5,896		5,896	67		230		230	6,126	1,587	2,104	1,602	4.05	5.47	4.09
2018	November	190		6,087		6,087			230		230	6,316	1,597	2,104	1,611	4.08	5.47	4.12
2018	December	149		6,236		6,236	5		234		234	6,470	1,605	2,104	1,619	4.12	5.44	4.16

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G	
2019	January	36	0	1,550		1,550	3	0	46		46	1,596	
2019	February	31	0	1,581		1,581	2	0	48		48	1,629	
2019	March	55	0	1,636		1,636	1	0	49		49	1,685	
2019	April	48	0	1,684		1,684	6	0	55		55	1,739	
2019	May	32	0	1,716		1,716	0	0	55		55	1,771	
2019	June	30	0	1,746		1,746	4	0	59		59	1,805	
2019	July	55	0	1,801		1,801	3	0	62	3	62	1,863	
2019	August	44	0	1,845		1,845	0	0	62	3	62	1,907	
2019	September	44	0	1,889		1,889	4	0	66	7	66	1,955	
2019	October	53	0	1,942		1,942	0	0	66	7	66	2,008	
2019	November	36	0	1,978		1,978	3	0	69	10	69	2,047	
2019	December	39	0	2,017		2,017	1	0	70		70	2,087	
2020	January	22	0	2,039		2,039	5	0	75		75	2,114	
2020	February	37	0	2,076		2,076	1	0	76		76	2,152	
2020	March	33	0	2,109		2,109	3	0	79		79	2,188	
2020	April	24	0	2,133		2,133	1	0	80		80	2,213	
2020	May	29	0	2,162		2,162	0	0	80		80	2,242	
2020	June	39	0	2,201		2,201	1	0	81		81	2,282	
2020	July	19	0	2,220		2,220	4	0	85		85	2,305	
2020	August	21	0	2,241		2,241	1	0	86		86	2,327	
2020	September	29	0	2,270		2,270	0	0	86		86	2,356	
2020	October	14	0	2,284		2,284	1	0	87		87	2,371	
2020	November	37	0	2,321		2,321	0	0	87		87	2,408	
2020	December	23	0	2,344		2,344	0	0	87		87	2,431	

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2019	January	77,149		2,507,140		2,507,140	7,171		97,631		97,631	2,604,771
2019	February	113,182		2,620,323		2,620,323	12,574		110,205		110,205	2,730,528
2019	March	87,772		2,708,094		2,708,094	95		110,301		110,301	2,818,395
2019	April	43,005		2,751,099		2,751,099	8,307		118,608		118,608	2,869,707
2019	May	74,478		2,825,578		2,825,578			118,608		118,608	2,944,186
2019	June	45,422		2,871,000		2,871,000	6,478		125,086		125,086	2,996,086
2019	July	74,976		2,945,975		2,945,975	2,804		127,890	2,804	127,890	3,073,866
2019	August	93,595		3,039,570		3,039,570			127,890	2,804	127,890	3,167,461
2019	September	79,323		3,118,893		3,118,893	9,479		137,369	12,283	137,369	3,256,263
2019	October	70,922		3,189,815		3,189,815	321		137,690	12,604	137,690	3,327,505
2019	November	87,767		3,277,582		3,277,582	6,180		143,870	18,784	18,784	3,421,452
2019	December	55,180		3,332,762		3,332,762	493		144,363		19,277	3,477,125
2020	January	40,322		3,373,084		3,373,084	10,610		154,973		29,887	3,528,057
2020	February	70,423		3,443,507		3,443,507	788		155,761		30,675	3,599,268
2020	March	80,751		3,524,258		3,524,258	6,546		162,307		37,221	3,686,565
2020	April	65,429		3,589,687		3,589,687	5,122		167,429		42,343	3,757,116
2020	May	32,952		3,622,639		3,622,639			167,429		42,343	3,790,068
2020	June	49,268		3,671,907		3,671,907	403		167,832		42,745	3,839,738
2020	July	24,022		3,695,929		3,695,929	1,232		169,064		43,978	3,864,993
2020	August	55,792		3,751,721		3,751,721	3,929		172,993		47,907	3,924,714
2020	September	49,271		3,800,992		3,800,992			172,993		47,907	3,973,985
2020	October	9,172		3,810,164		3,810,164	844		173,837		48,751	3,984,001
2020	November	78,297		3,888,461		3,888,461			173,837		48,751	4,062,298
2020	December	71,882		3,960,343		3,960,343			173,837		48,751	4,134,180

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2019	January	212		6,448		6,448	19		253		253	6,702	1,618	2,122	1,632	4.16	5.51	4.20
2019	February	314		6,762		6,762	35		288		288	7,051	1,657	2,296	1,676	4.28	6.01	4.33
2019	March	249		7,011		7,011	0		289		289	7,300	1,655	2,251	1,673	4.29	5.89	4.33
2019	April	146		7,157		7,157	18		306		306	7,463	1,634	2,157	1,650	4.25	5.57	4.29
2019	May	189		7,346		7,346			306		306	7,652	1,647	2,157	1,662	4.28	5.57	4.32
2019	June	78		7,424		7,424	16		322		322	7,746	1,644	2,120	1,660	4.25	5.46	4.29
2019	July	187		7,611		7,611	6		328	6	328	7,939	1,636	2,063	1,650	4.23	5.29	4.26
2019	August	213		7,824		7,824			328	6	328	8,152	1,647	2,063	1,661	4.24	5.29	4.27
2019	September	213		8,037		8,037	20		348	26	348	8,386	1,651	2,081	1,666	4.25	5.28	4.29
2019	October	201		8,238		8,238	1		349	27	349	8,587	1,643	2,086	1,657	4.24	5.29	4.28
2019	November	228		8,466		8,466	14		363	41	363	8,829	1,657	2,085	1,671	4.28	5.26	4.31
2019	December	144		8,611		8,611	1		365		365	8,975	1,652	2,062	1,666	4.27	5.21	4.30
2020	January	103		8,714		8,714	20		384		384	9,098	1,654	2,066	1,669	4.27	5.12	4.30
2020	February	175		8,889		8,889	2		386		386	9,275	1,659	2,049	1,673	4.28	5.08	4.31
2020	March	214		9,103		9,103	13		399		399	9,503	1,671	2,055	1,685	4.32	5.05	4.34
2020	April	119		9,223		9,223	0		399		399	9,622	1,683	2,093	1,698	4.32	4.99	4.35
2020	May	72		9,294		9,294			399		399	9,694	1,676	2,093	1,690	4.30	4.99	4.32
2020	June	128		9,422		9,422	1		400		400	9,822	1,668	2,072	1,683	4.28	4.94	4.30
2020	July	62		9,485		9,485	2		402		402	9,887	1,665	1,989	1,677	4.27	4.73	4.29
2020	August	139		9,624		9,624	7		409		409	10,033	1,674	2,012	1,687	4.29	4.76	4.31
2020	September	140		9,764		9,764			409		409	10,173	1,674	2,012	1,687	4.30	4.76	4.32
2020	October	32		9,796		9,796	2		411		411	10,207	1,668	1,998	1,680	4.29	4.73	4.31
2020	November	202		9,998		9,998			411		411	10,409	1,675	1,998	1,687	4.31	4.73	4.32
2020	December	123		10,120		10,120			411		411	10,532	1,690	1,998	1,701	4.32	4.73	4.33

Table 2. EM&V Data Incremental by Vintage Year											
		Program Participants									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2016		67		67			-		-	67
	2017		937		937			7		7	944
	2018		510		510			36		36	546
	2019		503		503			27		11	530
	2020		327		327			17		17	344

Table 3. EM&V Data Annualized by Vintage Year																
		Program Participants														
				VA IRP			VA NLR				NC IRP			NC NLR		System IRP
	2016					67							-		-	67
	2017					937							7		7	944
	2018					510							36		36	546
	2019					503							27		11	530
	2020					327							17		17	344

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants									
			VA PPI					NC PPI		System
2016			67					-		67
2017			1,004					7		1,011
2018			1,514					43		1,557
2019			1,950					70		2,020
2020			1,340					80		1,420

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
		Program Participants									
		VA IRP		VA NLR		NC IRP		NC NLR		System IRP	
2016		67		67		-		-		67	
2017		1,004		1,004		7		7		1,011	
2018		1,514		1,514		43		43		1,557	
2019		2,017		2,017		70		11		2,087	
2020		2,344		2,344		87		28		2,431	

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Program Participants										
			VA IRP					NC IRP			System IRP
2016			67					-			67
2017			1,004					7			1,011
2018			1,514					43			1,557
2019			2,017					70			2,087
2020			2,344					87			2,431
2021			2,344					87			2,431
2022			2,344					87			2,431
2023			2,344					87			2,431
2024			2,344					87			2,431
2025			2,344					87			2,431
2026			2,344					87			2,431
2027			2,344					87			2,431
2028			2,344					87			2,431
2029			2,344					87			2,431
2030			2,344					87			2,431
2031			2,344					87			2,431
2032			2,344					87			2,431
2033			2,344					87			2,431
2034			2,344					87			2,431
2035			2,344					87			2,431

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2016			68,256		68,256			-		-	68,256
2017			6,792,509		6,792,509			39,109		39,109	6,831,618
2018			8,668,870		8,668,870			460,906		460,906	9,129,776
2019			6,027,943		6,027,943			413,995		344,742	6,441,938
2020			4,139,545		4,139,545			279,939		279,939	4,419,484

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2016			610,825		610,825			-		-	610,825
2017			13,670,074		13,670,074			154,851		154,851	13,824,925
2018			14,878,990		14,878,990			930,665		930,665	15,809,655
2019			10,833,258		10,833,258			646,835		231,319	11,480,093
2020			7,530,972		7,530,972			353,693		353,693	7,884,666

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2016			68,256					-		68,256
2017			7,403,334					39,109		7,442,443
2018			22,949,769					615,758		23,565,527
2019			34,577,008					1,499,511		36,076,519
2020			29,851,793					1,857,440		31,709,232

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2016			68,256		68,256			0		0	68,256
2017			7,403,334		7,403,334			39,109		39,109	7,442,443
2018			22,949,769		22,949,769			615,758		615,758	23,565,527
2019			35,187,833		35,187,833			1,499,511		1,249,339	36,687,344
2020			44,132,692		44,132,692			2,012,291		511,258	46,144,983

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2016			68,256					-		68,256
2017			7,471,590					39,109		7,510,699
2018			30,421,359					654,867		31,076,226
2019			65,609,192					2,154,378		67,763,570
2020			109,741,884					4,166,669		113,908,553
2021			157,266,004					6,252,714		163,518,718
2022			204,790,124					8,338,758		213,128,882
2023			252,314,244					10,424,803		262,739,047
2024			299,838,364					12,510,848		312,349,211
2025			347,362,484					14,596,892		361,959,376
2026			394,886,603					16,682,937		411,569,540
2027			442,410,723					18,768,982		461,179,705
2028			489,934,843					20,855,026		510,789,869
2029			537,458,963					22,941,071		560,400,034
2030			584,914,826					25,027,116		609,941,942
2031			625,035,612					27,074,051		652,109,664
2032			649,609,963					28,544,338		678,154,301
2033			661,946,250					29,130,872		691,077,122
2034			665,337,678					29,204,625		694,542,303
2035			665,337,678					29,204,625		694,542,303

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2016			122		122			-		-	122	1,019	-	1,019	1.83	-	1.83
2017			2,881		2,881			30		30	2,912	7,249	5,587	7,237	3.07	4.33	3.08
2018			3,232		3,232			204		204	3,436	16,998	12,803	16,721	6.34	5.66	6.29
2019			2,375		2,375			130		43	2,505	11,984	15,333	12,155	4.72	4.83	4.73
2020			1,510		1,510			47		47	1,557	12,659	16,467	12,847	4.62	2.76	4.53

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2016			122		122			-		-	122	9,117	-	9,117	1.83	-	1.83
2017			2,881		2,881			30		30	2,912	14,589	22,122	14,645	3.07	4.33	3.08
2018			3,232		3,232			204		204	3,436	29,174	25,852	28,955	6.34	5.66	6.29
2019			2,375		2,375			130		43	2,505	21,537	23,957	21,661	4.72	4.83	4.73
2020			1,510		1,510			47		47	1,557	23,030	20,805	22,921	4.62	2.76	4.53

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2016			122					-		122		-			-	
2017			3,004					30		3,034		5,587			4.33	
2018			6,236					234		6,470		14,320			5.44	
2019			8,488					365		8,853		21,422			5.21	
2020			7,117					381		7,498		23,218			4.76	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/ Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2016			122		122			-		-	122	1,019	-	1,019	1.83	-	1.83
2017			3,004		3,004			30		30	3,034	7,374	5,587	7,361	2.99	4.33	3.00
2018			6,236		6,236			234		234	6,470	15,158	14,320	15,135	4.12	5.44	4.16
2019			8,611		8,611			365		43	8,975	17,446	21,422	17,579	4.27	5.21	4.30
2020			10,120		10,120			411		89	10,532	18,828	23,130	18,982	4.32	4.73	4.33

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)												IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2016			122					-			122	1,019	-	1,019	1.83	-	1.83
2017			3,004					30			3,034	7,442	5,587	7,429	2.99	4.33	3.00
2018			6,236					234			6,470	20,093	15,229	19,959	4.12	5.44	4.16
2019			8,611					365			8,975	32,528	30,777	32,469	4.27	5.21	4.30
2020			10,120					411			10,532	46,818	47,893	46,857	4.32	4.73	4.33
2021			10,120					411			10,532	67,093	71,870	67,264	4.32	4.73	4.33
2022			10,120					411			10,532	87,368	95,848	87,671	4.32	4.73	4.33
2023			10,120					411			10,532	107,643	119,825	108,079	4.32	4.73	4.33
2024			10,120					411			10,532	127,917	143,803	128,486	4.32	4.73	4.33
2025			10,120					411			10,532	148,192	167,780	148,893	4.32	4.73	4.33
2026			10,120					411			10,532	168,467	191,758	169,301	4.32	4.73	4.33
2027			10,120					411			10,532	188,742	215,735	189,708	4.32	4.73	4.33
2028			10,120					411			10,532	209,017	239,713	210,115	4.32	4.73	4.33
2029			10,120					411			10,532	229,291	263,690	230,522	4.32	4.73	4.33
2030			10,120					411			10,532	249,537	287,668	250,902	4.32	4.73	4.33
2031			10,120					411			10,532	266,653	311,196	268,247	4.32	4.73	4.33
2032			10,120					411			10,532	277,137	328,096	278,961	4.32	4.73	4.33
2033			10,120					411			10,532	282,400	334,838	284,277	4.32	4.73	4.33
2034			10,120					411			10,532	283,847	335,685	285,702	4.32	4.73	4.33
2035			10,120					411			10,532	283,847	335,685	285,702	4.32	4.73	4.33

Program:	Non-residential Prescriptive
DSM Phase:	6
Type:	
Program Life in years	
Starting from 2017:	6.3

Table 1		Participation											
Year	Month	Program Participants											System
		VA					NC					System Cum for IRP	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D		
2017	January	0	0	0		0	0	0		0		0	0
2017	February	0	0	0		0	0	0		0		0	0
2017	March	0	0	0		0	0	0		0		0	0
2017	April	0	0	0		0	0	0		0		0	0
2017	May	0	0	0		0	0	0		0		0	0
2017	June	0	0	0		0	0	0		0		0	0
2017	July	0	0	0		0	0	0		0		0	0
2017	August	0	0	0		0	0	0		0		0	0
2017	September	0	0	0		0	0	0		0		0	0
2017	October	0	0	0		0	0	0		0		0	0
2017	November	0	0	0		0	0	0		0		0	0
2017	December	4	0	4		4	0	0		0		0	4
2018	January	49	0	53		53	0	0		0		0	53
2018	February	181	0	234		234	0	0		0		0	234
2018	March	115	0	349		349	0	0		0		0	349
2018	April	56	0	405		405	0	0		0		0	405
2018	May	123	0	528		528	0	0		0		0	528
2018	June	100	0	628		628	0	0		0		0	628
2018	July	64	0	692		692	0	0		0		0	692
2018	August	47	0	739		739	0	0		0		0	739
2018	September	83	0	822		822	0	0		0		0	822
2018	October	11	0	833		833	0	0		0		0	833
2018	November	21	0	854		854	11	0	11		11	865	
2018	December	15	0	869		869	10	0	21		21	890	
2019	January	5	0	874		874	3	0	24		24	898	
2019	February	36	0	910		910	16	0	40		40	950	
2019	March	73	0	983		983	6	0	46		46	1,029	
2019	April	60	0	1,043		1,043	7	0	53		53	1,096	
2019	May	66	0	1,109		1,109	1	0	54		54	1,163	
2019	June	39	0	1,148		1,148	0	0	54		54	1,202	
2019	July	40	0	1,188		1,188	0	0	54	0	54	1,242	
2019	August	39	0	1,227		1,227	0	0	54	0	54	1,281	
2019	September	38	0	1,265		1,265	0	0	54	0	54	1,319	
2019	October	103	0	1,368		1,368	2	0	56	2	56	1,424	
2019	November	108	0	1,476		1,476	1	0	57	3	57	1,533	
2019	December	59	0	1,535		1,535	0	0	57		57	1,592	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				System Cum for IRP
2017	January			0		0			0		0	0
2017	February			0		0			0		0	0
2017	March			0		0			0		0	0
2017	April			0		0			0		0	0
2017	May			0		0			0		0	0
2017	June			0		0			0		0	0
2017	July			0		0			0		0	0
2017	August			0		0			0		0	0
2017	September			0		0			0		0	0
2017	October			0		0			0		0	0
2017	November			0		0			0		0	0
2017	December	50		50		50			0		0	50
2018	January	10,907		10,907		10,957			0		0	10,957
2018	February	102,892		113,849		113,849			0		0	113,849
2018	March	47,362		161,211		161,211			0		0	161,211
2018	April	29,467		190,678		190,678			0		0	190,678
2018	May	69,743		260,421		260,421			0		0	260,421
2018	June	56,509		316,930		316,930			0		0	316,930
2018	July	78,205		395,134		395,134			0		0	395,134
2018	August	29,223		424,358		424,358			0		0	424,358
2018	September	54,447		478,805		478,805			0		0	478,805
2018	October	8,846		487,650		487,650			0		0	487,650
2018	November	2,785		490,435		490,435	11,360		11,360		11,360	501,796
2018	December	7,089		497,524		497,524	4,349		15,709		15,709	513,233
2019	January	410		497,934		497,934	5,578		21,288		21,288	519,222
2019	February	26,844		524,778		524,778	5,157		26,445		26,445	551,223
2019	March	60,602		585,380		585,380	2,818		29,263		29,263	614,643
2019	April	17,602		602,982		602,982	1,764		31,026		31,026	634,008
2019	May	32,997		635,978		635,978	33		31,059		31,059	667,037
2019	June	12,091		648,070		648,070			31,059		31,059	679,129
2019	July	31,427		679,497		679,497			31,059	0	31,059	710,556
2019	August	32,178		711,675		711,675			31,059	0	31,059	742,734
2019	September	21,243		732,918		732,918			31,059	0	31,059	763,977
2019	October	29,336		762,254		762,254	725		31,784	725	31,784	794,038
2019	November	34,727		796,980		796,980	60		31,844	785	785	828,825
2019	December	12,490		809,470		809,470			31,844		785	841,315

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA	NC	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2017	January			0		0			0		0	0			-			-
2017	February			0		0			0		0	0			-			-
2017	March			0		0			0		0	0			-			-
2017	April			0		0			0		0	0			-			-
2017	May			0		0			0		0	0			-			-
2017	June			0		0			0		0	0			-			-
2017	July			0		0			0		0	0			-			-
2017	August			0		0			0		0	0			-			-
2017	September			0		0			0		0	0			-			-
2017	October			0		0			0		0	0			-			-
2017	November			0		0			0		0	0			-			-
2017	December	0		0		0			0		0	0	12		12	0.02		0.02
2018	January	20		20		20			0		0	20	207		207	0.37		0.37
2018	February	353		372		372			0		0	372	487		487	1.59		1.59
2018	March	189		561		561			0		0	561	462		462	1.61		1.61
2018	April	119		680		680			0		0	680	471		471	1.68		1.68
2018	May	175		855		855			0		0	855	493		493	1.62		1.62
2018	June	122		976		976			0		0	976	505		505	1.55		1.55
2018	July	253		1,229		1,229			0		0	1,229	571		571	1.78		1.78
2018	August	1,416		2,645		2,645			0		0	2,645	574		574	3.58		3.58
2018	September	146		2,791		2,791			0		0	2,791	582		582	3.40		3.40
2018	October	49		2,840		2,840			0		0	2,840	585		585	3.41		3.41
2018	November	3		2,843		2,843	16		16		16	2,859	574	1,033	580	3.33	1.41	3.30
2018	December	18		2,861		2,861	6		21		21	2,883	573	748	577	3.29	1.02	3.24
2019	January	2		2,863		2,863	8		29		29	2,892	570	887	578	3.28	1.21	3.22
2019	February	147		3,011		3,011	7		36		36	3,047	577	661	580	3.31	0.90	3.21
2019	March	1,250		4,261		4,261	4		40		40	4,300	596	636	597	4.33	0.87	4.18
2019	April	133		4,393		4,393	2		42		42	4,436	578	585	578	4.21	0.80	4.05
2019	May	321		4,714		4,714	0		42		42	4,757	573	575	574	4.25	0.79	4.09
2019	June	118		4,832		4,832			42		42	4,874	565	575	565	4.21	0.79	4.06
2019	July	147		4,979		4,979			42	0	42	5,021	572	575	572	4.19	0.79	4.04
2019	August	139		5,118		5,118			42	0	42	5,160	580	575	580	4.17	0.79	4.03
2019	September	68		5,186		5,186			42	0	42	5,228	579	575	579	4.10	0.79	3.96
2019	October	166		5,352		5,352	4		46	4	46	5,398	557	568	558	3.91	0.83	3.79
2019	November	292		5,643		5,643	1		47	5	47	5,691	540	559	541	3.82	0.83	3.71
2019	December	96		5,739		5,739			47		47	5,786	527	559	528	3.74	0.83	3.63

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC					System	
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	System Cum for IRP E+G	
2020	January	115	0	1,650		1,650	0	0	57		3	1,707	
2020	February	57	0	1,707		1,707	2	0	59		5	1,766	
2020	March	52	0	1,759		1,759	7	0	66		12	1,825	
2020	April	54	0	1,813		1,813	0	0	66		12	1,879	
2020	May	63	0	1,876		1,876	3	0	69		15	1,945	
2020	June	32	0	1,908		1,908	1	0	70		16	1,978	
2020	July	25	0	1,933		1,933	1	0	71		17	2,004	
2020	August	25	0	1,958		1,958	0	0	71		17	2,029	
2020	September	26	0	1,984		1,984	1	0	72		18	2,056	
2020	October	15	0	1,999		1,999	0	0	72		18	2,071	
2020	November	74	0	2,073		2,073	0	0	72		18	2,145	
2020	December	39	0	2,112		2,112	4	0	76		22	2,188	

Table 1		Energy Savings										
Year	Month	Net kWh					NC					System
		VA	VA	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2020	January	55,670		865,140		865,140			31,844		785	896,984
2020	February	44,906		910,046		910,046	354		32,199		1,140	942,245
2020	March	13,868		923,915		923,915	909		33,108		2,049	957,022
2020	April	186,504		1,110,418		1,110,418			33,108		2,049	1,143,526
2020	May	116,881		1,227,299		1,227,299	1,260		34,367		3,308	1,261,667
2020	June	181,823		1,409,122		1,409,122	85		34,452		3,393	1,443,574
2020	July	175,972		1,585,094		1,585,094	255		34,707		3,648	1,619,800
2020	August	136,349		1,721,443		1,721,443	32,412		67,118		36,059	1,788,561
2020	September	355,800		2,077,243		2,077,243	270		67,388		36,329	2,144,631
2020	October	49,957		2,127,200		2,127,200	4,532		71,921		40,862	2,199,120
2020	November	135,184		2,262,384		2,262,384	14,498		86,419		55,360	2,348,802
2020	December	121,462		2,383,846		2,383,846	995		87,414		56,355	2,471,260

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2020	January	408		6,147		6,147			47		5	6,195	524	559	525	3.73	0.83	3.63
2020	February	149		6,296		6,296	1		49		6	6,345	533	546	534	3.69	0.82	3.59
2020	March	56		6,352		6,352	4		52		10	6,404	525	502	524	3.61	0.79	3.51
2020	April	325		6,677		6,677			52		10	6,730	612	502	609	3.68	0.79	3.58
2020	May	224		6,902		6,902	5		57		15	6,959	654	498	649	3.68	0.83	3.58
2020	June	377		7,279		7,279	1		59		16	7,338	739	492	730	3.81	0.84	3.71
2020	July	427		7,706		7,706	1		60		18	7,766	820	489	808	3.99	0.85	3.88
2020	August	393		8,099		8,099	62		122		80	8,221	879	945	881	4.14	1.72	4.05
2020	September	704		8,804		8,804	1		124		81	8,927	1,047	936	1,043	4.44	1.72	4.34
2020	October	148		8,952		8,952	8		131		89	9,083	1,064	999	1,062	4.48	1.82	4.39
2020	November	307		9,259		9,259	25		157		114	9,416	1,091	1,200	1,095	4.47	2.18	4.39
2020	December	267		9,526		9,526	3		159		117	9,685	1,129	1,150	1,129	4.51	2.10	4.43

Table 2. EM&V Data Incremental by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			4		4			-		-	4
2018			865		865			21		21	886
2019			666		666			36		3	702
2020			577		577			19		19	596

Table 3. EM&V Data Annualized by Vintage Year											
		Program Participants									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			4		4			-		-	4
2018			865		865			21		21	886
2019			666		666			36		3	702
2020			577		577			19		19	596

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
		Program Participants								
		VA PPI						NC PPI		System
2017			4					-		4
2018			869					21		890
2019			1,535					57		1,592
2020			2,108					76		2,184

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			4		4			-		-	4
2018			869		869			21		21	890
2019			1,535		1,535			57		3	1,592
2020			2,112		2,112			76		22	2,188

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2017			4					-		4
2018			869					21		890
2019			1,535					57		1,592
2020			2,112					76		2,188
2021			2,112					76		2,188
2022			2,112					76		2,188
2023			2,112					76		2,188
2024			2,112					76		2,188
2025			2,112					76		2,188
2026			2,112					76		2,188
2027			2,112					76		2,188
2028			2,112					76		2,188

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			50		50			-		-	50
2018			3,827,356		3,827,356			27,070		27,070	3,854,426
2019			2,017,629		2,017,629			170,278		139,578	2,187,906
2020			8,889,505		8,889,505			231,913		231,913	9,121,418

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			594		594			-		-	594
2018			5,969,694		5,969,694			188,512		188,512	6,158,206
2019			3,743,355		3,743,355			193,620		9,423	3,936,975
2020			18,892,507		18,892,507			666,832		666,832	19,559,339

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
		Net Energy (kWh) for PPI								
			VA PPI				NC PPI			System
2017			50				-			50
2018			3,827,951				27,070			3,855,020
2019			7,987,917				358,790			8,346,706
2020			18,602,554				614,044			19,216,598

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Net Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			50		50			0		0	50
2018			3,827,951		3,827,951			27,070		27,070	3,855,020
2019			7,987,917		7,987,917			358,790		296,671	8,346,706
2020			18,603,149		18,603,149			614,044		241,336	19,217,193

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA IRP					NC IRP			System IRP
2017			50					-			50
2018			3,828,000					27,070			3,855,070
2019			11,815,917					385,859			12,201,776
2020			30,419,066					999,903			31,418,969
2021			59,025,216					2,048,867			61,074,083
2022			87,631,366					3,097,831			90,729,197
2023			116,237,516					4,146,795			120,384,311
2024			143,394,437					5,195,759			148,590,197
2025			165,447,197					6,016,455			171,463,652
2026			182,209,015					6,674,044			188,883,059
2027			183,556,130					6,730,853			190,286,982
2028			183,556,130					6,730,853			190,286,982

Table 2. EM&V Data Incremental by Vintage Year												Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2017			0		0			-		-	0	12	-	12	0.02	-	0.02
2018			2,861		2,861			21		21	2,883	4,425	1,289	4,350	3.31	1.02	3.25
2019			2,877		2,877			26		5	2,903	3,029	4,730	3,117	4.32	0.72	4.14
2020			3,787		3,787			112		112	3,899	15,406	12,206	15,304	6.56	5.90	6.54

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2017			0		0			-		-	0	149	-	149	0.02	-	0.02
2018			2,861		2,861			21		21	2,883	6,901	8,977	6,951	3.31	1.02	3.25
2019			2,877		2,877			26		5	2,903	5,621	5,378	5,608	4.32	0.72	4.14
2020			3,787		3,787			112		112	3,899	32,743	35,096	32,818	6.56	5.90	6.54

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2017		0					-			0		-			-	
2018		2,861					21			2,883		1,289			1.02	
2019		5,739					47			5,786		6,295			0.83	
2020		9,526					159			9,685		8,080			2.10	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2017			0		0			-		-	0	12	-	12	0.02	-	0.02
2018			2,861		2,861			21		21	2,883	4,405	1,289	4,331	3.29	1.02	3.24
2019			5,739		5,739			47		5	5,786	5,204	6,295	5,243	3.74	0.83	3.63
2020			9,526		9,526			159		117	9,685	8,808	8,080	8,783	4.51	2.10	4.43

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2017			0					-			0	12	-	12	0.02	-	0.02
2018			2,861					21			2,883	4,405	1,289	4,332	3.29	1.02	3.24
2019			5,739					47			5,786	7,698	6,769	7,664	3.74	0.83	3.63
2020			9,526					159			9,685	14,403	13,157	14,360	4.51	2.10	4.43
2021			9,526					159			9,685	27,948	26,959	27,913	4.51	2.10	4.43
2022			9,526					159			9,685	41,492	40,761	41,467	4.51	2.10	4.43
2023			9,526					159			9,685	55,037	54,563	55,020	4.51	2.10	4.43
2024			9,526					159			9,685	67,895	68,365	67,911	4.51	2.10	4.43
2025			9,526					159			9,685	78,337	79,164	78,365	4.51	2.10	4.43
2026			9,526					159			9,685	86,273	87,816	86,327	4.51	2.10	4.43
2027			9,526					159			9,685	86,911	88,564	86,968	4.51	2.10	4.43
2028			9,526					159			9,685	86,911	88,564	86,968	4.51	2.10	4.43

Program:	Non-residential Heating & Cooling Efficiency
DSM Phase:	7
Type:	
Program Life in years	
Starting from 2020:	15.0

Table 1		Participation											
		Program Participants											
Year	Month	VA				NC							
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	System
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]	[F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]	[H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	E+G	
2020	January	0	0	0		0	0	0	0		0	0	0
2020	February	0	0	0		0	0	0	0		0	0	0
2020	March	0	0	0		0	0	0	0		0	0	0
2020	April	0	0	0		0	0	0	0		0	0	0
2020	May	1	0	1		1	0	0	0		0	0	1
2020	June	5	0	6		6	0	0	0		0	0	6
2020	July	4	0	10		10	0	0	0		0	0	10
2020	August	3	0	13		13	0	0	0		0	0	13
2020	September	1	0	14		14	0	0	0		0	0	14
2020	October	0	0	14		14	0	0	0		0	0	14
2020	November	10	0	24		24	0	0	0		0	0	24
2020	December	6	0	30		30	0	0	0		0	0	30

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2020	January			0		0			0		0	0
2020	February			0		0			0		0	0
2020	March			0		0			0		0	0
2020	April			0		0			0		0	0
2020	May	447		447		447			0		0	447
2020	June	1,858		2,305		2,305			0		0	2,305
2020	July	62,729		65,034		65,034			0		0	65,034
2020	August	58,750		123,784		123,784			0		0	123,784
2020	September	1,145		124,930		124,930			0		0	124,930
2020	October			124,930		124,930			0		0	124,930
2020	November	11,938		136,868		136,868			0		0	136,868
2020	December	370		137,237		137,237			0		0	137,237

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2020	January			0		0			0		0	0			-			-
2020	February			0		0			0		0	0			-			-
2020	March			0		0			0		0	0			-			-
2020	April			0		0			0		0	0			-			-
2020	May	0		0		0			0		0	0	447		447	-		-
2020	June	48		48		48			0		0	48	384		384	8.05		8.05
2020	July	148		196		196			0		0	196	6,503		6,503	19.61		19.61
2020	August	65		261		261			0		0	261	9,522		9,522	20.10		20.10
2020	September	0		261		261			0		0	261	8,924		8,924	18.66		18.66
2020	October			261		261			0		0	261	8,924		8,924	18.66		18.66
2020	November	22		284		284			0		0	284	5,703		5,703	11.82		11.82
2020	December	2		286		286			0		0	286	4,575		4,575	9.52		9.52

Table 2. EM&V Data Incremental by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			30		30			-		-	30

Table 3. EM&V Data Annualized by Vintage Year											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			30		30			-		-	30

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Program Participants											
			VA PPI					NC PPI			System
2020			30					-			30

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			30		30			-		-	30

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
Program Participants											
			VA IRP					NC IRP			System IRP
2020			30					-			30
2021			30					-			30
2022			30					-			30
2023			30					-			30
2024			30					-			30
2025			30					-			30
2026			30					-			30
2027			30					-			30
2028			30					-			30
2029			30					-			30
2030			30					-			30
2031			30					-			30
2032			30					-			30
2033			30					-			30
2034			30					-			30
2035			30					-			30
2036			30					-			30

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			715,534		715,534			-		-	715,534

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			1,646,848		1,646,848			-		-	1,646,848

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2020			715,534					-		715,534

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			715,534		715,534			0		0	715,534

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2020			715,534					-		715,534
2021			2,362,382					-		2,362,382
2022			4,009,230					-		4,009,230
2023			5,656,077					-		5,656,077
2024			7,302,925					-		7,302,925
2025			8,949,772					-		8,949,772
2026			10,596,620					-		10,596,620
2027			12,243,467					-		12,243,467
2028			13,890,315					-		13,890,315
2029			15,537,162					-		15,537,162
2030			17,184,010					-		17,184,010
2031			18,830,858					-		18,830,858
2032			20,477,705					-		20,477,705
2033			22,124,553					-		22,124,553
2034			23,771,400					-		23,771,400
2035			24,702,713					-		24,702,713
2036			24,702,713					-		24,702,713

Table 2. EM&V Data Incremental by Vintage Year												Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			286		286			-		-	286	23,851	-	23,851	9.52	-	9.52

Table 3. EM&V Data Annualized by Vintage Year												Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			286		286			-		-	286	54,895	-	54,895	9.52	-	9.52

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)												PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2020			286					-			286		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)												IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant			Net kWh/Participant		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			286		286			-		-	286	23,851	-	23,851	9.52	-	9.52

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)												IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant			Net kWh/Participant		
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2020			286					-			286	23,851	-	23,851	9.52	-	9.52
2021			286					-			286	78,746	-	78,746	9.52	-	9.52
2022			286					-			286	133,641	-	133,641	9.52	-	9.52
2023			286					-			286	188,536	-	188,536	9.52	-	9.52
2024			286					-			286	243,431	-	243,431	9.52	-	9.52
2025			286					-			286	298,326	-	298,326	9.52	-	9.52
2026			286					-			286	353,221	-	353,221	9.52	-	9.52
2027			286					-			286	408,116	-	408,116	9.52	-	9.52
2028			286					-			286	463,010	-	463,010	9.52	-	9.52
2029			286					-			286	517,905	-	517,905	9.52	-	9.52
2030			286					-			286	572,800	-	572,800	9.52	-	9.52
2031			286					-			286	627,695	-	627,695	9.52	-	9.52
2032			286					-			286	682,590	-	682,590	9.52	-	9.52
2033			286					-			286	737,485	-	737,485	9.52	-	9.52
2034			286					-			286	792,380	-	792,380	9.52	-	9.52
2035			286					-			286	823,424	-	823,424	9.52	-	9.52
2036			286					-			286	823,424	-	823,424	9.52	-	9.52

Program:	Non-residential Office
DSM Phase:	7
Type:	
Program Life in years	
Starting from 2020:	7.0

Table 1		Participation											
Year	Month	Program Participants										System Cum for IRP	
		VA					NC						
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A$ retired]	[B]	[F] = $\Sigma[A] + \Sigma[-A$ retired] + B	[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C$ retired]	[D]	[H] = $\Sigma[C] + \Sigma[-C$ retired] + D		
2020	January	0	0	0		0	0	0	0		0	0	
2020	February	0	0	0		0	0	0	0		0	0	
2020	March	0	0	0		0	0	0	0		0	0	
2020	April	0	0	0		0	0	0	0		0	0	
2020	May	0	0	0		0	0	0	0		0	0	
2020	June	0	0	0		0	0	0	0		0	0	
2020	July	0	0	0		0	0	0	0		0	0	
2020	August	0	0	0		0	0	0	0		0	0	
2020	September	0	0	0		0	0	0	0		0	0	
2020	October	0	0	0		0	0	0	0		0	0	
2020	November	5	0	5		5	0	0	0		0	5	
2020	December	1	0	6		6	0	0	0		0	6	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				System Cum for IRP
2020	January			0		0			0		0	0
2020	February			0		0			0		0	0
2020	March			0		0			0		0	0
2020	April			0		0			0		0	0
2020	May			0		0			0		0	0
2020	June			0		0			0		0	0
2020	July			0		0			0		0	0
2020	August			0		0			0		0	0
2020	September			0		0			0		0	0
2020	October			0		0			0		0	0
2020	November	8,707		8,707		8,707			0		0	8,707
2020	December	1,150		9,856		9,856			0		0	9,856

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2020	January			0		0			0		0	0			-			-
2020	February			0		0			0		0	0			-			-
2020	March			0		0			0		0	0			-			-
2020	April			0		0			0		0	0			-			-
2020	May			0		0			0		0	0			-			-
2020	June			0		0			0		0	0			-			-
2020	July			0		0			0		0	0			-			-
2020	August			0		0			0		0	0			-			-
2020	September			0		0			0		0	0			-			-
2020	October			0		0			0		0	0			-			-
2020	November	0		0		0			0		0	0	1,741		1,741	-		-
2020	December	0		0		0			0		0	0	1,643		1,643	-		-

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			6		6			-		-	6

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			6		6			-		-	6

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
	Program Participants										
			VA PPI					NC PPI			System
2020			6					-			6

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			6		6			-		-	6

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Program Participants										
			VA IRP					NC IRP			System IRP
2020			6					-			6
2021			6					-			6
2022			6					-			6
2023			6					-			6
2024			6					-			6
2025			6					-			6
2026			6					-			6
2027			6					-			6
2028			6					-			6

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			18,563		18,563			-		-	18,563

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			118,275		118,275			-		-	118,275

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2020			18,563					-		18,563

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			18,563		18,563			0		0	18,563

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
		Net Energy (kWh)									
			VA IRP					NC IRP			System IRP
2020			18,563					-			18,563
2021			136,838					-			136,838
2022			255,113					-			255,113
2023			373,388					-			373,388
2024			491,663					-			491,663
2025			609,939					-			609,939
2026			728,214					-			728,214
2027			827,926					-			827,926
2028			827,926					-			827,926

Table 2. EM&V Data Incremental by Vintage Year												Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
	Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			-		-			-		-	-	3,094	-	3,094	-	-	-

Table 3. EM&V Data Annualized by Vintage Year												Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
	Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			-		-			-		-	-	19,713	-	19,713	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)												PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2020			-					-			-		-			-	-

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)												IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			-		-			-		-	-	3,094	-	3,094	-	-	-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)												IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2020			-					-			-	3,094	-	3,094	-	-	-
2021			-					-			-	22,806	-	22,806	-	-	-
2022			-					-			-	42,519	-	42,519	-	-	-
2023			-					-			-	62,231	-	62,231	-	-	-
2024			-					-			-	81,944	-	81,944	-	-	-
2025			-					-			-	101,656	-	101,656	-	-	-
2026			-					-			-	121,369	-	121,369	-	-	-
2027			-					-			-	137,988	-	137,988	-	-	-
2028			-					-			-	137,988	-	137,988	-	-	-

Program:	Non-residential Window Film
DSM Phase:	7
Type:	
Program Life in years	
Starting from 2020:	10.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2020	January	0	0	0		0	0	0	0		0	0
2020	February	0	0	0		0	0	0	0		0	0
2020	March	0	0	0		0	0	0	0		0	0
2020	April	2	0	2		2	0	0	0		0	2
2020	May	5	0	7		7	0	0	0		0	7
2020	June	2	0	9		9	0	0	0		0	9
2020	July	5	0	14		14	0	0	0		0	14
2020	August	6	0	20		20	1	0	1		1	21
2020	September	0	0	20		20	0	0	1		1	21
2020	October	1	0	21		21	0	0	1		1	22
2020	November	1	0	22		22	0	0	1		1	23
2020	December	0	0	22		22	0	0	1		1	23

Table 1		Energy Savings										
Year	Month	Net kWh					NC					System
		VA					NC Cum. for Net Lost Revenue (NLR)					System Cum for IRP
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2020	January			0		0			0		0	0
2020	February			0		0			0		0	0
2020	March			0		0			0		0	0
2020	April	8,287		8,287		8,287			0		0	8,287
2020	May	173		8,460		8,460			0		0	8,460
2020	June	31		8,491		8,491			0		0	8,491
2020	July	8,246		16,737		16,737			0		0	16,737
2020	August	-211		16,525		16,525	1,162		1,162		1,162	17,687
2020	September			16,525		16,525			1,162		1,162	17,687
2020	October	19		16,545		16,545			1,162		1,162	17,707
2020	November	147		16,692		16,692			1,162		1,162	17,854
2020	December			16,692		16,692			1,162		1,162	17,854

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2020	January			0		0			0		0	0			-			-
2020	February			0		0			0		0	0			-			-
2020	March			0		0			0		0	0			-			-
2020	April	26		26		26			0		0	26	4,143		4,143	13.17		13.17
2020	May	1		27		27			0		0	27	1,209		1,209	3.88		3.88
2020	June	0		27		27			0		0	27	943		943	3.03		3.03
2020	July	35		62		62			0		0	62	1,195		1,195	4.43		4.43
2020	August	0		62		62	4		4		4	66	826	1,162	842	3.10	3.72	3.13
2020	September			62		62			4		4	66	826	1,162	842	3.10	3.72	3.13
2020	October	0		62		62			4		4	66	788	1,162	805	2.95	3.72	2.99
2020	November	0		62		62			4		4	66	759	1,162	776	2.84	3.72	2.88
2020	December			62		62			4		4	66	759	1,162	776	2.84	3.72	2.88

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			22		22			1		1	23

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			22		22			1		1	23

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
	Program Participants										
			VA PPI					NC PPI			System
2020			22					1			23

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			22		22			1		1	23

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Program Participants										
			VA IRP					NC IRP			System IRP
2020			22					1			23
2021			22					1			23
2022			22					1			23
2023			22					1			23
2024			22					1			23
2025			22					1			23
2026			22					1			23
2027			22					1			23
2028			22					1			23
2029			22					1			23
2030			22					1			23
2031			22					1			23

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			124,952		124,952			5,810		5,810	130,762

Table 3. EM&V Data Annualized by Vintage Year											
Net kWh											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			200,302		200,302			13,944		13,944	214,245

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Net Energy (kWh) for PPI											
			VA PPI					NC PPI			System
2020			124,952					5,810			130,762

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Net Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2020			124,952		124,952			5,810		5,810	130,762

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
Net Energy (kWh)											
			VA IRP					NC IRP			System IRP
2020			124,952					5,810			130,762
2021			325,254					19,754			345,007
2022			525,555					33,697			559,253
2023			725,857					47,641			773,498
2024			926,159					61,585			987,743
2025			1,126,460					75,529			1,201,989
2026			1,326,762					89,472			1,416,234
2027			1,527,063					103,416			1,630,480
2028			1,727,365					117,360			1,844,725
2029			1,927,667					131,304			2,058,970
2030			2,003,016					139,437			2,142,453
2031			2,003,016					139,437			2,142,453

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			62		62			4		4	66	5,680	5,810	5,685	2.84	3.72	2.88

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			62		62			4		4	66	9,105	13,944	9,315	2.84	3.72	2.88

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2020			62					4		66		5,810			3.72	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2020			62		62			4		4	66	5,680	5,810	5,685	2.84	3.72	2.88

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2020			62					4			66	5,680	5,810	5,685	2.84	3.72	2.88
2021			62					4			66	14,784	19,754	15,000	2.84	3.72	2.88
2022			62					4			66	23,889	33,697	24,315	2.84	3.72	2.88
2023			62					4			66	32,994	47,641	33,630	2.84	3.72	2.88
2024			62					4			66	42,098	61,585	42,945	2.84	3.72	2.88
2025			62					4			66	51,203	75,529	52,260	2.84	3.72	2.88
2026			62					4			66	60,307	89,472	61,575	2.84	3.72	2.88
2027			62					4			66	69,412	103,416	70,890	2.84	3.72	2.88
2028			62					4			66	78,517	117,360	80,205	2.84	3.72	2.88
2029			62					4			66	87,621	131,304	89,520	2.84	3.72	2.88
2030			62					4			66	91,046	139,437	93,150	2.84	3.72	2.88
2031			62					4			66	91,046	139,437	93,150	2.84	3.72	2.88

PROGRAM: Residential AC Cycling
DSM Phase I Program
Type: Peak Shaving
Measure Life: N/A

Table 1					Energy Savings			Peak Capacity Savings			Energy Savings / Participant			Peak Capacity Savings / Participant		
Month	Year	Program Participants (Net) ¹			Net kWh			Net KW			Net kWh/Participant			Net kW/Participant		
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
May	2010	-		-				-		-						
June	2010	29		29				30		30				1.06		1.06
July	2010	332		332				351		351				1.06		1.06
August	2010	1,376		1,376				1,457		1,457				1.06		1.06
September	2010	3,104		3,104				3,287		3,287				1.06		1.06
October	2010	6,431		6,431				6,810		6,810				1.06		1.06
November	2010	8,054		8,054				8,529		8,529				1.06		1.06
December	2010	10,276		10,276				10,880		10,880				1.06		1.06
January	2011	11,788		11,788				14,408		14,408				1.22		1.22
February	2011	13,646		13,646				16,679		16,679				1.22		1.22
March	2011	16,816		16,816				20,553		20,553				1.22		1.22
April	2011	19,212		19,212				23,481		23,481				1.22		1.22
May	2011	21,091		21,091				25,779		25,779				1.22		1.22
June	2011	22,940		22,940				28,042		28,042				1.22		1.22
July	2011	24,809		24,809				30,352		30,352				1.22		1.22
August	2011	25,341	28	25,369				31,041	34	31,075				1.22	1.22	1.22
September	2011	26,908	28	26,935				32,978	34	33,012				1.23	1.22	1.23
October	2011	29,100	320	29,419				35,661	390	36,052				1.23	1.22	1.23
November	2011	31,085	765	31,851				38,092	935	39,027				1.23	1.22	1.23
December	2011	32,168	953	33,121				39,420	1,164	40,584				1.23	1.22	1.23
January	2012	35,431	1,334	36,765				38,863	1,459	40,321				1.10	1.09	1.10
February	2012	38,284	1,763	40,047				41,987	1,926	43,912				1.10	1.09	1.10
March	2012	40,408	2,357	42,765				44,314	2,575	46,889				1.10	1.09	1.10
April	2012	44,143	2,627	46,770				48,404	2,870	51,274				1.10	1.09	1.10
May	2012	47,425	2,634	50,059				51,999	2,876	54,876				1.10	1.09	1.10
June	2012	49,081	2,638	51,719				53,826	2,874	56,701				1.10	1.09	1.10
July	2012	50,600	2,596	53,196				55,326	2,843	58,169				1.09	1.09	1.09
August	2012	51,542	2,469	54,011				56,356	2,709	59,066				1.09	1.10	1.09
September	2012	52,897	2,464	55,361				57,838	2,704	60,542				1.09	1.10	1.09
October	2012	54,818	2,465	57,283				59,938	2,706	62,644				1.09	1.10	1.09
November	2012	57,874	2,471	60,345				63,279	2,714	65,993				1.09	1.10	1.09
December	2012	58,901	2,478	61,379				64,403	2,721	67,124				1.09	1.10	1.09
January	2013	60,429	2,506	62,935				51,954	2,155	54,109				0.86	0.86	0.86
February	2013	61,601	2,474	64,076				52,962	2,127	55,090				0.86	0.86	0.86
March	2013	63,316	2,450	65,766				54,436	2,107	56,543				0.86	0.86	0.86
April	2013	65,506	2,475	67,981				56,319	2,128	58,448				0.86	0.86	0.86
May	2013	67,036	2,543	69,579				57,635	2,187	59,822				0.86	0.86	0.86
June	2013	68,075	2,558	70,633				58,528	2,199	60,728				0.86	0.86	0.86
July	2013	68,928	2,532	71,460				59,261	2,177	61,438				0.86	0.86	0.86
August	2013	69,405	2,710	72,114				59,671	2,330	62,001				0.86	0.86	0.86
September	2013	70,340	3,053	73,393				60,475	2,330	62,805				0.86	0.76	0.86
October	2013	71,997	3,401	75,398				61,900	2,924	64,824				0.86	0.86	0.86
November	2013	74,182	3,397	77,578				63,778	2,920	66,699				0.86	0.86	0.86
December	2013	75,738	3,394	79,132				65,117	2,918	68,035				0.86	0.86	0.86
January	2014	77,588	3,376	80,964				61,004	2,654	63,658				0.79	0.79	0.79
February	2014	79,424	3,366	82,790				61,713	2,615	64,328				0.78	0.78	0.78
March	2014	81,294	3,359	84,653				61,661	2,548	64,209				0.76	0.76	0.76
April	2014	83,265	3,347	86,612				63,157	2,539	65,695				0.76	0.76	0.76
May	2014	83,721	3,286	87,008				61,954	2,432	64,386				0.74	0.74	0.74
June	2014	84,578	3,339	87,917				61,806	2,440	64,246				0.73	0.73	0.73
July	2014	84,055	3,553	87,608				59,868	2,531	62,399				0.71	0.71	0.71
August	2014	84,446	3,737	88,183				58,584	2,593	61,177				0.69	0.69	0.69
September	2014	85,480	3,930	89,410				57,720	2,654	60,374				0.68	0.68	0.68
October	2014	86,869	3,902	90,771				57,855	2,598	60,453				0.67	0.67	0.67
November	2014	87,540	4,005	91,546				57,492	2,630	60,123				0.66	0.66	0.66
December	2014	88,243	4,010	92,253				57,137	2,597	59,734				0.65	0.65	0.65

Table 1					Energy Savings			Peak Capacity Savings			Energy Savings / Participant			Peak Capacity Savings / Participant		
Month	Year	Program Participants (Net) ¹			Net kWh			Net KW			Net kWh/Participant			Net kW/Participant		
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
January	2015	94,241	4,213	98,454				66,911	2,991	69,903				0.71	0.71	0.71
February	2015	95,140	4,195	99,336				67,550	2,979	70,528				0.71	0.71	0.71
March	2015	96,549	4,233	100,782				68,550	3,006	71,555				0.71	0.71	0.71
April	2015	98,027	4,222	102,249				69,599	2,998	72,597				0.71	0.71	0.71
May	2015	99,574	4,215	103,790				70,698	2,993	73,691				0.71	0.71	0.71
June	2015	100,034	4,184	104,218				71,024	2,971	73,995				0.71	0.71	0.71
July	2015	97,475	3,994	101,470				69,207	2,836	72,043				0.71	0.71	0.71
August	2015	97,406	3,939	101,346				69,158	2,797	71,955				0.71	0.71	0.71
September	2015	98,545	3,908	102,454				69,967	2,775	72,742				0.71	0.71	0.71
October	2015	100,082	3,907	103,989				71,058	2,774	73,832				0.71	0.71	0.71
November	2015	101,422	3,914	105,336				72,009	2,779	74,789				0.71	0.71	0.71
December	2015	103,160	3,916	107,077				73,244	2,781	76,024				0.71	0.71	0.71
January	2016	103,679	3,897	107,576				100,207	3,780	103,987				0.97	0.97	0.97
February	2016	103,673	3,884	107,557				100,201	3,767	103,968				0.97	0.97	0.97
March	2016	103,872	3,882	107,754				100,393	3,766	104,159				0.97	0.97	0.97
April	2016	104,165	3,910	108,075				100,676	3,793	104,469				0.97	0.97	0.97
May	2016	104,189	3,899	108,088				100,700	3,782	104,481				0.97	0.97	0.97
June	2016	104,492	3,908	108,400				100,992	3,791	104,783				0.97	0.97	0.97
July	2016	103,807	3,876	107,683				100,330	3,760	104,090				0.97	0.97	0.97
August	2016	101,205	3,761	104,966				97,815	3,649	101,464				0.97	0.97	0.97
September	2016	99,596	3,712	103,308				96,260	3,600	99,861				0.97	0.97	0.97
October	2016	99,274	3,694	102,968				95,949	3,583	99,532				0.97	0.97	0.97
November	2016	98,676	3,728	102,404				95,371	3,616	98,987				0.97	0.97	0.97
December	2016	98,088	3,707	101,795				94,803	3,595	98,398				0.97	0.97	0.97
January	2017	97,959	3,716	101,675				66,589	2,527	69,116				0.68	0.68	0.68
February	2017	97,911	3,713	101,624				66,557	2,525	69,082				0.68	0.68	0.68
March	2017	97,881	3,713	101,594				66,536	2,525	69,061				0.68	0.68	0.68
April	2017	96,947	3,708	100,655				65,902	2,521	68,423				0.68	0.68	0.68
May	2017	95,476	3,697	99,173				64,902	2,514	67,415				0.68	0.68	0.68
June	2017	94,598	3,685	98,283				64,305	2,506	66,810				0.68	0.68	0.68
July	2017	93,399	3,667	97,066				63,490	2,493	65,983				0.68	0.68	0.68
August	2017	92,100	3,605	95,705				62,607	2,451	65,058				0.68	0.68	0.68
September	2017	91,120	3,596	94,716				61,941	2,445	64,386				0.68	0.68	0.68
October	2017	90,505	3,594	94,099				61,522	2,444	63,966				0.68	0.68	0.68
November	2017	89,586	3,593	93,179				60,898	2,443	63,341				0.68	0.68	0.68
December	2017	89,282	3,605	92,887				60,691	2,451	63,142				0.68	0.68	0.68
January	2018	88,935	3,612	92,547				55,778	2,267	58,045				0.63	0.63	0.63
February	2018	88,626	3,613	92,239				55,584	2,267	57,851				0.63	0.63	0.63
March	2018	88,319	3,606	91,925				55,392	2,263	57,655				0.63	0.63	0.63
April	2018	87,121	3,319	90,440				54,640	2,083	56,723				0.63	0.63	0.63
May	2018	86,796	3,316	90,112				54,436	2,081	56,517				0.63	0.63	0.63
June	2018	85,222	3,231	88,453				53,449	2,028	55,477				0.63	0.63	0.63
July	2018	83,955	3,187	87,142				52,655	2,000	54,655				0.63	0.63	0.63
August	2018	83,020	3,162	86,182				52,068	1,984	54,053				0.63	0.63	0.63
September	2018	82,011	3,133	85,144				51,435	1,966	53,402				0.63	0.63	0.63
October	2018	81,469	3,122	84,591				51,095	1,959	53,055				0.63	0.63	0.63
November	2018	80,982	3,082	84,064				50,790	1,934	52,724				0.63	0.63	0.63
December	2018	80,627	3,067	83,694				50,567	1,925	52,492				0.63	0.63	0.63
January	2019	80,205	3,059	83,264				50,191	1,915	52,105				0.63	0.63	0.63
February	2019	79,766	3,043	82,809				49,916	1,905	51,821				0.63	0.63	0.63
March	2019	79,610	3,042	82,652				49,818	1,904	51,722				0.63	0.63	0.63
April	2019	79,381	3,035	82,416				49,675	1,900	51,575				0.63	0.63	0.63
May	2019	79,158	3,052	82,210				49,535	1,911	51,446				0.63	0.63	0.63
June	2019	78,808	3,060	81,868				49,316	1,916	51,232				0.63	0.63	0.63
July	2019	78,270	3,081	81,351				48,980	1,929	50,908				0.63	0.63	0.63
August	2019	77,434	3,084	80,518				48,457	1,931	50,387				0.63	0.63	0.63
September	2019	76,729	3,080	79,809				48,015	1,928	49,943				0.63	0.63	0.63
October	2019	76,238	3,079	79,317				47,708	1,927	49,636				0.63	0.63	0.63
November	2019	75,707	3,077	78,784				47,376	1,926	49,302				0.63	0.63	0.63
December	2019	75,386	3,061	78,447				47,175	1,916	49,091				0.63	0.63	0.63
January	2020	75,008	3,063	78,071				47,530	1,942	49,472				0.63	0.63	0.63
February	2020	74,706	3,037	77,743				47,339	1,925	49,264				0.63	0.63	0.63
March	2020	74,335	3,024	77,359				47,104	1,917	49,020				0.63	0.63	0.63
April	2020	73,775	3,007	76,782				46,749	1,906	48,655				0.63	0.63	0.63
May	2020	73,380	2,999	76,379				46,498	1,901	48,399				0.63	0.63	0.63
June	2020	73,044	2,988	76,032				46,286	1,894	48,180				0.63	0.63	0.63
July	2020	72,213	2,947	75,160				45,759	1,868	47,627				0.63	0.63	0.63
August	2020	71,155	2,901	74,056				45,089	1,839	46,927				0.63	0.63	0.63
September	2020	70,380	2,864	73,244				44,597	1,815	46,413				0.63	0.63	0.63
October	2020	69,742	2,846	72,588				44,193	1,804	45,997				0.63	0.63	0.63
November	2020	69,071	2,823	71,894				43,768	1,789	45,557				0.63	0.63	0.63
December	2020	68,463	2,790	71,253				43,383	1,769	45,151				0.63	0.63	0.63

Table 2. EM&V Data by Vintage Year				Energy Savings (Incremental)			Annual Peak Savings			Incremental Energy Savings / Participant			Annual Peak Savings / Participant		
	Program Participants (Net) ¹			Net kWh			Net KW			Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
2010	10,276	-	10,276				10,880	-	10,880				1.06	-	1.06
2011	32,168	953	33,121				39,420	1,164	40,584				1.23	1.22	1.23
2012	58,901	2,478	61,379				64,403	2,721	67,124				1.09	1.10	1.09
2013	75,738	3,394	79,132				65,117	2,918	68,035				0.86	0.86	0.86
2014	88,243	4,010	92,253				57,137	2,597	59,734				0.65	0.65	0.65
2015	103,160	3,916	107,077				73,244	2,781	76,024				0.71	0.71	0.71
2016	98,088	3,707	101,795				94,803	3,595	98,398				0.97	0.97	0.97
2017	89,282	3,605	92,887				60,691	2,451	63,142				0.68	0.68	0.68
2018	80,627	3,067	83,694				50,567	1,925	52,492				0.63	0.63	0.63
2019	75,386	3,061	78,447				47,175	1,916	49,091				0.63	0.63	0.63
2020	68,463	2,790	71,253				43,383	1,769	45,151				0.63	0.63	0.63

Table 3. EM&V Data Difference by Vintage Year				Energy Savings (Annualized)						Annualized Energy Savings / Participant					
	Program Participant Difference			Net kWh			Net KW Difference			Net kWh/Participant			Net kW Difference / Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
2010	10,276	0	10,276				10,880	0	10,880				1.06	-	1.06
2011	21,893	953	22,845				28,540	1,164	29,704				1.30	1.22	1.30
2012	26,733	1,525	28,258				24,983	1,557	26,540				0.93	1.02	0.94
2013	16,837	916	17,753				714	197	911				0.04	0.22	0.05
2014	12,504	616	13,121				-7,980	-321	-8,301				-0.64	-0.52	-0.63
2015	14,917	-94	14,824				16,106	184	16,291				1.08	-1.97	1.10
2016	-5,072	-210	-5,282				21,559	815	22,374				-4.25	-3.88	-4.24
2017	-8,806	-102	-8,908				-34,112	-1,144	-35,256				3.87	11.24	3.96
2018	-8,655	-538	-9,193				-10,124	-526	-10,650				1.17	0.98	1.16
2019	-5,241	-6	-5,247				-3,392	-9	-3,401				0.65	1.46	0.65
2020	-6,923	-271	-7,194				-3,792	-148	-3,940				0.55	0.54	0.55

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)				Energy Savings for Program Performance Incentives (PPI)						PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Program Participants			Net kWh			Net kW			Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
2010	10,276	-	10,276				10,880	-	10,880				1.06	-	1.06
2011	32,168	953	33,121				50,300	1,164	51,463				1.56	1.22	1.19
2012	58,901	2,478	61,379				64,403	2,721	67,124				1.09	1.10	1.09
2013	65,463	3,394	68,857				54,237	2,918	57,155				0.83	0.86	0.83
2014	56,074	3,057	59,132				17,717	1,433	19,150				0.32	0.47	0.32
2015	44,259	1,438	45,697				8,841	60	8,901				0.20	0.04	0.19
2016	22,350	313	22,662				29,686	677	30,363				1.33	2.17	1.34
2017	1,039	-405	634				3,554	-145	3,409				3.42	0.36	5.38
2018	-22,533	-850	-23,383				-22,676	-856	-23,532				1.01	1.01	1.01
2019	-22,702	-646	-23,348				-47,628	-1,679	-49,307				2.10	2.60	2.11
2020	-20,819	-815	-21,634				-17,308	-683	-17,991				0.83	0.84	0.83

Table 5. EM&V Data Accumulated through Vintage Year (for IRP)				Energy Savings for Integrated Resource Planning (IRP)						IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	Program Participants			Net kWh			Net kW			Net kWh/Participant			Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System
2010	10,276	-	10,276				10,880	-	10,880				1.06	-	1.06
2011	32,168	953	33,121				39,420	1,164	40,584				1.23	1.22	1.23
2012	58,901	2,478	61,379				64,403	2,721	67,124				1.09	1.10	1.09
2013	75,738	3,394	79,132				65,117	2,918	68,035				0.86	0.86	0.86
2014	88,243	4,010	92,253				57,137	2,597	59,734				0.65	0.65	0.65
2015	103,160	3,916	107,077				73,244	2,781	76,024				0.71	0.71	0.71
2016	98,088	3,707	101,795				94,803	3,595	98,398				0.97	0.97	0.97
2017	89,282	3,605	92,887				60,691	2,451	63,142				0.68	0.68	0.68
2018	80,627	3,067	83,694				50,567	1,925	52,492				0.63	0.63	0.63
2019	75,386	3,061	78,447				47,175	1,916	49,091				0.63	0.63	0.63
2020	68,463	2,790	71,253				43,383	1,769	45,151				0.63	0.63	0.63

PROGRAM: Non-Residential Distributed Generation
DSM Phase II Program
Type: Peak Shaving
Program Measure Life: N/A

Table 1		Participation			Net Capacity Savings			Net Capacity Savings / Participant		
Month	Year	Program Participants			Net kW			Net kW/participant		
		VA	NC	System	VA	NC	System	VA	NC	System
June	2012	19		19	15,857		15,857	843		843
July	2012	19		19	16,051		16,051	843		843
August	2012	19		19	16,051		16,051	843		843
September	2012	19		19	16,051		16,051	843		843
October	2012	19		19	16,051		16,051	843		843
November	2012	19		19	16,051		16,051	843		843
December	2012	19		19	16,051		16,051	843		843
January	2013	19		19	13,478		13,478	698		698
February	2013	19		19	13,478		13,478	698		698
March	2013	19		19	13,478		13,478	698		698
April	2013	19		19	13,478		13,478	698		698
May	2013	19		19	13,478		13,478	698		698
June	2013	19		19	13,691		13,691	709		709
July	2013	19		19	14,713		14,713	758		758
August	2013	19		19	14,785		14,785	779		779
September	2013	19		19	15,770		15,770	830		830
October	2013	19		19	16,110		16,110	830		830
November	2013	19		19	16,110		16,110	830		830
December	2013	19		19	16,110		16,110	830		830
January	2014	19		19	10,346		10,346	550		550
February	2014	19		19	10,346		10,346	550		550
March	2014	19		19	8,653		8,653	460		460
April	2014	19		19	8,653		8,653	460		460
May	2014	19		19	8,653		8,653	460		460
June	2014	18		18	13,904		13,904	790		790
July	2014	19		19	14,860		14,860	790		790
August	2014	17		17	13,819		13,819	810		810
September	2014	19		19	14,121		14,121	760		760
October	2014	19		19	14,121		14,121	760		760
November	2014	19		19	14,121		14,121	760		760
December	2014	19		19	14,121		14,121	760		760
January	2015	6		6	4,259		4,259	698		698
February	2015	6		6	4,721		4,721	774		774
March	2015	6		6	5,457		5,457	895		895
April	2015	6		6	5,457		5,457	895		895
May	2015	6		6	5,457		5,457	895		895
June	2015	6		6	6,015		6,015	986		986
July	2015	6		6	6,048		6,048	991		991
August	2015	6		6	5,714		5,714	937		937
September	2015	6		6	5,530		5,530	907		907
October	2015	6		6	5,457		5,457	895		895
November	2015	6		6	5,457		5,457	895		895
December	2015	6		6	5,457		5,457	895		895
January	2016	6		6	4,597		4,597	742		742
February	2016	6		6	3,864		3,864	623		623
March	2016	0		0	0		0	-		-
April	2016	0		0	0		0	-		-
May	2016	0		0	0		0	-		-
June	2016	7		7	5,385		5,385	828		828
July	2016	7		7	4,446		4,446	684		684
August	2016	7		7	7,057		7,057	1,086		1,086
September	2016	7		7	7,653		7,653	1,177		1,177
October	2016	0		0	0		0	-		-
November	2016	0		0	0		0	-		-
December	2016	7		7	4,348		4,348	669		669
January	2017	6		6	5,149		5,149	844		844
February	2017	0		0	0		0	-		-
March	2017	0		0	0		0	-		-
April	2017	0		0	0		0	-		-
May	2017	6		6	5,487		5,487	900		900
June	2017	6		6	6,182		6,182	1,048		1,048
July	2017	6		6	6,054		6,054	1,026		1,026
August	2017	6		6	6,409		6,409	1,165		1,165
September	2017	6		6	5,674		5,674	1,013		1,013
October	2017	0		0	0		0	-		-
November	2017	0		0	0		0	-		-
December	2017	6		6	5,272		5,272	864		864

Table 1		Participation			Net Capacity Savings			Net Capacity Savings / Participant		
Month	Year	Program Participants			Net kW			Net kW/participant		
		VA	NC	System	VA	NC	System	VA	NC	System
January	2018	6		6	5,946		5,946	970		970
February	2018	6		6	5,946		5,946	970		970
March	2018	6		6	5,946		5,946	970		970
April	2018	6		6	5,946		5,946	970		970
May	2018	6		6	5,946		5,946	970		970
June	2018	6		6	5,946		5,946	970		970
July	2018	6		6	5,946		5,946	970		970
August	2018	6		6	5,946		5,946	970		970
September	2018	6		6	5,946		5,946	970		970
October	2018	6		6	5,946		5,946	970		970
November	2018	6		6	5,946		5,946	970		970
December	2018	6		6	5,946		5,946	970		970
January	2019	6		6	6,927		6,927	1,130		1,130
February	2019	6		6	6,927		6,927	1,130		1,130
March	2019	6		6	6,927		6,927	1,130		1,130
April	2019	6		6	6,927		6,927	1,130		1,130
May	2019	6		6	6,927		6,927	1,130		1,130
June	2019	6		6	6,927		6,927	1,130		1,130
July	2019	6		6	6,927		6,927	1,130		1,130
August	2019	6		6	6,927		6,927	1,130		1,130
September	2019	6		6	6,927		6,927	1,130		1,130
October	2019	6		6	6,927		6,927	1,130		1,130
November	2019	6		6	6,927		6,927	1,130		1,130
December	2019	6		6	6,927		6,927	1,130		1,130
January	2020	6		6	6,498		6,498	1,060		1,060
February	2020	6		6	6,498		6,498	1,060		1,060
March	2020	6		6	6,498		6,498	1,060		1,060
April	2020	6		6	6,498		6,498	1,060		1,060
May	2020	6		6	6,498		6,498	1,060		1,060
June	2020	6		6	6,498		6,498	1,060		1,060
July	2020	6		6	6,498		6,498	1,060		1,060
August	2020	6		6	6,498		6,498	1,060		1,060
September	2020	6		6	6,498		6,498	1,060		1,060
October	2020	6		6	6,498		6,498	1,060		1,060
November	2020	6		6	6,498		6,498	1,060		1,060
December	2020	6		6	6,498		6,498	1,060		1,060

Table 2. EM&V Data by Vintage Year				Annual Peak Shaving Potential			Annual Peak Shaving Potential/Participant		
	Program Participants			Net kW			Net kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System
2012	19		19	16,051		16,051	843		843
2013	19		19	16,110		16,110	830		830
2014	19		19	14,121		14,121	760		760
2015	6		6	5,457		5,457	895		895
2016	7		7	4,348		4,348	669		669
2017	6		6	5,272		5,272	864		864
2018	6		6	5,946		5,946	970		970
2019	6		6	6,927		6,927	1,130		1,130
2020	6		6	6,498		6,498	1,060		1,060

NOTES:

1. Non-Residential DG pilot and Program results are combined prior to 201

PROGRAM: Non-Residential Distributed Generation
DSM Phase II Program
Type: Peak Shaving
Program Measure Life: N/A

Table 1		Participation			Gross Capacity Savings			Gross Capacity Savings / Participant		
Month	Year	Program Participants			Gross kW			Gross kW/participant		
		VA	NC	System	VA	NC	System	VA	NC	System
June	2012	19		19	18,810		18,810	1000		1,000
July	2012	19		19	19,040		19,040	1000		1,000
August	2012	19		19	19,040		19,040	1000		1,000
September	2012	19		19	19,040		19,040	1000		1,000
October	2012	19		19	19,040		19,040	1000		1,000
November	2012	19		19	19,040		19,040	1000		1,000
December	2012	19		19	19,040		19,040	1000		1,000
January	2013	19		19	19,310		19,310	1000		1,000
February	2013	19		19	19,310		19,310	1000		1,000
March	2013	19		19	19,310		19,310	1000		1,000
April	2013	19		19	19,310		19,310	1000		1,000
May	2013	19		19	19,310		19,310	1000		1,000
June	2013	19		19	19,310		19,310	1000		1,000
July	2013	19		19	19,410		19,410	1000		1,000
August	2013	19		19	18,980		18,980	1000		1,000
September	2013	19		19	19,000		19,000	1000		1,000
October	2013	19		19	19,410		19,410	1000		1,000
November	2013	19		19	19,410		19,410	1000		1,000
December	2013	19		19	19,410		19,410	1000		1,000
January	2014	19		19	18,810		18,810	1000		1,000
February	2014	19		19	18,810		18,810	1000		1,000
March	2014	19		19	18,810		18,810	1000		1,000
April	2014	19		19	18,810		18,810	1000		1,000
May	2014	19		19	18,810		18,810	1000		1,000
June	2014	18		18	17,600		17,600	1000		1,000
July	2014	19		19	18,810		18,810	1000		1,000
August	2014	17		17	17,060		17,060	1000		1,000
September	2014	19		19	18,580		18,580	1000		1,000
October	2014	19		19	18,580		18,580	1000		1,000
November	2014	19		19	18,580		18,580	1000		1,000
December	2014	19		19	18,580		18,580	1000		1,000
January	2015	6		6	5,588		5,588	916		916
February	2015	6		6	6,045		6,045	991		991
March	2015	6		6	5,875		5,875	963		963
April	2015	6		6	5,875		5,875	963		963
May	2015	6		6	5,875		5,875	963		963
June	2015	6		6	5,914		5,914	970		970
July	2015	6		6	5,842		5,842	958		958
August	2015	6		6	6,060		6,060	993		993
September	2015	6		6	5,973		5,973	979		979
October	2015	6		6	5,875		5,875	963		963
November	2015	6		6	5,875		5,875	963		963
December	2015	6		6	5,875		5,875	963		963
January	2016	6		6	6,180		6,180	997		997
February	2016	6		6	5,900		5,900	952		952
March	2016	0		0	0		0	-		-
April	2016	0		0	0		0	-		-
May	2016	0		0	0		0	-		-
June	2016	7		7	6,210		6,210	955		955
July	2016	7		7	4,245		4,245	653		653
August	2016	7		7	6,137		6,137	944		944
September	2016	7		7	6,460		6,460	994		994
October	2016	0		0	0		0	-		-
November	2016	0		0	0		0	-		-
December	2016	7		7	5,740		5,740	883		883
January	2017	6		6	6,130		6,130	1,005		1,005
February	2017	0		0	0		0	-		-
March	2017	0		0	0		0	-		-
April	2017	0		0	0		0	-		-
May	2017	6		6	6,030		6,030	989		989
June	2017	6		6	5,832		5,832	988		988
July	2017	6		6	5,405		5,405	916		916
August	2017	6		6	5,386		5,386	979		979
September	2017	6		6	5,563		5,563	993		993
October	2017	0		0	0		0	-		-
November	2017	0		0	0		0	-		-
December	2017	6		6	6,130		6,130	1,005		1,005

Table 1		Participation			Gross Capacity Savings			Gross Capacity Savings / Participant		
Month	Year	Program Participants			Gross kW			Gross kW/participant		
		VA	NC	System	VA	NC	System	VA	NC	System
January	2018	6		6	6,130		6,130	1,000		1,000
February	2018	6		6	6,130		6,130	1,000		1,000
March	2018	6		6	6,130		6,130	1,000		1,000
April	2018	6		6	6,130		6,130	1,000		1,000
May	2018	6		6	6,130		6,130	1,000		1,000
June	2018	6		6	6,130		6,130	1,000		1,000
July	2018	6		6	6,130		6,130	1,000		1,000
August	2018	6		6	6,130		6,130	1,000		1,000
September	2018	6		6	6,130		6,130	1,000		1,000
October	2018	6		6	6,130		6,130	1,000		1,000
November	2018	6		6	6,130		6,130	1,000		1,000
December	2018	6		6	6,130		6,130	1,000		1,000
January	2019	6		6	6,130		6,130	1,000		1,000
February	2019	6		6	6,130		6,130	1,000		1,000
March	2019	6		6	6,130		6,130	1,000		1,000
April	2019	6		6	6,130		6,130	1,000		1,000
May	2019	6		6	6,130		6,130	1,000		1,000
June	2019	6		6	6,130		6,130	1,000		1,000
July	2019	6		6	6,130		6,130	1,000		1,000
August	2019	6		6	6,130		6,130	1,000		1,000
September	2019	6		6	6,130		6,130	1,000		1,000
October	2019	6		6	6,130		6,130	1,000		1,000
November	2019	6		6	6,130		6,130	1,000		1,000
December	2019	6		6	6,130		6,130	1,000		1,000
January	2020	6		6	6,130		6,130	1,000		1,000
February	2020	6		6	6,130		6,130	1,000		1,000
March	2020	6		6	6,130		6,130	1,000		1,000
April	2020	6		6	6,130		6,130	1,000		1,000
May	2020	6		6	6,130		6,130	1,000		1,000
June	2020	6		6	6,130		6,130	1,000		1,000
July	2020	6		6	6,130		6,130	1,000		1,000
August	2020	6		6	6,130		6,130	1,000		1,000
September	2020	6		6	6,130		6,130	1,000		1,000
October	2020	6		6	6,130		6,130	1,000		1,000
November	2020	6		6	6,130		6,130	1,000		1,000
December	2020	6		6	6,130		6,130	1,000		1,000

Table 2. EM&V Data by Vintage Year				Annual Peak Shaving Potential			Annual Peak Shaving Potential/Participant		
	Program Participants			Gross kW			Gross kW/Participant		
	VA	NC	System	VA	NC	System	VA	NC	System
2012	19		19	19,040		19,040	1,000		1,000
2013	19		19	19,410		19,410	1,000		1,000
2014	19		19	18,580		18,580	1,000		1,000
2015	6		6	5,875		5,875	963		963
2016	7		7	5,740		5,740	883		883
2017	6		6	6,130		6,130	1,005		1,005
2018	6		6	6,130		6,130	1,000		1,000
2019	6		6	6,130		6,130	1,000		1,000
2020	6		6	6,130		6,130	1,000		1,000

NOTES:

1. Non-Residential DG pilot and Program results are combined prior to 201.

Program:	Residential Lighting
DSM Phase:	1
Type:	
Program Life in years	
Starting from 2010:	9.4

Table 1		Participation												
Year	Month	Program Participants											System Cum for IRP	
		VA					NC							
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)			
[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G				
2010	January	0	0	0		0	0	0		0	0			
2010	February	0	0	0		0	0	0		0	0			
2010	March	0	0	0		0	0	0		0	0			
2010	April	0	0	0		0	0	0		0	0			
2010	May	79,585	0	79,585		79,585	0	0		0	79,585			
2010	June	71,318	0	150,903		150,903	0	0		0	150,903			
2010	July	159,352	0	310,255		310,255	0	0		0	310,255			
2010	August	455,987	0	766,242		766,242	0	0		0	766,242			
2010	September	296,951	0	1,063,193		1,063,193	0	0		0	1,063,193			
2010	October	311,925	0	1,375,118		1,375,118	0	0		0	1,375,118			
2010	November	352,606	0	1,727,724		1,727,724	0	0		0	1,727,724			
2010	December	288,755	0	2,016,479		2,016,479	0	0		0	2,016,479			
2011	January	416,132	0	2,432,611		2,432,611	0	0		0	2,432,611			
2011	February	239,046	0	2,671,657		2,671,657	0	0		0	2,671,657			
2011	March	267,519	0	2,939,176		2,939,176	0	0		0	2,939,176			
2011	April	188,281	0	3,127,457		3,127,457	0	0		0	3,127,457			
2011	May	161,608	0	3,289,065		3,289,065	0	0		0	3,289,065			
2011	June	125,422	0	3,414,487		3,414,487	276	0	276	3,414,763				
2011	July	172,996	0	3,587,483		3,587,483	3,966	0	4,242	3,591,725				
2011	August	158,263	0	3,745,746		3,745,746	4,495	0	8,737	3,754,483				
2011	September	121,451	0	3,867,197		3,867,197	6,027	0	14,764	3,881,961				
2011	October	112,373	0	3,979,570		3,979,570	5,419	0	20,183	3,999,753				
2011	November	144,920	0	4,124,490		4,124,490	9,315	0	29,498	4,153,988				
2011	December	98,019	0	4,222,509		4,222,509	7,622	0	37,120	4,259,629				
2012	January	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	February	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	March	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	April	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	May	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	June	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	July	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	August	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	September	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	October	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	November	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				
2012	December	0	0	4,222,509		4,222,509	0	0	37,120	4,259,629				

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA				VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adi.)	NC			NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adi.)	System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.		NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.		System Cum for IRP
2010	January			0		0			0		0	0
2010	February			0		0			0		0	0
2010	March			0		0			0		0	0
2010	April			0		0			0		0	0
2010	May	188,360		188,360		188,360			0		0	188,360
2010	June	169,164		357,525		357,525			0		0	357,525
2010	July	365,257		722,782		722,782			0		0	722,782
2010	August	1,028,011		1,750,793		1,750,793			0		0	1,750,793
2010	September	676,000		2,426,792		2,426,792			0		0	2,426,792
2010	October	708,923		3,135,716		3,135,716			0		0	3,135,716
2010	November	820,142		3,955,858		3,955,858			0		0	3,955,858
2010	December	668,789		4,624,646		4,624,646			0		0	4,624,646
2011	January	964,428		5,589,074		5,589,074			0		0	5,589,074
2011	February	563,360		6,152,434		6,152,434			0		0	6,152,434
2011	March	647,398		6,799,833		6,799,833			0		0	6,799,833
2011	April	457,933		7,257,765		7,257,765			0		0	7,257,765
2011	May	393,031		7,650,796		7,650,796			0		0	7,650,796
2011	June	306,454		7,957,250		7,957,250	615		615		615	7,957,865
2011	July	417,946		8,375,196		8,375,196	9,146		9,762		9,762	8,384,958
2011	August	387,313		8,762,509		8,762,509	10,714		20,476		20,476	8,782,984
2011	September	301,112		9,063,621		9,063,621	14,154		34,629		34,629	9,098,250
2011	October	281,877		9,345,498		9,345,498	12,526		47,156		47,156	9,392,653
2011	November	358,895		9,704,393		9,704,393	21,770		68,925		68,925	9,773,318
2011	December	231,503		9,935,895		9,935,895	16,744		85,669		85,669	10,021,564
2012	January			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	February			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	March			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	April			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	May			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	June			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	July			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	August			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	September			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	October			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	November			9,935,895		9,935,895			85,669		85,669	10,021,564
2012	December			9,935,895		9,935,895			85,669		85,669	10,021,564

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW					NC					System Cum for IRP	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		VA	NC	System	VA	NC	System
2010	January			0		0			0		0	0			-			-
2010	February			0		0			0		0	0			-			-
2010	March			0		0			0		0	0			-			-
2010	April			0		0			0		0	0			-			-
2010	May	246		246		246			0		0	246	2		2	0.00		0.00
2010	June	221		467		467			0		0	467	2		2	0.00		0.00
2010	July	477		944		944			0		0	944	2		2	0.00		0.00
2010	August	1,342		2,286		2,286			0		0	2,286	2		2	0.00		0.00
2010	September	883		3,168		3,168			0		0	3,168	2		2	0.00		0.00
2010	October	926		4,094		4,094			0		0	4,094	2		2	0.00		0.00
2010	November	1,071		5,165		5,165			0		0	5,165	2		2	0.00		0.00
2010	December	873		6,038		6,038			0		0	6,038	2		2	0.00		0.00
2011	January	1,259		7,297		7,297			0		0	7,297	2		2	0.00		0.00
2011	February	736		8,032		8,032			0		0	8,032	2		2	0.00		0.00
2011	March	845		8,878		8,878			0		0	8,878	2		2	0.00		0.00
2011	April	598		9,476		9,476			0		0	9,476	2		2	0.00		0.00
2011	May	513		9,989		9,989			0		0	9,989	2		2	0.00		0.00
2011	June	400		10,389		10,389	1		1		1	10,390	2	2	2	0.00	0.00	0.00
2011	July	546		10,934		10,934	12		13		13	10,947	2	2	2	0.00	0.00	0.00
2011	August	506		11,440		11,440	14		27		27	11,467	2	2	2	0.00	0.00	0.00
2011	September	393		11,833		11,833	18		45		45	11,878	2	2	2	0.00	0.00	0.00
2011	October	368		12,201		12,201	16		62		62	12,263	2	2	2	0.00	0.00	0.00
2011	November	469		12,670		12,670	28		90		90	12,760	2	2	2	0.00	0.00	0.00
2011	December	302		12,972		12,972	22		112		112	13,084	2	2	2	0.00	0.00	0.00
2012	January			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	February			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	March			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	April			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	May			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	June			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	July			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	August			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	September			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	October			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	November			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2012	December			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]		[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]		E+G
2013	January	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	February	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	March	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	April	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	May	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	June	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	July	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	August	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	September	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	October	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	November	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2013	December	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	January	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	February	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	March	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	April	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	May	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	June	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	July	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	August	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	September	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	October	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	November	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2014	December	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	January	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	February	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	March	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	April	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	May	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	June	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	July	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	August	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	September	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	October	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	November	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2015	December	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2013	January			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	February			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	March			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	April			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	May			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	June			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	July			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	August			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	September			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	October			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	November			9,935,895		9,935,895			85,669		85,669	10,021,564
2013	December			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	January			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	February			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	March			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	April			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	May			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	June			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	July			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	August			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	September			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	October			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	November			9,935,895		9,935,895			85,669		85,669	10,021,564
2014	December			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	January			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	February			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	March			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	April			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	May			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	June			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	July			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	August			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	September			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	October			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	November			9,935,895		9,935,895			85,669		85,669	10,021,564
2015	December			9,935,895		9,935,895			85,669		85,669	10,021,564

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System	VA	NC	System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2013	January			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	February			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	March			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	April			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	May			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	June			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	July			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	August			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	September			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	October			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	November			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2013	December			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	January			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	February			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	March			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	April			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	May			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	June			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	July			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	August			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	September			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	October			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	November			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2014	December			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	January			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	February			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	March			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	April			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	May			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	June			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	July			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	August			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	September			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	October			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	November			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2015	December			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System Cum for IRP E+G
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]		[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]		
2016	January	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	February	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	March	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	April	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	May	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	June	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	July	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	August	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	September	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	October	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	November	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2016	December	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	January	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	February	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	March	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	April	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	May	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	June	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	July	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	August	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	September	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	October	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	November	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2017	December	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	January	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	February	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	March	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	April	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	May	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	June	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	July	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	August	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	September	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	October	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	November	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2018	December	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2016	January			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	February			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	March			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	April			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	May			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	June			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	July			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	August			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	September			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	October			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	November			9,935,895		9,935,895			85,669		85,669	10,021,564
2016	December			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	January			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	February			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	March			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	April			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	May			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	June			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	July			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	August			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	September			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	October			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	November			9,935,895		9,935,895			85,669		85,669	10,021,564
2017	December			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	January			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	February			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	March			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	April			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	May			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	June			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	July			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	August			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	September			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	October			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	November			9,935,895		9,935,895			85,669		85,669	10,021,564
2018	December			9,935,895		9,935,895			85,669		85,669	10,021,564

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA	NC	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2016	January			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	February			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	March			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	April			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	May			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	June			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	July			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	August			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	September			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	October			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	November			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2016	December			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	January			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	February			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	March			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	April			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	May			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	June			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	July			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	August			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	September			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	October			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	November			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2017	December			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	January			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	February			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	March			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	April			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	May			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	June			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	July			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	August			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	September			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	October			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	November			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2018	December			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]		[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]		E+G
2019	January	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	February	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	March	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	April	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	May	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	June	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	July	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	August	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	September	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	October	0	0	4,222,509		4,222,509	0	0	37,120		37,120	4,259,629
2019	November	0	-79,585	4,142,924		4,142,924	0	0	37,120		37,120	4,180,044
2019	December	0	-71,318	4,071,606		4,071,606	0	0	37,120		37,120	4,108,726
2020	January	0	-159,352	3,912,254		3,912,254	0	0	37,120		37,120	3,949,374
2020	February	0	-455,987	3,456,267		3,456,267	0	0	37,120		37,120	3,493,387
2020	March	0	-296,951	3,159,316		3,159,316	0	0	37,120		37,120	3,196,436
2020	April	0	-311,925	2,847,391		2,847,391	0	0	37,120		37,120	2,884,511
2020	May	0	-352,606	2,494,785		2,494,785	0	0	37,120		37,120	2,531,905
2020	June	0	-288,755	2,206,030		2,206,030	0	0	37,120		37,120	2,243,150
2020	July	0	-416,132	1,789,898		1,789,898	0	0	37,120		37,120	1,827,018
2020	August	0	-239,046	1,550,852		1,550,852	0	0	37,120		37,120	1,587,972
2020	September	0	-267,519	1,283,333		1,283,333	0	0	37,120		37,120	1,320,453
2020	October	0	-188,281	1,095,052		1,095,052	0	0	37,120		37,120	1,132,172
2020	November	0	-161,608	933,444		933,444	0	0	37,120		37,120	970,564
2020	December	0	-125,422	808,022		808,022	0	-276	36,844		36,844	844,866

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2019	January			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	February			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	March			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	April			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	May			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	June			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	July			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	August			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	September			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	October			9,935,895		9,935,895			85,669		85,669	10,021,564
2019	November		-188,360	9,747,535		9,747,535			85,669		85,669	9,833,204
2019	December		-169,164	9,578,371		9,578,371			85,669		85,669	9,664,039
2020	January		-365,257	9,213,114		9,213,114			85,669		85,669	9,298,782
2020	February		-1,028,011	8,185,103		8,185,103			85,669		85,669	8,270,771
2020	March		-676,000	7,509,103		7,509,103			85,669		85,669	7,594,772
2020	April		-708,923	6,800,180		6,800,180			85,669		85,669	6,885,848
2020	May		-820,142	5,980,038		5,980,038			85,669		85,669	6,065,706
2020	June		-668,789	5,311,249		5,311,249			85,669		85,669	5,396,918
2020	July		-964,428	4,346,821		4,346,821			85,669		85,669	4,432,490
2020	August		-563,360	3,783,461		3,783,461			85,669		85,669	3,869,130
2020	September		-647,398	3,136,063		3,136,063			85,669		85,669	3,221,731
2020	October		-457,933	2,678,130		2,678,130			85,669		85,669	2,763,799
2020	November		-393,031	2,285,100		2,285,100			85,669		85,669	2,370,768
2020	December		-306,454	1,978,646		1,978,646		-615	85,053		85,053	2,063,699

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA		VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired										
2019	January			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	February			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	March			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	April			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	May			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	June			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	July			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	August			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	September			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	October			12,972		12,972			112		112	13,084	2	2	2	0.00	0.00	0.00
2019	November		-246	12,726		12,726			112		112	12,838	2	2	2	0.00	0.00	0.00
2019	December		-221	12,505		12,505			112		112	12,617	2	2	2	0.00	0.00	0.00
2020	January		-477	12,028		12,028			112		112	12,140	2	2	2	0.00	0.00	0.00
2020	February		-1,342	10,686		10,686			112		112	10,798	2	2	2	0.00	0.00	0.00
2020	March		-883	9,804		9,804			112		112	9,916	2	2	2	0.00	0.00	0.00
2020	April		-926	8,878		8,878			112		112	8,990	2	2	2	0.00	0.00	0.00
2020	May		-1,071	7,807		7,807			112		112	7,919	2	2	2	0.00	0.00	0.00
2020	June		-873	6,934		6,934			112		112	7,046	2	2	2	0.00	0.00	0.00
2020	July		-1,259	5,675		5,675			112		112	5,787	2	2	2	0.00	0.00	0.00
2020	August		-736	4,940		4,940			112		112	5,051	2	2	2	0.00	0.00	0.00
2020	September		-845	4,094		4,094			112		112	4,206	2	2	2	0.00	0.00	0.00
2020	October		-598	3,496		3,496			112		112	3,608	2	2	2	0.00	0.00	0.00
2020	November		-513	2,983		2,983			112		112	3,095	2	2	2	0.00	0.00	0.00
2020	December		-400	2,583		2,583		-1	111		111	2,694	2	2	2	0.00	0.00	0.00

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			2,016,479		2,016,479			-		-	2,016,479
2011			2,206,030		2,206,030			37,120		37,120	2,243,150
2012			-		-			-		-	-
2013			-		-			-		-	-
2014			-		-			-		-	-
2015			-		-			-		-	-
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-150,903		-150,903			-		-	-150,903
2020			-3,263,584		-3,263,584			-276		-276	-3,263,860

Table 3. EM&V Data Annualized by Vintage Year												
		Program Participants										
				VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2010			2,016,479		2,016,479			-		-	2,016,479
	2011			2,206,030		2,206,030		37,120		37,120		2,243,150
	2012			-		-		-		-		-
	2013			-		-		-		-		-
	2014			-		-		-		-		-
	2015			-		-		-		-		-
	2016			-		-		-		-		-
	2017			-		-		-		-		-
	2018			-		-		-		-		-
	2019			-150,903		-150,903		-		-		-150,903
	2020			-3,263,584		-3,263,584		-276		-276		-3,263,860

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Program Participants										
			VA PPI					NC PPI		System
2010			2,016,479					-		2,016,479
2011			4,222,509					37,120		4,259,629
2012			4,222,509					37,120		4,259,629
2013			2,206,030					37,120		2,243,150
2014			-					-		-
2015			-					-		-
2016			-					-		-
2017			-					-		-
2018			-					-		-
2019			-150,903					-		-150,903
2020			-3,414,487					-276		-3,414,763

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Program Participants											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			2,016,479		2,016,479			-		-	2,016,479
2011			4,222,509		4,222,509			37,120		37,120	4,259,629
2012			4,222,509		4,222,509			37,120		37,120	4,259,629
2013			4,222,509		4,222,509			37,120		37,120	4,259,629
2014			4,222,509		4,222,509			37,120		37,120	4,259,629
2015			4,222,509		4,222,509			37,120		37,120	4,259,629
2016			4,222,509		4,222,509			37,120		37,120	4,259,629
2017			4,222,509		4,222,509			37,120		37,120	4,259,629
2018			4,222,509		4,222,509			37,120		37,120	4,259,629
2019			4,071,606		4,071,606			37,120		37,120	4,108,726
2020			808,022		808,022			36,844		36,844	844,866

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Program Participants										
			VA IRP					NC IRP			System IRP
2010			2,016,479					-			2,016,479

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			17,162,471		17,162,471			-		-	17,162,471
2011			41,098,508		41,098,508			267,232		267,232	41,365,739
2012			-		-			-		-	-
2013			-		-			-		-	-
2014			-		-			-		-	-
2015			-		-			-		-	-
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-545,885		-545,885			-		-	-545,885
2020			-53,733,444		-53,733,444			-615		-615	-53,734,059

Table 3. EM&V Data Annualized by Vintage Year												
		Net kWh										
				VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2010			55,495,756		55,495,756			-		-	55,495,756
	2011			63,734,988		63,734,988			1,028,025		1,028,025	64,763,012
	2012			-		-			-		-	-
	2013			-		-			-		-	-
	2014			-		-			-		-	-
	2015			-		-			-		-	-
	2016			-		-			-		-	-
	2017			-		-			-		-	-
	2018			-		-			-		-	-
	2019			-4,290,295		-4,290,295			-		-	-4,290,295
	2020			-91,196,702		-91,196,702			-7,385		-7,385	-91,204,087

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2010			17,162,471					-		17,162,471
2011			96,594,264					267,232		96,861,495
2012			119,230,743					1,028,025		120,258,768
2013			63,734,988					1,028,025		64,763,012
2014			-					-		-
2015			-					-		-
2016			-					-		-
2017			-					-		-
2018			-					-		-
2019			-545,885					-		-545,885
2020			-58,023,739					-615		-58,024,354

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			17,162,471		17,162,471			0		0	17,162,471
2011			96,594,264		96,594,264			267,232		267,232	96,861,495
2012			119,230,743		119,230,743			1,028,025		1,028,025	120,258,768
2013			119,230,743		119,230,743			1,028,025		1,028,025	120,258,768
2014			119,230,743		119,230,743			1,028,025		1,028,025	120,258,768
2015			119,230,743		119,230,743			1,028,025		1,028,025	120,258,768
2016			119,230,743		119,230,743			1,028,025		1,028,025	120,258,768
2017			119,230,743		119,230,743			1,028,025		1,028,025	120,258,768
2018			119,230,743		119,230,743			1,028,025		1,028,025	120,258,768
2019			118,684,859		118,684,859			1,028,025		1,028,025	119,712,884
2020			61,207,005		61,207,005			1,027,409		1,027,409	62,234,414

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA IRP					NC IRP			System IRP
2010			17,162,471					-			17,162,471

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010		6,038		6,038			-		-	6,038	9	-	9	0.00	-	0.00
2011		6,934		6,934			112		112	7,046	19	7	18	0.00	0.00	0.00
2012		-		-			-		-	-	-	-	-	-	-	-
2013		-		-			-		-	-	-	-	-	-	-	-
2014		-		-			-		-	-	-	-	-	-	-	-
2015		-		-			-		-	-	-	-	-	-	-	-
2016		-		-			-		-	-	-	-	-	-	-	-
2017		-		-			-		-	-	-	-	-	-	-	-
2018		-		-			-		-	-	-	-	-	-	-	-
2019		-467		-467			-		-	-467	4	-	4	0.00	-	0.00
2020		-9,922		-9,922			-1		-1	-9,923	16	2	16	0.00	0.00	0.00

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010		6,038		6,038			-		-	6,038	28	-	28	0.00	-	0.00
2011		6,934		6,934			112		112	7,046	29	28	29	0.00	0.00	0.00
2012		-		-			-		-	-	-	-	-	-	-	-
2013		-		-			-		-	-	-	-	-	-	-	-
2014		-		-			-		-	-	-	-	-	-	-	-
2015		-		-			-		-	-	-	-	-	-	-	-
2016		-		-			-		-	-	-	-	-	-	-	-
2017		-		-			-		-	-	-	-	-	-	-	-
2018		-		-			-		-	-	-	-	-	-	-	-
2019		-467		-467			-		-	-467	28	-	28	0.00	-	0.00
2020		-9,922		-9,922			-1		-1	-9,923	28	27	28	0.00	0.00	0.00

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2010		6,038					-			6,038		-			-	
2011		12,972					112			13,084		7			0.00	
2012		12,972					112			13,084		28			0.00	
2013		6,934					112			7,046		28			0.00	
2014		-					-			-		-			-	
2015		-					-			-		-			-	
2016		-					-			-		-			-	
2017		-					-			-		-			-	
2018		-					-			-		-			-	
2019		-467					-			-467		-			-	
2020		-10,389					-1			-10,390		2			0.00	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010		6,038		6,038			-		-	6,038	9	-	9	0.00	-	0.00
2011		12,972		12,972			112		112	13,084	23	7	23	0.00	0.00	0.00
2012		12,972		12,972			112		112	13,084	28	28	28	0.00	0.00	0.00
2013		12,972		12,972			112		112	13,084	28	28	28	0.00	0.00	0.00
2014		12,972		12,972			112		112	13,084	28	28	28	0.00	0.00	0.00
2015		12,972		12,972			112		112	13,084	28	28	28	0.00	0.00	0.00
2016		12,972		12,972			112		112	13,084	28	28	28	0.00	0.00	0.00
2017		12,972		12,972			112		112	13,084	28	28	28	0.00	0.00	0.00
2018		12,972		12,972			112		112	13,084	28	28	28	0.00	0.00	0.00
2019		12,505		12,505			112		112	12,617	29	28	29	0.00	0.00	0.00
2020		2,583		2,583			111		111	2,694	76	28	74	0.00	0.00	0.00

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
		VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2010		6,038					-			6,038	9	-	9	0.00	-	0.00

2011			4,222,509					37,120			4,259,629
2012			4,222,509					37,120			4,259,629
2013			4,222,509					37,120			4,259,629
2014			4,222,509					37,120			4,259,629
2015			4,222,509					37,120			4,259,629
2016			4,222,509					37,120			4,259,629
2017			4,222,509					37,120			4,259,629
2018			4,222,509					37,120			4,259,629
2019			4,222,509					37,120			4,259,629
2020			4,222,509					37,120			4,259,629
2021			4,222,509					37,120			4,259,629
2022			4,222,509					37,120			4,259,629

2011			113,756,735					267,232			114,023,966
2012			232,987,478					1,295,257			234,282,734
2013			352,218,221					2,323,281			354,541,503
2014			471,448,965					3,351,306			474,800,271
2015			590,679,708					4,379,331			595,059,039
2016			709,910,451					5,407,356			715,317,807
2017			829,141,195					6,435,381			835,576,576
2018			948,371,938					7,463,406			955,835,344
2019			1,067,056,797					8,491,430			1,075,548,227
2020			1,128,263,802					9,518,840			1,137,782,642
2021			1,132,692,062					9,766,236			1,142,458,298
2022			1,132,692,062					9,766,236			1,142,458,298

2011			12,972					112			13,084	27	7	27	0.00	0.00	0.00
2012			12,972					112			13,084	55	35	55	0.00	0.00	0.00
2013			12,972					112			13,084	83	63	83	0.00	0.00	0.00
2014			12,972					112			13,084	112	90	111	0.00	0.00	0.00
2015			12,972					112			13,084	140	118	140	0.00	0.00	0.00
2016			12,972					112			13,084	168	146	168	0.00	0.00	0.00
2017			12,972					112			13,084	196	173	196	0.00	0.00	0.00
2018			12,972					112			13,084	225	201	224	0.00	0.00	0.00
2019			12,972					112			13,084	253	229	252	0.00	0.00	0.00
2020			12,972					112			13,084	267	256	267	0.00	0.00	0.00
2021			12,972					112			13,084	268	263	268	0.00	0.00	0.00
2022			12,972					112			13,084	268	263	268	0.00	0.00	0.00

Program:	Residential Low Income Program
DSM Phase:	1
Type:	
Program Life in years	
Starting from 2010:	13.6

Table 1		Participation											
Year	Month	Program Participants											System
		VA					NC					System Cum for IRP	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G			
2010	January	0	0	0		0	0	0		0	0	0	
2010	February	0	0	0		0	0	0		0	0	0	
2010	March	0	0	0		0	0	0		0	0	0	
2010	April	16	0	16		16	0	0		0	16	16	
2010	May	114	0	130		130	0	0		0	130	130	
2010	June	180	0	310		310	0	0		0	310	310	
2010	July	180	0	490		490	0	0		0	490	490	
2010	August	194	0	684		684	0	0		0	684	684	
2010	September	188	0	872		872	0	0		0	872	872	
2010	October	189	0	1,061		1,061	0	0		0	1,061	1,061	
2010	November	180	0	1,241		1,241	0	0		0	1,241	1,241	
2010	December	190	0	1,431		1,431	0	0		0	1,431	1,431	
2011	January	267	0	1,698		1,698	0	0		0	1,698	1,698	
2011	February	281	0	1,979		1,979	0	0		0	1,979	1,979	
2011	March	305	0	2,284		2,284	0	0		0	2,284	2,284	
2011	April	344	0	2,628		2,628	0	0		0	2,628	2,628	
2011	May	348	0	2,976		2,976	0	0		0	2,976	2,976	
2011	June	387	0	3,363		3,363	0	0		0	3,363	3,363	
2011	July	295	0	3,658		3,658	18	0	18		18	3,676	
2011	August	342	0	4,000		4,000	34	0	52		52	4,052	
2011	September	344	0	4,344		4,344	21	0	73		73	4,417	
2011	October	398	0	4,742		4,742	23	0	96		96	4,838	
2011	November	358	0	5,100		5,100	23	0	119		119	5,219	
2011	December	243	0	5,343		5,343	88	0	207		207	5,550	
2012	January	345	0	5,688		5,688	55	0	262		262	5,950	
2012	February	340	0	6,028		6,028	46	0	308		308	6,336	
2012	March	416	0	6,444		6,444	35	0	343		343	6,787	
2012	April	385	0	6,829		6,829	20	0	363		363	7,192	
2012	May	343	0	7,172		7,172	0	0	363		363	7,535	
2012	June	187	0	7,359		7,359	0	0	363		363	7,722	
2012	July	111	0	7,470		7,470	0	0	363		363	7,833	
2012	August	60	0	7,530		7,530	0	0	363		363	7,893	
2012	September	49	0	7,579		7,579	0	0	363		363	7,942	
2012	October	49	0	7,628		7,628	0	0	363		363	7,991	
2012	November	71	0	7,699		7,699	0	0	363		363	8,062	
2012	December	24	0	7,723		7,723	0	0	363		363	8,086	

Table 1		Energy Savings										
Year	Month	Net kWh										System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2010	January			0		0			0		0	
2010	February			0		0			0		0	
2010	March			0		0			0		0	
2010	April	852		852		852			0		852	
2010	May	5,889		6,741		6,741			0		6,741	
2010	June	8,884		15,625		15,625			0		15,625	
2010	July	9,929		25,554		25,554			0		25,554	
2010	August	10,525		36,078		36,078			0		36,078	
2010	September	9,813		45,891		45,891			0		45,891	
2010	October	10,170		56,061		56,061			0		56,061	
2010	November	10,242		66,303		66,303			0		66,303	
2010	December	9,709		76,012		76,012			0		76,012	
2011	January	13,312		89,324		89,324			0		89,324	
2011	February	14,142		103,466		103,466			0		103,466	
2011	March	15,804		119,270		119,270			0		119,270	
2011	April	17,797		137,068		137,068			0		137,068	
2011	May	15,046		152,113		152,113			0		152,113	
2011	June	17,554		169,667		169,667			0		169,667	
2011	July	10,575		180,242		180,242	590		590		180,832	
2011	August	12,144		192,387		192,387	1,155		1,745		194,131	
2011	September	13,562		205,949		205,949	826		2,571		208,519	
2011	October	18,243		224,192		224,192	897		3,468		227,660	
2011	November	15,605		239,797		239,797	918		4,386		244,183	
2011	December	9,715		249,512		249,512	3,887		8,273		257,785	
2012	January	13,684		263,197		263,197	2,510		10,783		273,980	
2012	February	14,735		277,932		277,932	2,102		12,885		290,816	
2012	March	17,339		295,270		295,270	1,435		14,319		309,590	
2012	April	15,686		310,956		310,956	668		14,988		325,944	
2012	May	14,272		325,228		325,228			14,988		340,216	
2012	June	6,888		332,116		332,116			14,988		347,104	
2012	July	4,059		336,176		336,176			14,988		351,163	
2012	August	2,479		338,655		338,655			14,988		353,643	
2012	September	1,168		339,823		339,823			14,988		354,811	
2012	October	1,754		341,578		341,578			14,988		356,565	
2012	November	2,385		343,963		343,963			14,988		358,950	
2012	December	740		344,703		344,703			14,988		359,690	

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW					NC					System Cum for IRP	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		VA	NC	System	VA	NC	System
2010	January			0		0			0		0	0			-			-
2010	February			0		0			0		0	0			-			-
2010	March			0		0			0		0	0			-			-
2010	April	2		2		2			0		0	2	53		53	0.13		0.13
2010	May	17		19		19			0		0	19	52		52	0.14		0.14
2010	June	25		43		43			0		0	43	50		50	0.14		0.14
2010	July	27		70		70			0		0	70	52		52	0.14		0.14
2010	August	28		98		98			0		0	98	53		53	0.14		0.14
2010	September	28		126		126			0		0	126	53		53	0.14		0.14
2010	October	28		155		155			0		0	155	53		53	0.15		0.15
2010	November	28		183		183			0		0	183	53		53	0.15		0.15
2010	December	25		208		208			0		0	208	53		53	0.15		0.15
2011	January	35		243		243			0		0	243	53		53	0.14		0.14
2011	February	38		281		281			0		0	281	52		52	0.14		0.14
2011	March	42		323		323			0		0	323	52		52	0.14		0.14
2011	April	44		367		367			0		0	367	52		52	0.14		0.14
2011	May	36		404		404			0		0	404	51		51	0.14		0.14
2011	June	41		445		445			0		0	445	50		50	0.13		0.13
2011	July	23		468		468	1		1		1	469	49	33	49	0.13	0.06	0.13
2011	August	27		496		496	3		4		4	499	48	34	48	0.12	0.07	0.12
2011	September	31		526		526	2		6		6	532	47	35	47	0.12	0.08	0.12
2011	October	44		570		570	3		9		9	579	47	36	47	0.12	0.09	0.12
2011	November	36		607		607	2		10		10	617	47	37	47	0.12	0.09	0.12
2011	December	23		630		630	8		18		18	648	47	40	46	0.12	0.09	0.12
2012	January	36		666		666	6		24		24	690	46	41	46	0.12	0.09	0.12
2012	February	36		702		702	5		29		29	732	46	42	46	0.12	0.10	0.12
2012	March	39		741		741	3		32		32	773	46	42	46	0.11	0.09	0.11
2012	April	35		776		776	1		34		34	810	46	41	45	0.11	0.09	0.11
2012	May	33		810		810			34		34	843	45	41	45	0.11	0.09	0.11
2012	June	16		825		825			34		34	859	45	41	45	0.11	0.09	0.11
2012	July	10		835		835			34		34	869	45	41	45	0.11	0.09	0.11
2012	August	6		841		841			34		34	875	45	41	45	0.11	0.09	0.11
2012	September	2		843		843			34		34	877	45	41	45	0.11	0.09	0.11
2012	October	4		847		847			34		34	881	45	41	45	0.11	0.09	0.11
2012	November	5		852		852			34		34	886	45	41	45	0.11	0.09	0.11
2012	December	2		853		853			34		34	887	45	41	44	0.11	0.09	0.11

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]		[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]		E+G
2013	January	136	0	7,859		7,859	13	0	376		376	8,235
2013	February	168	0	8,027		8,027	13	0	389		389	8,416
2013	March	188	0	8,215		8,215	13	0	402		402	8,617
2013	April	211	0	8,426		8,426	3	0	405		405	8,831
2013	May	189	0	8,615		8,615	3	0	408		408	9,023
2013	June	147	0	8,762		8,762	0	0	408		408	9,170
2013	July	191	0	8,953		8,953	1	0	409		409	9,362
2013	August	172	0	9,125		9,125	25	0	434		434	9,559
2013	September	142	0	9,267		9,267	15	0	449		449	9,716
2013	October	181	0	9,448		9,448	14	0	463		463	9,911
2013	November	116	0	9,564		9,564	11	0	474		474	10,038
2013	December	42	0	9,606		9,606	9	0	483		483	10,089
2014	January	158	0	9,764		9,764	9	0	492		492	10,256
2014	February	150	0	9,914		9,914	12	0	504		504	10,418
2014	March	160	0	10,074		10,074	10	0	514		514	10,588
2014	April	152	0	10,226		10,226	11	0	525		525	10,751
2014	May	160	0	10,386		10,386	10	0	535		535	10,921
2014	June	160	0	10,546		10,546	12	0	547		547	11,093
2014	July	160	0	10,706		10,706	14	0	561		561	11,267
2014	August	162	0	10,868		10,868	11	0	572		572	11,440
2014	September	164	0	11,032		11,032	12	0	584		584	11,616
2014	October	153	0	11,185		11,185	12	0	596		596	11,781
2014	November	190	0	11,375		11,375	7	0	603		603	11,978
2014	December	111	0	11,486		11,486	0	0	603		603	12,089
2015	January	0	0	11,486		11,486	46	0	649		649	12,135
2015	February	0	0	11,486		11,486	50	0	699		699	12,185
2015	March	0	0	11,486		11,486	65	0	764		764	12,250
2015	April	0	0	11,486		11,486	67	0	831		831	12,317
2015	May	0	0	11,486		11,486	50	0	881		881	12,367
2015	June	0	0	11,486		11,486	47	0	928		928	12,414
2015	July	0	0	11,486		11,486	50	0	978		978	12,464
2015	August	0	0	11,486		11,486	62	0	1,040		1,040	12,526
2015	September	0	0	11,486		11,486	60	0	1,100		1,100	12,586
2015	October	0	0	11,486		11,486	60	0	1,160		1,160	12,646
2015	November	0	0	11,486		11,486	57	0	1,217		1,217	12,703
2015	December	0	0	11,486		11,486	39	0	1,256		1,256	12,742

Table 1		Energy Savings												
Year	Month	Net kWh										System		
		VA	VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)		NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)
2013	January		7,014				351,717		746			15,733		367,450
2013	February		9,408				361,125		630			16,364		377,489
2013	March		9,847				370,972		686			17,049		388,021
2013	April		11,283				382,255		88			17,137		399,392
2013	May		9,749				392,005		192			17,329		409,333
2013	June		8,149				400,153					17,329		417,482
2013	July		10,615				410,768		25			17,354		428,122
2013	August		7,312				418,080	1,060				18,414		436,494
2013	September		6,850				424,930		590			19,004		443,934
2013	October		9,183				434,112		809			19,813		453,925
2013	November		5,968				440,080		797			20,610		460,690
2013	December		2,238				442,318		635			21,245		463,563
2014	January		7,349				449,668		398			21,642		471,310
2014	February		6,581				456,249		541			22,183		478,431
2014	March		7,266				463,514		233			22,416		485,930
2014	April		6,301				469,815		544			22,960		492,775
2014	May		6,610				476,425		360			23,320		499,745
2014	June		6,267				482,692		399			23,719		506,410
2014	July		7,273				489,965		625			24,344		514,309
2014	August		6,929				496,894		485			24,829		521,723
2014	September		8,028				504,922		585			25,414		530,336
2014	October		7,151				512,072		509			25,923		537,996
2014	November		9,029				521,101		282			26,205		547,306
2014	December		5,411				526,513					26,205		552,718
2015	January						526,513		2,614			28,819		555,332
2015	February						526,513		3,449			32,268		558,781
2015	March						526,513		4,214			36,482		562,995
2015	April						526,513		4,493			40,975		567,488
2015	May						526,513		3,239			44,214		570,726
2015	June						526,513		3,411			47,624		574,137
2015	July						526,513		3,374			50,998		577,511
2015	August						526,513		4,310			55,308		581,821
2015	September						526,513		4,905			60,213		586,726
2015	October						526,513		4,205			64,418		590,931
2015	November						526,513		3,478			67,896		594,408
2015	December						526,513		3,101			70,997		597,510

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant			
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC		NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC
2013	January	17		870		870	2			36		36	906	45	42	45	0.11	0.10	0.11
2013	February	24		894		894	2			38		38	933	45	42	45	0.11	0.10	0.11
2013	March	24		919		919	2			40		40	959	45	42	45	0.11	0.10	0.11
2013	April	28		947		947	0			41		41	987	45	42	45	0.11	0.10	0.11
2013	May	23		970		970	0			41		41	1,011	46	42	45	0.11	0.10	0.11
2013	June	22		992		992				41		41	1,033	46	42	46	0.11	0.10	0.11
2013	July	27		1,019		1,019	0			41		41	1,060	46	42	46	0.11	0.10	0.11
2013	August	16		1,035		1,035	3			44		44	1,079	46	42	46	0.11	0.10	0.11
2013	September	17		1,052		1,052	2			45		45	1,097	46	42	46	0.11	0.10	0.11
2013	October	24		1,075		1,075	3			48		48	1,123	46	43	46	0.11	0.10	0.11
2013	November	15		1,090		1,090	3			51		51	1,141	46	43	46	0.11	0.11	0.11
2013	December	6		1,096		1,096	2			53		53	1,149	46	44	46	0.11	0.11	0.11
2014	January	17		1,113		1,113	1			54		54	1,167	46	44	46	0.11	0.11	0.11
2014	February	17		1,130		1,130	2			55		55	1,185	46	44	46	0.11	0.11	0.11
2014	March	18		1,149		1,149	1			56		56	1,205	46	44	46	0.11	0.11	0.11
2014	April	15		1,164		1,164	2			58		58	1,221	46	44	46	0.11	0.11	0.11
2014	May	15		1,179		1,179	1			59		59	1,238	46	44	46	0.11	0.11	0.11
2014	June	13		1,192		1,192	1			60		60	1,252	46	43	46	0.11	0.11	0.11
2014	July	16		1,208		1,208	2			62		62	1,269	46	43	46	0.11	0.11	0.11
2014	August	16		1,224		1,224	1			63		63	1,287	46	43	46	0.11	0.11	0.11
2014	September	18		1,242		1,242	1			64		64	1,306	46	44	46	0.11	0.11	0.11
2014	October	17		1,259		1,259	1			66		66	1,324	46	43	46	0.11	0.11	0.11
2014	November	20		1,279		1,279	1			66		66	1,345	46	43	46	0.11	0.11	0.11
2014	December	12		1,291		1,291				66		66	1,357	46	43	46	0.11	0.11	0.11
2015	January			1,291		1,291	6			72		72	1,363	46	44	46	0.11	0.11	0.11
2015	February			1,291		1,291	9			81		81	1,372	46	46	46	0.11	0.12	0.11
2015	March			1,291		1,291	11			92		92	1,383	46	48	46	0.11	0.12	0.11
2015	April			1,291		1,291	11			103		103	1,394	46	49	46	0.11	0.12	0.11
2015	May			1,291		1,291	8			112		112	1,403	46	50	46	0.11	0.13	0.11
2015	June			1,291		1,291	9			121		121	1,412	46	51	46	0.11	0.13	0.11
2015	July			1,291		1,291	9			130		130	1,421	46	52	46	0.11	0.13	0.11
2015	August			1,291		1,291	12			142		142	1,433	46	53	46	0.11	0.14	0.11
2015	September			1,291		1,291	17			159		159	1,449	46	55	47	0.11	0.14	0.12
2015	October			1,291		1,291	14			173		173	1,463	46	56	47	0.11	0.15	0.12
2015	November			1,291		1,291	10			183		183	1,474	46	56	47	0.11	0.15	0.12
2015	December			1,291		1,291	11			194		194	1,485	46	57	47	0.11	0.15	0.12

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	
2016	January	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	February	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	March	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	April	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	May	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	June	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	July	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	August	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	September	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	October	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	November	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2016	December	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	January	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	February	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	March	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	April	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	May	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	June	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	July	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	August	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	September	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	October	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	November	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2017	December	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	January	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	February	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	March	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	April	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	May	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	June	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	July	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	August	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	September	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	October	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	November	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2018	December	0	0	11,486		11,486	0	0	1,256		1,256	12,742

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2016	January			526,513		526,513			70,997		70,997	597,510
2016	February			526,513		526,513			70,997		70,997	597,510
2016	March			526,513		526,513			70,997		70,997	597,510
2016	April			526,513		526,513			70,997		70,997	597,510
2016	May			526,513		526,513			70,997		70,997	597,510
2016	June			526,513		526,513			70,997		70,997	597,510
2016	July			526,513		526,513			70,997		70,997	597,510
2016	August			526,513		526,513			70,997		70,997	597,510
2016	September			526,513		526,513			70,997		70,997	597,510
2016	October			526,513		526,513			70,997		70,997	597,510
2016	November			526,513		526,513			70,997		70,997	597,510
2016	December			526,513		526,513			70,997		70,997	597,510
2017	January			526,513		526,513			70,997		70,997	597,510
2017	February			526,513		526,513			70,997		70,997	597,510
2017	March			526,513		526,513			70,997		70,997	597,510
2017	April			526,513		526,513			70,997		70,997	597,510
2017	May			526,513		526,513			70,997		70,997	597,510
2017	June			526,513		526,513			70,997		70,997	597,510
2017	July			526,513		526,513			70,997		70,997	597,510
2017	August			526,513		526,513			70,997		70,997	597,510
2017	September			526,513		526,513			70,997		70,997	597,510
2017	October			526,513		526,513			70,997		70,997	597,510
2017	November			526,513		526,513			70,997		70,997	597,510
2017	December			526,513		526,513			70,997		70,997	597,510
2018	January			526,513		526,513			70,997		70,997	597,510
2018	February			526,513		526,513			70,997		70,997	597,510
2018	March			526,513		526,513			70,997		70,997	597,510
2018	April			526,513		526,513			70,997		70,997	597,510
2018	May			526,513		526,513			70,997		70,997	597,510
2018	June			526,513		526,513			70,997		70,997	597,510
2018	July			526,513		526,513			70,997		70,997	597,510
2018	August			526,513		526,513			70,997		70,997	597,510
2018	September			526,513		526,513			70,997		70,997	597,510
2018	October			526,513		526,513			70,997		70,997	597,510
2018	November			526,513		526,513			70,997		70,997	597,510
2018	December			526,513		526,513			70,997		70,997	597,510

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System			System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2016	January			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	February			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	March			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	April			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	May			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	June			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	July			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	August			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	September			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	October			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	November			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2016	December			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	January			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	February			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	March			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	April			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	May			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	June			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	July			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	August			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	September			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	October			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	November			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2017	December			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	January			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	February			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	March			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	April			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	May			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	June			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	July			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	August			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	September			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	October			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	November			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2018	December			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	System Cum for IRP E+G
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]		[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]		
2019	January	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	February	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	March	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	April	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	May	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	June	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	July	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	August	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	September	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	October	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	November	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2019	December	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	January	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	February	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	March	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	April	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	May	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	June	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	July	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	August	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	September	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	October	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	November	0	0	11,486		11,486	0	0	1,256		1,256	12,742
2020	December	0	0	11,486		11,486	0	0	1,256		1,256	12,742

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2019	January			526,513		526,513			70,997		70,997	597,510
2019	February			526,513		526,513			70,997		70,997	597,510
2019	March			526,513		526,513			70,997		70,997	597,510
2019	April			526,513		526,513			70,997		70,997	597,510
2019	May			526,513		526,513			70,997		70,997	597,510
2019	June			526,513		526,513			70,997		70,997	597,510
2019	July			526,513		526,513			70,997		70,997	597,510
2019	August			526,513		526,513			70,997		70,997	597,510
2019	September			526,513		526,513			70,997		70,997	597,510
2019	October			526,513		526,513			70,997		70,997	597,510
2019	November			526,513		526,513			70,997		70,997	597,510
2019	December			526,513		526,513			70,997		70,997	597,510
2020	January			526,513		526,513			70,997		70,997	597,510
2020	February			526,513		526,513			70,997		70,997	597,510
2020	March			526,513		526,513			70,997		70,997	597,510
2020	April			526,513		526,513			70,997		70,997	597,510
2020	May			526,513		526,513			70,997		70,997	597,510
2020	June			526,513		526,513			70,997		70,997	597,510
2020	July			526,513		526,513			70,997		70,997	597,510
2020	August			526,513		526,513			70,997		70,997	597,510
2020	September			526,513		526,513			70,997		70,997	597,510
2020	October			526,513		526,513			70,997		70,997	597,510
2020	November			526,513		526,513			70,997		70,997	597,510
2020	December			526,513		526,513			70,997		70,997	597,510

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2019	January			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	February			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	March			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	April			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	May			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	June			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	July			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	August			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	September			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	October			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	November			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2019	December			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	January			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	February			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	March			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	April			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	May			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	June			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	July			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	August			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	September			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	October			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	November			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12
2020	December			1,291		1,291			194		194	1,485	46	57	47	0.11	0.15	0.12

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			1,431		1,431			-		-	1,431
2011			3,912		3,912			207		207	4,119
2012			2,380		2,380			156		156	2,536
2013			1,883		1,883			120		120	2,003
2014			1,880		1,880			120		120	2,000
2015			-		-			653		653	653
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			1,431		1,431			-		-	1,431
2011			3,912		3,912			207		207	4,119
2012			2,380		2,380			156		156	2,536
2013			1,883		1,883			120		120	2,003
2014			1,880		1,880			120		120	2,000
2015			-		-			653		653	653
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
	Program Participants		VA PPI					NC PPI			System
2010			1,431					-			1,431
2011			5,343					207			5,550
2012			7,723					363			8,086
2013			8,175					483			8,658
2014			6,143					396			6,539
2015			3,763					893			4,656
2016			1,880					773			2,653
2017			-					653			653
2018			-					-			-
2019			-					-			-
2020			-					-			-

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			329,118		329,118			-		-	329,118
2011			1,150,839		1,150,839			21,032		21,032	1,171,871
2012			855,451		855,451			73,601		73,601	929,051
2013			692,084		692,084			37,530		37,530	729,614
2014			542,010		542,010			34,225		34,225	576,235
2015			-		-			285,752		285,752	285,752
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			912,148		912,148			-		-	912,148
2011			2,081,997		2,081,997			99,274		99,274	2,181,271
2012			1,142,287		1,142,287			80,576		80,576	1,222,864
2013			1,171,388		1,171,388			75,084		75,084	1,246,472
2014			1,010,333		1,010,333			59,525		59,525	1,069,858
2015			-		-			537,503		537,503	537,503
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2010			329,118					-		329,118
2011			2,062,987					21,032		2,084,019
2012			3,849,596					172,874		4,022,471
2013			3,916,368					217,380		4,133,748
2014			2,855,685					189,886		3,045,571
2015			2,181,721					420,362		2,602,083
2016			1,010,333					597,028		1,607,361
2017			-					537,503		537,503
2018			-					-		-
2019			-					-		-
2020			-					-		-

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			208		208			-		-	208	230	-	230	0.15	-	0.15
2011			422		422			18		18	440	294	102	285	0.11	0.09	0.11
2012			223		223			16		16	239	359	472	366	0.09	0.10	0.09
2013			243		243			19		19	261	368	313	364	0.13	0.16	0.13
2014			195		195			13		13	208	288	285	288	0.10	0.11	0.10
2015			-		-			128		128	128	-	438	438	-	0.20	0.20
2016			-		-			-		-	-	-	-	-	-	-	-
2017			-		-			-		-	-	-	-	-	-	-	-
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			208		208			-		-	208	637	-	637	0.15	-	0.15
2011			422		422			18		18	440	532	480	530	0.11	0.09	0.11
2012			223		223			16		16	239	480	517	482	0.09	0.10	0.09
2013			243		243			19		19	261	622	626	622	0.13	0.16	0.13
2014			195		195			13		13	208	537	496	535	0.10	0.11	0.10
2015			-		-			128		128	128	-	823	823	-	0.20	0.20
2016			-		-			-		-	-	-	-	-	-	-	-
2017			-		-			-		-	-	-	-	-	-	-	-
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2010			208					-			208		-			-	
2011			630					18			648		102			0.09	
2012			853					34			887		476			0.09	
2013			888					53			941		450			0.11	
2014			661					48			709		480			0.12	
2015			437					160			597		471			0.18	
2016			195					141			336		772			0.18	
2017			-					128			128		823			0.20	
2018			-					-			-		-			-	
2019			-					-			-		-			-	
2020			-					-			-		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			1,431		1,431			-		-	1,431
2011			5,343		5,343			207		207	5,550
2012			7,723		7,723			363		363	8,086
2013			9,606		9,606			483		483	10,089
2014			11,486		11,486			603		603	12,089
2015			11,486		11,486			1,256		1,256	12,742
2016			11,486		11,486			1,256		1,256	12,742
2017			11,486		11,486			1,256		1,256	12,742
2018			11,486		11,486			1,256		1,256	12,742
2019			11,486		11,486			1,256		1,256	12,742
2020			11,486		11,486			1,256		1,256	12,742

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2010			1,431					-		1,431
2011			5,343					207		5,550
2012			7,723					363		8,086
2013			9,606					483		10,089
2014			11,486					603		12,089
2015			11,486					1,256		12,742
2016			11,486					1,256		12,742
2017			11,486					1,256		12,742
2018			11,486					1,256		12,742
2019			11,486					1,256		12,742
2020			11,486					1,256		12,742
2021			11,486					1,256		12,742
2022			11,486					1,256		12,742
2023			11,486					1,256		12,742
2024			11,486					1,256		12,742
2025			11,486					1,256		12,742
2026			11,486					1,256		12,742
2027			11,486					1,256		12,742
2028			11,486					1,256		12,742
2029			11,486					1,256		12,742
2030			11,486					1,256		12,742

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			329,118		329,118			0		0	329,118
2011			2,062,987		2,062,987			21,032		21,032	2,084,019
2012			3,849,596		3,849,596			172,874		172,874	4,022,471
2013			4,828,517		4,828,517			217,380		217,380	5,045,897
2014			5,849,830		5,849,830			289,160		289,160	6,138,990
2015			6,318,154		6,318,154			600,212		600,212	6,918,366
2016			6,318,154		6,318,154			851,963		851,963	7,170,116
2017			6,318,154		6,318,154			851,963		851,963	7,170,116
2018			6,318,154		6,318,154			851,963		851,963	7,170,116
2019			6,318,154		6,318,154			851,963		851,963	7,170,116
2020			6,318,154		6,318,154			851,963		851,963	7,170,116

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2010			329,118					-		329,118
2011			2,392,105					21,032		2,413,137
2012			6,241,701					193,906		6,435,607
2013			11,070,218					411,286		11,481,504
2014			16,920,048					700,446		17,620,494
2015			23,238,202					1,300,658		24,538,860
2016			29,556,355					2,152,621		31,708,976
2017			35,874,509					3,004,584		38,879,093
2018			42,192,662					3,856,547		46,049,209
2019			48,510,816					4,708,509		53,219,325
2020			54,828,970					5,560,472		60,389,442
2021			61,147,123					6,412,435		67,559,558
2022			67,465,277					7,264,398		74,729,675
2023			73,782,578					8,116,361		81,898,939
2024			79,323,338					8,968,323		88,291,662
2025			82,880,278					9,746,280		92,626,558
2026			85,030,120					10,412,059		95,442,179
2027			86,146,581					11,023,725		97,170,305
2028			86,348,098					11,537,184		97,885,283
2029			86,348,098					11,643,492		97,991,590
2030			86,348,098					11,643,492		97,991,590

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant				IRP Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant				Net kWh/Participant		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			208		208			-		-	208	230	-	230	0.15	-	0.15
2011			630		630			18		18	648	386	102	375	0.12	0.09	0.12
2012			853		853			34		34	887	498	476	497	0.11	0.09	0.11
2013			1,096		1,096			53		53	1,149	503	450	500	0.11	0.11	0.11
2014			1,291		1,291			66		66	1,357	509	480	508	0.11	0.11	0.11
2015			1,291		1,291			194		194	1,485	550	478	543	0.11	0.15	0.12
2016			1,291		1,291			194		194	1,485	550	678	563	0.11	0.15	0.12
2017			1,291		1,291			194		194	1,485	550	678	563	0.11	0.15	0.12
2018			1,291		1,291			194		194	1,485	550	678	563	0.11	0.15	0.12
2019			1,291		1,291			194		194	1,485	550	678	563	0.11	0.15	0.12
2020			1,291		1,291			194		194	1,485	550	678	563	0.11	0.15	0.12

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant				IRP Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant				Net kWh/Participant		
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2010			208					-			208	230	-	230	0.15	-	0.15
2011			630					18			648	448	102	435	0.12	0.09	0.12
2012			853					34			887	808	534	796	0.11	0.09	0.11
2013			1,096					53			1,149	1,152	852	1,138	0.11	0.11	0.11
2014			1,291					66			1,357	1,473	1,162	1,458	0.11	0.11	0.11
2015			1,291					194			1,485	2,023	1,036	1,926	0.11	0.15	0.12
2016			1,291					194			1,485	2,573	1,714	2,489	0.11	0.15	0.12
2017			1,291					194			1,485	3,123	2,392	3,051	0.11	0.15	0.12
2018			1,291					194			1,485	3,673	3,070	3,614	0.11	0.15	0.12
2019			1,291					194			1,485	4,223	3,749	4,177	0.11	0.15	0.12
2020			1,291					194			1,485	4,774	4,427	4,739	0.11	0.15	0.12
2021			1,291					194			1,485	5,324	5,105	5,302	0.11	0.15	0.12
2022			1,291					194			1,485	5,874	5,784	5,865	0.11	0.15	0.12
2023			1,291					194			1,485	6,424	6,462	6,427	0.11	0.15	0.12
2024			1,291					194			1,485	6,906	7,140	6,929	0.11	0.15	0.12
2025			1,291					194			1,485	7,216	7,760	7,269	0.11	0.15	0.12
2026			1,291					194			1,485	7,403	8,290	7,490	0.11	0.15	0.12
2027			1,291					194			1,485	7,500	8,777	7,626	0.11	0.15	0.12
2028			1,291					194			1,485	7,518	9,186	7,682	0.11	0.15	0.12
2029			1,291					194			1,485	7,518	9,270	7,690	0.11	0.15	0.12
2030			1,291					194			1,485	7,518	9,270	7,690	0.11	0.15	0.12

Program:	Residential Heat Pump Tune-up
DSM Phase:	2
Type:	
Program Life in years	
Starting from 2012:	5.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2012	January	0	0	0		0	0	0	0		0	0
2012	February	0	0	0		0	0	0	0		0	0
2012	March	0	0	0		0	0	0	0		0	0
2012	April	0	0	0		0	0	0	0		0	0
2012	May	0	0	0		0	0	0	0		0	0
2012	June	0	0	0		0	0	0	0		0	0
2012	July	0	0	0		0	0	0	0		0	0
2012	August	0	0	0		0	0	0	0		0	0
2012	September	0	0	0		0	0	0	0		0	0
2012	October	139	0	139		139	0	0	0		0	139
2012	November	579	0	718		718	0	0	0		0	718
2012	December	494	0	1,212		1,212	0	0	0		0	1,212
2013	January	536	0	1,748		1,748	0	0	0		0	1,748
2013	February	2,124	0	3,872		3,872	0	0	0		0	3,872
2013	March	2,194	0	6,066		6,066	0	0	0		0	6,066
2013	April	876	0	6,942		6,942	0	0	0		0	6,942
2013	May	1,779	0	8,721		8,721	0	0	0		0	8,721
2013	June	1,236	0	9,957		9,957	0	0	0		0	9,957
2013	July	888	0	10,845		10,845	0	0	0		0	10,845
2013	August	570	0	11,415		11,415	0	0	0		0	11,415
2013	September	1,275	0	12,690		12,690	0	0	0		0	12,690
2013	October	1,408	0	14,098		14,098	0	0	0		0	14,098
2013	November	1,323	0	15,421		15,421	0	0	0		0	15,421
2013	December	1,424	0	16,845		16,845	0	0	0		0	16,845
2014	January	995	0	17,840		17,840	0	0	0		0	17,840
2014	February	1,178	0	19,018		19,018	0	0	0		0	19,018
2014	March	949	0	19,967		19,967	0	0	0		0	19,967
2014	April	1,865	0	21,832		21,832	0	0	0		0	21,832
2014	May	2,465	0	24,297		24,297	3	0	3		3	24,300
2014	June	3,699	0	27,996		27,996	3	0	6		6	28,002
2014	July	3,427	0	31,423		31,423	2	0	8		8	31,431
2014	August	2,727	0	34,150		34,150	17	0	25		25	34,175
2014	September	2,248	0	36,398		36,398	14	0	39		39	36,437
2014	October	1,621	0	38,019		38,019	82	0	121		121	38,140
2014	November	1,833	0	39,852		39,852	263	0	384		384	40,236
2014	December	1,680	0	41,532		41,532	197	0	581		581	42,113

Table 1		Energy Savings											
Year	Month	Net kWh					NC	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA	VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.							
2012	January				0		0			0		0	0
2012	February				0		0			0		0	0
2012	March				0		0			0		0	0
2012	April				0		0			0		0	0
2012	May				0		0			0		0	0
2012	June				0		0			0		0	0
2012	July				0		0			0		0	0
2012	August				0		0			0		0	0
2012	September				0		0			0		0	0
2012	October	3,183		3,183		3,183			0		0		3,183
2012	November	12,964		16,146		16,146			0		0		16,146
2012	December	10,991		27,138		27,138			0		0		27,138
2013	January	12,103		39,240		39,240			0		0		39,240
2013	February	47,828		87,068		87,068			0		0		87,068
2013	March	48,036		135,103		135,103			0		0		135,103
2013	April	19,306		154,409		154,409			0		0		154,409
2013	May	38,940		193,350		193,350			0		0		193,350
2013	June	27,560		220,910		220,910			0		0		220,910
2013	July	19,587		240,497		240,497			0		0		240,497
2013	August	12,451		252,947		252,947			0		0		252,947
2013	September	27,837		280,785		280,785			0		0		280,785
2013	October	30,624		311,409		311,409			0		0		311,409
2013	November	28,123		339,531		339,531			0		0		339,531
2013	December	29,540		369,071		369,071			0		0		369,071
2014	January	18,561		387,633		387,633			0		0		387,633
2014	February	22,546		410,179		410,179			0		0		410,179
2014	March	17,744		427,923		427,923			0		0		427,923
2014	April	33,845		461,768		461,768			0		0		461,768
2014	May	46,981		508,749		508,749	102		102		102		508,851
2014	June	67,720		576,469		576,469	90		192		192		576,662
2014	July	65,240		641,710		641,710	41		233		233		641,943
2014	August	50,580		692,290		692,290	337		570		570		692,861
2014	September	40,381		732,671		732,671	268		838		838		733,509
2014	October	31,695		764,366		764,366	1,573		2,411		2,411		766,778
2014	November	37,163		801,529		801,529	5,047		7,459		7,459		808,988
2014	December	33,089		834,618		834,618	4,039		11,498		11,498		846,116

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant				
Year	Month	Net kW VA					NC					System			Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System		
2012	January			0		0			0		0	0			-			-		
2012	February			0		0			0		0	0			-			-		
2012	March			0		0			0		0	0			-			-		
2012	April			0		0			0		0	0			-			-		
2012	May			0		0			0		0	0			-			-		
2012	June			0		0			0		0	0			-			-		
2012	July			0		0			0		0	0			-			-		
2012	August			0		0			0		0	0			-			-		
2012	September			0		0			0		0	0			-			-		
2012	October	26		26		26			0		0	26	23		23	0.19		0.19		
2012	November	106		133		133			0		0	133	22		22	0.18		0.18		
2012	December	90		223		223			0		0	223	22		22	0.18		0.18		
2013	January	99		322		322			0		0	322	22		22	0.18		0.18		
2013	February	392		714		714			0		0	714	22		22	0.18		0.18		
2013	March	395		1,109		1,109			0		0	1,109	22		22	0.18		0.18		
2013	April	160		1,269		1,269			0		0	1,269	22		22	0.18		0.18		
2013	May	322		1,591		1,591			0		0	1,591	22		22	0.18		0.18		
2013	June	229		1,820		1,820			0		0	1,820	22		22	0.18		0.18		
2013	July	161		1,981		1,981			0		0	1,981	22		22	0.18		0.18		
2013	August	102		2,084		2,084			0		0	2,084	22		22	0.18		0.18		
2013	September	228		2,312		2,312			0		0	2,312	22		22	0.18		0.18		
2013	October	252		2,564		2,564			0		0	2,564	22		22	0.18		0.18		
2013	November	231		2,795		2,795			0		0	2,795	22		22	0.18		0.18		
2013	December	243		3,038		3,038			0		0	3,038	22		22	0.18		0.18		
2014	January	170		3,208		3,208			0		0	3,208	22		22	0.18		0.18		
2014	February	207		3,415		3,415			0		0	3,415	22		22	0.18		0.18		
2014	March	163		3,578		3,578			0		0	3,578	21		21	0.18		0.18		
2014	April	311		3,889		3,889			0		0	3,889	21		21	0.18		0.18		
2014	May	437		4,326		4,326	1		1		1	4,326	21	34	21	0.18	0.21	0.18		
2014	June	626		4,951		4,951	1		1		1	4,953	21	32	21	0.18	0.20	0.18		
2014	July	610		5,561		5,561	0		1		1	5,563	20	29	20	0.18	0.18	0.18		
2014	August	468		6,029		6,029	2		3		3	6,032	20	23	20	0.18	0.14	0.18		
2014	September	375		6,404		6,404	2		5		5	6,409	20	21	20	0.18	0.13	0.18		
2014	October	304		6,708		6,708	10		15		15	6,723	20	20	20	0.18	0.12	0.18		
2014	November	362		7,070		7,070	32		47		47	7,117	20	19	20	0.18	0.12	0.18		
2014	December	317		7,387		7,387	24		71		71	7,459	20	20	20	0.18	0.12	0.18		

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	
2015	January	1,968	0	43,500		43,500	448	0	1,029		1,029	44,529
2015	February	1,931	0	45,431		45,431	316	0	1,345		1,345	46,776
2015	March	1,219	0	46,650		46,650	254	0	1,599		1,599	48,249
2015	April	3,141	0	49,791		49,791	342	0	1,941		1,941	51,733
2015	May	2,128	0	51,919		51,919	313	0	2,254		2,254	54,177
2015	June	2,085	0	54,004		54,004	523	0	2,777		2,777	56,783
2015	July	2,133	0	56,137		56,137	282	0	3,059		3,059	59,191
2015	August	1,931	0	58,068		58,068	171	0	3,230		3,230	61,291
2015	September	1,873	0	59,941		59,941	336	0	3,566		3,566	63,847
2015	October	1,900	0	61,841		61,841	169	0	3,735		3,735	65,577
2015	November	1,866	0	63,707		63,707	102	0	3,837		3,837	67,544
2015	December	1,939	0	65,646		65,646	51	0	3,888		3,888	69,533
2016	January	1,761	0	67,407		67,407	94	0	3,982		3,982	71,389
2016	February	2,101	0	69,508		69,508	170	0	4,152		4,152	73,666
2016	March	1,113	0	70,621		70,621	117	0	4,269		4,269	74,899
2016	April	1,726	0	72,347		72,347	159	0	4,428		4,428	76,777
2016	May	1,550	0	73,897		73,897	96	0	4,524		4,524	78,422
2016	June	1,649	0	75,546		75,546	179	0	4,703		4,703	80,249
2016	July	1,259	0	76,805		76,805	100	0	4,803	100	4,803	81,608
2016	August	1,754	0	78,559		78,559	113	0	4,916	213	4,916	83,477
2016	September	1,313	0	79,872		79,872	54	0	4,970	267	4,970	84,844
2016	October	1,644	0	81,516		81,516	54	0	5,024	321	5,024	86,544
2016	November	2,249	0	83,765		83,765	71	0	5,095	392	5,095	88,866
2016	December	889	0	84,654		84,654	67	0	5,162		5,162	89,811
2017	January	2,221	0	86,875		86,875	80	0	5,242		5,242	91,211
2017	February	219	0	87,094		87,094	29	0	5,271		5,271	92,366
2017	March	32	0	87,126		87,126	16	0	5,287		5,287	92,411
2017	April	0	0	87,126		87,126	0	0	5,287		5,287	92,411
2017	May	0	0	87,126		87,126	0	0	5,287		5,287	92,411
2017	June	0	0	87,126		87,126	0	0	5,287		5,287	92,411
2017	July	0	0	87,126		87,126	0	0	5,287		5,287	92,411
2017	August	0	0	87,126		87,126	0	0	5,287		5,287	92,411
2017	September	0	0	87,126		87,126	0	0	5,287		5,287	92,411
2017	October	0	-139	86,987		86,987	0	0	5,287		5,287	92,272
2017	November	0	-579	86,408		86,408	0	0	5,287		5,287	91,693
2017	December	0	-494	85,914		85,914	0	0	5,287		5,287	91,200

Table 1		Energy Savings										
Year	Month	Net kWh VA						NC				System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2015	January	33,222		867,840		867,840	8,474		19,972		19,972	887,811
2015	February	30,438		898,278		898,278	5,780		25,752		25,752	924,030
2015	March	20,144		918,422		918,422	4,905		30,657		30,657	949,079
2015	April	48,407		966,829		966,829	6,664		37,321		37,321	1,004,150
2015	May	32,985		999,815		999,815	5,884		43,204		43,204	1,043,019
2015	June	31,756		1,031,571		1,031,571	10,017		53,221		53,221	1,084,792
2015	July	30,444		1,062,015		1,062,015	5,351		58,572		58,572	1,120,587
2015	August	28,507		1,090,522		1,090,522	3,180		61,753		61,753	1,152,274
2015	September	29,147		1,119,668		1,119,668	6,296		68,049		68,049	1,187,717
2015	October	30,942		1,150,611		1,150,611	3,245		71,294		71,294	1,221,905
2015	November	29,365		1,179,975		1,179,975	1,930		73,225		73,225	1,253,200
2015	December	30,876		1,210,852		1,210,852	917		74,142		74,142	1,284,994
2016	January	27,617		1,238,469		1,238,469	1,834		75,976		75,976	1,314,445
2016	February	33,781		1,272,250		1,272,250	3,034		79,010		79,010	1,351,260
2016	March	17,517		1,289,766		1,289,766	2,218		81,228		81,228	1,370,994
2016	April	27,538		1,317,305		1,317,305	2,928		84,156		84,156	1,401,461
2016	May	26,420		1,343,724		1,343,724	1,790		85,947		85,947	1,429,671
2016	June	28,094		1,371,819		1,371,819	3,394		89,341		89,341	1,461,159
2016	July	20,475		1,392,294		1,392,294	1,999		91,340	1,999	91,340	1,483,634
2016	August	27,325		1,419,619		1,419,619	2,171		93,510	4,170	93,510	1,513,129
2016	September	19,504		1,439,124		1,439,124	958		94,468	5,127	94,468	1,533,591
2016	October	23,992		1,463,116		1,463,116	999		95,467	6,126	95,467	1,558,582
2016	November	33,819		1,496,934		1,496,934	1,420		96,887	7,546	96,887	1,593,821
2016	December	13,541		1,510,476		1,510,476	1,214		98,101		8,761	1,608,577
2017	January	33,009		1,543,485		1,543,485	1,511		99,613		10,272	1,643,097
2017	February	3,608		1,547,092		1,547,092	527		100,140		10,799	1,647,232
2017	March	568		1,547,660		1,547,660	341		100,481		11,140	1,648,141
2017	April			1,547,660		1,547,660			100,481		11,140	1,648,141
2017	May			1,547,660		1,547,660			100,481		11,140	1,648,141
2017	June			1,547,660		1,547,660			100,481		11,140	1,648,141
2017	July			1,547,660		1,547,660			100,481		11,140	1,648,141
2017	August			1,547,660		1,547,660			100,481		11,140	1,648,141
2017	September			1,547,660		1,547,660			100,481		11,140	1,648,141
2017	October		-3,183	1,544,477		1,544,477			100,481		11,140	1,644,958
2017	November		-12,964	1,531,514		1,531,514			100,481		11,140	1,631,994
2017	December		-10,991	1,520,522		1,520,522			100,481		11,140	1,621,003

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW		VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired					VA	NC	System	VA	NC	System
2015	January	301		7,689		7,689	75		146		146	7,835	20	19	20	0.18	0.14	0.18
2015	February	273		7,961		7,961	52		198		198	8,159	20	19	20	0.18	0.15	0.17
2015	March	181		8,142		8,142	43		241		241	8,383	20	19	20	0.17	0.15	0.17
2015	April	430		8,573		8,573	59		300		300	8,873	19	19	19	0.17	0.15	0.17
2015	May	296		8,868		8,868	53		353		353	9,221	19	19	19	0.17	0.16	0.17
2015	June	284		9,152		9,152	89		441		441	9,593	19	19	19	0.17	0.16	0.17
2015	July	266		9,418		9,418	47		489		489	9,906	19	19	19	0.17	0.16	0.17
2015	August	251		9,669		9,669	29		517		517	10,186	19	19	19	0.17	0.16	0.17
2015	September	260		9,928		9,928	56		574		574	10,502	19	19	19	0.17	0.16	0.17
2015	October	274		10,202		10,202	29		603		603	10,805	19	19	19	0.16	0.16	0.16
2015	November	258		10,460		10,460	17		620		620	11,080	19	19	19	0.16	0.16	0.16
2015	December	271		10,731		10,731	8		628		628	11,359	18	19	18	0.16	0.16	0.16
2016	January	245		10,976		10,976	16		644		644	11,620	18	19	18	0.16	0.16	0.16
2016	February	300		11,275		11,275	27		671		671	11,947	18	19	18	0.16	0.16	0.16
2016	March	156		11,431		11,431	20		691		691	12,122	18	19	18	0.16	0.16	0.16
2016	April	244		11,675		11,675	26		717		717	12,392	18	19	18	0.16	0.16	0.16
2016	May	237		11,912		11,912	16		734		734	12,645	18	19	18	0.16	0.16	0.16
2016	June	253		12,165		12,165	31		764		764	12,929	18	19	18	0.16	0.16	0.16
2016	July	183		12,348		12,348	18		782	18	782	13,130	18	19	18	0.16	0.16	0.16
2016	August	240		12,588		12,588	19		802	37	802	13,389	18	19	18	0.16	0.16	0.16
2016	September	174		12,762		12,762	9		810	46	810	13,572	18	19	18	0.16	0.16	0.16
2016	October	216		12,978		12,978	9		819	55	819	13,797	18	19	18	0.16	0.16	0.16
2016	November	307		13,286		13,286	13		832	68	832	14,118	18	19	18	0.16	0.16	0.16
2016	December	120		13,406		13,406	11		843		843	14,249	18	19	18	0.16	0.16	0.16
2017	January	309		13,715		13,715	14		857		857	14,572	18	19	18	0.16	0.16	0.16
2017	February	34		13,749		13,749	5		862		862	14,610	18	19	18	0.16	0.16	0.16
2017	March	5		13,754		13,754	3		865		865	14,619	18	19	18	0.16	0.16	0.16
2017	April			13,754		13,754			865		865	14,619	18	19	18	0.16	0.16	0.16
2017	May			13,754		13,754			865		865	14,619	18	19	18	0.16	0.16	0.16
2017	June			13,754		13,754			865		865	14,619	18	19	18	0.16	0.16	0.16
2017	July			13,754		13,754			865		865	14,619	18	19	18	0.16	0.16	0.16
2017	August			13,754		13,754			865		865	14,619	18	19	18	0.16	0.16	0.16
2017	September			13,754		13,754			865		865	14,619	18	19	18	0.16	0.16	0.16
2017	October		-26	13,728		13,728			865		865	14,593	18	19	18	0.16	0.16	0.16
2017	November		-106	13,621		13,621			865		865	14,486	18	19	18	0.16	0.16	0.16
2017	December		-90	13,531		13,531			865		865	14,396	18	19	18	0.16	0.16	0.16

Table 1		Participation											
Year	Month	Program Participants										System Cum for IRP	
		VA					NC						
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D		
2018	January	0	-536	85,378		85,378	0	0	5,287		584	90,665	
2018	February	0	-2,124	83,254		83,254	0	0	5,287		584	88,541	
2018	March	0	-2,194	81,060		81,060	0	0	5,287		584	86,347	
2018	April	0	-876	80,184		80,184	0	0	5,287		584	85,471	
2018	May	0	-1,779	78,405		78,405	0	0	5,287		584	83,692	
2018	June	0	-1,236	77,169		77,169	0	0	5,287		584	82,456	
2018	July	0	-888	76,281		76,281	0	0	5,287		584	81,568	
2018	August	0	-570	75,711		75,711	0	0	5,287		584	80,998	
2018	September	0	-1,275	74,436		74,436	0	0	5,287		584	79,723	
2018	October	0	-1,408	73,028		73,028	0	0	5,287		584	78,315	
2018	November	0	-1,323	71,705		71,705	0	0	5,287		584	76,992	
2018	December	0	-1,424	70,281		70,281	0	0	5,287		584	75,568	
2019	January	0	-995	69,286		69,286	0	0	5,287		584	74,573	
2019	February	0	-1,178	68,108		68,108	0	0	5,287		584	73,395	
2019	March	0	-949	67,159		67,159	0	0	5,287		584	72,446	
2019	April	0	-1,865	65,294		65,294	0	0	5,287		584	70,581	
2019	May	0	-2,465	62,829		62,829	0	-3	5,284		581	68,113	
2019	June	0	-3,699	59,130		59,130	0	-3	5,281		578	64,411	
2019	July	0	-3,427	55,703		55,703	0	-2	5,279	0	576	60,982	
2019	August	0	-2,727	52,976		52,976	0	-17	5,262	0	559	58,238	
2019	September	0	-2,248	50,728		50,728	0	-14	5,248	0	545	55,976	
2019	October	0	-1,621	49,107		49,107	0	-82	5,166	0	463	54,273	
2019	November	0	-1,833	47,274		47,274	0	-263	4,903	0	-384	52,177	
2019	December	0	-1,680	45,594		45,594	0	-197	4,706		-581	50,300	
2020	January	0	-1,968	43,626		43,626	0	-448	4,258		-1,029	47,884	
2020	February	0	-1,931	41,695		41,695	0	-316	3,942		-1,345	45,637	
2020	March	0	-1,219	40,476		40,476	0	-254	3,688		-1,599	44,164	
2020	April	0	-3,141	37,335		37,335	0	-342	3,346		-1,941	40,681	
2020	May	0	-2,128	35,207		35,207	0	-313	3,033		-2,254	38,240	
2020	June	0	-2,085	33,122		33,122	0	-523	2,510		-2,777	35,632	
2020	July	0	-2,133	30,989		30,989	0	-282	2,228		-3,059	33,217	
2020	August	0	-1,931	29,058		29,058	0	-171	2,057		-3,230	31,115	
2020	September	0	-1,873	27,185		27,185	0	-336	1,721		-3,566	28,906	
2020	October	0	-1,900	25,285		25,285	0	-169	1,552		-3,735	26,837	
2020	November	0	-1,866	23,419		23,419	0	-102	1,450		-3,837	24,869	
2020	December	0	-1,939	21,480		21,480	0	-51	1,399		-3,888	22,879	

Table 1		Energy Savings										
Year	Month	Net kWh					NC					System
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2018	January		-12,103	1,508,420		1,508,420			100,481		11,140	1,608,901
2018	February		-47,828	1,460,592		1,460,592			100,481		11,140	1,561,073
2018	March		-48,036	1,412,557		1,412,557			100,481		11,140	1,513,038
2018	April		-19,306	1,393,251		1,393,251			100,481		11,140	1,493,731
2018	May		-38,940	1,354,310		1,354,310			100,481		11,140	1,454,791
2018	June		-27,560	1,326,750		1,326,750			100,481		11,140	1,427,231
2018	July		-19,587	1,307,163		1,307,163			100,481		11,140	1,407,644
2018	August		-12,451	1,294,713		1,294,713			100,481		11,140	1,395,194
2018	September		-27,837	1,266,875		1,266,875			100,481		11,140	1,367,356
2018	October		-30,624	1,236,251		1,236,251			100,481		11,140	1,336,732
2018	November		-28,123	1,208,129		1,208,129			100,481		11,140	1,308,610
2018	December		-29,540	1,178,589		1,178,589			100,481		11,140	1,279,070
2019	January		-18,561	1,160,027		1,160,027			100,481		11,140	1,260,508
2019	February		-22,546	1,137,481		1,137,481			100,481		11,140	1,237,962
2019	March		-17,744	1,119,737		1,119,737			100,481		11,140	1,220,218
2019	April		-33,845	1,085,892		1,085,892			100,481		11,140	1,186,373
2019	May		-46,981	1,038,911		1,038,911		-102	100,379		11,039	1,139,290
2019	June		-67,720	971,191		971,191		-90	100,289		10,948	1,071,479
2019	July		-65,240	905,950		905,950		-41	100,247	0	10,907	1,006,198
2019	August		-50,580	855,370		855,370		-337	99,910	0	10,570	955,280
2019	September		-40,381	814,989		814,989		-268	99,642	0	10,302	914,632
2019	October		-31,695	783,294		783,294		-1,573	98,069	0	8,729	881,363
2019	November		-37,163	746,131		746,131		-5,047	93,022	0	-7,459	839,153
2019	December		-33,089	713,042		713,042		-4,039	88,983		-11,498	802,025
2020	January		-33,222	679,820		679,820		-8,474	80,509		-19,972	760,330
2020	February		-30,438	649,382		649,382		-5,780	74,729		-25,752	724,111
2020	March		-20,144	629,238		629,238		-4,905	69,824		-30,657	699,062
2020	April		-48,407	580,831		580,831		-6,664	63,160		-37,321	643,991
2020	May		-32,985	547,846		547,846		-5,884	57,277		-43,204	605,122
2020	June		-31,756	516,089		516,089		-10,017	47,260		-53,221	563,349
2020	July		-30,444	485,645		485,645		-5,351	41,908		-58,572	527,553
2020	August		-28,507	457,138		457,138		-3,180	38,728		-61,753	495,867
2020	September		-29,147	427,992		427,992		-6,296	32,432		-68,049	460,423
2020	October		-30,942	397,050		397,050		-3,245	29,186		-71,294	426,236
2020	November		-29,365	367,685		367,685		-1,930	27,256		-73,225	394,941
2020	December		-30,876	336,808		336,808		-917	26,339		-74,142	363,147

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA	VA	VA	VA	VA	NC	NC	NC	NC	NC	System	VA	NC	System	VA	NC	System
		Monthly New	Monthly Retired	Cum. for IRP (New+Retired)	Rate Reset Adj.	Cum. for Net Lost Revenue (NLR)	Monthly New	Monthly Retired	Cum. for IRP (New + Retired)	Rate Reset Adj.	Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	Cum. for IRP						
2018	January		-99	13,432		13,432			865		101	14,297	18	19	18	0.16	0.16	0.16
2018	February		-392	13,040		13,040			865		101	13,905	18	19	18	0.16	0.16	0.16
2018	March		-395	12,645		12,645			865		101	13,509	17	19	18	0.16	0.16	0.16
2018	April		-160	12,485		12,485			865		101	13,350	17	19	17	0.16	0.16	0.16
2018	May		-322	12,163		12,163			865		101	13,027	17	19	17	0.16	0.16	0.16
2018	June		-229	11,934		11,934			865		101	12,799	17	19	17	0.15	0.16	0.16
2018	July		-161	11,773		11,773			865		101	12,632	17	19	17	0.15	0.16	0.15
2018	August		-102	11,670		11,670			865		101	12,535	17	19	17	0.15	0.16	0.15
2018	September		-228	11,442		11,442			865		101	12,307	17	19	17	0.15	0.16	0.15
2018	October		-252	11,190		11,190			865		101	12,055	17	19	17	0.15	0.16	0.15
2018	November		-231	10,959		10,959			865		101	11,824	17	19	17	0.15	0.16	0.15
2018	December		-243	10,716		10,716			865		101	11,580	17	19	17	0.15	0.16	0.15
2019	January		-170	10,546		10,546			865		101	11,411	17	19	17	0.15	0.16	0.15
2019	February		-207	10,339		10,339			865		101	11,203	17	19	17	0.15	0.16	0.15
2019	March		-163	10,176		10,176			865		101	11,041	17	19	17	0.15	0.16	0.15
2019	April		-311	9,865		9,865			865		101	10,730	17	19	17	0.15	0.16	0.15
2019	May		-437	9,428		9,428		-1	864		100	10,293	17	19	17	0.15	0.16	0.15
2019	June		-626	8,803		8,803		-1	864		100	9,666	16	19	17	0.15	0.16	0.15
2019	July		-610	8,193		8,193		0	863	0	99	9,056	16	19	16	0.15	0.16	0.15
2019	August		-468	7,725		7,725		-2	861	0	97	8,586	16	19	16	0.15	0.16	0.15
2019	September		-375	7,350		7,350		-2	860	0	96	8,210	16	19	16	0.14	0.16	0.15
2019	October		-304	7,046		7,046		-10	850	0	86	7,896	16	19	16	0.14	0.16	0.15
2019	November		-362	6,684		6,684		-32	818	0	-47	7,501	16	19	16	0.14	0.17	0.14
2019	December		-317	6,366		6,366		-24	794		-71	7,160	16	19	16	0.14	0.17	0.14
2020	January		-301	6,065		6,065		-75	719		-146	6,784	16	19	16	0.14	0.17	0.14
2020	February		-273	5,793		5,793		-52	667		-198	6,460	16	19	16	0.14	0.17	0.14
2020	March		-181	5,612		5,612		-43	624		-241	6,235	16	19	16	0.14	0.17	0.14
2020	April		-430	5,181		5,181		-59	565		-300	5,746	16	19	16	0.14	0.17	0.14
2020	May		-296	4,886		4,886		-53	512		-353	5,398	16	19	16	0.14	0.17	0.14
2020	June		-284	4,602		4,602		-89	423		-441	5,025	16	19	16	0.14	0.17	0.14
2020	July		-266	4,336		4,336		-47	376		-489	4,712	16	19	16	0.14	0.17	0.14
2020	August		-251	4,085		4,085		-29	347		-517	4,439	16	19	16	0.14	0.17	0.14
2020	September		-260	3,826		3,826		-56	291		-574	4,117	16	19	16	0.14	0.17	0.14
2020	October		-274	3,552		3,552		-29	262		-603	3,814	16	19	16	0.14	0.17	0.14
2020	November		-258	3,294		3,294		-17	245		-620	3,539	16	19	16	0.14	0.17	0.14
2020	December		-271	3,023		3,023		-8	236		-628	3,260	16	19	16	0.14	0.17	0.14

Program Participants										
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012		1,212		1,212			-		-	1,212
2013		15,633		15,633			-		-	15,633
2014		24,687		24,687			581		581	25,268
2015		24,114		24,114			3,307		3,307	27,421
2016		19,008		19,008			1,274		459	20,282
2017		1,260		1,260			125		125	1,385
2018		-15,633		-15,633			-		-	-15,633
2019		-24,687		-24,687			-581		-581	-25,268
2020		-24,114		-24,114			-3,307		-3,307	-27,421

Program Participants										
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012		1,212		1,212			-		-	1,212
2013		15,633		15,633			-		-	15,633
2014		24,687		24,687			581		581	25,268
2015		24,114		24,114			3,307		3,307	27,421
2016		19,008		19,008			1,274		459	20,282
2017		1,260		1,260			125		125	1,385
2018		-15,633		-15,633			-		-	-15,633
2019		-24,687		-24,687			-581		-581	-25,268
2020		-24,114		-24,114			-3,307		-3,307	-27,421

Program Participants										
		VA PPI					NC PPI			System
2012		1,212					-			1,212
2013		16,845					-			16,845
2014		41,532					581			42,113
2015		64,434					3,888			68,322
2016		67,809					5,162			72,971
2017		44,382					4,706			49,088
2018		4,635					1,399			6,034
2019		-39,060					-456			-39,516
2020		-64,434					-3,888			-68,322

Program Participants										
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012		1,212		1,212			-		-	1,212
2013		16,845		16,845			-		-	16,845
2014		41,532		41,532			581		581	42,113
2015		65,646		65,646			3,888		3,888	69,534
2016		84,654		84,654			5,162		459	89,816
2017		85,914		85,914			5,287		584	91,201
2018		70,281		70,281			5,287		584	75,568
2019		45,594		45,594			4,706		-581	50,300
2020		21,480		21,480			1,399		-3,888	22,879

Program Participants										
		VA IRP					NC IRP			System IRP
2012		1,212					-			1,212
2013		16,845					-			16,845
2014		41,532					581			42,113
2015		65,646					3,888			69,534
2016		84,654					5,162			89,816
2017		85,914					5,287			91,201
2018		85,914					5,287			91,201
2019		85,914					5,287			91,201
2020		85,914					5,287			91,201
2021		85,914					5,287			91,201
2022		85,914					5,287			91,201
2023		85,914					5,287			91,201

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			46,467		46,467			-		-	46,467
2013			2,298,669		2,298,669			-		-	2,298,669
2014			2,811,050		2,811,050			23,304		23,304	2,834,355
2015			2,480,982		2,480,982			479,185		479,185	2,960,167
2016			2,024,673		2,024,673			175,724		145,327	2,200,396
2017			395,002		395,002			27,347		27,347	422,349
2018			-2,298,669		-2,298,669			-		-	-2,298,669
2019			-2,811,050		-2,811,050			-23,304		-23,304	-2,834,355
2020			-2,480,982		-2,480,982			-479,185		-479,185	-2,960,167

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			325,651		325,651			-		-	325,651
2013			4,103,204		4,103,204			-		-	4,103,204
2014			5,586,560		5,586,560			137,977		137,977	5,724,537
2015			4,514,807		4,514,807			751,729		751,729	5,266,536
2016			3,595,486		3,595,486			287,507		105,127	3,882,994
2017			120,561		120,561			28,556		28,556	149,117
2018			-4,103,204		-4,103,204			-		-	-4,103,204
2019			-5,586,560		-5,586,560			-137,977		-137,977	-5,724,537
2020			-4,514,807		-4,514,807			-751,729		-751,729	-5,266,536

	Net Energy (kWh) for PPI										
			VA PPI					NC PPI			System
2012			46,467					-			46,467
2013			2,624,320					-			2,624,320
2014			7,239,905					23,304			7,263,210
2015			12,170,746					617,162			12,787,908
2016			12,126,040					1,065,430			13,191,470
2017			8,505,296					1,066,583			9,571,879
2018			1,417,378					316,064			1,733,442
2019			-6,793,693					5,252			-6,788,441
2020			-12,170,746					-617,162			-12,787,908

	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			46,467		46,467			0		0	46,467
2013			2,624,320		2,624,320			0		0	2,624,320
2014			7,239,905		7,239,905			23,304		23,304	7,263,210
2015			12,496,397		12,496,397			617,162		617,162	13,113,559
2016			16,554,895		16,554,895			1,065,430		886,749	17,620,325
2017			18,520,711		18,520,711			1,204,561		132,474	19,725,271
2018			15,947,600		15,947,600			1,205,770		133,683	17,153,370
2019			11,332,015		11,332,015			1,182,465		88,098	12,514,481
2020			6,075,524		6,075,524			588,607		0	6,664,131

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA IRP					NC IRP			System IRP
2012			46,467					-			46,467
2013			2,670,787					-			2,670,787
2014			9,910,692					23,304			9,933,997
2015			22,407,089					640,467			23,047,556
2016			38,961,984					1,705,897			40,667,880
2017			57,482,694					2,910,457			60,393,152
2018			73,430,295					4,116,227			77,546,522
2019			84,762,310					5,298,693			90,061,003
2020			90,837,834					5,887,300			96,725,134
2021			92,854,860					6,027,640			98,882,500
2022			92,859,603					6,028,849			98,888,452
2023			92,859,603					6,028,849			98,888,452

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012		223		223			-		-	223	38	-	38	0.18	-	0.18
2013		2,816		2,816			-		-	2,816	147	-	147	0.18	-	0.18
2014		4,349		4,349			71		71	4,420	114	40	112	0.18	0.12	0.17
2015		3,343		3,343			557		557	3,900	103	145	108	0.14	0.17	0.14
2016		2,675		2,675			214		79	2,890	107	138	108	0.14	0.17	0.14
2017		125		125			22		22	147	313	219	305	0.10	0.18	0.11
2018		-2,816		-2,816			-		-	-2,816	147	-	147	0.18	-	0.18
2019		-4,349		-4,349			-71		-71	-4,420	114	40	112	0.18	0.12	0.17
2020		-3,343		-3,343			-557		-557	-3,900	103	145	108	0.14	0.17	0.14

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012		223		223			-		-	223	269	-	269	0.18	-	0.18
2013		2,816		2,816			-		-	2,816	262	-	262	0.18	-	0.18
2014		4,349		4,349			71		71	4,420	226	237	227	0.18	0.12	0.17
2015		3,343		3,343			557		557	3,900	187	227	192	0.14	0.17	0.14
2016		2,675		2,675			214		79	2,890	189	226	191	0.14	0.17	0.14
2017		125		125			22		22	147	96	228	108	0.10	0.18	0.11
2018		-2,816		-2,816			-		-	-2,816	262	-	262	0.18	-	0.18
2019		-4,349		-4,349			-71		-71	-4,420	226	237	227	0.18	0.12	0.17
2020		-3,343		-3,343			-557		-557	-3,900	187	227	192	0.14	0.17	0.14

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2012		223					-		-	223						
2013		3,038					-		-	3,038						
2014		7,387					71		71	7,459		40			0.12	
2015		10,508					628		628	11,136		159			0.16	
2016		10,368					843		843	11,210		206			0.16	
2017		6,144					794		794	6,937		227			0.17	
2018		-15					236		236	221		226			0.17	
2019		-7,039					-49		-49	-7,089		-12			0.11	
2020		-10,508					-628		-628	-11,136		159			0.16	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012		223		223			-		-	223	38	-	38	0.18	-	0.18
2013		3,038		3,038			-		-	3,038	156	-	156	0.18	-	0.18
2014		7,387		7,387			71		71	7,459	174	40	172	0.18	0.12	0.18
2015		10,731		10,731			628		628	11,359	190	159	189	0.16	0.16	0.16
2016		13,406		13,406			843		79	14,249	196	206	196	0.16	0.16	0.16
2017		13,531		13,531			865		101	14,396	216	228	216	0.16	0.16	0.16
2018		10,716		10,716			865		101	11,580	227	228	227	0.15	0.16	0.15
2019		6,366		6,366			794		-71	7,160	249	251	249	0.14	0.17	0.14
2020		3,023		3,023			236		-628	3,260	283	421	291	0.14	0.17	0.14

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
		VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2012		223					-		-	223	38	-	38	0.18	-	0.18
2013		3,038					-		-	3,038	159	-	159	0.18	-	0.18
2014		7,387					71		71	7,459	239	40	236	0.18	0.12	0.18
2015		10,731					628		628	11,359	341	165	331	0.16	0.16	0.16
2016		13,406					843		79	14,249	460	330	453	0.16	0.16	0.16
2017		13,531					865		101	14,396	660	550	654	0.16	0.16	0.16
2018		13,531					865		101	14,396	843	779	839	0.16	0.16	0.16
2019		13,531					865		101	14,396	973	1,002	975	0.16	0.16	0.16
2020		13,531					865		101	14,396	1,043	1,114	1,047	0.16	0.16	0.16
2021		13,531					865		101	14,396	1,066	1,140	1,070	0.16	0.16	0.16
2022		13,531					865		101	14,396	1,066	1,140	1,070	0.16	0.16	0.16
2023		13,531					865		101	14,396	1,066	1,140	1,070	0.16	0.16	0.16

Program:	Residential Heat Pump Upgrade
DSM Phase:	2
Type:	
Program Life in years	
Starting from 2012:	15.0

Table 1		Participation										
Year	Month	Program Participants										System System Cum for IRP
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G		
2012	January	0	0	0		0	0	0		0	0	
2012	February	0	0	0		0	0	0		0	0	
2012	March	0	0	0		0	0	0		0	0	
2012	April	0	0	0		0	0	0		0	0	
2012	May	0	0	0		0	0	0		0	0	
2012	June	0	0	0		0	0	0		0	0	
2012	July	0	0	0		0	0	0		0	0	
2012	August	0	0	0		0	0	0		0	0	
2012	September	0	0	0		0	0	0		0	0	
2012	October	16	0	16		16	0	0		0	16	
2012	November	33	0	49		49	0	0		0	49	
2012	December	37	0	86		86	0	0		0	86	
2013	January	34	0	120		120	0	0		0	120	
2013	February	165	0	285		285	0	0		0	285	
2013	March	202	0	487		487	0	0		0	487	
2013	April	149	0	636		636	0	0		0	636	
2013	May	261	0	897		897	0	0		0	897	
2013	June	309	0	1,206		1,206	0	0		0	1,206	
2013	July	465	0	1,671		1,671	0	0		0	1,671	
2013	August	343	0	2,014		2,014	0	0		0	2,014	
2013	September	415	0	2,429		2,429	0	0		0	2,429	
2013	October	452	0	2,881		2,881	0	0		0	2,881	
2013	November	176	0	3,057		3,057	0	0		0	3,057	
2013	December	324	0	3,381		3,381	0	0		0	3,381	
2014	January	284	0	3,665		3,665	0	0		0	3,665	
2014	February	280	0	3,945		3,945	0	0		0	3,945	
2014	March	254	0	4,199		4,199	0	0		0	4,199	
2014	April	298	0	4,497		4,497	0	0		0	4,497	
2014	May	241	0	4,738		4,738	0	0		0	4,738	
2014	June	322	0	5,060		5,060	1	0	1		5,061	
2014	July	586	0	5,646		5,646	0	0	1		5,647	
2014	August	334	0	5,980		5,980	4	0	5		5,985	
2014	September	418	0	6,398		6,398	5	0	10		6,408	
2014	October	243	0	6,641		6,641	9	0	19		6,660	
2014	November	169	0	6,810		6,810	12	0	31		6,841	
2014	December	219	0	7,029		7,029	13	0	44		7,073	

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2012	January			0		0			0		0	0
2012	February			0		0			0		0	0
2012	March			0		0			0		0	0
2012	April			0		0			0		0	0
2012	May			0		0			0		0	0
2012	June			0		0			0		0	0
2012	July			0		0			0		0	0
2012	August			0		0			0		0	0
2012	September			0		0			0		0	0
2012	October	3,099		3,099		3,099			0		0	3,099
2012	November	6,191		9,290		9,290			0		0	9,290
2012	December	5,784		15,074		15,074			0		0	15,074
2013	January	4,407		19,481		19,481			0		0	19,481
2013	February	26,135		45,615		45,615			0		0	45,615
2013	March	31,256		76,871		76,871			0		0	76,871
2013	April	21,926		98,797		98,797			0		0	98,797
2013	May	40,740		139,537		139,537			0		0	139,537
2013	June	47,820		187,357		187,357			0		0	187,357
2013	July	72,929		260,286		260,286			0		0	260,286
2013	August	51,353		311,639		311,639			0		0	311,639
2013	September	63,936		375,575		375,575			0		0	375,575
2013	October	63,368		438,943		438,943			0		0	438,943
2013	November	28,145		467,088		467,088			0		0	467,088
2013	December	52,004		519,092		519,092			0		0	519,092
2014	January	39,691		558,782		558,782			0		0	558,782
2014	February	36,403		595,185		595,185			0		0	595,185
2014	March	35,279		630,464		630,464			0		0	630,464
2014	April	41,917		672,381		672,381			0		0	672,381
2014	May	31,488		703,869		703,869			0		0	703,869
2014	June	44,686		748,555		748,555	299		299		299	748,854
2014	July	57,993		806,548		806,548			299		299	806,847
2014	August	34,782		841,330		841,330	487		787		787	842,116
2014	September	41,890		883,220		883,220	759		1,546		1,546	884,766
2014	October	25,347		908,567		908,567	696		2,242		2,242	910,809
2014	November	16,360		924,927		924,927	1,357		3,598		3,598	928,525
2014	December	22,025		946,952		946,952	1,877		5,476		5,476	952,427

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2012	January			0		0			0		0	0			-			-
2012	February			0		0			0		0	0			-			-
2012	March			0		0			0		0	0			-			-
2012	April			0		0			0		0	0			-			-
2012	May			0		0			0		0	0			-			-
2012	June			0		0			0		0	0			-			-
2012	July			0		0			0		0	0			-			-
2012	August			0		0			0		0	0			-			-
2012	September			0		0			0		0	0			-			-
2012	October	7		7		7			0		0	0	7	194		194	0.43	0.43
2012	November	16		23		23			0		0	0	23	190		190	0.47	0.47
2012	December	19		42		42			0		0	0	42	175		175	0.49	0.49
2013	January	17		59		59			0		0	0	59	162		162	0.49	0.49
2013	February	88		147		147			0		0	0	147	160		160	0.51	0.51
2013	March	107		253		253			0		0	0	253	158		158	0.52	0.52
2013	April	80		333		333			0		0	0	333	155		155	0.52	0.52
2013	May	145		478		478			0		0	0	478	156		156	0.53	0.53
2013	June	165		644		644			0		0	0	644	155		155	0.53	0.53
2013	July	232		875		875			0		0	0	875	156		156	0.52	0.52
2013	August	171		1,047		1,047			0		0	0	1,047	155		155	0.52	0.52
2013	September	210		1,257		1,257			0		0	0	1,257	155		155	0.52	0.52
2013	October	219		1,475		1,475			0		0	0	1,475	152		152	0.51	0.51
2013	November	82		1,558		1,558			0		0	0	1,558	153		153	0.51	0.51
2013	December	175		1,733		1,733			0		0	0	1,733	154		154	0.51	0.51
2014	January	153		1,886		1,886			0		0	0	1,886	152		152	0.51	0.51
2014	February	136		2,021		2,021			0		0	0	2,021	151		151	0.51	0.51
2014	March	136		2,157		2,157			0		0	0	2,157	150		150	0.51	0.51
2014	April	155		2,312		2,312			0		0	0	2,312	150		150	0.51	0.51
2014	May	126		2,438		2,438			0		0	0	2,438	149		149	0.51	0.51
2014	June	171		2,609		2,609	1		1		1	1	2,609	148	299	148	0.52	0.59
2014	July	176		2,784		2,784		1	1		1	1	2,785	143	299	143	0.49	0.59
2014	August	112		2,896		2,896	1		1		1	1	2,897	141	157	141	0.48	0.27
2014	September	134		3,030		3,030	0		2		2	2	3,032	138	155	138	0.47	0.18
2014	October	94		3,124		3,124	3		4		4	4	3,129	137	118	137	0.47	0.24
2014	November	62		3,186		3,186	1		6		6	6	3,192	136	116	136	0.47	0.19
2014	December	78		3,264		3,264	8		13		13	13	3,277	135	124	135	0.46	0.46

Table 1		Participation											
Year	Month	Program Participants											System Cum for IRP
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D		
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]					
2015	January	301	0	7,330		7,330	34	0	78		78	7,408	
2015	February	327	0	7,657		7,657	15	0	93		93	7,750	
2015	March	258	0	7,915		7,915	20	0	113		113	8,028	
2015	April	335	0	8,250		8,250	58	0	171		171	8,421	
2015	May	258	0	8,508		8,508	57	0	228		228	8,736	
2015	June	694	0	9,202		9,202	99	0	327		327	9,529	
2015	July	459	0	9,661		9,661	83	0	410		410	10,071	
2015	August	445	0	10,106		10,106	48	0	458		458	10,564	
2015	September	412	0	10,518		10,518	103	0	561		561	11,079	
2015	October	322	0	10,840		10,840	43	0	604		604	11,444	
2015	November	289	0	11,129		11,129	29	0	633		633	11,762	
2015	December	110	0	11,239		11,239	8	0	641		641	11,880	
2016	January	421	0	11,660		11,660	23	0	664		664	12,324	
2016	February	444	0	12,104		12,104	72	0	736		736	12,840	
2016	March	415	0	12,519		12,519	48	0	784		784	13,303	
2016	April	418	0	12,937		12,937	65	0	849		849	13,786	
2016	May	384	0	13,321		13,321	44	0	893		893	14,214	
2016	June	499	0	13,820		13,820	88	0	981		981	14,801	
2016	July	598	0	14,418		14,418	70	0	1,051	70	1,051	15,469	
2016	August	729	0	15,147		15,147	105	0	1,156	175	1,156	16,303	
2016	September	414	0	15,561		15,561	37	0	1,193	212	1,193	16,754	
2016	October	392	0	15,953		15,953	57	0	1,250	269	1,250	17,203	
2016	November	470	0	16,423		16,423	46	0	1,296	315	1,296	17,719	
2016	December	212	0	16,635		16,635	10	0	1,306		1,306	17,941	
2017	January	828	0	17,463		17,463	76	0	1,382		1,382	18,845	
2017	February	235	0	17,698		17,698	36	0	1,418		1,418	19,116	
2017	March	86	0	17,784		17,784	6	0	1,424		1,424	19,208	
2017	April	0	0	17,784		17,784	0	0	1,424		1,424	19,208	
2017	May	0	0	17,784		17,784	0	0	1,424		1,424	19,208	
2017	June	0	0	17,784		17,784	0	0	1,424		1,424	19,208	
2017	July	0	0	17,784		17,784	0	0	1,424		1,424	19,208	
2017	August	0	0	17,784		17,784	0	0	1,424		1,424	19,208	
2017	September	0	0	17,784		17,784	0	0	1,424		1,424	19,208	
2017	October	0	0	17,784		17,784	0	0	1,424		1,424	19,208	
2017	November	0	0	17,784		17,784	0	0	1,424		1,424	19,208	
2017	December	0	0	17,784		17,784	0	0	1,424		1,424	19,208	

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2015	January	5,716		952,668		952,668	707		6,182		6,182	958,850
2015	February	6,160		958,827		958,827	1,149		7,331		7,331	966,159
2015	March	4,449		963,277		963,277	150		7,482		7,482	970,759
2015	April	5,000		968,277		968,277	925		8,407		8,407	976,683
2015	May	4,801		973,078		973,078	878		9,285		9,285	982,363
2015	June	11,294		984,372		984,372	1,042		10,327		10,327	994,699
2015	July	7,925		992,296		992,296	890		11,217		11,217	1,003,513
2015	August	6,761		999,057		999,057	417		11,634		11,634	1,010,692
2015	September	6,411		1,005,468		1,005,468	1,061		12,695		12,695	1,018,164
2015	October	4,756		1,010,224		1,010,224	579		13,275		13,275	1,023,499
2015	November	4,992		1,015,216		1,015,216	346		13,621		13,621	1,028,837
2015	December	2,109		1,017,326		1,017,326	108		13,729		13,729	1,031,055
2016	January	7,829		1,025,155		1,025,155	287		14,016		14,016	1,039,171
2016	February	7,946		1,033,101		1,033,101	1,264		15,280		15,280	1,048,381
2016	March	6,004		1,039,105		1,039,105	542		15,822		15,822	1,054,927
2016	April	6,292		1,045,397		1,045,397	608		16,430		16,430	1,061,827
2016	May	6,627		1,052,024		1,052,024	585		17,015		17,015	1,069,039
2016	June	8,042		1,060,066		1,060,066	1,457		18,472		18,472	1,078,538
2016	July	9,708		1,069,774		1,069,774	764		19,236		19,236	1,089,010
2016	August	11,866		1,081,640		1,081,640	1,373		20,608	764	21,362	1,102,248
2016	September	7,301		1,088,940		1,088,940	484		21,093	2,136	23,229	1,110,033
2016	October	6,314		1,095,254		1,095,254	759		21,852	2,621	24,473	1,117,106
2016	November	8,677		1,103,931		1,103,931	1,018		22,870	3,379	26,249	1,126,801
2016	December	3,342		1,107,273		1,107,273	148		23,018	4,398	27,416	1,130,291
2017	January	11,803		1,119,076		1,119,076	1,231		24,249		24,249	1,143,325
2017	February	3,362		1,122,438		1,122,438	469		24,718		24,718	1,147,156
2017	March	1,037		1,123,475		1,123,475	146		24,864		24,864	1,148,339
2017	April			1,123,475		1,123,475			24,864		24,864	1,148,339
2017	May			1,123,475		1,123,475			24,864		24,864	1,148,339
2017	June			1,123,475		1,123,475			24,864		24,864	1,148,339
2017	July			1,123,475		1,123,475			24,864		24,864	1,148,339
2017	August			1,123,475		1,123,475			24,864		24,864	1,148,339
2017	September			1,123,475		1,123,475			24,864		24,864	1,148,339
2017	October			1,123,475		1,123,475			24,864		24,864	1,148,339
2017	November			1,123,475		1,123,475			24,864		24,864	1,148,339
2017	December			1,123,475		1,123,475			24,864		24,864	1,148,339

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System			VA		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2015	January	15		3,279		3,279	2		16		16	3,295	130	79	129	0.45	0.20	0.44
2015	February	14		3,293		3,293	2		18		18	3,311	125	79	125	0.43	0.19	0.43
2015	March	13		3,306		3,306	1		18		18	3,324	122	66	121	0.42	0.16	0.41
2015	April	14		3,320		3,320	2		20		20	3,341	117	49	116	0.40	0.12	0.40
2015	May	14		3,334		3,334	2		23		23	3,357	114	41	112	0.39	0.10	0.38
2015	June	30		3,364		3,364	3		26		26	3,390	107	32	104	0.37	0.08	0.36
2015	July	19		3,384		3,384	3		29		29	3,412	103	27	100	0.35	0.07	0.34
2015	August	19		3,402		3,402	1		30		30	3,432	99	25	96	0.34	0.07	0.32
2015	September	17		3,419		3,419	3		33		33	3,453	96	23	92	0.33	0.06	0.31
2015	October	13		3,433		3,433	2		35		35	3,468	93	22	89	0.32	0.06	0.30
2015	November	14		3,447		3,447	1		36		36	3,483	91	22	87	0.31	0.06	0.30
2015	December	6		3,453		3,453	0		37		37	3,489	91	21	87	0.31	0.06	0.29
2016	January	19		3,472		3,472	1		37		37	3,509	88	21	84	0.30	0.06	0.28
2016	February	23		3,495		3,495	4		41		41	3,536	85	21	82	0.29	0.06	0.28
2016	March	18		3,513		3,513	2		43		43	3,556	83	20	79	0.28	0.05	0.27
2016	April	19		3,532		3,532	3		46		46	3,578	81	19	77	0.27	0.05	0.26
2016	May	18		3,549		3,549	2		47		47	3,597	79	19	75	0.27	0.05	0.25
2016	June	23		3,573		3,573	4		51		51	3,624	77	19	73	0.26	0.05	0.24
2016	July	28		3,600		3,600	2		54	2	54	3,654	74	18	70	0.25	0.05	0.24
2016	August	33		3,634		3,634	4		58	7	58	3,691	71	18	68	0.24	0.05	0.23
2016	September	19		3,652		3,652	1		59	8	59	3,711	70	18	66	0.23	0.05	0.22
2016	October	19		3,671		3,671	2		61	10	61	3,732	69	17	65	0.23	0.05	0.22
2016	November	24		3,694		3,694	2		63	12	63	3,758	67	18	64	0.22	0.05	0.21
2016	December	9		3,703		3,703	1		64		64	3,768	67	18	63	0.22	0.05	0.21
2017	January	38		3,741		3,741	4		68		68	3,810	64	18	61	0.21	0.05	0.20
2017	February	10		3,751		3,751	1		70		70	3,821	63	17	60	0.21	0.05	0.20
2017	March	4		3,756		3,756	0		70		70	3,825	63	17	60	0.21	0.05	0.20
2017	April			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20
2017	May			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20
2017	June			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20
2017	July			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20
2017	August			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20
2017	September			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20
2017	October			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20
2017	November			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20
2017	December			3,756		3,756			70		70	3,825	63	17	60	0.21	0.05	0.20

Table 1		Participation										
Year	Month	Program Participants										System Cum for IRP
		VA				NC		NC Cum. for IRP		NC Cum. for Net Lost Revenue (NLR)		
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] =Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	
2018	January	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	February	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	March	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	April	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	May	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	June	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	July	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	August	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	September	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	October	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	November	0	0	17,784		17,784	0	0	1,424		443	19,208
2018	December	0	0	17,784		17,784	0	0	1,424		443	19,208
2019	January	0	0	17,784		17,784	0	0	1,424		443	19,208
2019	February	0	0	17,784		17,784	0	0	1,424		443	19,208
2019	March	0	0	17,784		17,784	0	0	1,424		443	19,208
2019	April	0	0	17,784		17,784	0	0	1,424		443	19,208
2019	May	0	0	17,784		17,784	0	0	1,424		443	19,208
2019	June	0	0	17,784		17,784	0	0	1,424		443	19,208
2019	July	0	0	17,784		17,784	0	0	1,424	0	443	19,208
2019	August	0	0	17,784		17,784	0	0	1,424	0	443	19,208
2019	September	0	0	17,784		17,784	0	0	1,424	0	443	19,208
2019	October	0	0	17,784		17,784	0	0	1,424	0	443	19,208
2019	November	0	0	17,784		17,784	0	0	1,424	0	443	19,208
2019	December	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	January	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	February	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	March	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	April	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	May	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	June	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	July	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	August	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	September	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	October	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	November	0	0	17,784		17,784	0	0	1,424		0	19,208
2020	December	0	0	17,784		17,784	0	0	1,424		0	19,208

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2018	January			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	February			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	March			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	April			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	May			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	June			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	July			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	August			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	September			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	October			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	November			1,123,475		1,123,475			24,864		6,392	1,148,339
2018	December			1,123,475		1,123,475			24,864		6,392	1,148,339
2019	January			1,123,475		1,123,475			24,864		6,392	1,148,339
2019	February			1,123,475		1,123,475			24,864		6,392	1,148,339
2019	March			1,123,475		1,123,475			24,864		6,392	1,148,339
2019	April			1,123,475		1,123,475			24,864		6,392	1,148,339
2019	May			1,123,475		1,123,475			24,864		6,392	1,148,339
2019	June			1,123,475		1,123,475			24,864		6,392	1,148,339
2019	July			1,123,475		1,123,475			24,864	0	6,392	1,148,339
2019	August			1,123,475		1,123,475			24,864	0	6,392	1,148,339
2019	September			1,123,475		1,123,475			24,864	0	6,392	1,148,339
2019	October			1,123,475		1,123,475			24,864	0	6,392	1,148,339
2019	November			1,123,475		1,123,475			24,864	0	6,392	1,148,339
2019	December			1,123,475		1,123,475			24,864	0	0	1,148,339
2020	January			1,123,475		1,123,475			24,864		0	1,148,339
2020	February			1,123,475		1,123,475			24,864		0	1,148,339
2020	March			1,123,475		1,123,475			24,864		0	1,148,339
2020	April			1,123,475		1,123,475			24,864		0	1,148,339
2020	May			1,123,475		1,123,475			24,864		0	1,148,339
2020	June			1,123,475		1,123,475			24,864		0	1,148,339
2020	July			1,123,475		1,123,475			24,864		0	1,148,339
2020	August			1,123,475		1,123,475			24,864		0	1,148,339
2020	September			1,123,475		1,123,475			24,864		0	1,148,339
2020	October			1,123,475		1,123,475			24,864		0	1,148,339
2020	November			1,123,475		1,123,475			24,864		0	1,148,339
2020	December			1,123,475		1,123,475			24,864		0	1,148,339

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant			
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC						System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP							
2018	January			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	February			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	March			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	April			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	May			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	June			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	July			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	August			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	September			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	October			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	November			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2018	December			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2019	January			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2019	February			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2019	March			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2019	April			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2019	May			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2019	June			3,756		3,756			70		19	3,825	63	17	60	0.21	0.05	0.20	
2019	July			3,756		3,756			70	0	19	3,825	63	17	60	0.21	0.05	0.20	
2019	August			3,756		3,756			70	0	19	3,825	63	17	60	0.21	0.05	0.20	
2019	September			3,756		3,756			70	0	19	3,825	63	17	60	0.21	0.05	0.20	
2019	October			3,756		3,756			70	0	19	3,825	63	17	60	0.21	0.05	0.20	
2019	November			3,756		3,756			70	0	19	3,825	63	17	60	0.21	0.05	0.20	
2019	December			3,756		3,756			70	0	19	3,825	63	17	60	0.21	0.05	0.20	
2020	January			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	February			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	March			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	April			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	May			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	June			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	July			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	August			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	September			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	October			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	November			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	
2020	December			3,756		3,756			70		0	3,825	63	17	60	0.21	0.05	0.20	

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			86		86			-		-	86
2013			3,295		3,295			-		-	3,295
2014			3,648		3,648			44		44	3,692
2015			4,210		4,210			597		597	4,807
2016			5,396		5,396			665		325	6,061
2017			1,149		1,149			118		118	1,267
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			86		86			-		-	86
2013			3,295		3,295			-		-	3,295
2014			3,648		3,648			44		44	3,692
2015			4,210		4,210			597		597	4,807
2016			5,396		5,396			665		325	6,061
2017			1,149		1,149			118		118	1,267
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants		VA PPI					NC PPI		System
2012			86					-		86
2013			3,381					-		3,381
2014			7,029					44		7,073
2015			11,153					641		11,794
2016			13,254					1,306		14,560
2017			10,755					1,380		12,135
2018			6,545					783		7,328
2019			1,149					118		1,267
2020			-					-		-

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			27,464		27,464			-		-	27,464
2013			2,759,391		2,759,391			-		-	2,759,391
2014			2,991,681		2,991,681			14,247		14,247	3,005,927
2015			476,667		476,667			59,477		59,477	536,145
2016			593,751		593,751			60,962		51,476	654,712
2017			188,994		188,994			21,385		21,385	210,379
2018			-		-			-		-	-
2019			-		-			-		0	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
Net kWh											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			180,889		180,889			-		-	180,889
2013			6,048,211		6,048,211			-		-	6,048,211
2014			5,134,319		5,134,319			65,708		65,708	5,200,027
2015			844,490		844,490			99,042		99,042	943,531
2016			1,079,366		1,079,366			111,469		54,553	1,190,835
2017			194,431		194,431			22,145		22,145	216,577
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Net Energy (kWh) for PPI											
			VA PPI					NC PPI			System
2012			27,464					-			27,464
2013			2,940,280					-			2,940,280
2014			9,220,780					14,247			9,235,027
2015			11,659,197					125,185			11,784,382
2016			6,572,560					225,711			6,798,271
2017			2,112,850					231,895			2,344,745
2018			1,273,797					133,614			1,407,411
2019			194,431					22,145			216,577
2020			-					-			-

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			42		42			-		-	42	319	-	319	0.49	-	0.49
2013			1,691		1,691			-		-	1,691	837	-	837	0.51	-	0.51
2014			1,531		1,531			13		13	1,544	820	324	814	0.42	0.31	0.42
2015			189		189			23		23	212	113	100	112	0.04	0.04	0.04
2016			251		251			28		13	278	110	92	108	0.05	0.04	0.05
2017			52		52			6		6	58	164	181	166	0.05	0.05	0.05
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			42		42			-		-	42	2,103	-	2,103	0.49	-	0.49
2013			1,691		1,691			-		-	1,691	1,836	-	1,836	0.51	-	0.51
2014			1,531		1,531			13		13	1,544	1,407	1,493	1,408	0.42	0.31	0.42
2015			189		189			23		23	212	201	166	196	0.04	0.04	0.04
2016			251		251			28		13	278	200	168	196	0.05	0.04	0.05
2017			52		52			6		6	58	169	188	171	0.05	0.05	0.05
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2012			42					-		42		-			-	
2013			1,733					-		1,733		-			-	
2014			3,264					13		3,277		324			0.31	
2015			3,411					37		3,447		195			0.06	
2016			1,971					64		2,035		173			0.05	
2017			492					56		548		168			0.04	
2018			303					33		336		171			0.04	
2019			52					6		58		188			0.05	
2020			-					-		-		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
	Program Participants									
			VA IRP		VA NLR			NC IRP		System IRP
2012			86		86			-		86
2013			3,381		3,381			-		3,381
2014			7,029		7,029			44		7,073
2015			11,239		11,239			641		11,880
2016			16,635		16,635			1,306		17,941
2017			17,784		17,784			1,424		19,208
2018			17,784		17,784			1,424		19,208
2019			17,784		17,784			1,424		19,208
2020			17,784		17,784			1,424		19,208

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2012			86					-		86
2013			3,381					-		3,381
2014			7,029					44		7,073
2015			11,239					641		11,880
2016			16,635					1,306		17,941
2017			17,784					1,424		19,208
2018			17,784					1,424		19,208
2019			17,784					1,424		19,208
2020			17,784					1,424		19,208
2021			17,784					1,424		19,208
2022			17,784					1,424		19,208
2023			17,784					1,424		19,208
2024			17,784					1,424		19,208
2025			17,784					1,424		19,208
2026			17,784					1,424		19,208
2027			17,784					1,424		19,208
2028			17,784					1,424		19,208
2029			17,784					1,424		19,208
2030			17,784					1,424		19,208
2031			17,784					1,424		19,208
2032			17,784					1,424		19,208
2033			17,784					1,424		19,208

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
	Net Energy (kWh)									
			VA IRP		VA NLR		NC IRP		NC NLR	System IRP
2012			27,464		27,464		0		0	27,464
2013			2,940,280		2,940,280		0		0	2,940,280
2014			9,220,780		9,220,780		14,247		14,247	9,235,027
2015			11,840,086		11,840,086		125,185		125,185	11,965,271
2016			12,801,659		12,801,659		225,711		188,767	13,027,370
2017			13,476,269		13,476,269		297,603		75,938	13,773,872
2018			13,481,706		13,481,706		298,363		76,698	13,780,069
2019			13,481,706		13,481,706		298,363		63,915	13,780,069
2020			13,481,706		13,481,706		298,363		0	13,780,069

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2012			27,464					-		27,464
2013			2,967,744					-		2,967,744
2014			12,188,524					14,247		12,202,771
2015			24,028,610					139,431		24,168,042
2016			36,830,270					365,142		37,195,412
2017			50,306,538					662,745		50,969,284
2018			63,788,244					961,109		64,749,353
2019			77,269,950					1,259,472		78,529,422
2020			90,751,655					1,557,835		92,309,491
2021			104,233,361					1,856,199		106,089,560
2022			117,715,067					2,154,562		119,869,629
2023			131,196,772					2,452,926		133,649,698
2024			144,678,478					2,751,289		147,429,767
2025			158,160,183					3,049,652		161,209,836
2026			171,641,889					3,348,016		174,989,905
2027			185,096,131					3,646,379		188,742,510
2028			195,637,557					3,944,742		199,582,299
2029			199,898,482					4,228,859		204,127,341
2030			201,540,101					4,402,038		205,942,139
2031			202,220,148					4,474,690		206,694,838
2032			202,225,585					4,475,451		206,701,035
2033			202,225,585					4,475,451		206,701,035

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			42		42			-		-	42	319	-	319	0.49	-	0.49
2013			1,733		1,733			-		-	1,733	870	-	870	0.51	-	0.51
2014			3,264		3,264			13		13	3,277	1,312	324	1,306	0.46	0.31	0.46
2015			3,453		3,453			37		37	3,489	1,053	195	1,007	0.31	0.06	0.29
2016			3,703		3,703			64		13	3,768	770	173	726	0.22	0.05	0.21
2017			3,756		3,756			70		19	3,825	758	209	717	0.21	0.05	0.20
2018			3,756		3,756			70		19	3,825	758	210	717	0.21	0.05	0.20
2019			3,756		3,756			70		-	3,825	758	210	717	0.21	0.05	0.20
2020			3,756		3,756			70		-	3,825	758	210	717	0.21	0.05	0.20

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant				IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant				Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System	
2012			42					-			42	319	-	319	0.49	-	0.49	
2013			1,733					-			1,733	878	-	878	0.51	-	0.51	
2014			3,264					13			3,277	1,734	324	1,725	0.46	0.31	0.46	
2015			3,453					37			3,489	2,138	218	2,034	0.31	0.06	0.29	
2016			3,703					64			3,768	2,214	280	2,073	0.22	0.05	0.21	
2017			3,756					70			3,825	2,829	465	2,654	0.21	0.05	0.20	
2018			3,756					70			3,825	3,587	675	3,371	0.21	0.05	0.20	
2019			3,756					70			3,825	4,345	884	4,088	0.21	0.05	0.20	
2020			3,756					70			3,825	5,103	1,094	4,806	0.21	0.05	0.20	
2021			3,756					70			3,825	5,861	1,304	5,523	0.21	0.05	0.20	
2022			3,756					70			3,825	6,619	1,513	6,241	0.21	0.05	0.20	
2023			3,756					70			3,825	7,377	1,723	6,958	0.21	0.05	0.20	
2024			3,756					70			3,825	8,135	1,932	7,675	0.21	0.05	0.20	
2025			3,756					70			3,825	8,893	2,142	8,393	0.21	0.05	0.20	
2026			3,756					70			3,825	9,651	2,351	9,110	0.21	0.05	0.20	
2027			3,756					70			3,825	10,408	2,561	9,826	0.21	0.05	0.20	
2028			3,756					70			3,825	11,001	2,770	10,391	0.21	0.05	0.20	
2029			3,756					70			3,825	11,240	2,970	10,627	0.21	0.05	0.20	
2030			3,756					70			3,825	11,333	3,091	10,722	0.21	0.05	0.20	
2031			3,756					70			3,825	11,371	3,142	10,761	0.21	0.05	0.20	
2032			3,756					70			3,825	11,371	3,143	10,761	0.21	0.05	0.20	
2033			3,756					70			3,825	11,371	3,143	10,761	0.21	0.05	0.20	

Program:	Residential Duct Testing & Sealing
DSM Phase:	2
Type:	
Program Life in years	
Starting from 2012:	18.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2012	January	0	0	0		0	0	0	0		0	0
2012	February	0	0	0		0	0	0	0		0	0
2012	March	0	0	0		0	0	0	0		0	0
2012	April	0	0	0		0	0	0	0		0	0
2012	May	0	0	0		0	0	0	0		0	0
2012	June	0	0	0		0	0	0	0		0	0
2012	July	0	0	0		0	0	0	0		0	0
2012	August	0	0	0		0	0	0	0		0	0
2012	September	0	0	0		0	0	0	0		0	0
2012	October	2	0	2		2	0	0	0		0	2
2012	November	6	0	8		8	0	0	0		0	8
2012	December	0	0	8		8	0	0	0		0	8
2013	January	0	0	8		8	0	0	0		0	8
2013	February	16	0	24		24	0	0	0		0	24
2013	March	4	0	28		28	0	0	0		0	28
2013	April	23	0	51		51	0	0	0		0	51
2013	May	17	0	68		68	0	0	0		0	68
2013	June	11	0	79		79	0	0	0		0	79
2013	July	4	0	83		83	0	0	0		0	83
2013	August	7	0	90		90	0	0	0		0	90
2013	September	3	0	93		93	0	0	0		0	93
2013	October	10	0	103		103	0	0	0		0	103
2013	November	6	0	109		109	0	0	0		0	109
2013	December	7	0	116		116	0	0	0		0	116
2014	January	15	0	131		131	0	0	0		0	131
2014	February	6	0	137		137	0	0	0		0	137
2014	March	3	0	140		140	0	0	0		0	140
2014	April	9	0	149		149	0	0	0		0	149
2014	May	6	0	155		155	0	0	0		0	155
2014	June	6	0	161		161	0	0	0		0	161
2014	July	9	0	170		170	0	0	0		0	170
2014	August	5	0	175		175	0	0	0		0	175
2014	September	26	0	201		201	0	0	0		0	201
2014	October	82	0	283		283	0	0	0		0	283
2014	November	117	0	400		400	0	0	0		0	400
2014	December	117	0	517		517	0	0	0		0	517

Table 1		Energy Savings												
Year	Month	Net kWh										System		
		VA	VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)		NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)
2012	January				0		0				0		0	0
2012	February				0		0				0		0	0
2012	March				0		0				0		0	0
2012	April				0		0				0		0	0
2012	May				0		0				0		0	0
2012	June				0		0				0		0	0
2012	July				0		0				0		0	0
2012	August				0		0				0		0	0
2012	September				0		0				0		0	0
2012	October	104			104		104				0		0	104
2012	November	226			330		330				0		0	330
2012	December				330		330				0		0	330
2013	January				330		330				0		0	330
2013	February	1,132			1,462		1,462				0		0	1,462
2013	March	66			1,528		1,528				0		0	1,528
2013	April	673			2,201		2,201				0		0	2,201
2013	May	490			2,691		2,691				0		0	2,691
2013	June	461			3,151		3,151				0		0	3,151
2013	July	124			3,275		3,275				0		0	3,275
2013	August	268			3,543		3,543				0		0	3,543
2013	September	127			3,670		3,670				0		0	3,670
2013	October	210			3,880		3,880				0		0	3,880
2013	November	161			4,040		4,040				0		0	4,040
2013	December	235			4,275		4,275				0		0	4,275
2014	January	290			4,565		4,565				0		0	4,565
2014	February	106			4,671		4,671				0		0	4,671
2014	March	66			4,737		4,737				0		0	4,737
2014	April	222			4,958		4,958				0		0	4,958
2014	May	146			5,105		5,105				0		0	5,105
2014	June	188			5,292		5,292				0		0	5,292
2014	July	168			5,460		5,460				0		0	5,460
2014	August	103			5,564		5,564				0		0	5,564
2014	September	1,024			6,588		6,588				0		0	6,588
2014	October	1,783			8,371		8,371				0		0	8,371
2014	November	2,231			10,603		10,603				0		0	10,603
2014	December	2,315			12,918		12,918				0		0	12,918

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2012	January			0		0			0		0	0			-			-
2012	February			0		0			0		0	0			-			-
2012	March			0		0			0		0	0			-			-
2012	April			0		0			0		0	0			-			-
2012	May			0		0			0		0	0			-			-
2012	June			0		0			0		0	0			-			-
2012	July			0		0			0		0	0			-			-
2012	August			0		0			0		0	0			-			-
2012	September			0		0			0		0	0			-			-
2012	October	1		1		1			0		0	1	52		52	0.71		0.71
2012	November	3		5		5			0		0	5	41		41	0.57		0.57
2012	December			5		5			0		0	5	41		41	0.57		0.57
2013	January			5		5			0		0	5	41		41	0.57		0.57
2013	February	16		20		20			0		0	20	61		61	0.84		0.84
2013	March	1		21		21			0		0	21	55		55	0.74		0.74
2013	April	9		30		30			0		0	30	43		43	0.59		0.59
2013	May	7		37		37			0		0	37	40		40	0.54		0.54
2013	June	6		43		43			0		0	43	40		40	0.55		0.55
2013	July	2		45		45			0		0	45	39		39	0.54		0.54
2013	August	4		49		49			0		0	49	39		39	0.54		0.54
2013	September	2		50		50			0		0	50	39		39	0.54		0.54
2013	October	3		53		53			0		0	53	38		38	0.52		0.52
2013	November	2		55		55			0		0	55	37		37	0.51		0.51
2013	December	3		59		59			0		0	59	37		37	0.51		0.51
2014	January	3		61		61			0		0	61	35		35	0.47		0.47
2014	February	1		62		62			0		0	62	34		34	0.46		0.46
2014	March	1		63		63			0		0	63	34		34	0.45		0.45
2014	April	2		65		65			0		0	65	33		33	0.44		0.44
2014	May	1		67		67			0		0	67	33		33	0.43		0.43
2014	June	2		69		69			0		0	69	33		33	0.43		0.43
2014	July	2		70		70			0		0	70	32		32	0.41		0.41
2014	August	1		71		71			0		0	71	32		32	0.41		0.41
2014	September	10		81		81			0		0	81	33		33	0.40		0.40
2014	October	18		99		99			0		0	99	30		30	0.35		0.35
2014	November	22		121		121			0		0	121	27		27	0.30		0.30
2014	December	23		144		144			0		0	144	25		25	0.28		0.28

Table 1		Participation											
Year	Month	Program Participants										System Cum for IRP E+G	
		VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D		
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]					
2015	January	106	0	623		623	1	0		1		1	624
2015	February	163	0	786		786	28	0		29		29	815
2015	March	132	0	918		918	85	0		114		114	1,032
2015	April	201	0	1,119		1,119	60	0		174		174	1,293
2015	May	233	0	1,352		1,352	77	0		251		251	1,603
2015	June	262	0	1,614		1,614	59	0		310		310	1,924
2015	July	168	0	1,782		1,782	12	0		322		322	2,104
2015	August	185	0	1,967		1,967	0	0		322		322	2,289
2015	September	134	0	2,101		2,101	0	0		322		322	2,423
2015	October	68	0	2,169		2,169	1	0		323		323	2,492
2015	November	59	0	2,228		2,228	0	0		323		323	2,551
2015	December	149	0	2,377		2,377	0	0		323		323	2,700
2016	January	53	0	2,430		2,430	1	0		324		324	2,754
2016	February	96	0	2,526		2,526	26	0		350		350	2,876
2016	March	48	0	2,574		2,574	66	0		416		416	2,990
2016	April	48	0	2,622		2,622	49	0		465		465	3,087
2016	May	40	0	2,662		2,662	25	0		490		490	3,152
2016	June	48	0	2,710		2,710	21	0		511		511	3,221
2016	July	14	0	2,724		2,724	19	0		530	19	530	3,254
2016	August	36	0	2,760		2,760	6	0		536	25	536	3,296
2016	September	55	0	2,815		2,815	1	0		537	26	537	3,352
2016	October	67	0	2,882		2,882	3	0		540	29	540	3,422
2016	November	95	0	2,977		2,977	0	0		540	29	540	3,517
2016	December	58	0	3,035		3,035	0	0		540		540	3,575
2017	January	101	0	3,136		3,136	8	0		548		548	3,684
2017	February	147	0	3,283		3,283	5	0		553		553	3,836
2017	March	16	0	3,299		3,299	1	0		554		554	3,853
2017	April	0	0	3,299		3,299	0	0		554		554	3,853
2017	May	0	0	3,299		3,299	0	0		554		554	3,853
2017	June	0	0	3,299		3,299	0	0		554		554	3,853
2017	July	0	0	3,299		3,299	0	0		554		554	3,853
2017	August	0	0	3,299		3,299	0	0		554		554	3,853
2017	September	0	0	3,299		3,299	0	0		554		554	3,853
2017	October	0	0	3,299		3,299	0	0		554		554	3,853
2017	November	0	0	3,299		3,299	0	0		554		554	3,853
2017	December	0	0	3,299		3,299	0	0		554		554	3,853

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System System Cum for IRP
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2015	January	5,448		18,366		18,366	58		58		58	18,424
2015	February	7,642		26,008		26,008	1,649		1,707		1,707	27,714
2015	March	6,286		32,294		32,294	4,331		6,037		6,037	38,331
2015	April	9,099		41,393		41,393	3,171		9,208		9,208	50,601
2015	May	11,291		52,684		52,684	3,850		13,058		13,058	65,743
2015	June	12,135		64,819		64,819	3,005		16,063		16,063	80,882
2015	July	6,995		71,814		71,814	678		16,742		16,742	88,556
2015	August	8,560		80,374		80,374			16,742		16,742	97,116
2015	September	5,958		86,332		86,332			16,742		16,742	103,074
2015	October	3,014		89,347		89,347	50		16,791		16,791	106,138
2015	November	2,748		92,095		92,095			16,791		16,791	108,886
2015	December	6,181		98,276		98,276			16,791		16,791	115,067
2016	January	3,147		101,423		101,423	39		16,830		16,830	118,253
2016	February	4,683		106,106		106,106	1,237		18,068		18,068	124,174
2016	March	1,989		108,095		108,095	3,681		21,749		21,749	129,844
2016	April	2,173		110,269		110,269	2,362		24,111		24,111	134,380
2016	May	2,388		112,656		112,656	1,251		25,362		25,362	138,019
2016	June	2,284		114,940		114,940	864		26,226		26,226	141,166
2016	July	612		115,552		115,552	777		27,004	777	27,004	142,555
2016	August	1,494		117,046		117,046	414		27,418	1,191	27,418	144,463
2016	September	2,395		119,441		119,441	39		27,457	1,231	27,457	146,898
2016	October	3,208		122,649		122,649	95		27,553	1,326	27,553	150,202
2016	November	4,432		127,082		127,082			27,553	1,326	1,326	154,634
2016	December	1,971		129,053		129,053			27,553			156,605
2017	January	4,818		133,870		133,870	436		27,989			161,859
2017	February	6,556		140,427		140,427	193		28,181			168,608
2017	March	763		141,189		141,189	38		28,219			169,409
2017	April			141,189		141,189			28,219			169,409
2017	May			141,189		141,189			28,219			169,409
2017	June			141,189		141,189			28,219			169,409
2017	July			141,189		141,189			28,219			169,409
2017	August			141,189		141,189			28,219			169,409
2017	September			141,189		141,189			28,219			169,409
2017	October			141,189		141,189			28,219			169,409
2017	November			141,189		141,189			28,219			169,409
2017	December			141,189		141,189			28,219			169,409

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2015	January	54		197		197	1		1		1	198	29	58	30	0.32	0.51	0.32
2015	February	75		272		272	15		15		15	287	33	59	34	0.35	0.52	0.35
2015	March	62		334		334	38		53		53	387	35	53	37	0.36	0.47	0.38
2015	April	89		424		424	28		81		81	505	37	53	39	0.38	0.47	0.39
2015	May	111		535		535	34		115		115	650	39	52	41	0.40	0.46	0.41
2015	June	119		654		654	26		142		142	796	40	52	42	0.41	0.46	0.41
2015	July	69		723		723	6		148		148	870	40	52	42	0.41	0.46	0.41
2015	August	84		807		807			148		148	954	41	52	42	0.41	0.46	0.41
2015	September	59		865		865			148		148	1,013	41	52	43	0.41	0.46	0.42
2015	October	30		895		895	0		148		148	1,043	41	52	43	0.41	0.46	0.42
2015	November	27		922		922			148		148	1,070	41	52	43	0.41	0.46	0.42
2015	December	61		983		983			148		148	1,131	41	52	43	0.41	0.46	0.42
2016	January	31		1,014		1,014	0		148		148	1,162	42	52	43	0.42	0.46	0.42
2016	February	46		1,060		1,060	11		159		159	1,219	42	52	43	0.42	0.46	0.42
2016	March	20		1,079		1,079	32		192		192	1,271	42	52	43	0.42	0.46	0.43
2016	April	21		1,101		1,101	21		213		213	1,313	42	52	44	0.42	0.46	0.43
2016	May	23		1,124		1,124	11		224		224	1,348	42	52	44	0.42	0.46	0.43
2016	June	22		1,146		1,146	8		231		231	1,378	42	51	44	0.42	0.45	0.43
2016	July	6		1,153		1,153	7		238	7	238	1,391	42	51	44	0.42	0.45	0.43
2016	August	15		1,167		1,167	4		242	11	242	1,409	42	51	44	0.42	0.45	0.43
2016	September	24		1,191		1,191	0		242	11	242	1,433	42	51	44	0.42	0.45	0.43
2016	October	32		1,222		1,222	1		243	12	243	1,465	43	51	44	0.42	0.45	0.43
2016	November	44		1,266		1,266			243	12	243	1,509	43	51	44	0.43	0.45	0.43
2016	December	19		1,285		1,285			243		243	1,528	43	51	44	0.42	0.45	0.43
2017	January	47		1,333		1,333	4		247		247	1,579	43	51	44	0.42	0.45	0.43
2017	February	64		1,397		1,397	2		249		249	1,646	43	51	44	0.43	0.45	0.43
2017	March	8		1,405		1,405	0		249		249	1,653	43	51	44	0.43	0.45	0.43
2017	April			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43
2017	May			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43
2017	June			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43
2017	July			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43
2017	August			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43
2017	September			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43
2017	October			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43
2017	November			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43
2017	December			1,405		1,405			249		249	1,653	43	51	44	0.43	0.45	0.43

Table 1		Participation											
Year	Month	Program Participants											
		VA						NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B		[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G
2018	January	0	0	3,299		3,299		0	0	554		43	3,853
2018	February	0	0	3,299		3,299		0	0	554		43	3,853
2018	March	0	0	3,299		3,299		0	0	554		43	3,853
2018	April	0	0	3,299		3,299		0	0	554		43	3,853
2018	May	0	0	3,299		3,299		0	0	554		43	3,853
2018	June	0	0	3,299		3,299		0	0	554		43	3,853
2018	July	0	0	3,299		3,299		0	0	554		43	3,853
2018	August	0	0	3,299		3,299		0	0	554		43	3,853
2018	September	0	0	3,299		3,299		0	0	554		43	3,853
2018	October	0	0	3,299		3,299		0	0	554		43	3,853
2018	November	0	0	3,299		3,299		0	0	554		43	3,853
2018	December	0	0	3,299		3,299		0	0	554		43	3,853
2019	January	0	0	3,299		3,299		0	0	554		43	3,853
2019	February	0	0	3,299		3,299		0	0	554		43	3,853
2019	March	0	0	3,299		3,299		0	0	554		43	3,853
2019	April	0	0	3,299		3,299		0	0	554		43	3,853
2019	May	0	0	3,299		3,299		0	0	554		43	3,853
2019	June	0	0	3,299		3,299		0	0	554		43	3,853
2019	July	0	0	3,299		3,299		0	0	554	0	43	3,853
2019	August	0	0	3,299		3,299		0	0	554	0	43	3,853
2019	September	0	0	3,299		3,299		0	0	554	0	43	3,853
2019	October	0	0	3,299		3,299		0	0	554	0	43	3,853
2019	November	0	0	3,299		3,299		0	0	554	0	0	3,853
2019	December	0	0	3,299		3,299		0	0	554		0	3,853
2020	January	0	0	3,299		3,299		0	0	554		0	3,853
2020	February	0	0	3,299		3,299		0	0	554		0	3,853
2020	March	0	0	3,299		3,299		0	0	554		0	3,853
2020	April	0	0	3,299		3,299		0	0	554		0	3,853
2020	May	0	0	3,299		3,299		0	0	554		0	3,853
2020	June	0	0	3,299		3,299		0	0	554		0	3,853
2020	July	0	0	3,299		3,299		0	0	554		0	3,853
2020	August	0	0	3,299		3,299		0	0	554		0	3,853
2020	September	0	0	3,299		3,299		0	0	554		0	3,853
2020	October	0	0	3,299		3,299		0	0	554		0	3,853
2020	November	0	0	3,299		3,299		0	0	554		0	3,853
2020	December	0	0	3,299		3,299		0	0	554		0	3,853

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				System Cum for IRP
2018	January			141,189		141,189			28,219		1,993	169,409
2018	February			141,189		141,189			28,219		1,993	169,409
2018	March			141,189		141,189			28,219		1,993	169,409
2018	April			141,189		141,189			28,219		1,993	169,409
2018	May			141,189		141,189			28,219		1,993	169,409
2018	June			141,189		141,189			28,219		1,993	169,409
2018	July			141,189		141,189			28,219		1,993	169,409
2018	August			141,189		141,189			28,219		1,993	169,409
2018	September			141,189		141,189			28,219		1,993	169,409
2018	October			141,189		141,189			28,219		1,993	169,409
2018	November			141,189		141,189			28,219		1,993	169,409
2018	December			141,189		141,189			28,219		1,993	169,409
2019	January			141,189		141,189			28,219		1,993	169,409
2019	February			141,189		141,189			28,219		1,993	169,409
2019	March			141,189		141,189			28,219		1,993	169,409
2019	April			141,189		141,189			28,219		1,993	169,409
2019	May			141,189		141,189			28,219		1,993	169,409
2019	June			141,189		141,189			28,219		1,993	169,409
2019	July			141,189		141,189			28,219	0	1,993	169,409
2019	August			141,189		141,189			28,219	0	1,993	169,409
2019	September			141,189		141,189			28,219	0	1,993	169,409
2019	October			141,189		141,189			28,219	0	1,993	169,409
2019	November			141,189		141,189			28,219	0	1,993	169,409
2019	December			141,189		141,189			28,219	0	0	169,409
2020	January			141,189		141,189			28,219		0	169,409
2020	February			141,189		141,189			28,219		0	169,409
2020	March			141,189		141,189			28,219		0	169,409
2020	April			141,189		141,189			28,219		0	169,409
2020	May			141,189		141,189			28,219		0	169,409
2020	June			141,189		141,189			28,219		0	169,409
2020	July			141,189		141,189			28,219		0	169,409
2020	August			141,189		141,189			28,219		0	169,409
2020	September			141,189		141,189			28,219		0	169,409
2020	October			141,189		141,189			28,219		0	169,409
2020	November			141,189		141,189			28,219		0	169,409
2020	December			141,189		141,189			28,219		0	169,409

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2018	January			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	February			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	March			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	April			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	May			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	June			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	July			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	August			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	September			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	October			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	November			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2018	December			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2019	January			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2019	February			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2019	March			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2019	April			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2019	May			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2019	June			1,405		1,405			249		18	1,653	43	51	44	0.43	0.45	0.43
2019	July			1,405		1,405			249	0	18	1,653	43	51	44	0.43	0.45	0.43
2019	August			1,405		1,405			249	0	18	1,653	43	51	44	0.43	0.45	0.43
2019	September			1,405		1,405			249	0	18	1,653	43	51	44	0.43	0.45	0.43
2019	October			1,405		1,405			249	0	18	1,653	43	51	44	0.43	0.45	0.43
2019	November			1,405		1,405			249	0	18	1,653	43	51	44	0.43	0.45	0.43
2019	December			1,405		1,405			249	0	18	1,653	43	51	44	0.43	0.45	0.43
2020	January			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	February			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	March			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	April			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	May			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	June			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	July			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	August			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	September			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	October			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	November			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43
2020	December			1,405		1,405			249		0	1,653	43	51	44	0.43	0.45	0.43

Table 2. EM&V Data Incremental by Vintage Year										
Program Participants		VA IRP		VA NLR		NC IRP		NC NLR		System IRP
2012			8		8		-		-	8
2013			108		108		-		-	108
2014			401		401		-		-	401
2015			1,860		1,860		323		323	2,183
2016			658		658		217		29	875
2017			264		264		14		14	278
2018			-		-		-		-	-
2019			-		-		-		-	-
2020			-		-		-		-	-

Table 3. EM&V Data Annualized by Vintage Year										
Program Participants		VA IRP		VA NLR		NC IRP		NC NLR		System IRP
2012			8		8		-		-	8
2013			108		108		-		-	108
2014			401		401		-		-	401
2015			1,860		1,860		323		323	2,183
2016			658		658		217		29	875
2017			264		264		14		14	278
2018			-		-		-		-	-
2019			-		-		-		-	-
2020			-		-		-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Program Participants		VA PPI		NC PPI						System
2012			8		-		-		-	8
2013			116		-		-		-	116
2014			517		-		-		-	517
2015			2,369		323		-		-	2,692
2016			2,919		540		-		-	3,459
2017			2,782		554		-		-	3,336
2018			922		231		-		-	1,153
2019			264		14		-		-	278
2020			-		-		-		-	-

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			763		763			-		-	763
2013			30,090		30,090			-		-	30,090
2014			27,532		27,532			-		-	27,532
2015			598,792		598,792			146,730		146,730	745,521
2016			205,001		205,001			95,389		76,519	300,390
2017			137,557		137,557			7,734		7,734	145,291
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
Net kWh											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			3,956		3,956			-		-	3,956
2013			47,343		47,343			-		-	47,343
2014			103,711		103,711			-		-	103,711
2015			1,024,299		1,024,299			201,495		201,495	1,225,794
2016			369,325		369,325			129,136		15,915	498,461
2017			145,638		145,638			8,003		8,003	153,641
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Net Energy (kWh) for PPI											
			VA PPI					NC PPI			System
2012			763					-			763
2013			34,046					-			34,046
2014			78,831					-			78,831
2015			749,846					146,730			896,575
2016			1,333,012					296,884			1,629,896
2017			1,531,181					338,365			1,869,546
2018			514,964					137,138			652,102
2019			145,638					8,003			153,641
2020			-					-			-

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			5		5			-		-	5	95	-	95	0.57	-	0.57
2013			54		54			-		-	54	279	-	279	0.50	-	0.50
2014			85		85			-		-	85	69	-	69	0.21	-	0.21
2015			839		839			148		148	987	322	454	342	0.45	0.46	0.45
2016			302		302			95		12	397	312	440	343	0.46	0.44	0.45
2017			119		119			6		6	125	521	552	523	0.45	0.42	0.45
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			5		5			-		-	5	495	-	495	0.57	-	0.57
2013			54		54			-		-	54	438	-	438	0.50	-	0.50
2014			85		85			-		-	85	259	-	259	0.21	-	0.21
2015			839		839			148		148	987	551	624	562	0.45	0.46	0.45
2016			302		302			95		12	397	561	595	570	0.46	0.44	0.45
2017			119		119			6		6	125	552	572	553	0.45	0.42	0.45
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2012			5					-			5		-			-	
2013			59					-			59		-			-	
2014			144					-			144		-			-	
2015			978					148			1,126		454			0.46	
2016			1,227					243			1,470		550			0.45	
2017			1,261					249			1,510		611			0.45	
2018			422					101			523		594			0.44	
2019			119					6			125		572			0.42	
2020			-					-			-		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
Program Participants										
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012		8		8			-		-	8
2013		116		116			-		-	116
2014		517		517			-		-	517
2015		2,377		2,377			323		323	2,700
2016		3,035		3,035			540		29	3,575
2017		3,299		3,299			554		43	3,853
2018		3,299		3,299			554		43	3,853
2019		3,299		3,299			554		-	3,853
2020		3,299		3,299			554		-	3,853

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Program Participants										
		VA IRP					NC IRP			System IRP
2012		8					-			8
2013		116					-			116
2014		517					-			517
2015		2,377					323			2,700
2016		3,035					540			3,575
2017		3,299					554			3,853
2018		3,299					554			3,853
2019		3,299					554			3,853
2020		3,299					554			3,853
2021		3,299					554			3,853
2022		3,299					554			3,853
2023		3,299					554			3,853
2024		3,299					554			3,853
2025		3,299					554			3,853
2026		3,299					554			3,853
2027		3,299					554			3,853
2028		3,299					554			3,853
2029		3,299					554			3,853
2030		3,299					554			3,853
2031		3,299					554			3,853
2032		3,299					554			3,853
2033		3,299					554			3,853
2034		3,299					554			3,853
2035		3,299					554			3,853
2036		3,299					554			3,853

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			763		763			0		0	763
2013			34,046		34,046			0		0	34,046
2014			78,831		78,831			0		0	78,831
2015			753,802		753,802			146,730		146,730	900,532
2016			1,384,311		1,384,311			296,884		244,431	1,681,194
2017			1,686,192		1,686,192			338,365		23,649	2,024,556
2018			1,694,273		1,694,273			338,633		23,917	2,032,907
2019			1,694,273		1,694,273			338,633		19,931	2,032,907
2020			1,694,273		1,694,273			338,633		0	2,032,907

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2012			763					-		763
2013			34,809					-		34,809
2014			113,640					-		113,640
2015			867,442					146,730		1,014,171
2016			2,251,752					443,613		2,695,366
2017			3,937,944					781,978		4,719,922
2018			5,632,218					1,120,611		6,752,829
2019			7,326,491					1,459,244		8,785,736
2020			9,020,765					1,797,878		10,818,642
2021			10,715,038					2,136,511		12,851,549
2022			12,409,312					2,475,144		14,884,455
2023			14,103,585					2,813,777		16,917,362
2024			15,797,859					3,152,410		18,950,269
2025			17,492,132					3,491,043		20,983,175
2026			19,186,406					3,829,677		23,016,082
2027			20,880,679					4,168,310		25,048,989
2028			22,574,953					4,506,943		27,081,895
2029			24,269,226					4,845,576		29,114,802
2030			25,962,737					5,184,209		31,146,946
2031			27,622,964					5,522,842		33,145,807
2032			29,238,407					5,861,476		35,099,883
2033			30,178,878					6,053,379		36,232,257
2034			30,488,841					6,095,129		36,583,970
2035			30,496,923					6,095,397		36,592,320
2036			30,496,923					6,095,397		36,592,320

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/ Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			5		5			-		-	5	95	-	95	0.57	-	0.57
2013			59		59			-		-	59	293	-	293	0.51	-	0.51
2014			144		144			-		-	144	152	-	152	0.28	-	0.28
2015			983		983			148		148	1,131	317	454	334	0.41	0.46	0.42
2016			1,285		1,285			243		12	1,528	456	550	470	0.42	0.45	0.43
2017			1,405		1,405			249		18	1,653	511	611	525	0.43	0.45	0.43
2018			1,405		1,405			249		18	1,653	514	611	528	0.43	0.45	0.43
2019			1,405		1,405			249		-	1,653	514	611	528	0.43	0.45	0.43
2020			1,405		1,405			249		-	1,653	514	611	528	0.43	0.45	0.43

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant				IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant				Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System	
2012			5					-			5	95	-	95	0.57	-	0.57	
2013			59					-			59	300	-	300	0.51	-	0.51	
2014			144					-			144	220	-	220	0.28	-	0.28	
2015			983					148			1,131	365	454	376	0.41	0.46	0.42	
2016			1,285					243			1,528	742	822	754	0.42	0.45	0.43	
2017			1,405					249			1,653	1,194	1,412	1,225	0.43	0.45	0.43	
2018			1,405					249			1,653	1,707	2,023	1,753	0.43	0.45	0.43	
2019			1,405					249			1,653	2,221	2,634	2,280	0.43	0.45	0.43	
2020			1,405					249			1,653	2,734	3,245	2,808	0.43	0.45	0.43	
2021			1,405					249			1,653	3,248	3,857	3,335	0.43	0.45	0.43	
2022			1,405					249			1,653	3,762	4,468	3,863	0.43	0.45	0.43	
2023			1,405					249			1,653	4,275	5,079	4,391	0.43	0.45	0.43	
2024			1,405					249			1,653	4,789	5,690	4,918	0.43	0.45	0.43	
2025			1,405					249			1,653	5,302	6,302	5,446	0.43	0.45	0.43	
2026			1,405					249			1,653	5,816	6,913	5,974	0.43	0.45	0.43	
2027			1,405					249			1,653	6,329	7,524	6,501	0.43	0.45	0.43	
2028			1,405					249			1,653	6,843	8,135	7,029	0.43	0.45	0.43	
2029			1,405					249			1,653	7,357	8,747	7,556	0.43	0.45	0.43	
2030			1,405					249			1,653	7,870	9,358	8,084	0.43	0.45	0.43	
2031			1,405					249			1,653	8,373	9,969	8,603	0.43	0.45	0.43	
2032			1,405					249			1,653	8,863	10,580	9,110	0.43	0.45	0.43	
2033			1,405					249			1,653	9,148	10,927	9,404	0.43	0.45	0.43	
2034			1,405					249			1,653	9,242	11,002	9,495	0.43	0.45	0.43	
2035			1,405					249			1,653	9,244	11,003	9,497	0.43	0.45	0.43	
2036			1,405					249			1,653	9,244	11,003	9,497	0.43	0.45	0.43	

Program:	Residential Home Energy Check-up
DSM Phase:	2
Type:	
Program Life in years	
Starting from 2012:	10.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2012	January	0	0	0		0	0	0	0		0	0
2012	February	0	0	0		0	0	0	0		0	0
2012	March	0	0	0		0	0	0	0		0	0
2012	April	0	0	0		0	0	0	0		0	0
2012	May	0	0	0		0	0	0	0		0	0
2012	June	0	0	0		0	0	0	0		0	0
2012	July	0	0	0		0	0	0	0		0	0
2012	August	0	0	0		0	0	0	0		0	0
2012	September	0	0	0		0	0	0	0		0	0
2012	October	4	0	4		4	0	0	0		0	4
2012	November	6	0	10		10	0	0	0		0	10
2012	December	21	0	31		31	0	0	0		0	31
2013	January	22	0	53		53	0	0	0		0	53
2013	February	37	0	90		90	0	0	0		0	90
2013	March	14	0	104		104	0	0	0		0	104
2013	April	27	0	131		131	0	0	0		0	131
2013	May	42	0	173		173	0	0	0		0	173
2013	June	15	0	188		188	0	0	0		0	188
2013	July	15	0	203		203	0	0	0		0	203
2013	August	61	0	264		264	0	0	0		0	264
2013	September	75	0	339		339	0	0	0		0	339
2013	October	219	0	558		558	0	0	0		0	558
2013	November	305	0	863		863	0	0	0		0	863
2013	December	737	0	1,600		1,600	0	0	0		0	1,600
2014	January	541	0	2,141		2,141	0	0	0		0	2,141
2014	February	942	0	3,083		3,083	0	0	0		0	3,083
2014	March	877	0	3,960		3,960	0	0	0		0	3,960
2014	April	1,372	0	5,332		5,332	0	0	0		0	5,332
2014	May	1,247	0	6,579		6,579	0	0	0		0	6,579
2014	June	1,751	0	8,330		8,330	0	0	0		0	8,330
2014	July	2,023	0	10,353		10,353	0	0	0		0	10,353
2014	August	2,079	0	12,432		12,432	0	0	0		0	12,432
2014	September	3,222	0	15,654		15,654	0	0	0		0	15,654
2014	October	1,739	0	17,393		17,393	0	0	0		0	17,393
2014	November	544	0	17,937		17,937	0	0	0		0	17,937
2014	December	3,366	0	21,303		21,303	0	0	0		0	21,303

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC				System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2012	January			0		0			0		0	0
2012	February			0		0			0		0	0
2012	March			0		0			0		0	0
2012	April			0		0			0		0	0
2012	May			0		0			0		0	0
2012	June			0		0			0		0	0
2012	July			0		0			0		0	0
2012	August			0		0			0		0	0
2012	September			0		0			0		0	0
2012	October	317		317		317			0		0	317
2012	November	544		860		860			0		0	860
2012	December	1,716		2,576		2,576			0		0	2,576
2013	January	1,584		4,160		4,160			0		0	4,160
2013	February	2,698		6,858		6,858			0		0	6,858
2013	March	1,143		8,001		8,001			0		0	8,001
2013	April	2,065		10,067		10,067			0		0	10,067
2013	May	3,398		13,465		13,465			0		0	13,465
2013	June	1,140		14,605		14,605			0		0	14,605
2013	July	1,300		15,905		15,905			0		0	15,905
2013	August	4,897		20,802		20,802			0		0	20,802
2013	September	5,907		26,710		26,710			0		0	26,710
2013	October	16,855		43,565		43,565			0		0	43,565
2013	November	23,769		67,334		67,334			0		0	67,334
2013	December	56,939		124,272		124,272			0		0	124,272
2014	January	27,486		151,759		151,759			0		0	151,759
2014	February	49,857		201,616		201,616			0		0	201,616
2014	March	43,852		245,467		245,467			0		0	245,467
2014	April	73,355		318,822		318,822			0		0	318,822
2014	May	63,052		381,874		381,874			0		0	381,874
2014	June	86,015		467,889		467,889			0		0	467,889
2014	July	93,287		561,175		561,175			0		0	561,175
2014	August	101,602		662,777		662,777			0		0	662,777
2014	September	209,586		872,364		872,364			0		0	872,364
2014	October	114,007		986,371		986,371			0		0	986,371
2014	November	37,638		1,024,009		1,024,009			0		0	1,024,009
2014	December	212,945		1,236,954		1,236,954			0		0	1,236,954

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2012	January			0		0			0		0	0			-			-
2012	February			0		0			0		0	0			-			-
2012	March			0		0			0		0	0			-			-
2012	April			0		0			0		0	0			-			-
2012	May			0		0			0		0	0			-			-
2012	June			0		0			0		0	0			-			-
2012	July			0		0			0		0	0			-			-
2012	August			0		0			0		0	0			-			-
2012	September			0		0			0		0	0			-			-
2012	October	1		1		1			0		0	1	79		79	0.14		0.14
2012	November	1		1		1			0		0	1	86		86	0.13		0.13
2012	December	3		4		4			0		0	4	83		83	0.13		0.13
2013	January	2		6		6			0		0	6	78		78	0.12		0.12
2013	February	4		11		11			0		0	11	76		76	0.12		0.12
2013	March	2		12		12			0		0	12	77		77	0.12		0.12
2013	April	3		16		16			0		0	16	77		77	0.12		0.12
2013	May	5		21		21			0		0	21	78		78	0.12		0.12
2013	June	2		22		22			0		0	22	78		78	0.12		0.12
2013	July	2		24		24			0		0	24	78		78	0.12		0.12
2013	August	7		31		31			0		0	31	79		79	0.12		0.12
2013	September	9		40		40			0		0	40	79		79	0.12		0.12
2013	October	25		65		65			0		0	65	78		78	0.12		0.12
2013	November	35		100		100			0		0	100	78		78	0.12		0.12
2013	December	81		181		181			0		0	181	78		78	0.11		0.11
2014	January	37		217		217			0		0	217	71		71	0.10		0.10
2014	February	66		284		284			0		0	284	65		65	0.09		0.09
2014	March	59		343		343			0		0	343	62		62	0.09		0.09
2014	April	96		439		439			0		0	439	60		60	0.08		0.08
2014	May	83		523		523			0		0	523	58		58	0.08		0.08
2014	June	119		641		641			0		0	641	56		56	0.08		0.08
2014	July	141		783		783			0		0	783	54		54	0.08		0.08
2014	August	145		928		928			0		0	928	53		53	0.07		0.07
2014	September	243		1,171		1,171			0		0	1,171	56		56	0.07		0.07
2014	October	127		1,298		1,298			0		0	1,298	57		57	0.07		0.07
2014	November	38		1,336		1,336			0		0	1,336	57		57	0.07		0.07
2014	December	241		1,577		1,577			0		0	1,577	58		58	0.07		0.07

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System Cum for IRP
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	
2015	January	1,829	0	23,132		23,132	0	0	0		0	23,132
2015	February	985	0	24,117		24,117	152	0	152		152	24,269
2015	March	957	0	25,074		25,074	156	0	308		308	25,382
2015	April	906	0	25,980		25,980	128	0	436		436	26,416
2015	May	1,038	0	27,018		27,018	237	0	673		673	27,691
2015	June	1,227	0	28,245		28,245	200	0	873		873	29,118
2015	July	1,219	0	29,464		29,464	86	0	959		959	30,423
2015	August	1,355	0	30,819		30,819	5	0	964		964	31,783
2015	September	1,500	0	32,319		32,319	27	0	991		991	33,310
2015	October	1,121	0	33,440		33,440	4	0	995		995	34,435
2015	November	1,107	0	34,547		34,547	0	0	995		995	35,542
2015	December	616	0	35,163		35,163	1	0	996		996	36,159
2016	January	737	0	35,900		35,900	3	0	999		999	36,899
2016	February	889	0	36,789		36,789	1	0	1,000		1,000	37,789
2016	March	1,301	0	38,090		38,090	0	0	1,000		1,000	39,090
2016	April	1,804	0	39,894		39,894	0	0	1,000		1,000	40,894
2016	May	2,211	0	42,105		42,105	0	0	1,000		1,000	43,105
2016	June	1,360	0	43,465		43,465	0	0	1,000		1,000	44,465
2016	July	1,348	0	44,813		44,813	0	0	1,000	0	1,000	45,813
2016	August	1,913	0	46,726		46,726	0	0	1,000	0	1,000	47,726
2016	September	880	0	47,606		47,606	0	0	1,000	0	1,000	48,606
2016	October	1,074	0	48,680		48,680	0	0	1,000	0	1,000	49,680
2016	November	1,328	0	50,008		50,008	0	0	1,000	0	1,000	51,008
2016	December	407	0	50,415		50,415	0	0	1,000		0	51,415
2017	January	1,069	0	51,484		51,484	5	0	1,005		5	52,489
2017	February	377	0	51,861		51,861	39	0	1,044		44	52,905
2017	March	54	0	51,915		51,915	5	0	1,049		49	52,964
2017	April	0	0	51,915		51,915	0	0	1,049		49	52,964
2017	May	0	0	51,915		51,915	0	0	1,049		49	52,964
2017	June	0	0	51,915		51,915	0	0	1,049		49	52,964
2017	July	0	0	51,915		51,915	0	0	1,049		49	52,964
2017	August	0	0	51,915		51,915	0	0	1,049		49	52,964
2017	September	0	0	51,915		51,915	0	0	1,049		49	52,964
2017	October	0	0	51,915		51,915	0	0	1,049		49	52,964
2017	November	0	0	51,915		51,915	0	0	1,049		49	52,964
2017	December	0	0	51,915		51,915	0	0	1,049		49	52,964

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2015	January	93,988		1,330,942		1,330,942			0		0	1,330,942
2015	February	51,070		1,382,012		1,382,012	12,504		12,504		12,504	1,394,516
2015	March	47,745		1,429,757		1,429,757	10,968		23,471		23,471	1,453,229
2015	April	42,143		1,471,901		1,471,901	7,849		31,320		31,320	1,503,221
2015	May	46,716		1,518,617		1,518,617	13,298		44,618		44,618	1,563,235
2015	June	62,029		1,580,646		1,580,646	11,283		55,901		55,901	1,636,547
2015	July	61,717		1,642,363		1,642,363	4,236		60,137		60,137	1,702,500
2015	August	69,789		1,712,153		1,712,153	276		60,413		60,413	1,772,566
2015	September	85,376		1,797,529		1,797,529	1,660		62,073		62,073	1,859,602
2015	October	59,071		1,856,600		1,856,600	270		62,343		62,343	1,918,944
2015	November	65,593		1,922,194		1,922,194			62,343		62,343	1,984,537
2015	December	33,848		1,956,042		1,956,042	75		62,418		62,418	2,018,460
2016	January	32,620		1,988,661		1,988,661	126		62,544		62,544	2,051,206
2016	February	45,210		2,033,872		2,033,872	34		62,579		62,579	2,096,450
2016	March	56,292		2,090,164		2,090,164			62,579		62,579	2,152,743
2016	April	77,196		2,167,361		2,167,361			62,579		62,579	2,229,939
2016	May	99,199		2,266,560		2,266,560			62,579		62,579	2,329,138
2016	June	55,459		2,322,018		2,322,018			62,579		62,579	2,384,597
2016	July	64,990		2,387,008		2,387,008			62,579	0	62,579	2,449,587
2016	August	94,325		2,481,333		2,481,333			62,579	0	62,579	2,543,912
2016	September	43,842		2,525,175		2,525,175			62,579	0	62,579	2,587,754
2016	October	50,264		2,575,439		2,575,439			62,579	0	62,579	2,638,018
2016	November	72,135		2,647,574		2,647,574			62,579	0	62,579	2,710,153
2016	December	21,870		2,669,444		2,669,444			62,579		62,579	2,732,023
2017	January	63,175		2,732,619		2,732,619	600		63,179		600	2,795,798
2017	February	20,798		2,753,417		2,753,417	2,595		65,774		3,195	2,819,191
2017	March	3,116		2,756,533		2,756,533	493		66,267		3,689	2,822,800
2017	April			2,756,533		2,756,533			66,267		3,689	2,822,800
2017	May			2,756,533		2,756,533			66,267		3,689	2,822,800
2017	June			2,756,533		2,756,533			66,267		3,689	2,822,800
2017	July			2,756,533		2,756,533			66,267		3,689	2,822,800
2017	August			2,756,533		2,756,533			66,267		3,689	2,822,800
2017	September			2,756,533		2,756,533			66,267		3,689	2,822,800
2017	October			2,756,533		2,756,533			66,267		3,689	2,822,800
2017	November			2,756,533		2,756,533			66,267		3,689	2,822,800
2017	December			2,756,533		2,756,533			66,267		3,689	2,822,800

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2015	January	118		1,696		1,696			0		0	1,696	58		58	0.07		0.07
2015	February	65		1,761		1,761	13		13		13	1,774	57	82	57	0.07	0.08	0.07
2015	March	62		1,823		1,823	12		24		24	1,847	57	76	57	0.07	0.08	0.07
2015	April	53		1,876		1,876	8		32		32	1,908	57	72	57	0.07	0.07	0.07
2015	May	59		1,935		1,935	14		47		47	1,981	56	66	56	0.07	0.07	0.07
2015	June	77		2,012		2,012	12		59		59	2,071	56	64	56	0.07	0.07	0.07
2015	July	74		2,086		2,086	5		63		63	2,149	56	63	56	0.07	0.07	0.07
2015	August	83		2,169		2,169	0		64		64	2,233	56	63	56	0.07	0.07	0.07
2015	September	98		2,268		2,268	2		65		65	2,333	56	63	56	0.07	0.07	0.07
2015	October	70		2,338		2,338	0		66		66	2,403	56	63	56	0.07	0.07	0.07
2015	November	76		2,414		2,414			66		66	2,479	56	63	56	0.07	0.07	0.07
2015	December	41		2,455		2,455	0		66		66	2,520	56	63	56	0.07	0.07	0.07
2016	January	41		2,496		2,496	0		66		66	2,562	55	63	56	0.07	0.07	0.07
2016	February	54		2,550		2,550	0		66		66	2,616	55	63	55	0.07	0.07	0.07
2016	March	71		2,621		2,621			66		66	2,687	55	63	55	0.07	0.07	0.07
2016	April	98		2,719		2,719			66		66	2,785	54	63	55	0.07	0.07	0.07
2016	May	126		2,845		2,845			66		66	2,910	54	63	54	0.07	0.07	0.07
2016	June	71		2,915		2,915			66		66	2,981	53	63	54	0.07	0.07	0.07
2016	July	79		2,994		2,994			66	0	66	3,060	53	63	53	0.07	0.07	0.07
2016	August	111		3,106		3,106			66	0	66	3,171	53	63	53	0.07	0.07	0.07
2016	September	52		3,158		3,158			66	0	66	3,224	53	63	53	0.07	0.07	0.07
2016	October	61		3,218		3,218			66	0	66	3,284	53	63	53	0.07	0.07	0.07
2016	November	83		3,301		3,301			66	0	66	3,367	53	63	53	0.07	0.07	0.07
2016	December	26		3,328		3,328			66		66	3,394	53	63	53	0.07	0.07	0.07
2017	January	69		3,397		3,397	0		66		66	3,463	53	63	53	0.07	0.07	0.07
2017	February	24		3,421		3,421	2		69		69	3,489	53	63	53	0.07	0.07	0.07
2017	March	3		3,424		3,424	0		69		69	3,493	53	63	53	0.07	0.07	0.07
2017	April			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07
2017	May			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07
2017	June			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07
2017	July			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07
2017	August			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07
2017	September			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07
2017	October			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07
2017	November			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07
2017	December			3,424		3,424			69		69	3,493	53	63	53	0.07	0.07	0.07

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC				System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G	
2018	January	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	February	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	March	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	April	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	May	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	June	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	July	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	August	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	September	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	October	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	November	0	0	51,915		51,915	0	0	1,049		49	52,964	
2018	December	0	0	51,915		51,915	0	0	1,049		49	52,964	
2019	January	0	0	51,915		51,915	0	0	1,049		49	52,964	
2019	February	0	0	51,915		51,915	0	0	1,049		49	52,964	
2019	March	0	0	51,915		51,915	0	0	1,049		49	52,964	
2019	April	0	0	51,915		51,915	0	0	1,049		49	52,964	
2019	May	0	0	51,915		51,915	0	0	1,049		49	52,964	
2019	June	0	0	51,915		51,915	0	0	1,049		49	52,964	
2019	July	0	0	51,915		51,915	0	0	1,049	0	49	52,964	
2019	August	0	0	51,915		51,915	0	0	1,049	0	49	52,964	
2019	September	0	0	51,915		51,915	0	0	1,049	0	49	52,964	
2019	October	0	0	51,915		51,915	0	0	1,049	0	49	52,964	
2019	November	0	0	51,915		51,915	0	0	1,049	0	49	52,964	
2019	December	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	January	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	February	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	March	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	April	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	May	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	June	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	July	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	August	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	September	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	October	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	November	0	0	51,915		51,915	0	0	1,049		0	52,964	
2020	December	0	0	51,915		51,915	0	0	1,049		0	52,964	

Table 1		Energy Savings											
Year	Month	Net kWh											
		VA	VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)
													System Cum for IRP
2018	January			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	February			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	March			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	April			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	May			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	June			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	July			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	August			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	September			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	October			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	November			2,756,533		2,756,533				66,267		3,689	2,822,800
2018	December			2,756,533		2,756,533				66,267		3,689	2,822,800
2019	January			2,756,533		2,756,533				66,267		3,689	2,822,800
2019	February			2,756,533		2,756,533				66,267		3,689	2,822,800
2019	March			2,756,533		2,756,533				66,267		3,689	2,822,800
2019	April			2,756,533		2,756,533				66,267		3,689	2,822,800
2019	May			2,756,533		2,756,533				66,267		3,689	2,822,800
2019	June			2,756,533		2,756,533				66,267		3,689	2,822,800
2019	July			2,756,533		2,756,533				66,267	0	3,689	2,822,800
2019	August			2,756,533		2,756,533				66,267	0	3,689	2,822,800
2019	September			2,756,533		2,756,533				66,267	0	3,689	2,822,800
2019	October			2,756,533		2,756,533				66,267	0	3,689	2,822,800
2019	November			2,756,533		2,756,533				66,267	0	0	2,822,800
2019	December			2,756,533		2,756,533				66,267		0	2,822,800
2020	January			2,756,533		2,756,533				66,267		0	2,822,800
2020	February			2,756,533		2,756,533				66,267		0	2,822,800
2020	March			2,756,533		2,756,533				66,267		0	2,822,800
2020	April			2,756,533		2,756,533				66,267		0	2,822,800
2020	May			2,756,533		2,756,533				66,267		0	2,822,800
2020	June			2,756,533		2,756,533				66,267		0	2,822,800
2020	July			2,756,533		2,756,533				66,267		0	2,822,800
2020	August			2,756,533		2,756,533				66,267		0	2,822,800
2020	September			2,756,533		2,756,533				66,267		0	2,822,800
2020	October			2,756,533		2,756,533				66,267		0	2,822,800
2020	November			2,756,533		2,756,533				66,267		0	2,822,800
2020	December			2,756,533		2,756,533				66,267		0	2,822,800

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System			System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2018	January			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	February			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	March			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	April			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	May			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	June			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	July			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	August			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	September			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	October			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	November			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2018	December			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2019	January			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2019	February			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2019	March			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2019	April			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2019	May			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2019	June			3,424		3,424			69			3	53	63	53	0.07	0.07	0.07
2019	July			3,424		3,424			69	0		3	53	63	53	0.07	0.07	0.07
2019	August			3,424		3,424			69	0		3	53	63	53	0.07	0.07	0.07
2019	September			3,424		3,424			69	0		3	53	63	53	0.07	0.07	0.07
2019	October			3,424		3,424			69	0		3	53	63	53	0.07	0.07	0.07
2019	November			3,424		3,424			69	0		3	53	63	53	0.07	0.07	0.07
2019	December			3,424		3,424			69	0		3	53	63	53	0.07	0.07	0.07
2020	January			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	February			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	March			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	April			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	May			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	June			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	July			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	August			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	September			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	October			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	November			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07
2020	December			3,424		3,424			69			0	53	63	53	0.07	0.07	0.07

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			31		31			-		-	31
2013			1,569		1,569			-		-	1,569
2014			19,703		19,703			-		-	19,703
2015			13,860		13,860			996		996	14,856
2016			15,252		15,252			4		-	15,256
2017			1,500		1,500			49		49	1,549
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			31		31			-		-	31
2013			1,569		1,569			-		-	1,569
2014			19,703		19,703			-		-	19,703
2015			13,860		13,860			996		996	14,856
2016			15,252		15,252			4		-	15,256
2017			1,500		1,500			49		49	1,549
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants		VA PPI					NC PPI		System
2012			31					-		31
2013			1,600					-		1,600
2014			21,303					-		21,303
2015			35,132					996		36,128
2016			48,815					1,000		49,815
2017			30,612					1,049		31,661
2018			16,752					53		16,805
2019			1,500					49		1,549
2020			-					-		-

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			3,753		3,753			-		-	3,753
2013			324,828		324,828			-		-	324,828
2014			5,619,810		5,619,810			-		-	5,619,810
2015			4,757,310		4,757,310			537,542		537,542	5,294,852
2016			4,682,111		4,682,111			1,890		1,569	4,684,000
2017			1,018,034		1,018,034			40,681		40,681	1,058,715
2018			-		-			-		-	-
2019			-		-			-		0	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			30,916		30,916			-		-	30,916
2013			1,460,350		1,460,350			-		-	1,460,350
2014			13,352,180		13,352,180			-		-	13,352,180
2015			8,629,053		8,629,053			749,019		749,019	9,378,072
2016			8,560,831		8,560,831			1,924		-	8,562,754
2017			1,045,064		1,045,064			44,262		44,262	1,089,326
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Net Energy (kWh) for PPI										
			VA PPI					NC PPI		System
2012			3,753					-		3,753
2013			355,744					-		355,744
2014			7,111,076					-		7,111,076
2015			19,569,840					537,542		20,107,382
2016			26,663,344					750,908		27,414,252
2017			18,207,918					791,624		18,999,541
2018			9,605,894					46,186		9,652,080
2019			1,045,064					44,262		1,089,326
2020			-					-		-

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			4		4			-		-	4	121	-	121	0.13	-	0.13
2013			177		177			-		-	177	207	-	207	0.11	-	0.11
2014			1,397		1,397			-		-	1,397	285	-	285	0.07	-	0.07
2015			877		877			66		66	943	343	540	356	0.06	0.07	0.06
2016			873		873			0		-	873	307	472	307	0.06	0.05	0.06
2017			96		96			3		3	100	679	830	683	0.06	0.06	0.06
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			4		4			-		-	4	997	-	997	0.13	-	0.13
2013			177		177			-		-	177	931	-	931	0.11	-	0.11
2014			1,397		1,397			-		-	1,397	678	-	678	0.07	-	0.07
2015			877		877			66		66	943	623	752	631	0.06	0.07	0.06
2016			873		873			0		-	873	561	481	561	0.06	0.05	0.06
2017			96		96			3		3	100	697	903	703	0.06	0.06	0.06
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2012			4					-		4		-			-	
2013			181					-		181		-			-	
2014			1,577					-		1,577		-			-	
2015			2,451					66		2,516		540			0.07	
2016			3,147					66		3,213		751			0.07	
2017			1,847					69		1,916		755			0.07	
2018			969					3		973		871			0.06	
2019			96					3		100		903			0.06	
2020			-					-		-		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
	Program Participants									
			VA IRP		VA NLR			NC IRP		NC NLR
2012			31		31			-		-
2013			1,600		1,600			-		-
2014			21,303		21,303			-		-
2015			35,163		35,163			996		996
2016			50,415		50,415			1,000		-
2017			51,915		51,915			1,049		49
2018			51,915		51,915			1,049		49
2019			51,915		51,915			1,049		-
2020			51,915		51,915			1,049		-

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2012			31					-		31
2013			1,600					-		1,600
2014			21,303					-		21,303
2015			35,163					996		36,159
2016			50,415					1,000		51,415
2017			51,915					1,049		52,964
2018			51,915					1,049		52,964
2019			51,915					1,049		52,964
2020			51,915					1,049		52,964
2021			51,915					1,049		52,964
2022			51,915					1,049		52,964
2023			51,915					1,049		52,964
2024			51,915					1,049		52,964
2025			51,915					1,049		52,964
2026			51,915					1,049		52,964
2027			51,915					1,049		52,964
2028			51,915					1,049		52,964

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
	Net Energy (kWh)									
			VA IRP		VA NLR		NC IRP		NC NLR	System IRP
2012			3,753		3,753		0		0	3,753
2013			355,744		355,744		0		0	355,744
2014			7,111,076		7,111,076		0		0	7,111,076
2015			19,600,757		19,600,757		537,542		537,542	20,138,298
2016			28,154,610		28,154,610		750,908		625,751	28,905,519
2017			33,051,364		33,051,364		791,624		40,681	33,842,988
2018			33,078,394		33,078,394		795,205		44,262	33,873,599
2019			33,078,394		33,078,394		795,205		36,885	33,873,599
2020			33,078,394		33,078,394		795,205		0	33,873,599

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Net Energy (kWh)										
			VA IRP					NC IRP		System IRP
2012			3,753					-		3,753
2013			359,498					-		359,498
2014			7,470,574					-		7,470,574
2015			27,071,330					537,542		27,608,872
2016			55,225,941					1,288,450		56,514,391
2017			88,277,305					2,080,073		90,357,379
2018			121,355,699					2,875,278		124,230,977
2019			154,434,093					3,670,484		158,104,576
2020			187,512,487					4,465,689		191,978,175
2021			220,590,881					5,260,894		225,851,774
2022			253,665,521					6,056,099		259,721,620
2023			286,388,171					6,851,304		293,239,475
2024			312,355,489					7,646,509		320,001,997
2025			325,833,126					7,904,172		333,737,298
2026			330,756,910					7,948,469		338,705,378
2027			330,783,939					7,952,050		338,735,989
2028			330,783,939					7,952,050		338,735,989

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			4		4			-		-	4	121	-	121	0.13	-	0.13
2013			181		181			-		-	181	222	-	222	0.11	-	0.11
2014			1,577		1,577			-		-	1,577	334	-	334	0.07	-	0.07
2015			2,455		2,455			66		66	2,520	557	540	557	0.07	0.07	0.07
2016			3,328		3,328			66		-	3,394	558	751	562	0.07	0.07	0.07
2017			3,424		3,424			69		3	3,493	637	755	639	0.07	0.07	0.07
2018			3,424		3,424			69		3	3,493	637	758	640	0.07	0.07	0.07
2019			3,424		3,424			69		-	3,493	637	758	640	0.07	0.07	0.07
2020			3,424		3,424			69		-	3,493	637	758	640	0.07	0.07	0.07

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2012			4					-			4	121	-	121	0.13	-	0.13
2013			181					-			181	225	-	225	0.11	-	0.11
2014			1,577					-			1,577	351	-	351	0.07	-	0.07
2015			2,455					66			2,520	770	540	764	0.07	0.07	0.07
2016			3,328					66			3,394	1,095	1,288	1,099	0.07	0.07	0.07
2017			3,424					69			3,493	1,700	1,983	1,706	0.07	0.07	0.07
2018			3,424					69			3,493	2,338	2,741	2,346	0.07	0.07	0.07
2019			3,424					69			3,493	2,975	3,499	2,985	0.07	0.07	0.07
2020			3,424					69			3,493	3,612	4,257	3,625	0.07	0.07	0.07
2021			3,424					69			3,493	4,249	5,015	4,264	0.07	0.07	0.07
2022			3,424					69			3,493	4,886	5,773	4,904	0.07	0.07	0.07
2023			3,424					69			3,493	5,516	6,531	5,537	0.07	0.07	0.07
2024			3,424					69			3,493	6,017	7,289	6,042	0.07	0.07	0.07
2025			3,424					69			3,493	6,276	7,535	6,301	0.07	0.07	0.07
2026			3,424					69			3,493	6,371	7,577	6,395	0.07	0.07	0.07
2027			3,424					69			3,493	6,372	7,581	6,396	0.07	0.07	0.07
2028			3,424					69			3,493	6,372	7,581	6,396	0.07	0.07	0.07

Program:	Residential Appliance Recycling
DSM Phase:	4
Type:	
Program Life in years	
Starting from 2015:	8.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2015	January	0	0	0		0	0	0	0		0	0
2015	February	0	0	0		0	0	0	0		0	0
2015	March	0	0	0		0	0	0	0		0	0
2015	April	0	0	0		0	0	0	0		0	0
2015	May	0	0	0		0	0	0	0		0	0
2015	June	0	0	0		0	0	0	0		0	0
2015	July	0	0	0		0	0	0	0		0	0
2015	August	0	0	0		0	0	0	0		0	0
2015	September	921	0	921		921	0	0	0		0	921
2015	October	1,007	0	1,928		1,928	0	0	0		0	1,928
2015	November	1,067	0	2,995		2,995	0	0	0		0	2,995
2015	December	146	0	3,141		3,141	0	0	0		0	3,141
2016	January	206	0	3,347		3,347	0	0	0		0	3,347
2016	February	4	0	3,351		3,351	0	0	0		0	3,351
2016	March	876	0	4,227		4,227	0	0	0		0	4,227
2016	April	653	0	4,880		4,880	0	0	0		0	4,880
2016	May	525	0	5,405		5,405	0	0	0		0	5,405
2016	June	1,202	0	6,607		6,607	0	0	0		0	6,607
2016	July	519	0	7,126		7,126	0	0	0		0	7,126
2016	August	1,102	0	8,228		8,228	0	0	0		0	8,228
2016	September	671	0	8,899		8,899	0	0	0		0	8,899
2016	October	615	0	9,514		9,514	0	0	0		0	9,514
2016	November	713	0	10,227		10,227	0	0	0		0	10,227
2016	December	648	0	10,875		10,875	0	0	0		0	10,875
2017	January	815	0	11,690		11,690	0	0	0		0	11,690
2017	February	313	0	12,003		12,003	0	0	0		0	12,003
2017	March	416	0	12,419		12,419	0	0	0		0	12,419
2017	April	511	0	12,930		12,930	0	0	0		0	12,930
2017	May	584	0	13,514		13,514	0	0	0		0	13,514
2017	June	475	0	13,989		13,989	0	0	0		0	13,989
2017	July	15	0	14,004		14,004	0	0	0		0	14,004
2017	August	0	0	14,004		14,004	0	0	0		0	14,004
2017	September	0	0	14,004		14,004	0	0	0		0	14,004
2017	October	0	0	14,004		14,004	0	0	0		0	14,004
2017	November	0	0	14,004		14,004	0	0	0		0	14,004
2017	December	0	0	14,004		14,004	0	0	0		0	14,004

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2015	January			0		0			0		0	0
2015	February			0		0			0		0	0
2015	March			0		0			0		0	0
2015	April			0		0			0		0	0
2015	May			0		0			0		0	0
2015	June			0		0			0		0	0
2015	July			0		0			0		0	0
2015	August			0		0			0		0	0
2015	September	85,475		85,475		85,475			0		0	85,475
2015	October	94,204		179,679		179,679			0		0	179,679
2015	November	94,694		274,373		274,373			0		0	274,373
2015	December	12,956		287,328		287,328			0		0	287,328
2016	January	18,353		305,681		305,681			0		0	305,681
2016	February	418		306,099		306,099			0		0	306,099
2016	March	65,927		372,026		372,026			0		0	372,026
2016	April	52,456		424,482		424,482			0		0	424,482
2016	May	40,844		465,326		465,326			0		0	465,326
2016	June	98,785		564,111		564,111			0		0	564,111
2016	July	42,735		606,846		606,846			0		0	606,846
2016	August	96,035		702,881		702,881			0		0	702,881
2016	September	58,181		761,062		761,062			0		0	761,062
2016	October	52,902		813,964		813,964			0		0	813,964
2016	November	61,607		875,571		875,571			0		0	875,571
2016	December	55,301		930,872		930,872			0		0	930,872
2017	January	67,673		998,545		998,545			0		0	998,545
2017	February	25,659		1,024,204		1,024,204			0		0	1,024,204
2017	March	32,960		1,057,164		1,057,164			0		0	1,057,164
2017	April	41,653		1,098,817		1,098,817			0		0	1,098,817
2017	May	46,444		1,145,261		1,145,261			0		0	1,145,261
2017	June	36,073		1,181,334		1,181,334			0		0	1,181,334
2017	July	908		1,182,242		1,182,242			0		0	1,182,242
2017	August			1,182,242		1,182,242			0		0	1,182,242
2017	September			1,182,242		1,182,242			0		0	1,182,242
2017	October			1,182,242		1,182,242			0		0	1,182,242
2017	November			1,182,242		1,182,242			0		0	1,182,242
2017	December			1,182,242		1,182,242			0		0	1,182,242

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2015	January			0		0			0		0	0			-			-
2015	February			0		0			0		0	0			-			-
2015	March			0		0			0		0	0			-			-
2015	April			0		0			0		0	0			-			-
2015	May			0		0			0		0	0			-			-
2015	June			0		0			0		0	0			-			-
2015	July			0		0			0		0	0			-			-
2015	August			0		0			0		0	0			-			-
2015	September	154		154		154			0		0	154	93		93	0.17		0.17
2015	October	169		323		323			0		0	323	93		93	0.17		0.17
2015	November	170		493		493			0		0	493	92		92	0.16		0.16
2015	December	23		516		516			0		0	516	91		91	0.16		0.16
2016	January	33		549		549			0		0	549	91		91	0.16		0.16
2016	February	1		550		550			0		0	550	91		91	0.16		0.16
2016	March	118		668		668			0		0	668	88		88	0.16		0.16
2016	April	94		762		762			0		0	762	87		87	0.16		0.16
2016	May	73		836		836			0		0	836	86		86	0.15		0.15
2016	June	177		1,013		1,013			0		0	1,013	85		85	0.15		0.15
2016	July	77		1,090		1,090			0		0	1,090	85		85	0.15		0.15
2016	August	172		1,262		1,262			0		0	1,262	85		85	0.15		0.15
2016	September	105		1,367		1,367			0		0	1,367	86		86	0.15		0.15
2016	October	95		1,462		1,462			0		0	1,462	86		86	0.15		0.15
2016	November	111		1,573		1,573			0		0	1,573	86		86	0.15		0.15
2016	December	99		1,672		1,672			0		0	1,672	86		86	0.15		0.15
2017	January	122		1,794		1,794			0		0	1,794	85		85	0.15		0.15
2017	February	46		1,840		1,840			0		0	1,840	85		85	0.15		0.15
2017	March	59		1,899		1,899			0		0	1,899	85		85	0.15		0.15
2017	April	75		1,974		1,974			0		0	1,974	85		85	0.15		0.15
2017	May	83		2,057		2,057			0		0	2,057	85		85	0.15		0.15
2017	June	65		2,122		2,122			0		0	2,122	84		84	0.15		0.15
2017	July	2		2,123		2,123			0		0	2,123	84		84	0.15		0.15
2017	August			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2017	September			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2017	October			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2017	November			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2017	December			2,123		2,123			0		0	2,123	84		84	0.15		0.15

Table 1		Participation											
Year	Month	Program Participants										System Cum for IRP	
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)		
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired					
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G	
2018	January	0	0	14,004		14,004	0	0	0		14,004		
2018	February	0	0	14,004		14,004	0	0	0		14,004		
2018	March	0	0	14,004		14,004	0	0	0		14,004		
2018	April	0	0	14,004		14,004	0	0	0		14,004		
2018	May	0	0	14,004		14,004	0	0	0		14,004		
2018	June	0	0	14,004		14,004	0	0	0		14,004		
2018	July	0	0	14,004		14,004	0	0	0		14,004		
2018	August	0	0	14,004		14,004	0	0	0		14,004		
2018	September	0	0	14,004		14,004	0	0	0		14,004		
2018	October	0	0	14,004		14,004	0	0	0		14,004		
2018	November	0	0	14,004		14,004	0	0	0		14,004		
2018	December	0	0	14,004		14,004	0	0	0		14,004		
2019	January	0	0	14,004		14,004	0	0	0		14,004		
2019	February	0	0	14,004		14,004	0	0	0		14,004		
2019	March	0	0	14,004		14,004	0	0	0		14,004		
2019	April	0	0	14,004		14,004	0	0	0		14,004		
2019	May	0	0	14,004		14,004	0	0	0		14,004		
2019	June	0	0	14,004		14,004	0	0	0		14,004		
2019	July	0	0	14,004		14,004	0	0	0		14,004		
2019	August	0	0	14,004		14,004	0	0	0		14,004		
2019	September	0	0	14,004		14,004	0	0	0		14,004		
2019	October	0	0	14,004		14,004	0	0	0		14,004		
2019	November	0	0	14,004		14,004	0	0	0		14,004		
2019	December	0	0	14,004		14,004	0	0	0		14,004		
2020	January	0	0	14,004		14,004	0	0	0		14,004		
2020	February	0	0	14,004		14,004	0	0	0		14,004		
2020	March	0	0	14,004		14,004	0	0	0		14,004		
2020	April	0	0	14,004		14,004	0	0	0		14,004		
2020	May	0	0	14,004		14,004	0	0	0		14,004		
2020	June	0	0	14,004		14,004	0	0	0		14,004		
2020	July	0	0	14,004		14,004	0	0	0		14,004		
2020	August	0	0	14,004		14,004	0	0	0		14,004		
2020	September	0	0	14,004		14,004	0	0	0		14,004		
2020	October	0	0	14,004		14,004	0	0	0		14,004		
2020	November	0	0	14,004		14,004	0	0	0		14,004		
2020	December	0	0	14,004		14,004	0	0	0		14,004		

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				System Cum for IRP
2018	January			1,182,242		1,182,242			0		0	1,182,242
2018	February			1,182,242		1,182,242			0		0	1,182,242
2018	March			1,182,242		1,182,242			0		0	1,182,242
2018	April			1,182,242		1,182,242			0		0	1,182,242
2018	May			1,182,242		1,182,242			0		0	1,182,242
2018	June			1,182,242		1,182,242			0		0	1,182,242
2018	July			1,182,242		1,182,242			0		0	1,182,242
2018	August			1,182,242		1,182,242			0		0	1,182,242
2018	September			1,182,242		1,182,242			0		0	1,182,242
2018	October			1,182,242		1,182,242			0		0	1,182,242
2018	November			1,182,242		1,182,242			0		0	1,182,242
2018	December			1,182,242		1,182,242			0		0	1,182,242
2019	January			1,182,242		1,182,242			0		0	1,182,242
2019	February			1,182,242		1,182,242			0		0	1,182,242
2019	March			1,182,242		1,182,242			0		0	1,182,242
2019	April			1,182,242		1,182,242			0		0	1,182,242
2019	May			1,182,242		1,182,242			0		0	1,182,242
2019	June			1,182,242		1,182,242			0		0	1,182,242
2019	July			1,182,242		1,182,242			0		0	1,182,242
2019	August			1,182,242		1,182,242			0		0	1,182,242
2019	September			1,182,242		1,182,242			0		0	1,182,242
2019	October			1,182,242		1,182,242			0		0	1,182,242
2019	November			1,182,242		1,182,242			0		0	1,182,242
2019	December			1,182,242		1,182,242			0		0	1,182,242
2020	January			1,182,242		1,182,242			0		0	1,182,242
2020	February			1,182,242		1,182,242			0		0	1,182,242
2020	March			1,182,242		1,182,242			0		0	1,182,242
2020	April			1,182,242		1,182,242			0		0	1,182,242
2020	May			1,182,242		1,182,242			0		0	1,182,242
2020	June			1,182,242		1,182,242			0		0	1,182,242
2020	July			1,182,242		1,182,242			0		0	1,182,242
2020	August			1,182,242		1,182,242			0		0	1,182,242
2020	September			1,182,242		1,182,242			0		0	1,182,242
2020	October			1,182,242		1,182,242			0		0	1,182,242
2020	November			1,182,242		1,182,242			0		0	1,182,242
2020	December			1,182,242		1,182,242			0		0	1,182,242

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System			VA		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2018	January			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	February			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	March			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	April			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	May			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	June			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	July			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	August			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	September			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	October			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	November			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2018	December			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	January			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	February			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	March			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	April			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	May			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	June			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	July			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	August			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	September			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	October			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	November			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2019	December			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	January			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	February			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	March			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	April			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	May			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	June			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	July			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	August			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	September			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	October			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	November			2,123		2,123			0		0	2,123	84		84	0.15		0.15
2020	December			2,123		2,123			0		0	2,123	84		84	0.15		0.15

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			3,141		3,141			-		-	3,141
2016			7,734		7,734			-		-	7,734
2017			3,129		3,129			-		-	3,129
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			3,141		3,141			-		-	3,141
2016			7,734		7,734			-		-	7,734
2017			3,129		3,129			-		-	3,129
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
	Program Participants		VA PPI					NC PPI			System
2015			3,141					-			3,141
2016			10,875					-			10,875
2017			14,004					-			14,004
2018			10,863					-			10,863
2019			3,129					-			3,129
2020			-					-			-

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			826,855		826,855			-		-	826,855
2016			3,680,982		3,680,982			-		-	3,680,982
2017			2,428,307		2,428,307			-		-	2,428,307
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			3,447,939		3,447,939			-		-	3,447,939
2016			7,722,529		7,722,529			-		-	7,722,529
2017			3,016,432		3,016,432			-		-	3,016,432
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2015			826,855					-		826,855
2016			7,128,922					-		7,128,922
2017			13,598,776					-		13,598,776
2018			10,738,961					-		10,738,961
2019			3,016,432					-		3,016,432
2020			-					-		-

Table 2. EM&V Data Incremental by Vintage Year												Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2015			516		516			-		-	516	263	-	263	0.16	-	0.16
2016			1,156		1,156			-		-	1,156	476	-	476	0.15	-	0.15
2017			451		451			-		-	451	776	-	776	0.14	-	0.14
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year												Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2015			516		516			-		-	516	1,098	-	1,098	0.16	-	0.16
2016			1,156		1,156			-		-	1,156	999	-	999	0.15	-	0.15
2017			451		451			-		-	451	964	-	964	0.14	-	0.14
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)												PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2015			516					-			516		-			-	
2016			1,672					-			1,672		-			-	
2017			2,123					-			2,123		-			-	
2018			1,607					-			1,607		-			-	
2019			451					-			451		-			-	
2020			-					-			-		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			3,141		3,141			-		-	3,141
2016			10,875		10,875			-		-	10,875
2017			14,004		14,004			-		-	14,004
2018			14,004		14,004			-		-	14,004
2019			14,004		14,004			-		-	14,004
2020			14,004		14,004			-		-	14,004

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2015			3,141					-		3,141
2016			10,875					-		10,875
2017			14,004					-		14,004
2018			14,004					-		14,004
2019			14,004					-		14,004
2020			14,004					-		14,004
2021			14,004					-		14,004
2022			14,004					-		14,004
2023			14,004					-		14,004
2024			14,004					-		14,004
2025			14,004					-		14,004
2026			14,004					-		14,004

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2015			826,855		826,855			0		0	826,855
2016			7,128,922		7,128,922			0		0	7,128,922
2017			13,598,776		13,598,776			0		0	13,598,776
2018			14,186,901		14,186,901			0		0	14,186,901
2019			14,186,901		14,186,901			0		0	14,186,901
2020			14,186,901		14,186,901			0		0	14,186,901

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA IRP					NC IRP			System IRP
2015			826,855					-			826,855
2016			7,955,777					-			7,955,777
2017			21,554,553					-			21,554,553
2018			35,741,454					-			35,741,454
2019			49,928,354					-			49,928,354
2020			64,115,255					-			64,115,255
2021			78,302,155					-			78,302,155
2022			92,489,056					-			92,489,056
2023			105,849,101					-			105,849,101
2024			112,907,080					-			112,907,080
2025			113,495,205					-			113,495,205
2026			113,495,205					-			113,495,205

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2015			516		516			-		-	516	263	-	263	0.16	-	0.16
2016			1,672		1,672			-		-	1,672	656	-	656	0.15	-	0.15
2017			2,123		2,123			-		-	2,123	971	-	971	0.15	-	0.15
2018			2,123		2,123			-		-	2,123	1,013	-	1,013	0.15	-	0.15
2019			2,123		2,123			-		-	2,123	1,013	-	1,013	0.15	-	0.15
2020			2,123		2,123			-		-	2,123	1,013	-	1,013	0.15	-	0.15

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant		
			VA IRP					NC IRP		System IRP	VA	NC	System	VA	NC	System
2015			516					-		516	263	-	263	0.16	-	0.16
2016			1,672					-		1,672	732	-	732	0.15	-	0.15
2017			2,123					-		2,123	1,539	-	1,539	0.15	-	0.15
2018			2,123					-		2,123	2,552	-	2,552	0.15	-	0.15
2019			2,123					-		2,123	3,565	-	3,565	0.15	-	0.15
2020			2,123					-		2,123	4,578	-	4,578	0.15	-	0.15
2021			2,123					-		2,123	5,591	-	5,591	0.15	-	0.15
2022			2,123					-		2,123	6,604	-	6,604	0.15	-	0.15
2023			2,123					-		2,123	7,558	-	7,558	0.15	-	0.15
2024			2,123					-		2,123	8,062	-	8,062	0.15	-	0.15
2025			2,123					-		2,123	8,104	-	8,104	0.15	-	0.15
2026			2,123					-		2,123	8,104	-	8,104	0.15	-	0.15

Program:	Residential Retail LED
DSM Phase:	5
Type:	
Program Life in years	
Starting from 2017:	20.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2017	January	0	0	0		0	0	0	0		0	0
2017	February	0	0	0		0	0	0	0		0	0
2017	March	0	0	0		0	0	0	0		0	0
2017	April	0	0	0		0	0	0	0		0	0
2017	May	0	0	0		0	0	0	0		0	0
2017	June	0	0	0		0	0	0	0		0	0
2017	July	0	0	0		0	0	0	0		0	0
2017	August	0	0	0		0	5,018	0	5,018		5,018	5,018
2017	September	0	0	0		0	14,683	0	19,701		19,701	19,701
2017	October	0	0	0		0	14,758	0	34,459		34,459	34,459
2017	November	0	0	0		0	19,836	0	54,295		54,295	54,295
2017	December	0	0	0		0	15,966	0	70,261		70,261	70,261
2018	January	0	0	0		0	12,482	0	82,743		82,743	82,743
2018	February	0	0	0		0	29,279	0	112,022		112,022	112,022
2018	March	0	0	0		0	13,614	0	125,636		125,636	125,636
2018	April	0	0	0		0	21,629	0	147,265		147,265	147,265
2018	May	0	0	0		0	11,552	0	158,817		158,817	158,817
2018	June	0	0	0		0	14,694	0	173,511		173,511	173,511
2018	July	0	0	0		0	20,050	0	193,561		193,561	193,561
2018	August	0	0	0		0	25,185	0	218,746		218,746	218,746
2018	September	0	0	0		0	32,534	0	251,280		251,280	251,280
2018	October	0	0	0		0	11,899	0	263,179		263,179	263,179
2018	November	0	0	0		0	42,003	0	305,182		305,182	305,182
2018	December	0	0	0		0	29,315	0	334,497		334,497	334,497
2019	January	0	0	0		0	0	0	334,497		334,497	334,497
2019	February	0	0	0		0	0	0	334,497		334,497	334,497
2019	March	0	0	0		0	0	0	334,497		334,497	334,497
2019	April	0	0	0		0	0	0	334,497		334,497	334,497
2019	May	0	0	0		0	0	0	334,497		334,497	334,497
2019	June	0	0	0		0	0	0	334,497		334,497	334,497
2019	July	0	0	0		0	0	0	334,497	0	334,497	334,497
2019	August	0	0	0		0	0	0	334,497	0	334,497	334,497
2019	September	0	0	0		0	0	0	334,497	0	334,497	334,497
2019	October	0	0	0		0	0	0	334,497	0	334,497	334,497
2019	November	0	0	0		0	0	0	334,497	0	334,497	334,497
2019	December	0	0	0		0	0	0	334,497	0	334,497	334,497

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2017	January			0		0			0		0	0
2017	February			0		0			0		0	0
2017	March			0		0			0		0	0
2017	April			0		0			0		0	0
2017	May			0		0			0		0	0
2017	June			0		0			0		0	0
2017	July			0		0			0		0	0
2017	August			0		0	11,080		11,080		11,080	11,080
2017	September			0		0	31,886		42,966		42,966	42,966
2017	October			0		0	32,304		75,270		75,270	75,270
2017	November			0		0	45,335		120,605		120,605	120,605
2017	December			0		0	36,296		156,901		156,901	156,901
2018	January			0		0	19,791		176,692		176,692	176,692
2018	February			0		0	47,625		224,317		224,317	224,317
2018	March			0		0	21,932		246,250		246,250	246,250
2018	April			0		0	33,671		279,920		279,920	279,920
2018	May			0		0	18,995		298,915		298,915	298,915
2018	June			0		0	24,434		323,349		323,349	323,349
2018	July			0		0	32,054		355,403		355,403	355,403
2018	August			0		0	39,443		394,846		394,846	394,846
2018	September			0		0	45,748		440,594		440,594	440,594
2018	October			0		0	20,227		460,821		460,821	460,821
2018	November			0		0	64,477		525,298		525,298	525,298
2018	December			0		0	50,814		576,111		576,111	576,111
2019	January			0		0			576,111		576,111	576,111
2019	February			0		0			576,111		576,111	576,111
2019	March			0		0			576,111		576,111	576,111
2019	April			0		0			576,111		576,111	576,111
2019	May			0		0			576,111		576,111	576,111
2019	June			0		0			576,111		576,111	576,111
2019	July			0		0			576,111	0	576,111	576,111
2019	August			0		0			576,111	0	576,111	576,111
2019	September			0		0			576,111	0	576,111	576,111
2019	October			0		0			576,111	0	576,111	576,111
2019	November			0		0			576,111	0	576,111	576,111
2019	December			0		0			576,111	0	576,111	576,111

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2017	January			0		0			0		0	0			-			-
2017	February			0		0			0		0	0			-			-
2017	March			0		0			0		0	0			-			-
2017	April			0		0			0		0	0			-			-
2017	May			0		0			0		0	0			-			-
2017	June			0		0			0		0	0			-			-
2017	July			0		0			0		0	0			-			-
2017	August			0		0	15		15		15	15		2	2		0.00	0.00
2017	September			0		0	42		56		56	56		2	2		0.00	0.00
2017	October			0		0	42		99		99	99		2	2		0.00	0.00
2017	November			0		0	60		158		158	158		2	2		0.00	0.00
2017	December			0		0	48		206		206	206		2	2		0.00	0.00
2018	January			0		0	24		230		230	230		2	2		0.00	0.00
2018	February			0		0	59		289		289	289		2	2		0.00	0.00
2018	March			0		0	27		316		316	316		2	2		0.00	0.00
2018	April			0		0	41		357		357	357		2	2		0.00	0.00
2018	May			0		0	23		381		381	381		2	2		0.00	0.00
2018	June			0		0	30		411		411	411		2	2		0.00	0.00
2018	July			0		0	39		450		450	450		2	2		0.00	0.00
2018	August			0		0	48		498		498	498		2	2		0.00	0.00
2018	September			0		0	56		555		555	555		2	2		0.00	0.00
2018	October			0		0	25		580		580	580		2	2		0.00	0.00
2018	November			0		0	79		659		659	659		2	2		0.00	0.00
2018	December			0		0	62		721		721	721		2	2		0.00	0.00
2019	January			0		0			721		721	721		2	2		0.00	0.00
2019	February			0		0			721		721	721		2	2		0.00	0.00
2019	March			0		0			721		721	721		2	2		0.00	0.00
2019	April			0		0			721		721	721		2	2		0.00	0.00
2019	May			0		0			721		721	721		2	2		0.00	0.00
2019	June			0		0			721		721	721		2	2		0.00	0.00
2019	July			0		0			721	0	721	721		2	2		0.00	0.00
2019	August			0		0			721	0	721	721		2	2		0.00	0.00
2019	September			0		0			721	0	721	721		2	2		0.00	0.00
2019	October			0		0			721	0	721	721		2	2		0.00	0.00
2019	November			0		0			721	0	721	721		2	2		0.00	0.00
2019	December			0		0			721		721	721		2	2		0.00	0.00

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]	[F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]	[H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	E+G	
2020	January	0	0	0		0	0	0	334,497		0	334,497	
2020	February	0	0	0		0	0	0	334,497		0	334,497	
2020	March	0	0	0		0	0	0	334,497		0	334,497	
2020	April	0	0	0		0	0	0	334,497		0	334,497	
2020	May	0	0	0		0	0	0	334,497		0	334,497	
2020	June	0	0	0		0	0	0	334,497		0	334,497	
2020	July	0	0	0		0	0	0	334,497		0	334,497	
2020	August	0	0	0		0	0	0	334,497		0	334,497	
2020	September	0	0	0		0	0	0	334,497		0	334,497	
2020	October	0	0	0		0	0	0	334,497		0	334,497	
2020	November	0	0	0		0	0	0	334,497		0	334,497	
2020	December	0	0	0		0	0	0	334,497		0	334,497	

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2020	January			0		0			576,111		0	576,111
2020	February			0		0			576,111		0	576,111
2020	March			0		0			576,111		0	576,111
2020	April			0		0			576,111		0	576,111
2020	May			0		0			576,111		0	576,111
2020	June			0		0			576,111		0	576,111
2020	July			0		0			576,111		0	576,111
2020	August			0		0			576,111		0	576,111
2020	September			0		0			576,111		0	576,111
2020	October			0		0			576,111		0	576,111
2020	November			0		0			576,111		0	576,111
2020	December			0		0			576,111		0	576,111

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA						NC			System		VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2020	January			0		0			721		0	721		2	2		0.00	0.00
2020	February			0		0			721		0	721		2	2		0.00	0.00
2020	March			0		0			721		0	721		2	2		0.00	0.00
2020	April			0		0			721		0	721		2	2		0.00	0.00
2020	May			0		0			721		0	721		2	2		0.00	0.00
2020	June			0		0			721		0	721		2	2		0.00	0.00
2020	July			0		0			721		0	721		2	2		0.00	0.00
2020	August			0		0			721		0	721		2	2		0.00	0.00
2020	September			0		0			721		0	721		2	2		0.00	0.00
2020	October			0		0			721		0	721		2	2		0.00	0.00
2020	November			0		0			721		0	721		2	2		0.00	0.00
2020	December			0		0			721		0	721		2	2		0.00	0.00

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			-		-			70,261		70,261	70,261
2018			-		-			264,236		264,236	264,236
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			-		-			70,261		70,261	70,261
2018			-		-			264,236		264,236	264,236
2019			-		-						
2020			-		-						

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants									
			VA PPI					NC PPI		System
2017			-					70,261		70,261
2018			-					334,497		334,497
2019			-					334,497		334,497
2020			-					264,236		264,236

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			-		-			406,822		406,822	406,822
2018			-		-			2,419,705		2,419,705	2,419,705
2019			-		-			-		0	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
Net kWh											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			-		-			1,882,812		1,882,812	1,882,812
2018			-		-			5,030,524		5,030,524	5,030,524
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Net Energy (kWh) for PPI											
			VA PPI					NC PPI			System
2017			-					406,822			406,822
2018			-					4,302,517			4,302,517
2019			-					6,913,336			6,913,336
2020			-					5,030,524			5,030,524

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2017			-		-			206		206	206	-	6	6	-	0.00	0.00
2018			-		-			515		515	515	-	9	9	-	0.00	0.00
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2017			-		-			206		206	206	-	27	27	-	0.00	0.00
2018			-		-			515		515	515	-	19	19	-	0.00	0.00
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2017			-					206		206		6			0.00	
2018			-					721		721		13			0.00	
2019			-					721		721		21			0.00	
2020			-					515		515		19			0.00	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			-		-			70,261		70,261	70,261
2018			-		-			334,497		334,497	334,497
2019			-		-			334,497		-	334,497
2020			-		-			334,497		-	334,497

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Program Participants										
			VA IRP					NC IRP			System IRP
2017			-					70,261			70,261
2018			-					334,497			334,497
2019			-					334,497			334,497
2020			-					334,497			334,497
2021			-					334,497			334,497
2022			-					334,497			334,497
2023			-					334,497			334,497
2024			-					334,497			334,497
2025			-					334,497			334,497
2026			-					334,497			334,497
2027			-					334,497			334,497
2028			-					334,497			334,497
2029			-					334,497			334,497
2030			-					334,497			334,497
2031			-					334,497			334,497
2032			-					334,497			334,497
2033			-					334,497			334,497
2034			-					334,497			334,497
2035			-					334,497			334,497
2036			-					334,497			334,497
2037			-					334,497			334,497
2038			-					334,497			334,497
2039			-					334,497			334,497

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2017			-		-			406,822		406,822	406,822
2018			-		-			4,302,517		4,302,517	4,302,517
2019			-		-			6,913,336		5,761,113	6,913,336
2020			-		-			6,913,336		0	6,913,336

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Net Energy (kWh)										
			VA IRP					NC IRP			System IRP
2017			-					406,822			406,822
2018			-					4,709,339			4,709,339
2019			-					11,622,674			11,622,674
2020			-					18,536,010			18,536,010
2021			-					25,449,346			25,449,346
2022			-					32,362,681			32,362,681
2023			-					39,276,017			39,276,017
2024			-					46,189,352			46,189,352
2025			-					53,102,688			53,102,688
2026			-					60,016,023			60,016,023
2027			-					66,929,359			66,929,359
2028			-					73,842,694			73,842,694
2029			-					80,756,030			80,756,030
2030			-					87,669,365			87,669,365
2031			-					94,582,701			94,582,701
2032			-					101,496,036			101,496,036
2033			-					108,409,372			108,409,372
2034			-					115,322,708			115,322,708
2035			-					122,236,043			122,236,043
2036			-					129,149,379			129,149,379
2037			-					135,655,892			135,655,892
2038			-					138,266,711			138,266,711
2039			-					138,266,711			138,266,711

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2017			-		-			206		206	206	-	6	6	-	0.00	0.00
2018			-		-			721		721	721	-	13	13	-	0.00	0.00
2019			-		-			721		721	721	-	21	21	-	0.00	0.00
2020			-		-			721		-	721	-	21	21	-	0.00	0.00

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2017			-					206			206	-	6	6	-	0.00	0.00
2018			-					721			721	-	14	14	-	0.00	0.00
2019			-					721			721	-	35	35	-	0.00	0.00
2020			-					721			721	-	55	55	-	0.00	0.00
2021			-					721			721	-	76	76	-	0.00	0.00
2022			-					721			721	-	97	97	-	0.00	0.00
2023			-					721			721	-	117	117	-	0.00	0.00
2024			-					721			721	-	138	138	-	0.00	0.00
2025			-					721			721	-	159	159	-	0.00	0.00
2026			-					721			721	-	179	179	-	0.00	0.00
2027			-					721			721	-	200	200	-	0.00	0.00
2028			-					721			721	-	221	221	-	0.00	0.00
2029			-					721			721	-	241	241	-	0.00	0.00
2030			-					721			721	-	262	262	-	0.00	0.00
2031			-					721			721	-	283	283	-	0.00	0.00
2032			-					721			721	-	303	303	-	0.00	0.00
2033			-					721			721	-	324	324	-	0.00	0.00
2034			-					721			721	-	345	345	-	0.00	0.00
2035			-					721			721	-	365	365	-	0.00	0.00
2036			-					721			721	-	386	386	-	0.00	0.00
2037			-					721			721	-	406	406	-	0.00	0.00
2038			-					721			721	-	413	413	-	0.00	0.00
2039			-					721			721	-	413	413	-	0.00	0.00

Program:	Commercial Lighting Program
DSM Phase:	1
Type:	
Program Life in years	
Starting from 2010:	10.0

Table 1		Participation										
Year	Month	Program Participants										System System Cum for IRP E+G
		VA					NC					
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	
2010	January	0	0	0		0	0	0	0		0	0
2010	February	0	0	0		0	0	0	0		0	0
2010	March	0	0	0		0	0	0	0		0	0
2010	April	0	0	0		0	0	0	0		0	0
2010	May	0	0	0		0	0	0	0		0	0
2010	June	12	0	12		12	0	0	0		0	12
2010	July	19	0	31		31	0	0	0		0	31
2010	August	53	0	84		84	0	0	0		0	84
2010	September	169	0	253		253	0	0	0		0	253
2010	October	57	0	310		310	0	0	0		0	310
2010	November	46	0	356		356	0	0	0		0	356
2010	December	43	0	399		399	0	0	0		0	399
2011	January	51	0	450		450	0	0	0		0	450
2011	February	557	0	1,007		1,007	0	0	0		0	1,007
2011	March	56	0	1,063		1,063	0	0	0		0	1,063
2011	April	42	0	1,105		1,105	0	0	0		0	1,105
2011	May	52	0	1,157		1,157	0	0	0		0	1,157
2011	June	73	0	1,230		1,230	0	0	0		0	1,230
2011	July	14	0	1,244		1,244	0	0	0		0	1,244
2011	August	122	0	1,366		1,366	0	0	0		0	1,366
2011	September	73	0	1,439		1,439	0	0	0		0	1,439
2011	October	69	0	1,508		1,508	0	0	0		0	1,508
2011	November	58	0	1,566		1,566	0	0	0		0	1,566
2011	December	140	0	1,706		1,706	1	0	1		1	1,707
2012	January	156	0	1,862		1,862	1	0	2		2	1,864
2012	February	226	0	2,088		2,088	2	0	4		4	2,092
2012	March	58	0	2,146		2,146	2	0	6		6	2,152
2012	April	32	0	2,178		2,178	12	0	18		18	2,196
2012	May	0	0	2,178		2,178	0	0	18		18	2,196
2012	June	147	0	2,325		2,325	3	0	21		21	2,346
2012	July	83	0	2,408		2,408	3	0	24		24	2,432
2012	August	1	0	2,409		2,409	1	0	25		25	2,434
2012	September	0	0	2,409		2,409	0	0	25		25	2,434
2012	October	0	0	2,409		2,409	0	0	25		25	2,434
2012	November	0	0	2,409		2,409	1	0	26		26	2,435
2012	December	0	0	2,409		2,409	0	0	26		26	2,435

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC				System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2010	January			0		0			0		0	0
2010	February			0		0			0		0	0
2010	March			0		0			0		0	0
2010	April			0		0			0		0	0
2010	May			0		0			0		0	0
2010	June	135,000		135,000		135,000			0		0	135,000
2010	July	21,960		156,960		156,960			0		0	156,960
2010	August	214,145		371,105		371,105			0		0	371,105
2010	September	226,331		597,436		597,436			0		0	597,436
2010	October	164,509		761,945		761,945			0		0	761,945
2010	November	164,021		925,966		925,966			0		0	925,966
2010	December	78,841		1,004,807		1,004,807			0		0	1,004,807
2011	January	170,611		1,175,418		1,175,418			0		0	1,175,418
2011	February	348,561		1,523,980		1,523,980			0		0	1,523,980
2011	March	156,770		1,680,750		1,680,750			0		0	1,680,750
2011	April	265,148		1,945,898		1,945,898			0		0	1,945,898
2011	May	233,515		2,179,412		2,179,412			0		0	2,179,412
2011	June	358,288		2,537,700		2,537,700			0		0	2,537,700
2011	July	64,171		2,601,871		2,601,871			0		0	2,601,871
2011	August	212,157		2,814,028		2,814,028			0		0	2,814,028
2011	September	498,457		3,312,485		3,312,485			0		0	3,312,485
2011	October	183,189		3,495,674		3,495,674			0		0	3,495,674
2011	November	377,496		3,873,170		3,873,170			0		0	3,873,170
2011	December	257,456		4,130,625		4,130,625	131,821		131,821		131,821	4,262,446
2012	January	419,896		4,550,521		4,550,521	5,275		137,096		137,096	4,687,617
2012	February	198,535		4,749,057		4,749,057	182		137,278		137,278	4,886,334
2012	March	98,538		4,847,595		4,847,595	235		137,513		137,513	4,985,108
2012	April	125,865		4,973,460		4,973,460	1,850		139,363		139,363	5,112,823
2012	May			4,973,460		4,973,460			139,363		139,363	5,112,823
2012	June	538,873		5,512,333		5,512,333	14,549		153,911		153,911	5,666,244
2012	July	369,861		5,882,193		5,882,193	1,524		155,435		155,435	6,037,629
2012	August	7,249		5,889,443		5,889,443	857		156,292		156,292	6,045,735
2012	September			5,889,443		5,889,443			156,292		156,292	6,045,735
2012	October			5,889,443		5,889,443			156,292		156,292	6,045,735
2012	November			5,889,443		5,889,443	5,942		162,234		162,234	6,051,677
2012	December			5,889,443		5,889,443			162,234		162,234	6,051,677

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2010	January			0		0			0		0	0			-			-
2010	February			0		0			0		0	0			-			-
2010	March			0		0			0		0	0			-			-
2010	April			0		0			0		0	0			-			-
2010	May			0		0			0		0	0			-			-
2010	June	242		242		242			0		0	242	11,250		11,250	20.14		20.14
2010	July	38		280		280			0		0	280	5,063		5,063	9.03		9.03
2010	August	362		642		642			0		0	642	4,418		4,418	7.65		7.65
2010	September	260		902		902			0		0	902	2,361		2,361	3.56		3.56
2010	October	237		1,139		1,139			0		0	1,139	2,458		2,458	3.68		3.68
2010	November	238		1,377		1,377			0		0	1,377	2,601		2,601	3.87		3.87
2010	December	117		1,494		1,494			0		0	1,494	2,518		2,518	3.74		3.74
2011	January	264		1,758		1,758			0		0	1,758	2,612		2,612	3.91		3.91
2011	February	405		2,163		2,163			0		0	2,163	1,513		1,513	2.15		2.15
2011	March	257		2,419		2,419			0		0	2,419	1,581		1,581	2.28		2.28
2011	April	372		2,792		2,792			0		0	2,792	1,761		1,761	2.53		2.53
2011	May	345		3,137		3,137			0		0	3,137	1,884		1,884	2.71		2.71
2011	June	567		3,704		3,704			0		0	3,704	2,063		2,063	3.01		3.01
2011	July	98		3,802		3,802			0		0	3,802	2,092		2,092	3.06		3.06
2011	August	297		4,098		4,098			0		0	4,098	2,060		2,060	3.00		3.00
2011	September	763		4,862		4,862			0		0	4,862	2,302		2,302	3.38		3.38
2011	October	305		5,167		5,167			0		0	5,167	2,318		2,318	3.43		3.43
2011	November	624		5,791		5,791			0		0	5,791	2,473		2,473	3.70		3.70
2011	December	384		6,175		6,175	334		334		334	6,509	2,421	131,821	2,497	3.62	334.02	3.81
2012	January	634		6,808		6,808	8		342		342	7,150	2,444	68,548	2,515	3.66	170.99	3.84
2012	February	298		7,107		7,107	0		342		342	7,449	2,274	34,319	2,336	3.40	85.56	3.56
2012	March	155		7,262		7,262	0		343		343	7,605	2,259	22,919	2,317	3.38	57.10	3.53
2012	April	196		7,458		7,458	3		345		345	7,803	2,283	7,742	2,328	3.42	19.19	3.55
2012	May			7,458		7,458			345		345	7,803	2,283	7,742	2,328	3.42	19.19	3.55
2012	June	782		8,240		8,240	29		375		375	8,615	2,371	7,329	2,415	3.54	17.85	3.67
2012	July	595		8,834		8,834	2		377		377	9,212	2,443	6,476	2,483	3.67	15.72	3.79
2012	August	11		8,845		8,845	1		378		378	9,224	2,445	6,252	2,484	3.67	15.14	3.79
2012	September			8,845		8,845			378		378	9,224	2,445	6,252	2,484	3.67	15.14	3.79
2012	October			8,845		8,845			378		378	9,224	2,445	6,252	2,484	3.67	15.14	3.79
2012	November			8,845		8,845	9		388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2012	December			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79

Table 1		Participation											
Year	Month	Program Participants										System System Cum for IRP E+G	
		VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D		
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]					
2013	January	0	0	2,409		2,409	0	0	26		26	2,435	
2013	February	0	0	2,409		2,409	0	0	26		26	2,435	
2013	March	0	0	2,409		2,409	0	0	26		26	2,435	
2013	April	0	0	2,409		2,409	0	0	26		26	2,435	
2013	May	0	0	2,409		2,409	0	0	26		26	2,435	
2013	June	0	0	2,409		2,409	0	0	26		26	2,435	
2013	July	0	0	2,409		2,409	0	0	26		26	2,435	
2013	August	0	0	2,409		2,409	0	0	26		26	2,435	
2013	September	0	0	2,409		2,409	0	0	26		26	2,435	
2013	October	0	0	2,409		2,409	0	0	26		26	2,435	
2013	November	0	0	2,409		2,409	0	0	26		26	2,435	
2013	December	0	0	2,409		2,409	0	0	26		26	2,435	
2014	January	0	0	2,409		2,409	0	0	26		26	2,435	
2014	February	0	0	2,409		2,409	0	0	26		26	2,435	
2014	March	0	0	2,409		2,409	0	0	26		26	2,435	
2014	April	0	0	2,409		2,409	0	0	26		26	2,435	
2014	May	0	0	2,409		2,409	4	0	30		30	2,439	
2014	June	0	0	2,409		2,409	1	0	31		31	2,440	
2014	July	0	0	2,409		2,409	1	0	32		32	2,441	
2014	August	0	0	2,409		2,409	0	0	32		32	2,441	
2014	September	0	0	2,409		2,409	2	0	34		34	2,443	
2014	October	0	0	2,409		2,409	0	0	34		34	2,443	
2014	November	0	0	2,409		2,409	11	0	45		45	2,454	
2014	December	0	0	2,409		2,409	2	0	47		47	2,456	
2015	January	0	0	2,409		2,409	0	0	47		47	2,456	
2015	February	0	0	2,409		2,409	0	0	47		47	2,456	
2015	March	0	0	2,409		2,409	0	0	47		47	2,456	
2015	April	0	0	2,409		2,409	0	0	47		47	2,456	
2015	May	0	0	2,409		2,409	0	0	47		47	2,456	
2015	June	0	0	2,409		2,409	0	0	47		47	2,456	
2015	July	0	0	2,409		2,409	0	0	47		47	2,456	
2015	August	0	0	2,409		2,409	0	0	47		47	2,456	
2015	September	0	0	2,409		2,409	0	0	47		47	2,456	
2015	October	0	0	2,409		2,409	0	0	47		47	2,456	
2015	November	0	0	2,409		2,409	0	0	47		47	2,456	
2015	December	0	0	2,409		2,409	0	0	47		47	2,456	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2013	January			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	February			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	March			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	April			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	May			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	June			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	July			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	August			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	September			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	October			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	November			5,889,443		5,889,443			162,234		162,234	6,051,677
2013	December			5,889,443		5,889,443			162,234		162,234	6,051,677
2014	January			5,889,443		5,889,443			162,234		162,234	6,051,677
2014	February			5,889,443		5,889,443			162,234		162,234	6,051,677
2014	March			5,889,443		5,889,443			162,234		162,234	6,051,677
2014	April			5,889,443		5,889,443			162,234		162,234	6,051,677
2014	May			5,889,443		5,889,443	14,949		177,183		177,183	6,066,626
2014	June			5,889,443		5,889,443	12,922		190,105		190,105	6,079,548
2014	July			5,889,443		5,889,443	7,786		197,891		197,891	6,087,334
2014	August			5,889,443		5,889,443			197,891		197,891	6,087,334
2014	September			5,889,443		5,889,443	12,598		210,489		210,489	6,099,932
2014	October			5,889,443		5,889,443			210,489		210,489	6,099,932
2014	November			5,889,443		5,889,443	24,834		235,323		235,323	6,124,766
2014	December			5,889,443		5,889,443	1,549		236,872		236,872	6,126,315
2015	January			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	February			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	March			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	April			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	May			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	June			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	July			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	August			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	September			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	October			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	November			5,889,443		5,889,443			236,872		236,872	6,126,315
2015	December			5,889,443		5,889,443			236,872		236,872	6,126,315

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System			System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2013	January			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	February			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	March			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	April			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	May			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	June			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	July			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	August			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	September			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	October			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	November			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2013	December			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2014	January			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2014	February			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2014	March			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2014	April			8,845		8,845			388		388	9,233	2,445	6,240	2,485	3.67	14.92	3.79
2014	May			8,845		8,845	51		439		439	9,284	2,445	5,906	2,487	3.67	14.63	3.81
2014	June			8,845		8,845	66		505		505	9,350	2,445	6,132	2,492	3.67	16.29	3.83
2014	July			8,845		8,845	21		526		526	9,371	2,445	6,184	2,494	3.67	16.44	3.84
2014	August			8,845		8,845			526		526	9,371	2,445	6,184	2,494	3.67	16.44	3.84
2014	September			8,845		8,845	29		556		556	9,401	2,445	6,191	2,497	3.67	16.34	3.85
2014	October			8,845		8,845			556		556	9,401	2,445	6,191	2,497	3.67	16.34	3.85
2014	November			8,845		8,845	63		619		619	9,464	2,445	5,229	2,496	3.67	13.75	3.86
2014	December			8,845		8,845	4		623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	January			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	February			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	March			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	April			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	May			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	June			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	July			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	August			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	September			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	October			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	November			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2015	December			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86

Table 1		Participation										
Year	Month	Program Participants										System System Cum for IRP E+G
		VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2016	January	0	0	2,409		2,409	0	0	47		47	2,456
2016	February	0	0	2,409		2,409	0	0	47		47	2,456
2016	March	0	0	2,409		2,409	0	0	47		47	2,456
2016	April	0	0	2,409		2,409	0	0	47		47	2,456
2016	May	0	0	2,409		2,409	0	0	47		47	2,456
2016	June	0	0	2,409		2,409	0	0	47		47	2,456
2016	July	0	0	2,409		2,409	0	0	47		47	2,456
2016	August	0	0	2,409		2,409	0	0	47		47	2,456
2016	September	0	0	2,409		2,409	0	0	47		47	2,456
2016	October	0	0	2,409		2,409	0	0	47		47	2,456
2016	November	0	0	2,409		2,409	0	0	47		47	2,456
2016	December	0	0	2,409		2,409	0	0	47		47	2,456
2017	January	0	0	2,409		2,409	0	0	47		47	2,456
2017	February	0	0	2,409		2,409	0	0	47		47	2,456
2017	March	0	0	2,409		2,409	0	0	47		47	2,456
2017	April	0	0	2,409		2,409	0	0	47		47	2,456
2017	May	0	0	2,409		2,409	0	0	47		47	2,456
2017	June	0	0	2,409		2,409	0	0	47		47	2,456
2017	July	0	0	2,409		2,409	0	0	47		47	2,456
2017	August	0	0	2,409		2,409	0	0	47		47	2,456
2017	September	0	0	2,409		2,409	0	0	47		47	2,456
2017	October	0	0	2,409		2,409	0	0	47		47	2,456
2017	November	0	0	2,409		2,409	0	0	47		47	2,456
2017	December	0	0	2,409		2,409	0	0	47		47	2,456
2018	January	0	0	2,409		2,409	0	0	47		47	2,456
2018	February	0	0	2,409		2,409	0	0	47		47	2,456
2018	March	0	0	2,409		2,409	0	0	47		47	2,456
2018	April	0	0	2,409		2,409	0	0	47		47	2,456
2018	May	0	0	2,409		2,409	0	0	47		47	2,456
2018	June	0	0	2,409		2,409	0	0	47		47	2,456
2018	July	0	0	2,409		2,409	0	0	47		47	2,456
2018	August	0	0	2,409		2,409	0	0	47		47	2,456
2018	September	0	0	2,409		2,409	0	0	47		47	2,456
2018	October	0	0	2,409		2,409	0	0	47		47	2,456
2018	November	0	0	2,409		2,409	0	0	47		47	2,456
2018	December	0	0	2,409		2,409	0	0	47		47	2,456

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2016	January			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	February			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	March			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	April			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	May			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	June			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	July			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	August			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	September			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	October			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	November			5,889,443		5,889,443			236,872		236,872	6,126,315
2016	December			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	January			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	February			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	March			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	April			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	May			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	June			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	July			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	August			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	September			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	October			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	November			5,889,443		5,889,443			236,872		236,872	6,126,315
2017	December			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	January			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	February			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	March			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	April			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	May			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	June			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	July			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	August			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	September			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	October			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	November			5,889,443		5,889,443			236,872		236,872	6,126,315
2018	December			5,889,443		5,889,443			236,872		236,872	6,126,315

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2016	January			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	February			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	March			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	April			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	May			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	June			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	July			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	August			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	September			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	October			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	November			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2016	December			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	January			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	February			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	March			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	April			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	May			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	June			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	July			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	August			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	September			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	October			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	November			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2017	December			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	January			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	February			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	March			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	April			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	May			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	June			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	July			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	August			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	September			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	October			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	November			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2018	December			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86

Table 1		Participation										
Year	Month	Program Participants										
		VA					NC					System Cum for IRP
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	
2019	January	0	0	2,409		2,409	0	0	47		47	2,456
2019	February	0	0	2,409		2,409	0	0	47		47	2,456
2019	March	0	0	2,409		2,409	0	0	47		47	2,456
2019	April	0	0	2,409		2,409	0	0	47		47	2,456
2019	May	0	0	2,409		2,409	0	0	47		47	2,456
2019	June	0	0	2,409		2,409	0	0	47		47	2,456
2019	July	0	0	2,409		2,409	0	0	47		47	2,456
2019	August	0	0	2,409		2,409	0	0	47		47	2,456
2019	September	0	0	2,409		2,409	0	0	47		47	2,456
2019	October	0	0	2,409		2,409	0	0	47		47	2,456
2019	November	0	0	2,409		2,409	0	0	47		47	2,456
2019	December	0	0	2,409		2,409	0	0	47		47	2,456
2020	January	0	0	2,409		2,409	0	0	47		47	2,456
2020	February	0	0	2,409		2,409	0	0	47		47	2,456
2020	March	0	0	2,409		2,409	0	0	47		47	2,456
2020	April	0	0	2,409		2,409	0	0	47		47	2,456
2020	May	0	0	2,409		2,409	0	0	47		47	2,456
2020	June	0	-12	2,397		2,397	0	0	47		47	2,444
2020	July	0	-19	2,378		2,378	0	0	47		47	2,425
2020	August	0	-53	2,325		2,325	0	0	47		47	2,372
2020	September	0	-169	2,156		2,156	0	0	47		47	2,203
2020	October	0	-57	2,099		2,099	0	0	47		47	2,146
2020	November	0	-46	2,053		2,053	0	0	47		47	2,100
2020	December	0	-43	2,010		2,010	0	0	47		47	2,057

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2019	January			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	February			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	March			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	April			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	May			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	June			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	July			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	August			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	September			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	October			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	November			5,889,443		5,889,443			236,872		236,872	6,126,315
2019	December			5,889,443		5,889,443			236,872		236,872	6,126,315
2020	January			5,889,443		5,889,443			236,872		236,872	6,126,315
2020	February			5,889,443		5,889,443			236,872		236,872	6,126,315
2020	March			5,889,443		5,889,443			236,872		236,872	6,126,315
2020	April			5,889,443		5,889,443			236,872		236,872	6,126,315
2020	May			5,889,443		5,889,443			236,872		236,872	6,126,315
2020	June		-135,000	5,754,443		5,754,443			236,872		236,872	5,991,315
2020	July		-21,960	5,732,482		5,732,482			236,872		236,872	5,969,355
2020	August		-214,145	5,518,338		5,518,338			236,872		236,872	5,755,210
2020	September		-226,331	5,292,007		5,292,007			236,872		236,872	5,528,879
2020	October		-164,509	5,127,498		5,127,498			236,872		236,872	5,364,370
2020	November		-164,021	4,963,477		4,963,477			236,872		236,872	5,200,349
2020	December		-78,841	4,884,636		4,884,636			236,872		236,872	5,121,508

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2019	January			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	February			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	March			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	April			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	May			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	June			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	July			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	August			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	September			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	October			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	November			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2019	December			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2020	January			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2020	February			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2020	March			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2020	April			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2020	May			8,845		8,845			623		623	9,468	2,445	5,040	2,494	3.67	13.26	3.86
2020	June		-242	8,604		8,604			623		623	9,227	2,401	5,040	2,451	3.59	13.26	3.78
2020	July		-38	8,565		8,565			623		623	9,189	2,411	5,040	2,462	3.60	13.26	3.79
2020	August		-362	8,203		8,203			623		623	8,826	2,373	5,040	2,426	3.53	13.26	3.72
2020	September		-260	7,943		7,943			623		623	8,566	2,455	5,040	2,510	3.68	13.26	3.89
2020	October		-237	7,706		7,706			623		623	8,329	2,443	5,040	2,500	3.67	13.26	3.88
2020	November		-238	7,468		7,468			623		623	8,091	2,418	5,040	2,476	3.64	13.26	3.85
2020	December		-117	7,351		7,351			623		623	7,974	2,430	5,040	2,490	3.66	13.26	3.88

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			399		399			-		-	399
2011			1,307		1,307			1		1	1,308
2012			703		703			25		25	728
2013			-		-			-		-	-
2014			-		-			21		21	21
2015			-		-			-		-	-
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-399		-399			-		-	-399

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			399		399			-		-	399
2011			1,307		1,307			1		1	1,308
2012			703		703			25		25	728
2013			-		-			-		-	-
2014			-		-			21		21	21
2015			-		-			-		-	-
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-399		-399			-		-	-399

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants		VA PPI					NC PPI		System
2010			399					-		399
2011			1,706					1		1,707
2012			2,409					26		2,435
2013			2,010					26		2,036
2014			703					46		749
2015			-					21		21
2016			-					21		21
2017			-					-		-
2018			-					-		-
2019			-					-		-
2020			-399					-		-399

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			3,953,218		3,953,218			-		-	3,953,218
2011			19,213,327		19,213,327			131,821		131,821	19,345,147
2012			15,368,328		15,368,328			211,454		211,454	15,579,782
2013			-		-			-		-	-
2014			-		-			358,372		358,372	358,372
2015			-		-			-		-	-
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-3,953,218		-3,953,218			-		-	-3,953,218

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			12,057,683		12,057,683			-		-	12,057,683
2011			37,509,820		37,509,820			1,581,849		1,581,849	39,091,670
2012			21,105,807		21,105,807			364,960		364,960	21,470,766
2013			-		-			-		-	-
2014			-		-			895,657		895,657	895,657
2015			-		-			-		-	-
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-12,057,683		-12,057,683			-		-	-12,057,683

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Net Energy (kWh) for PPI										
			VA PPI					NC PPI		System
2010			3,953,218					-		3,953,218
2011			31,271,010					131,821		31,402,830
2012			64,935,832					1,793,303		66,729,135
2013			58,615,627					1,946,809		60,562,436
2014			21,105,807					723,332		21,829,138
2015			-					895,657		895,657
2016			-					895,657		895,657
2017			-					-		-
2018			-					-		-
2019			-					-		-
2020			-3,953,218					-		-3,953,218

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			1,494		1,494			-		-	1,494	9,908	-	9,908	3.74	-	3.74
2011			4,681		4,681			334		334	5,015	14,700	131,821	14,790	3.58	334.02	3.83
2012			2,670		2,670			54		54	2,724	21,861	8,458	21,401	3.80	2.16	3.74
2013			-		-			-		-	-	-	-	-	-	-	-
2014			-		-			235		235	235	-	17,065	17,065	-	11.20	11.20
2015			-		-			-		-	-	-	-	-	-	-	-
2016			-		-			-		-	-	-	-	-	-	-	-
2017			-		-			-		-	-	-	-	-	-	-	-
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-1,494		-1,494			-		-	-1,494	9,908	-	9,908	3.74	-	3.74

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			1,494		1,494			-		-	1,494	30,220	-	30,220	3.74	-	3.74
2011			4,681		4,681			334		334	5,015	28,699	1,581,849	29,887	3.58	334.02	3.83
2012			2,670		2,670			54		54	2,724	30,022	14,598	29,493	3.80	2.16	3.74
2013			-		-			-		-	-	-	-	-	-	-	-
2014			-		-			235		235	235	-	42,650	42,650	-	11.20	11.20
2015			-		-			-		-	-	-	-	-	-	-	-
2016			-		-			-		-	-	-	-	-	-	-	-
2017			-		-			-		-	-	-	-	-	-	-	-
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-1,494		-1,494			-		-	-1,494	30,220	-	30,220	3.74	-	3.74

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2010			1,494					-		1,494		-			-	
2011			6,175					334		6,509		131,821			334.02	
2012			8,845					388		9,233		68,973			14.92	
2013			7,351					388		7,739		74,877			14.92	
2014			2,670					289		2,959		15,725			6.28	
2015			-					235		235		42,650			11.20	
2016			-					235		235		42,650			11.20	
2017			-					-		-		-			-	
2018			-					-		-		-			-	
2019			-					-		-		-			-	
2020			-1,494					-		-1,494		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			399		399			-		-	399
2011			1,706		1,706			1		1	1,707
2012			2,409		2,409			26		26	2,435
2013			2,409		2,409			26		26	2,435
2014			2,409		2,409			47		47	2,456
2015			2,409		2,409			47		47	2,456
2016			2,409		2,409			47		47	2,456
2017			2,409		2,409			47		47	2,456
2018			2,409		2,409			47		47	2,456
2019			2,409		2,409			47		47	2,456
2020			2,010		2,010			47		47	2,057

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2010			399					-		399
2011			1,706					1		1,707
2012			2,409					26		2,435
2013			2,409					26		2,435
2014			2,409					47		2,456
2015			2,409					47		2,456
2016			2,409					47		2,456
2017			2,409					47		2,456
2018			2,409					47		2,456
2019			2,409					47		2,456
2020			2,409					47		2,456
2021			2,409					47		2,456
2022			2,409					47		2,456
2023			2,409					47		2,456
2024			2,409					47		2,456
2025			2,409					47		2,456

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			3,953,218		3,953,218			0		0	3,953,218
2011			31,271,010		31,271,010			131,821		131,821	31,402,830
2012			64,935,832		64,935,832			1,793,303		1,793,303	66,729,135
2013			70,673,310		70,673,310			1,946,809		1,946,809	72,620,119
2014			70,673,310		70,673,310			2,305,181		2,305,181	72,978,491
2015			70,673,310		70,673,310			2,842,465		2,842,465	73,515,776
2016			70,673,310		70,673,310			2,842,465		2,842,465	73,515,776
2017			70,673,310		70,673,310			2,842,465		2,842,465	73,515,776
2018			70,673,310		70,673,310			2,842,465		2,842,465	73,515,776
2019			70,673,310		70,673,310			2,842,465		2,842,465	73,515,776
2020			66,720,093		66,720,093			2,842,465		2,842,465	69,562,558

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2010			3,953,218					-		3,953,218
2011			35,224,227					131,821		35,356,048
2012			100,160,059					1,925,124		102,085,183
2013			170,833,369					3,871,933		174,705,302
2014			241,506,680					6,177,114		247,683,793
2015			312,179,990					9,019,579		321,199,569
2016			382,853,300					11,862,044		394,715,345
2017			453,526,611					14,704,510		468,231,120
2018			524,199,921					17,546,975		541,746,896
2019			594,873,231					20,389,440		615,262,672
2020			661,593,324					23,231,906		684,825,230
2021			700,995,625					25,942,550		726,938,175
2022			706,733,103					26,991,712		733,724,816
2023			706,733,103					27,887,369		734,620,472
2024			706,733,103					28,424,653		735,157,757
2025			706,733,103					28,424,653		735,157,757

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			1,494		1,494			-		-	1,494	9,908	-	9,908	3.74	-	3.74
2011			6,175		6,175			334		334	6,509	18,330	131,821	18,397	3.62	334.02	3.81
2012			8,845		8,845			388		388	9,233	26,956	68,973	27,404	3.67	14.92	3.79
2013			8,845		8,845			388		388	9,233	29,337	74,877	29,823	3.67	14.92	3.79
2014			8,845		8,845			623		623	9,468	29,337	49,046	29,714	3.67	13.26	3.86
2015			8,845		8,845			623		623	9,468	29,337	60,478	29,933	3.67	13.26	3.86
2016			8,845		8,845			623		623	9,468	29,337	60,478	29,933	3.67	13.26	3.86
2017			8,845		8,845			623		623	9,468	29,337	60,478	29,933	3.67	13.26	3.86
2018			8,845		8,845			623		623	9,468	29,337	60,478	29,933	3.67	13.26	3.86
2019			8,845		8,845			623		623	9,468	29,337	60,478	29,933	3.67	13.26	3.86
2020			7,351		7,351			623		623	7,974	33,194	60,478	33,817	3.66	13.26	3.88

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant				IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/ Participant				Net kWh/Participant			
			VA IRP					NC IRP		System IRP	VA	NC	System	VA	NC	System		
2010			1,494					-		1,494	9,908	-	9,908	3.74	-	3.74		
2011			6,175					334		6,509	20,647	131,821	20,712	3.62	334.02	3.81		
2012			8,845					388		9,233	74,043	41,924	41,924	3.67	14.92	3.79		
2013			8,845					388		9,233	70,915	148,920	71,748	3.67	14.92	3.79		
2014			8,845					623		9,468	100,252	131,428	100,848	3.67	13.26	3.86		
2015			8,845					623		9,468	129,589	191,906	130,782	3.67	13.26	3.86		
2016			8,845					623		9,468	158,926	252,384	160,715	3.67	13.26	3.86		
2017			8,845					623		9,468	188,263	312,862	190,648	3.67	13.26	3.86		
2018			8,845					623		9,468	217,601	373,340	220,581	3.67	13.26	3.86		
2019			8,845					623		9,468	246,938	433,818	250,514	3.67	13.26	3.86		
2020			8,845					623		9,468	274,634	494,296	278,838	3.67	13.26	3.86		
2021			8,845					623		9,468	290,990	551,969	295,985	3.67	13.26	3.86		
2022			8,845					623		9,468	293,372	574,292	298,748	3.67	13.26	3.86		
2023			8,845					623		9,468	293,372	593,348	299,113	3.67	13.26	3.86		
2024			8,845					623		9,468	293,372	604,780	299,331	3.67	13.26	3.86		
2025			8,845					623		9,468	293,372	604,780	299,331	3.67	13.26	3.86		

Program:	Commercial HVAC Upgrade
DSM Phase:	1
Type:	
Program Life in years	
Starting from 2010:	15.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2010	January	0	0	0		0	0	0	0		0	0
2010	February	0	0	0		0	0	0	0		0	0
2010	March	0	0	0		0	0	0	0		0	0
2010	April	0	0	0		0	0	0	0		0	0
2010	May	0	0	0		0	0	0	0		0	0
2010	June	0	0	0		0	0	0	0		0	0
2010	July	3	0	3		3	0	0	0		0	3
2010	August	1	0	4		4	0	0	0		0	4
2010	September	6	0	10		10	0	0	0		0	10
2010	October	4	0	14		14	0	0	0		0	14
2010	November	8	0	22		22	0	0	0		0	22
2010	December	6	0	28		28	0	0	0		0	28
2011	January	3	0	31		31	0	0	0		0	31
2011	February	2	0	33		33	0	0	0		0	33
2011	March	9	0	42		42	0	0	0		0	42
2011	April	1	0	43		43	0	0	0		0	43
2011	May	4	0	47		47	0	0	0		0	47
2011	June	8	0	55		55	0	0	0		0	55
2011	July	4	0	59		59	0	0	0		0	59
2011	August	8	0	67		67	0	0	0		0	67
2011	September	5	0	72		72	0	0	0		0	72
2011	October	4	0	76		76	0	0	0		0	76
2011	November	11	0	87		87	0	0	0		0	87
2011	December	0	0	87		87	0	0	0		0	87
2012	January	6	0	93		93	2	0	2		2	95
2012	February	0	0	93		93	1	0	3		3	96
2012	March	3	0	96		96	0	0	3		3	99
2012	April	3	0	99		99	0	0	3		3	102
2012	May	0	0	99		99	0	0	3		3	102
2012	June	15	0	114		114	0	0	3		3	117
2012	July	9	0	123		123	0	0	3		3	126
2012	August	0	0	123		123	0	0	3		3	126
2012	September	0	0	123		123	0	0	3		3	126
2012	October	0	0	123		123	1	0	4		4	127
2012	November	0	0	123		123	0	0	4		4	127
2012	December	0	0	123		123	0	0	4		4	127

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2010	January			0		0			0		0	0
2010	February			0		0			0		0	0
2010	March			0		0			0		0	0
2010	April			0		0			0		0	0
2010	May			0		0			0		0	0
2010	June			0		0			0		0	0
2010	July	3,673		3,673		3,673			0		0	3,673
2010	August	106		3,779		3,779			0		0	3,779
2010	September	9,083		12,863		12,863			0		0	12,863
2010	October	1,749		14,612		14,612			0		0	14,612
2010	November	15,769		30,381		30,381			0		0	30,381
2010	December	9,662		40,042		40,042			0		0	40,042
2011	January	7,167		47,209		47,209			0		0	47,209
2011	February	4,050		51,259		51,259			0		0	51,259
2011	March	65,756		117,015		117,015			0		0	117,015
2011	April	12,645		129,659		129,659			0		0	129,659
2011	May	4,461		134,120		134,120			0		0	134,120
2011	June	24,019		158,139		158,139			0		0	158,139
2011	July	6,401		164,541		164,541			0		0	164,541
2011	August	10,762		175,302		175,302			0		0	175,302
2011	September	1,506		176,808		176,808			0		0	176,808
2011	October	8,887		185,695		185,695			0		0	185,695
2011	November	231,210		416,905		416,905			0		0	416,905
2011	December			416,905		416,905			0		0	416,905
2012	January	8,264		425,170		425,170	2,364		2,364		2,364	427,533
2012	February			425,170		425,170	1,089		3,453		3,453	428,622
2012	March	2,016		427,185		427,185			3,453		3,453	430,638
2012	April	11,244		438,430		438,430			3,453		3,453	441,882
2012	May			438,430		438,430			3,453		3,453	441,882
2012	June	25,555		463,984		463,984			3,453		3,453	467,437
2012	July	21,464		485,448		485,448			3,453		3,453	488,901
2012	August			485,448		485,448			3,453		3,453	488,901
2012	September			485,448		485,448			3,453		3,453	488,901
2012	October			485,448		485,448	5,761		9,214		9,214	494,662
2012	November			485,448		485,448			9,214		9,214	494,662
2012	December			485,448		485,448			9,214		9,214	494,662

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2010	January			0		0			0		0	0			-			-
2010	February			0		0			0		0	0			-			-
2010	March			0		0			0		0	0			-			-
2010	April			0		0			0		0	0			-			-
2010	May			0		0			0		0	0			-			-
2010	June			0		0			0		0	0			-			-
2010	July	11		11		11			0		0	11	1,224		1,224	3.83		3.83
2010	August	1		13		13			0		0	13	945		945	3.18		3.18
2010	September	59		72		72			0		0	72	1,286		1,286	7.17		7.17
2010	October	3		74		74			0		0	74	1,044		1,044	5.32		5.32
2010	November	22		97		97			0		0	97	1,381		1,381	4.41		4.41
2010	December	26		123		123			0		0	123	1,430		1,430	4.38		4.38
2011	January	17		140		140			0		0	140	1,523		1,523	4.51		4.51
2011	February	4		143		143			0		0	143	1,553		1,553	4.34		4.34
2011	March	58		201		201			0		0	201	2,786		2,786	4.80		4.80
2011	April	11		213		213			0		0	213	3,015		3,015	4.95		4.95
2011	May	15		228		228			0		0	228	2,854		2,854	4.84		4.84
2011	June	252		479		479			0		0	479	2,875		2,875	8.71		8.71
2011	July	44		523		523			0		0	523	2,789		2,789	8.87		8.87
2011	August	49		572		572			0		0	572	2,616		2,616	8.54		8.54
2011	September	22		594		594			0		0	594	2,456		2,456	8.26		8.26
2011	October	13		607		607			0		0	607	2,443		2,443	7.99		7.99
2011	November	226		834		834			0		0	834	4,792		4,792	9.58		9.58
2011	December			834		834			0		0	834	4,792		4,792	9.58		9.58
2012	January	24		858		858	18		18		18	876	4,572	1,182	4,500	9.22	9.24	9.22
2012	February			858		858	8		27		27	884	4,572	1,151	4,465	9.22	8.84	9.21
2012	March	3		861		861			27		27	887	4,450	1,151	4,350	8.97	8.84	8.96
2012	April	18		879		879			27		27	905	4,429	1,151	4,332	8.87	8.84	8.87
2012	May			879		879			27		27	905	4,429	1,151	4,332	8.87	8.84	8.87
2012	June	114		992		992			27		27	1,019	4,070	1,151	3,995	8.70	8.84	8.71
2012	July	89		1,081		1,081			27		27	1,108	3,947	1,151	3,880	8.79	8.84	8.79
2012	August			1,081		1,081			27		27	1,108	3,947	1,151	3,880	8.79	8.84	8.79
2012	September			1,081		1,081			27		27	1,108	3,947	1,151	3,880	8.79	8.84	8.79
2012	October			1,081		1,081	5		32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2012	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2012	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC						
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G	
2013	January	0	0	123		123	0	0	4		4	127	
2013	February	0	0	123		123	0	0	4		4	127	
2013	March	0	0	123		123	0	0	4		4	127	
2013	April	0	0	123		123	0	0	4		4	127	
2013	May	0	0	123		123	0	0	4		4	127	
2013	June	0	0	123		123	0	0	4		4	127	
2013	July	0	0	123		123	0	0	4		4	127	
2013	August	0	0	123		123	0	0	4		4	127	
2013	September	0	0	123		123	0	0	4		4	127	
2013	October	0	0	123		123	0	0	4		4	127	
2013	November	0	0	123		123	0	0	4		4	127	
2013	December	0	0	123		123	0	0	4		4	127	
2014	January	0	0	123		123	0	0	4		4	127	
2014	February	0	0	123		123	0	0	4		4	127	
2014	March	0	0	123		123	0	0	4		4	127	
2014	April	0	0	123		123	0	0	4		4	127	
2014	May	0	0	123		123	0	0	4		4	127	
2014	June	0	0	123		123	0	0	4		4	127	
2014	July	0	0	123		123	0	0	4		4	127	
2014	August	0	0	123		123	0	0	4		4	127	
2014	September	0	0	123		123	0	0	4		4	127	
2014	October	0	0	123		123	0	0	4		4	127	
2014	November	0	0	123		123	0	0	4		4	127	
2014	December	0	0	123		123	0	0	4		4	127	
2015	January	0	0	123		123	0	0	4		4	127	
2015	February	0	0	123		123	0	0	4		4	127	
2015	March	0	0	123		123	0	0	4		4	127	
2015	April	0	0	123		123	0	0	4		4	127	
2015	May	0	0	123		123	0	0	4		4	127	
2015	June	0	0	123		123	0	0	4		4	127	
2015	July	0	0	123		123	0	0	4		4	127	
2015	August	0	0	123		123	0	0	4		4	127	
2015	September	0	0	123		123	0	0	4		4	127	
2015	October	0	0	123		123	0	0	4		4	127	
2015	November	0	0	123		123	0	0	4		4	127	
2015	December	0	0	123		123	0	0	4		4	127	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System System Cum for IRP
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2013	January			485,448		485,448			9,214		9,214	494,662
2013	February			485,448		485,448			9,214		9,214	494,662
2013	March			485,448		485,448			9,214		9,214	494,662
2013	April			485,448		485,448			9,214		9,214	494,662
2013	May			485,448		485,448			9,214		9,214	494,662
2013	June			485,448		485,448			9,214		9,214	494,662
2013	July			485,448		485,448			9,214		9,214	494,662
2013	August			485,448		485,448			9,214		9,214	494,662
2013	September			485,448		485,448			9,214		9,214	494,662
2013	October			485,448		485,448			9,214		9,214	494,662
2013	November			485,448		485,448			9,214		9,214	494,662
2013	December			485,448		485,448			9,214		9,214	494,662
2014	January			485,448		485,448			9,214		9,214	494,662
2014	February			485,448		485,448			9,214		9,214	494,662
2014	March			485,448		485,448			9,214		9,214	494,662
2014	April			485,448		485,448			9,214		9,214	494,662
2014	May			485,448		485,448			9,214		9,214	494,662
2014	June			485,448		485,448			9,214		9,214	494,662
2014	July			485,448		485,448			9,214		9,214	494,662
2014	August			485,448		485,448			9,214		9,214	494,662
2014	September			485,448		485,448			9,214		9,214	494,662
2014	October			485,448		485,448			9,214		9,214	494,662
2014	November			485,448		485,448			9,214		9,214	494,662
2014	December			485,448		485,448			9,214		9,214	494,662
2015	January			485,448		485,448			9,214		9,214	494,662
2015	February			485,448		485,448			9,214		9,214	494,662
2015	March			485,448		485,448			9,214		9,214	494,662
2015	April			485,448		485,448			9,214		9,214	494,662
2015	May			485,448		485,448			9,214		9,214	494,662
2015	June			485,448		485,448			9,214		9,214	494,662
2015	July			485,448		485,448			9,214		9,214	494,662
2015	August			485,448		485,448			9,214		9,214	494,662
2015	September			485,448		485,448			9,214		9,214	494,662
2015	October			485,448		485,448			9,214		9,214	494,662
2015	November			485,448		485,448			9,214		9,214	494,662
2015	December			485,448		485,448			9,214		9,214	494,662

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System			System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2013	January			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	February			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	March			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	April			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	May			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	June			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	July			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	August			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	September			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	October			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2013	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	January			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	February			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	March			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	April			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	May			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	June			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	July			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	August			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	September			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	October			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2014	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	January			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	February			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	March			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	April			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	May			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	June			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	July			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	August			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	September			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	October			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2015	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC						
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] =Σ[A] + Σ[-A retired] + B	[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G	
2016	January	0	0	123		123	0	0	4		4	127	
2016	February	0	0	123		123	0	0	4		4	127	
2016	March	0	0	123		123	0	0	4		4	127	
2016	April	0	0	123		123	0	0	4		4	127	
2016	May	0	0	123		123	0	0	4		4	127	
2016	June	0	0	123		123	0	0	4		4	127	
2016	July	0	0	123		123	0	0	4		4	127	
2016	August	0	0	123		123	0	0	4		4	127	
2016	September	0	0	123		123	0	0	4		4	127	
2016	October	0	0	123		123	0	0	4		4	127	
2016	November	0	0	123		123	0	0	4		4	127	
2016	December	0	0	123		123	0	0	4		4	127	
2017	January	0	0	123		123	0	0	4		4	127	
2017	February	0	0	123		123	0	0	4		4	127	
2017	March	0	0	123		123	0	0	4		4	127	
2017	April	0	0	123		123	0	0	4		4	127	
2017	May	0	0	123		123	0	0	4		4	127	
2017	June	0	0	123		123	0	0	4		4	127	
2017	July	0	0	123		123	0	0	4		4	127	
2017	August	0	0	123		123	0	0	4		4	127	
2017	September	0	0	123		123	0	0	4		4	127	
2017	October	0	0	123		123	0	0	4		4	127	
2017	November	0	0	123		123	0	0	4		4	127	
2017	December	0	0	123		123	0	0	4		4	127	
2018	January	0	0	123		123	0	0	4		4	127	
2018	February	0	0	123		123	0	0	4		4	127	
2018	March	0	0	123		123	0	0	4		4	127	
2018	April	0	0	123		123	0	0	4		4	127	
2018	May	0	0	123		123	0	0	4		4	127	
2018	June	0	0	123		123	0	0	4		4	127	
2018	July	0	0	123		123	0	0	4		4	127	
2018	August	0	0	123		123	0	0	4		4	127	
2018	September	0	0	123		123	0	0	4		4	127	
2018	October	0	0	123		123	0	0	4		4	127	
2018	November	0	0	123		123	0	0	4		4	127	
2018	December	0	0	123		123	0	0	4		4	127	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System System Cum for IRP
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2016	January			485,448		485,448			9,214		9,214	494,662
2016	February			485,448		485,448			9,214		9,214	494,662
2016	March			485,448		485,448			9,214		9,214	494,662
2016	April			485,448		485,448			9,214		9,214	494,662
2016	May			485,448		485,448			9,214		9,214	494,662
2016	June			485,448		485,448			9,214		9,214	494,662
2016	July			485,448		485,448			9,214		9,214	494,662
2016	August			485,448		485,448			9,214		9,214	494,662
2016	September			485,448		485,448			9,214		9,214	494,662
2016	October			485,448		485,448			9,214		9,214	494,662
2016	November			485,448		485,448			9,214		9,214	494,662
2016	December			485,448		485,448			9,214		9,214	494,662
2017	January			485,448		485,448			9,214		9,214	494,662
2017	February			485,448		485,448			9,214		9,214	494,662
2017	March			485,448		485,448			9,214		9,214	494,662
2017	April			485,448		485,448			9,214		9,214	494,662
2017	May			485,448		485,448			9,214		9,214	494,662
2017	June			485,448		485,448			9,214		9,214	494,662
2017	July			485,448		485,448			9,214		9,214	494,662
2017	August			485,448		485,448			9,214		9,214	494,662
2017	September			485,448		485,448			9,214		9,214	494,662
2017	October			485,448		485,448			9,214		9,214	494,662
2017	November			485,448		485,448			9,214		9,214	494,662
2017	December			485,448		485,448			9,214		9,214	494,662
2018	January			485,448		485,448			9,214		9,214	494,662
2018	February			485,448		485,448			9,214		9,214	494,662
2018	March			485,448		485,448			9,214		9,214	494,662
2018	April			485,448		485,448			9,214		9,214	494,662
2018	May			485,448		485,448			9,214		9,214	494,662
2018	June			485,448		485,448			9,214		9,214	494,662
2018	July			485,448		485,448			9,214		9,214	494,662
2018	August			485,448		485,448			9,214		9,214	494,662
2018	September			485,448		485,448			9,214		9,214	494,662
2018	October			485,448		485,448			9,214		9,214	494,662
2018	November			485,448		485,448			9,214		9,214	494,662
2018	December			485,448		485,448			9,214		9,214	494,662

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System			System		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2016	January			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	February			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	March			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	April			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	May			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	June			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	July			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	August			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	September			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	October			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2016	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	January			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	February			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	March			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	April			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	May			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	June			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	July			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	August			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	September			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	October			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2017	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	January			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	February			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	March			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	April			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	May			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	June			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	July			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	August			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	September			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	October			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2018	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC					System	
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	System Cum for IRP E+G	
2019	January	0	0	123		123	0	0	4		4	4	127
2019	February	0	0	123		123	0	0	4		4	4	127
2019	March	0	0	123		123	0	0	4		4	4	127
2019	April	0	0	123		123	0	0	4		4	4	127
2019	May	0	0	123		123	0	0	4		4	4	127
2019	June	0	0	123		123	0	0	4		4	4	127
2019	July	0	0	123		123	0	0	4		4	4	127
2019	August	0	0	123		123	0	0	4		4	4	127
2019	September	0	0	123		123	0	0	4		4	4	127
2019	October	0	0	123		123	0	0	4		4	4	127
2019	November	0	0	123		123	0	0	4		4	4	127
2019	December	0	0	123		123	0	0	4		4	4	127
2020	January	0	0	123		123	0	0	4		4	4	127
2020	February	0	0	123		123	0	0	4		4	4	127
2020	March	0	0	123		123	0	0	4		4	4	127
2020	April	0	0	123		123	0	0	4		4	4	127
2020	May	0	0	123		123	0	0	4		4	4	127
2020	June	0	0	123		123	0	0	4		4	4	127
2020	July	0	0	123		123	0	0	4		4	4	127
2020	August	0	0	123		123	0	0	4		4	4	127
2020	September	0	0	123		123	0	0	4		4	4	127
2020	October	0	0	123		123	0	0	4		4	4	127
2020	November	0	0	123		123	0	0	4		4	4	127
2020	December	0	0	123		123	0	0	4		4	4	127

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2019	January			485,448		485,448			9,214		9,214	494,662
2019	February			485,448		485,448			9,214		9,214	494,662
2019	March			485,448		485,448			9,214		9,214	494,662
2019	April			485,448		485,448			9,214		9,214	494,662
2019	May			485,448		485,448			9,214		9,214	494,662
2019	June			485,448		485,448			9,214		9,214	494,662
2019	July			485,448		485,448			9,214		9,214	494,662
2019	August			485,448		485,448			9,214		9,214	494,662
2019	September			485,448		485,448			9,214		9,214	494,662
2019	October			485,448		485,448			9,214		9,214	494,662
2019	November			485,448		485,448			9,214		9,214	494,662
2019	December			485,448		485,448			9,214		9,214	494,662
2020	January			485,448		485,448			9,214		9,214	494,662
2020	February			485,448		485,448			9,214		9,214	494,662
2020	March			485,448		485,448			9,214		9,214	494,662
2020	April			485,448		485,448			9,214		9,214	494,662
2020	May			485,448		485,448			9,214		9,214	494,662
2020	June			485,448		485,448			9,214		9,214	494,662
2020	July			485,448		485,448			9,214		9,214	494,662
2020	August			485,448		485,448			9,214		9,214	494,662
2020	September			485,448		485,448			9,214		9,214	494,662
2020	October			485,448		485,448			9,214		9,214	494,662
2020	November			485,448		485,448			9,214		9,214	494,662
2020	December			485,448		485,448			9,214		9,214	494,662

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2019	January			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	February			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	March			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	April			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	May			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	June			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	July			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	August			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	September			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	October			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2019	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	January			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	February			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	March			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	April			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	May			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	June			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	July			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	August			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	September			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	October			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	November			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77
2020	December			1,081		1,081			32		32	1,113	3,947	2,303	3,895	8.79	8.00	8.77

Table 2. EM&V Data Incremental by Vintage Year											
		Program Participants									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			28		28			-		-	28
2011			59		59			-		-	59
2012			36		36			4		4	40
2013			-		-			-		-	-
2014			-		-			-		-	-
2015			-		-			-		-	-
2016			-		-			-		-	-
2017			-		-			-		-	-
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year												
		Program Participants										
				VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2010			28		28			-		-	28
	2011			59		59			-		-	59
	2012			36		36			4		4	40
	2013			-		-			-		-	-
	2014			-		-			-		-	-
	2015			-		-			-		-	-
	2016			-		-			-		-	-
	2017			-		-			-		-	-
	2018			-		-			-		-	-
	2019			-		-			-		-	-
	2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants									
			VA PPI					NC PPI		System
2010			28					-		28
2011			87					-		87
2012			123					4		127
2013			95					4		99
2014			36					4		40
2015			-					-		-
2016			-					-		-
2017			-					-		-
2018			-					-		-
2019			-					-		-
2020			-					-		-

Table 2. EM&V Data Incremental by Vintage Year												
		Net Incremental Energy (kWh)										
				VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010				105,350		105,350			-		-	105,350
2011				1,693,051		1,693,051			-		-	1,693,051
2012				528,192		528,192			57,627		57,627	585,819
2013				-		-			-		-	-
2014				-		-			-		-	-
2015				-		-			-		-	-
2016				-		-			-		-	-
2017				-		-			-		-	-
2018				-		-			-		-	-
2019				-		-			-		-	-
2020				-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
		Net kWh									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2010		480,508		480,508			-		-	480,508
	2011		4,522,358		4,522,358			-		-	4,522,358
	2012		822,513		822,513			110,566		110,566	933,079
	2013		-		-			-		-	-
	2014		-		-			-		-	-
	2015		-		-			-		-	-
	2016		-		-			-		-	-
	2017		-		-			-		-	-
	2018		-		-			-		-	-
	2019		-		-			-		-	-
	2020		-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2010			105,350					-		105,350
2011			2,173,558					-		2,173,558
2012			5,531,058					57,627		5,588,685
2013			5,344,871					110,566		5,455,437
2014			822,513					110,566		933,079
2015			-					-		-
2016			-					-		-
2017			-					-		-
2018			-					-		-
2019			-					-		-
2020			-					-		-

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			123		123			-		-	123	3,763	-	3,763	4.38	-	4.38
2011			711		711			-		-	711	28,696	-	28,696	12.05	-	12.05
2012			248		248			32		32	280	14,672	14,407	14,645	6.88	8.00	6.99
2013			-		-			-		-	-	-	-	-	-	-	-
2014			-		-			-		-	-	-	-	-	-	-	-
2015			-		-			-		-	-	-	-	-	-	-	-
2016			-		-			-		-	-	-	-	-	-	-	-
2017			-		-			-		-	-	-	-	-	-	-	-
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			123		123			-		-	123	17,161	-	17,161	4.38	-	4.38
2011			711		711			-		-	711	76,650	-	76,650	12.05	-	12.05
2012			248		248			32		32	280	22,848	27,641	23,327	6.88	8.00	6.99
2013			-		-			-		-	-	-	-	-	-	-	-
2014			-		-			-		-	-	-	-	-	-	-	-
2015			-		-			-		-	-	-	-	-	-	-	-
2016			-		-			-		-	-	-	-	-	-	-	-
2017			-		-			-		-	-	-	-	-	-	-	-
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2010			123					-		123		-			-	
2011			834					-		834		-			-	
2012			1,081					32		1,113		14,407			8.00	
2013			959					32		991		27,641			8.00	
2014			248					32		280		27,641			8.00	
2015			-					-		-		-			-	
2016			-					-		-		-			-	
2017			-					-		-		-			-	
2018			-					-		-		-			-	
2019			-					-		-		-			-	
2020			-					-		-		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			28		28			-		-	28
2011			87		87			-		-	87
2012			123		123			4		4	127
2013			123		123			4		4	127
2014			123		123			4		4	127
2015			123		123			4		4	127
2016			123		123			4		4	127
2017			123		123			4		4	127
2018			123		123			4		4	127
2019			123		123			4		4	127
2020			123		123			4		4	127

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Program Participants		VA IRP					NC IRP			System IRP
2010			28					-			28
2011			87					-			87
2012			123					4			127
2013			123					4			127
2014			123					4			127
2015			123					4			127
2016			123					4			127
2017			123					4			127
2018			123					4			127
2019			123					4			127
2020			123					4			127
2021			123					4			127
2022			123					4			127
2023			123					4			127
2024			123					4			127
2025			123					4			127
2026			123					4			127
2027			123					4			127
2028			123					4			127

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2010			105,350		105,350			0		0	105,350
2011			2,173,558		2,173,558			0		0	2,173,558
2012			5,531,058		5,531,058			57,627		57,627	5,588,685
2013			5,825,379		5,825,379			110,566		110,566	5,935,945
2014			5,825,379		5,825,379			110,566		110,566	5,935,945
2015			5,825,379		5,825,379			110,566		110,566	5,935,945
2016			5,825,379		5,825,379			110,566		110,566	5,935,945
2017			5,825,379		5,825,379			110,566		110,566	5,935,945
2018			5,825,379		5,825,379			110,566		110,566	5,935,945
2019			5,825,379		5,825,379			110,566		110,566	5,935,945
2020			5,825,379		5,825,379			110,566		110,566	5,935,945

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2010			105,350					-		105,350
2011			2,278,908					-		2,278,908
2012			7,809,966					57,627		7,867,593
2013			13,635,345					168,193		13,803,538
2014			19,460,723					278,759		19,739,482
2015			25,286,102					389,325		25,675,427
2016			31,111,481					499,891		31,611,372
2017			36,936,860					610,456		37,547,316
2018			42,762,238					721,022		43,483,261
2019			48,587,617					831,588		49,419,205
2020			54,412,996					942,154		55,355,150
2021			60,238,374					1,052,720		61,291,094
2022			66,063,753					1,163,286		67,227,039
2023			71,889,132					1,273,852		73,162,983
2024			77,714,510					1,384,417		79,098,928
2025			83,434,539					1,494,983		84,929,522
2026			87,086,359					1,605,549		88,691,909
2027			87,380,681					1,658,488		89,039,168
2028			87,380,681					1,658,488		89,039,168

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2010			123		123			-		-	123	3,763	-	3,763	4.38	-	4.38
2011			834		834			-		-	834	24,983	-	24,983	9.58	-	9.58
2012			1,081		1,081			32		32	1,113	44,968	14,407	44,005	8.79	8.00	8.77
2013			1,081		1,081			32		32	1,113	47,361	27,641	46,740	8.79	8.00	8.77
2014			1,081		1,081			32		32	1,113	47,361	27,641	46,740	8.79	8.00	8.77
2015			1,081		1,081			32		32	1,113	47,361	27,641	46,740	8.79	8.00	8.77
2016			1,081		1,081			32		32	1,113	47,361	27,641	46,740	8.79	8.00	8.77
2017			1,081		1,081			32		32	1,113	47,361	27,641	46,740	8.79	8.00	8.77
2018			1,081		1,081			32		32	1,113	47,361	27,641	46,740	8.79	8.00	8.77
2019			1,081		1,081			32		32	1,113	47,361	27,641	46,740	8.79	8.00	8.77
2020			1,081		1,081			32		32	1,113	47,361	27,641	46,740	8.79	8.00	8.77

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2010			123					-			123	3,763	-	3,763	4.38	-	4.38
2011			834					-			834	26,194	-	26,194	9.58	-	9.58
2012			1,081					32			1,113	63,496	14,407	61,950	8.79	8.00	8.77
2013			1,081					32			1,113	110,856	42,048	108,689	8.79	8.00	8.77
2014			1,081					32			1,113	158,217	69,690	155,429	8.79	8.00	8.77
2015			1,081					32			1,113	205,578	97,331	202,169	8.79	8.00	8.77
2016			1,081					32			1,113	252,939	124,973	248,908	8.79	8.00	8.77
2017			1,081					32			1,113	300,300	152,614	295,648	8.79	8.00	8.77
2018			1,081					32			1,113	347,660	180,256	342,388	8.79	8.00	8.77
2019			1,081					32			1,113	395,021	207,897	389,128	8.79	8.00	8.77
2020			1,081					32			1,113	442,382	235,539	435,867	8.79	8.00	8.77
2021			1,081					32			1,113	489,743	263,180	482,607	8.79	8.00	8.77
2022			1,081					32			1,113	537,104	290,821	529,347	8.79	8.00	8.77
2023			1,081					32			1,113	584,464	318,463	576,086	8.79	8.00	8.77
2024			1,081					32			1,113	631,825	346,104	622,826	8.79	8.00	8.77
2025			1,081					32			1,113	678,330	373,746	668,736	8.79	8.00	8.77
2026			1,081					32			1,113	708,019	401,387	698,361	8.79	8.00	8.77
2027			1,081					32			1,113	710,412	414,622	701,096	8.79	8.00	8.77
2028			1,081					32			1,113	710,412	414,622	701,096	8.79	8.00	8.77

Program:	Non-residential Duct Testing & Sealing
DSM Phase:	2
Type:	
Program Life in years	
Starting from 2012:	25.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2012	January	0	0	0		0	0	0	0		0	0
2012	February	0	0	0		0	0	0	0		0	0
2012	March	0	0	0		0	0	0	0		0	0
2012	April	0	0	0		0	0	0	0		0	0
2012	May	0	0	0		0	0	0	0		0	0
2012	June	0	0	0		0	0	0	0		0	0
2012	July	0	0	0		0	0	0	0		0	0
2012	August	0	0	0		0	0	0	0		0	0
2012	September	0	0	0		0	0	0	0		0	0
2012	October	0	0	0		0	0	0	0		0	0
2012	November	1	0	1		1	0	0	0		0	1
2012	December	10	0	11		11	0	0	0		0	11
2013	January	2	0	13		13	0	0	0		0	13
2013	February	0	0	13		13	0	0	0		0	13
2013	March	8	0	21		21	0	0	0		0	21
2013	April	17	0	38		38	0	0	0		0	38
2013	May	12	0	50		50	0	0	0		0	50
2013	June	4	0	54		54	0	0	0		0	54
2013	July	27	0	81		81	0	0	0		0	81
2013	August	24	0	105		105	0	0	0		0	105
2013	September	67	0	172		172	0	0	0		0	172
2013	October	63	0	235		235	0	0	0		0	235
2013	November	30	0	265		265	0	0	0		0	265
2013	December	103	0	368		368	0	0	0		0	368
2014	January	22	0	390		390	0	0	0		0	390
2014	February	106	0	496		496	0	0	0		0	496
2014	March	243	0	739		739	0	0	0		0	739
2014	April	125	0	864		864	0	0	0		0	864
2014	May	115	0	979		979	0	0	0		0	979
2014	June	98	0	1,077		1,077	0	0	0		0	1,077
2014	July	166	0	1,243		1,243	0	0	0		0	1,243
2014	August	190	0	1,433		1,433	0	0	0		0	1,433
2014	September	206	0	1,639		1,639	0	0	0		0	1,639
2014	October	212	0	1,851		1,851	0	0	0		0	1,851
2014	November	137	0	1,988		1,988	46	0	46		46	2,034
2014	December	80	0	2,068		2,068	14	0	60		60	2,128

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2012	January			0		0			0		0	0
2012	February			0		0			0		0	0
2012	March			0		0			0		0	0
2012	April			0		0			0		0	0
2012	May			0		0			0		0	0
2012	June			0		0			0		0	0
2012	July			0		0			0		0	0
2012	August			0		0			0		0	0
2012	September			0		0			0		0	0
2012	October			0		0			0		0	0
2012	November	152		152		152			0		0	152
2012	December	5,316		5,467		5,467			0		0	5,467
2013	January	2,354		7,821		7,821			0		0	7,821
2013	February			7,821		7,821			0		0	7,821
2013	March	2,611		10,432		10,432			0		0	10,432
2013	April	2,664		13,096		13,096			0		0	13,096
2013	May	3,716		16,812		16,812			0		0	16,812
2013	June	294		17,106		17,106			0		0	17,106
2013	July	13,711		30,817		30,817			0		0	30,817
2013	August	7,866		38,684		38,684			0		0	38,684
2013	September	27,808		66,491		66,491			0		0	66,491
2013	October	31,300		97,792		97,792			0		0	97,792
2013	November	11,454		109,246		109,246			0		0	109,246
2013	December	42,938		152,184		152,184			0		0	152,184
2014	January	13,642		165,826		165,826			0		0	165,826
2014	February	72,076		237,902		237,902			0		0	237,902
2014	March	111,865		349,767		349,767			0		0	349,767
2014	April	181,627		531,395		531,395			0		0	531,395
2014	May	102,031		633,426		633,426			0		0	633,426
2014	June	129,825		763,251		763,251			0		0	763,251
2014	July	287,856		1,051,107		1,051,107			0		0	1,051,107
2014	August	210,867		1,261,974		1,261,974			0		0	1,261,974
2014	September	363,779		1,625,753		1,625,753			0		0	1,625,753
2014	October	497,583		2,123,336		2,123,336			0		0	2,123,336
2014	November	291,989		2,415,324		2,415,324	45,596		45,596		45,596	2,460,920
2014	December	109,813		2,525,138		2,525,138	4,062		49,658		49,658	2,574,795

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2012	January			0		0			0		0	0			-			-
2012	February			0		0			0		0	0			-			-
2012	March			0		0			0		0	0			-			-
2012	April			0		0			0		0	0			-			-
2012	May			0		0			0		0	0			-			-
2012	June			0		0			0		0	0			-			-
2012	July			0		0			0		0	0			-			-
2012	August			0		0			0		0	0			-			-
2012	September			0		0			0		0	0			-			-
2012	October			0		0			0		0	0			-			-
2012	November	0		0		0			0		0	0	152		152	0.24		0.24
2012	December	7		7		7			0		0	7	497		497	0.67		0.67
2013	January	3		10		10			0		0	10	602		602	0.76		0.76
2013	February			10		10			0		0	10	602		602	0.76		0.76
2013	March	4		14		14			0		0	14	497		497	0.65		0.65
2013	April	6		20		20			0		0	20	345		345	0.51		0.51
2013	May	10		30		30			0		0	30	336		336	0.60		0.60
2013	June	5		35		35			0		0	35	317		317	0.65		0.65
2013	July	35		70		70			0		0	70	380		380	0.87		0.87
2013	August	44		114		114			0		0	114	368		368	1.09		1.09
2013	September	85		200		200			0		0	200	387		387	1.16		1.16
2013	October	67		267		267			0		0	267	416		416	1.14		1.14
2013	November	48		315		315			0		0	315	412		412	1.19		1.19
2013	December	197		511		511			0		0	511	414		414	1.39		1.39
2014	January	24		535		535			0		0	535	425		425	1.37		1.37
2014	February	104		639		639			0		0	639	480		480	1.29		1.29
2014	March	129		768		768			0		0	768	473		473	1.04		1.04
2014	April	222		990		990			0		0	990	615		615	1.15		1.15
2014	May	130		1,120		1,120			0		0	1,120	647		647	1.14		1.14
2014	June	135		1,255		1,255			0		0	1,255	709		709	1.16		1.16
2014	July	299		1,553		1,553			0		0	1,553	846		846	1.25		1.25
2014	August	174		1,728		1,728			0		0	1,728	881		881	1.21		1.21
2014	September	208		1,936		1,936			0		0	1,936	992		992	1.18		1.18
2014	October	240		2,176		2,176			0		0	2,176	1,147		1,147	1.18		1.18
2014	November	280		2,456		2,456	60		60		60	2,516	1,215	991	1,210	1.24	1.30	1.24
2014	December	112		2,568		2,568	5		65		65	2,633	1,221	828	1,210	1.24	1.08	1.24

Table 1		Participation											
Year	Month	Program Participants											
		VA						NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B		[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G
2015	January	100	0	2,168		2,168		12	0	72		72	2,240
2015	February	81	0	2,249		2,249		4	0	76		76	2,325
2015	March	116	0	2,365		2,365		2	0	78		78	2,443
2015	April	193	0	2,558		2,558		62	0	140		140	2,698
2015	May	112	0	2,670		2,670		13	0	153		153	2,823
2015	June	215	0	2,885		2,885		40	0	193		193	3,078
2015	July	101	0	2,986		2,986		9	0	202		202	3,188
2015	August	207	0	3,193		3,193		7	0	209		209	3,402
2015	September	250	0	3,443		3,443		0	0	209		209	3,652
2015	October	89	0	3,532		3,532		2	0	211		211	3,743
2015	November	93	0	3,625		3,625		1	0	212		212	3,837
2015	December	98	0	3,723		3,723		0	0	212		212	3,935
2016	January	49	0	3,772		3,772		0	0	212		212	3,984
2016	February	59	0	3,831		3,831		1	0	213		213	4,044
2016	March	41	0	3,872		3,872		0	0	213		213	4,085
2016	April	47	0	3,919		3,919		4	0	217		217	4,136
2016	May	21	0	3,940		3,940		3	0	220		220	4,160
2016	June	61	0	4,001		4,001		5	0	225		225	4,226
2016	July	52	0	4,053		4,053		4	0	229	4	229	4,282
2016	August	43	0	4,096		4,096		5	0	234	9	234	4,330
2016	September	61	0	4,157		4,157		1	0	235	10	235	4,392
2016	October	77	0	4,234		4,234		2	0	237	12	237	4,471
2016	November	72	0	4,306		4,306		8	0	245	20	245	4,551
2016	December	57	0	4,363		4,363		0	0	245		245	4,608
2017	January	42	0	4,405		4,405		3	0	248		248	4,653
2017	February	38	0	4,443		4,443		1	0	249		249	4,692
2017	March	1	0	4,444		4,444		1	0	250		250	4,694
2017	April	0	0	4,444		4,444		0	0	250		250	4,694
2017	May	0	0	4,444		4,444		0	0	250		250	4,694
2017	June	0	0	4,444		4,444		0	0	250		250	4,694
2017	July	0	0	4,444		4,444		0	0	250		250	4,694
2017	August	0	0	4,444		4,444		0	0	250		250	4,694
2017	September	0	0	4,444		4,444		0	0	250		250	4,694
2017	October	0	0	4,444		4,444		0	0	250		250	4,694
2017	November	0	0	4,444		4,444		0	0	250		250	4,694
2017	December	0	0	4,444		4,444		0	0	250		250	4,694

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2015	January	201,891		2,727,028		2,727,028	35,926		85,583		85,583	2,812,612
2015	February	116,805		2,843,834		2,843,834	1,316		86,899		86,899	2,930,733
2015	March	103,437		2,947,271		2,947,271	2,005		88,904		88,904	3,036,175
2015	April	167,457		3,114,728		3,114,728	62,291		151,195		151,195	3,265,923
2015	May	59,933		3,174,661		3,174,661	20,520		171,715		171,715	3,346,376
2015	June	198,698		3,373,358		3,373,358	37,871		209,586		209,586	3,582,944
2015	July	58,395		3,431,753		3,431,753	20,271		229,857		229,857	3,661,610
2015	August	231,905		3,663,657		3,663,657	13,363		243,220		243,220	3,906,877
2015	September	217,522		3,881,179		3,881,179			243,220		243,220	4,124,399
2015	October	87,673		3,968,852		3,968,852	2,992		246,212		246,212	4,215,064
2015	November	88,982		4,057,834		4,057,834	3,513		249,726		249,726	4,307,560
2015	December	174,646		4,232,480		4,232,480			249,726		249,726	4,482,205
2016	January	185,981		4,418,461		4,418,461			249,726		249,726	4,668,187
2016	February	125,309		4,543,770		4,543,770	2,697		252,422		252,422	4,796,192
2016	March	64,244		4,608,014		4,608,014			252,422		252,422	4,860,436
2016	April	216,137		4,824,150		4,824,150	273		252,695		252,695	5,076,845
2016	May	212,483		5,036,633		5,036,633	500		253,195		253,195	5,289,828
2016	June	453,430		5,490,063		5,490,063	336		253,531		253,531	5,743,594
2016	July	112,152		5,602,215		5,602,215	16,577		270,107	16,577	270,107	5,872,322
2016	August	141,750		5,743,965		5,743,965	17,786		287,893	34,363	287,893	6,031,858
2016	September	182,701		5,926,666		5,926,666	235		288,128	34,598	288,128	6,214,794
2016	October	193,533		6,120,199		6,120,199	1,068		289,196	35,666	289,196	6,409,395
2016	November	182,431		6,302,629		6,302,629	6,374		295,570	42,040	42,040	6,598,199
2016	December	125,904		6,428,533		6,428,533			295,570		42,040	6,724,103
2017	January	240,780		6,669,313		6,669,313	844		296,414		42,884	6,965,727
2017	February	111,162		6,780,475		6,780,475	847		297,262		43,731	7,077,737
2017	March	2,335		6,782,811		6,782,811	13,663		310,925		57,394	7,093,736
2017	April			6,782,811		6,782,811			310,925		57,394	7,093,736
2017	May			6,782,811		6,782,811			310,925		57,394	7,093,736
2017	June			6,782,811		6,782,811			310,925		57,394	7,093,736
2017	July			6,782,811		6,782,811			310,925		57,394	7,093,736
2017	August			6,782,811		6,782,811			310,925		57,394	7,093,736
2017	September			6,782,811		6,782,811			310,925		57,394	7,093,736
2017	October			6,782,811		6,782,811			310,925		57,394	7,093,736
2017	November			6,782,811		6,782,811			310,925		57,394	7,093,736
2017	December			6,782,811		6,782,811			310,925		57,394	7,093,736

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2015	January	206		2,774		2,774	46		111		111	2,885	1,258	1,189	1,256	1.28	1.54	1.29
2015	February	186		2,960		2,960	1		112		112	3,072	1,264	1,143	1,261	1.32	1.48	1.32
2015	March	151		3,111		3,111	2		114		114	3,226	1,246	1,140	1,243	1.32	1.46	1.32
2015	April	219		3,330		3,330	102		216		216	3,546	1,218	1,080	1,210	1.30	1.54	1.31
2015	May	79		3,409		3,409	34		250		250	3,659	1,189	1,122	1,185	1.28	1.63	1.30
2015	June	402		3,811		3,811	56		306		306	4,117	1,169	1,086	1,164	1.32	1.59	1.34
2015	July	132		3,942		3,942	25		331		331	4,273	1,149	1,138	1,149	1.32	1.64	1.34
2015	August	319		4,262		4,262	19		349		349	4,611	1,147	1,164	1,148	1.33	1.67	1.36
2015	September	283		4,545		4,545			349		349	4,894	1,127	1,164	1,129	1.32	1.67	1.34
2015	October	142		4,686		4,686	4		353		353	5,039	1,124	1,167	1,126	1.33	1.67	1.35
2015	November	194		4,880		4,880	3		357		357	5,236	1,119	1,178	1,123	1.35	1.68	1.36
2015	December	198		5,078		5,078			357		357	5,435	1,137	1,178	1,139	1.36	1.68	1.38
2016	January	176		5,254		5,254			357		357	5,611	1,171	1,178	1,172	1.39	1.68	1.41
2016	February	126		5,381		5,381	9		365		365	5,746	1,186	1,185	1,186	1.40	1.72	1.42
2016	March	157		5,538		5,538			365		365	5,903	1,190	1,185	1,190	1.43	1.72	1.45
2016	April	179		5,716		5,716	1		366		366	6,083	1,231	1,164	1,227	1.46	1.69	1.47
2016	May	98		5,814		5,814	1		368		368	6,182	1,278	1,151	1,272	1.48	1.67	1.49
2016	June	330		6,145		6,145	2		370		370	6,514	1,372	1,127	1,359	1.54	1.64	1.54
2016	July	249		6,394		6,394	62		432	62	432	6,826	1,382	1,180	1,371	1.58	1.89	1.59
2016	August	327		6,722		6,722	69		501	132	501	7,223	1,402	1,230	1,393	1.64	2.14	1.67
2016	September	225		6,947		6,947	1		502	132	502	7,449	1,426	1,226	1,415	1.67	2.14	1.70
2016	October	228		7,175		7,175	2		504	134	504	7,679	1,445	1,220	1,434	1.69	2.13	1.72
2016	November	318		7,493		7,493	12		516	147	516	8,009	1,464	1,206	1,450	1.74	2.11	1.76
2016	December	179		7,673		7,673			516		516	8,189	1,473	1,206	1,459	1.76	2.11	1.78
2017	January	472		8,145		8,145	3		519		519	8,663	1,514	1,195	1,497	1.85	2.09	1.86
2017	February	219		8,364		8,364	2		520		520	8,884	1,526	1,194	1,508	1.88	2.09	1.89
2017	March	4		8,368		8,368	50		570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	April			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	May			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	June			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	July			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	August			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	September			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	October			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	November			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90
2017	December			8,368		8,368			570		570	8,938	1,526	1,244	1,511	1.88	2.28	1.90

Table 1		Participation											
Year	Month	Program Participants										System Cum for IRP E+G	
		VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D		
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]			NC Cum. for Net Lost Revenue (NLR) [H] = Σ[C] + Σ[-C retired] + D		
2018	January	0	0	4,444		4,444	0	0	250		25	4,694	
2018	February	0	0	4,444		4,444	0	0	250		25	4,694	
2018	March	0	0	4,444		4,444	0	0	250		25	4,694	
2018	April	0	0	4,444		4,444	0	0	250		25	4,694	
2018	May	0	0	4,444		4,444	0	0	250		25	4,694	
2018	June	0	0	4,444		4,444	0	0	250		25	4,694	
2018	July	0	0	4,444		4,444	0	0	250		25	4,694	
2018	August	0	0	4,444		4,444	0	0	250		25	4,694	
2018	September	0	0	4,444		4,444	0	0	250		25	4,694	
2018	October	0	0	4,444		4,444	0	0	250		25	4,694	
2018	November	0	0	4,444		4,444	0	0	250		25	4,694	
2018	December	0	0	4,444		4,444	0	0	250		25	4,694	
2019	January	0	0	4,444		4,444	0	0	250		25	4,694	
2019	February	0	0	4,444		4,444	0	0	250		25	4,694	
2019	March	0	0	4,444		4,444	0	0	250		25	4,694	
2019	April	0	0	4,444		4,444	0	0	250		25	4,694	
2019	May	0	0	4,444		4,444	0	0	250		25	4,694	
2019	June	0	0	4,444		4,444	0	0	250		25	4,694	
2019	July	0	0	4,444		4,444	0	0	250		25	4,694	
2019	August	0	0	4,444		4,444	0	0	250		25	4,694	
2019	September	0	0	4,444		4,444	0	0	250		25	4,694	
2019	October	0	0	4,444		4,444	0	0	250		25	4,694	
2019	November	0	0	4,444		4,444	0	0	250		25	4,694	
2019	December	0	0	4,444		4,444	0	0	250		25	4,694	
2020	January	0	0	4,444		4,444	0	0	250		25	4,694	
2020	February	0	0	4,444		4,444	0	0	250		25	4,694	
2020	March	0	0	4,444		4,444	0	0	250		25	4,694	
2020	April	0	0	4,444		4,444	0	0	250		25	4,694	
2020	May	0	0	4,444		4,444	0	0	250		25	4,694	
2020	June	0	0	4,444		4,444	0	0	250		25	4,694	
2020	July	0	0	4,444		4,444	0	0	250	0	25	4,694	
2020	August	0	0	4,444		4,444	0	0	250	0	25	4,694	
2020	September	0	0	4,444		4,444	0	0	250	0	25	4,694	
2020	October	0	0	4,444		4,444	0	0	250	0	25	4,694	
2020	November	0	0	4,444		4,444	0	0	250	0	0	4,694	
2020	December	0	0	4,444		4,444	0	0	250		0	4,694	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2018	January			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	February			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	March			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	April			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	May			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	June			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	July			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	August			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	September			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	October			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	November			6,782,811		6,782,811			310,925		57,394	7,093,736
2018	December			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	January			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	February			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	March			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	April			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	May			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	June			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	July			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	August			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	September			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	October			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	November			6,782,811		6,782,811			310,925		57,394	7,093,736
2019	December			6,782,811		6,782,811			310,925		57,394	7,093,736
2020	January			6,782,811		6,782,811			310,925		57,394	7,093,736
2020	February			6,782,811		6,782,811			310,925		57,394	7,093,736
2020	March			6,782,811		6,782,811			310,925		57,394	7,093,736
2020	April			6,782,811		6,782,811			310,925		57,394	7,093,736
2020	May			6,782,811		6,782,811			310,925		57,394	7,093,736
2020	June			6,782,811		6,782,811			310,925		57,394	7,093,736
2020	July			6,782,811		6,782,811			310,925	0	57,394	7,093,736
2020	August			6,782,811		6,782,811			310,925	0	57,394	7,093,736
2020	September			6,782,811		6,782,811			310,925	0	57,394	7,093,736
2020	October			6,782,811		6,782,811			310,925	0	57,394	7,093,736
2020	November			6,782,811		6,782,811			310,925	0	0	7,093,736
2020	December			6,782,811		6,782,811			310,925	0	0	7,093,736

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant			
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP			
		VA					NC					System		VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP							
2018	January			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	February			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	March			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	April			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	May			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	June			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	July			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	August			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	September			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	October			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	November			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2018	December			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	January			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	February			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	March			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	April			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	May			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	June			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	July			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	August			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	September			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	October			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	November			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2019	December			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	January			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	February			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	March			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	April			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	May			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	June			8,368		8,368			570		200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	July			8,368		8,368			570	0	200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	August			8,368		8,368			570	0	200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	September			8,368		8,368			570	0	200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	October			8,368		8,368			570	0	200	8,938	1,526	1,244	1,511	1.88	2.28	1.90	
2020	November			8,368		8,368			570	0	8,938	1,526	1,244	1,511	1.88	2.28	1.90		
2020	December			8,368		8,368			570	0	8,938	1,526	1,244	1,511	1.88	2.28	1.90		

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			11		11			-		-	11
2013			357		357			-		-	357
2014			1,700		1,700			60		60	1,760
2015			1,655		1,655			152		152	1,807
2016			640		640			33		20	673
2017			81		81			5		5	86
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			11		11			-		-	11
2013			357		357			-		-	357
2014			1,700		1,700			60		60	1,760
2015			1,655		1,655			152		152	1,807
2016			640		640			33		20	673
2017			81		81			5		5	86
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants									
			VA PPI					NC PPI		System
2012			11					-		11
2013			368					-		368
2014			2,068					60		2,128
2015			3,712					212		3,924
2016			3,995					245		4,240
2017			2,376					190		2,566
2018			721					38		759
2019			81					5		86
2020			-					-		-

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			5,619		5,619			-		-	5,619
2013			502,695		502,695			-		-	502,695
2014			11,857,994		11,857,994			95,254		95,254	11,953,248
2015			11,114,984		11,114,984			1,659,949		1,659,949	12,774,933
2016			14,255,540		14,255,540			243,747		236,138	14,499,288
2017			4,135,501		4,135,501			156,081		156,081	4,291,582
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			65,606		65,606			-		-	65,606
2013			1,760,597		1,760,597			-		-	1,760,597
2014			28,475,447		28,475,447			595,895		595,895	29,071,342
2015			20,488,106		20,488,106			2,400,813		2,400,813	22,888,919
2016			26,352,640		26,352,640			550,135		504,476	26,902,775
2017			4,251,334		4,251,334			184,255		184,255	4,435,589
2018			-		-			-		-	-
2019			-		-			-		-	-
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
	Net Energy (kWh) for PPI										
			VA PPI					NC PPI			System
2012			5,619					-			5,619
2013			568,302					-			568,302
2014			13,684,198					95,254			13,779,451
2015			41,351,028					2,255,843			43,606,871
2016			63,219,094					3,240,455			66,459,549
2017			50,976,247					3,107,029			54,083,277
2018			30,603,974					734,390			31,338,364
2019			4,251,334					184,255			4,435,589
2020			-					-			-

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			7		7			-		-	7	511	-	511	0.67	-	0.67
2013			504		504			-		-	504	1,408	-	1,408	1.41	-	1.41
2014			2,057		2,057			65		65	2,122	6,975	1,588	6,792	1.21	1.08	1.21
2015			2,510		2,510			292		292	2,802	6,716	10,921	7,070	1.52	1.92	1.55
2016			2,594		2,594			160		147	2,754	22,274	7,386	21,544	4.05	4.84	4.09
2017			695		695			54		54	749	51,056	31,216	49,902	8.58	10.77	8.71
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			7		7			-		-	7	5,964	-	5,964	0.67	-	0.67
2013			504		504			-		-	504	4,932	-	4,932	1.41	-	1.41
2014			2,057		2,057			65		65	2,122	16,750	9,932	16,518	1.21	1.08	1.21
2015			2,510		2,510			292		292	2,802	12,380	15,795	12,667	1.52	1.92	1.55
2016			2,594		2,594			160		147	2,754	41,176	16,671	39,974	4.05	4.84	4.09
2017			695		695			54		54	749	52,486	36,851	51,577	8.58	10.77	8.71
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-		-			-		-	-	-	-	-	-	-	-
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2012			7					-		7		-			-	
2013			511					-		511		-			-	
2014			2,568					65		2,633		1,588			1.08	
2015			5,071					357		5,428		10,641			1.68	
2016			7,161					516		7,677		13,226			2.11	
2017			5,800					505		6,305		16,353			2.66	
2018			3,289					213		3,503		19,326			5.62	
2019			695					54		749		36,851			10.77	
2020			-					-		-		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
Program Participants										
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012		11		11			-		-	11
2013		368		368			-		-	368
2014		2,068		2,068			60		60	2,128
2015		3,723		3,723			212		212	3,935
2016		4,363		4,363			245		20	4,608
2017		4,444		4,444			250		25	4,694
2018		4,444		4,444			250		25	4,694
2019		4,444		4,444			250		25	4,694
2020		4,444		4,444			250		-	4,694

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Program Participants										
		VA IRP					NC IRP			System IRP
2012		11					-			11
2013		368					-			368
2014		2,068					60			2,128
2015		3,723					212			3,935
2016		4,363					245			4,608
2017		4,444					250			4,694
2018		4,444					250			4,694
2019		4,444					250			4,694
2020		4,444					250			4,694
2021		4,444					250			4,694
2022		4,444					250			4,694
2023		4,444					250			4,694
2024		4,444					250			4,694
2025		4,444					250			4,694
2026		4,444					250			4,694
2027		4,444					250			4,694
2028		4,444					250			4,694
2029		4,444					250			4,694
2030		4,444					250			4,694
2031		4,444					250			4,694
2032		4,444					250			4,694
2033		4,444					250			4,694
2034		4,444					250			4,694
2035		4,444					250			4,694
2036		4,444					250			4,694
2037		4,444					250			4,694
2038		4,444					250			4,694
2039		4,444					250			4,694
2040		4,444					250			4,694
2041		4,444					250			4,694
2042		4,444					250			4,694
2043		4,444					250			4,694

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)

Net Energy (kWh)										
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012		5,619		5,619			0		0	5,619
2013		568,302		568,302			0		0	568,302
2014		13,684,198		13,684,198			95,254		95,254	13,779,451
2015		41,416,634		41,416,634			2,255,843		2,255,843	43,672,478
2016		65,045,297		65,045,297			3,240,455		2,733,394	68,285,752
2017		81,277,898		81,277,898			3,702,924		660,557	84,980,822
2018		81,393,731		81,393,731			3,731,098		688,731	85,124,829
2019		81,393,731		81,393,731			3,731,098		688,731	85,124,829
2020		81,393,731		81,393,731			3,731,098		573,943	85,124,829

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)

Net Energy (kWh)										
		VA IRP					NC IRP			System IRP
2012		5,619					-			5,619
2013		573,920					-			573,920
2014		14,258,118					95,254			14,353,372
2015		55,674,752					2,351,097			58,025,850
2016		120,720,049					5,591,552			126,311,602
2017		201,997,947					9,294,477			211,292,424
2018		283,391,678					13,025,575			296,417,253
2019		364,785,409					16,756,673			381,542,081
2020		446,179,139					20,487,771			466,666,910
2021		527,572,870					24,218,869			551,791,739
2022		608,966,601					27,949,967			636,916,568
2023		690,360,332					31,681,065			722,041,396
2024		771,754,063					35,412,163			807,166,225
2025		853,147,793					39,143,261			892,291,054
2026		934,541,524					42,874,359			977,415,883
2027		1,015,935,255					46,605,457			1,062,540,711
2028		1,097,328,986					50,336,555			1,147,665,540
2029		1,178,722,716					54,067,653			1,232,790,369
2030		1,260,116,447					57,798,751			1,317,915,198
2031		1,341,510,178					61,529,849			1,403,040,027
2032		1,422,903,909					65,260,947			1,488,164,855
2033		1,504,297,639					68,992,045			1,573,289,684
2034		1,585,691,370					72,723,143			1,658,414,513
2035		1,667,085,101					76,454,241			1,743,539,342
2036		1,748,478,832					80,185,339			1,828,664,170
2037		1,829,866,944					83,916,437			1,913,783,380
2038		1,910,692,373					87,647,535			1,998,339,908
2039		1,978,401,906					91,283,379			2,069,685,285
2040		2,018,379,002					92,758,634			2,111,137,636
2041		2,034,727,436					93,249,276			2,127,976,712
2042		2,034,843,269					93,277,450			2,128,120,719
2043		2,034,843,269					93,277,450			2,128,120,719

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant			Net kWh/Participant			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			7		7			-		-	7	511	-	511	0.67	-	0.67
2013			511		511			-		-	511	1,544	-	1,544	1.39	-	1.39
2014			2,568		2,568			65		65	2,633	6,617	1,588	6,475	1.24	1.08	1.24
2015			5,078		5,078			357		357	5,435	11,125	10,641	11,098	1.36	1.68	1.38
2016			7,673		7,673			516		147	8,189	14,908	13,226	14,819	1.76	2.11	1.78
2017			8,368		8,368			570		200	8,938	18,289	14,812	18,104	1.88	2.28	1.90
2018			8,368		8,368			570		200	8,938	18,315	14,924	18,135	1.88	2.28	1.90
2019			8,368		8,368			570		200	8,938	18,315	14,924	18,135	1.88	2.28	1.90
2020			8,368		8,368			570		-	8,938	18,315	14,924	18,135	1.88	2.28	1.90

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant				IRP Capacity Savings/Participant		
	Net Peak Demand (kW)										Net kWh/Participant				Net kWh/Participant		
			VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2012			7					-			7	511	-	511	0.67	-	0.67
2013			511					-			511	1,560	-	1,560	1.39	-	1.39
2014			2,568					65			2,633	6,895	1,588	6,745	1.24	1.08	1.24
2015			5,078					357			5,435	14,954	11,090	14,746	1.36	1.68	1.38
2016			7,673					516			8,189	27,669	22,823	27,411	1.76	2.11	1.78
2017			8,368					570			8,938	45,454	37,178	45,013	1.88	2.28	1.90
2018			8,368					570			8,938	63,770	52,102	63,148	1.88	2.28	1.90
2019			8,368					570			8,938	82,085	67,027	81,283	1.88	2.28	1.90
2020			8,368					570			8,938	100,400	81,951	99,418	1.88	2.28	1.90
2021			8,368					570			8,938	118,716	96,875	117,553	1.88	2.28	1.90
2022			8,368					570			8,938	137,031	111,800	135,687	1.88	2.28	1.90
2023			8,368					570			8,938	155,347	126,724	153,822	1.88	2.28	1.90
2024			8,368					570			8,938	173,662	141,649	171,957	1.88	2.28	1.90
2025			8,368					570			8,938	191,977	156,573	190,092	1.88	2.28	1.90
2026			8,368					570			8,938	210,293	171,497	208,227	1.88	2.28	1.90
2027			8,368					570			8,938	228,608	186,422	226,361	1.88	2.28	1.90
2028			8,368					570			8,938	246,924	201,346	244,496	1.88	2.28	1.90
2029			8,368					570			8,938	265,239	216,271	262,631	1.88	2.28	1.90
2030			8,368					570			8,938	283,555	231,195	280,766	1.88	2.28	1.90
2031			8,368					570			8,938	301,870	246,119	298,901	1.88	2.28	1.90
2032			8,368					570			8,938	320,185	261,044	317,036	1.88	2.28	1.90
2033			8,368					570			8,938	338,501	275,968	335,170	1.88	2.28	1.90
2034			8,368					570			8,938	356,816	290,893	353,305	1.88	2.28	1.90
2035			8,368					570			8,938	375,132	305,817	371,440	1.88	2.28	1.90
2036			8,368					570			8,938	393,447	320,741	389,575	1.88	2.28	1.90
2037			8,368					570			8,938	411,761	335,666	407,708	1.88	2.28	1.90
2038			8,368					570			8,938	429,949	350,590	425,722	1.88	2.28	1.90
2039			8,368					570			8,938	445,185	365,134	440,921	1.88	2.28	1.90
2040			8,368					570			8,938	454,181	371,035	449,752	1.88	2.28	1.90
2041			8,368					570			8,938	457,859	372,997	453,340	1.88	2.28	1.90
2042			8,368					570			8,938	457,886	373,110	453,370	1.88	2.28	1.90
2043			8,368					570			8,938	457,886	373,110	453,370	1.88	2.28	1.90

Program:	Non-residential Energy Audit
DSM Phase:	2
Type:	
Program Life in years	
Starting from 2012:	7.0

Table 1		Participation											
Year	Month	Program Participants										System System Cum for IRP E+G	
		VA					NC						
		VA Monthly New [A]	VA Monthly Retired [-A retired]	VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC Monthly New [C]	NC Monthly Retired [-C retired]	NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D		
2012	January	0	0	0		0	0	0	0		0	0	
2012	February	0	0	0		0	0	0	0		0	0	
2012	March	0	0	0		0	0	0	0		0	0	
2012	April	0	0	0		0	0	0	0		0	0	
2012	May	0	0	0		0	0	0	0		0	0	
2012	June	0	0	0		0	0	0	0		0	0	
2012	July	0	0	0		0	0	0	0		0	0	
2012	August	0	0	0		0	0	0	0		0	0	
2012	September	0	0	0		0	0	0	0		0	0	
2012	October	0	0	0		0	0	0	0		0	0	
2012	November	0	0	0		0	0	0	0		0	0	
2012	December	1	0	1		1	0	0	0		0	1	
2013	January	0	0	1		1	0	0	0		0	1	
2013	February	0	0	1		1	0	0	0		0	1	
2013	March	0	0	1		1	0	0	0		0	1	
2013	April	0	0	1		1	0	0	0		0	1	
2013	May	26	0	27		27	0	0	0		0	27	
2013	June	7	0	34		34	0	0	0		0	34	
2013	July	2	0	36		36	0	0	0		0	36	
2013	August	3	0	39		39	0	0	0		0	39	
2013	September	6	0	45		45	0	0	0		0	45	
2013	October	88	0	133		133	0	0	0		0	133	
2013	November	72	0	205		205	0	0	0		0	205	
2013	December	98	0	303		303	0	0	0		0	303	
2014	January	54	0	357		357	0	0	0		0	357	
2014	February	72	0	429		429	0	0	0		0	429	
2014	March	31	0	460		460	0	0	0		0	460	
2014	April	70	0	530		530	0	0	0		0	530	
2014	May	136	0	666		666	0	0	0		0	666	
2014	June	41	0	707		707	0	0	0		0	707	
2014	July	52	0	759		759	0	0	0		0	759	
2014	August	114	0	873		873	0	0	0		0	873	
2014	September	207	0	1,080		1,080	0	0	0		0	1,080	
2014	October	145	0	1,225		1,225	2	0	2		2	1,227	
2014	November	174	0	1,399		1,399	14	0	16		16	1,415	
2014	December	20	0	1,419		1,419	0	0	16		16	1,435	

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
												System Cum for IRP
2012	January			0		0			0		0	0
2012	February			0		0			0		0	0
2012	March			0		0			0		0	0
2012	April			0		0			0		0	0
2012	May			0		0			0		0	0
2012	June			0		0			0		0	0
2012	July			0		0			0		0	0
2012	August			0		0			0		0	0
2012	September			0		0			0		0	0
2012	October			0		0			0		0	0
2012	November			0		0			0		0	0
2012	December	2,878		2,878		2,878			0		0	2,878
2013	January			2,878		2,878			0		0	2,878
2013	February			2,878		2,878			0		0	2,878
2013	March			2,878		2,878			0		0	2,878
2013	April			2,878		2,878			0		0	2,878
2013	May	15,005		17,883		17,883			0		0	17,883
2013	June	2,060		19,944		19,944			0		0	19,944
2013	July	3		19,946		19,946			0		0	19,946
2013	August	283		20,229		20,229			0		0	20,229
2013	September	565		20,794		20,794			0		0	20,794
2013	October	145,815		166,609		166,609			0		0	166,609
2013	November	88,973		255,582		255,582			0		0	255,582
2013	December	42,085		297,667		297,667			0		0	297,667
2014	January	109,453		407,120		407,120			0		0	407,120
2014	February	149,520		556,640		556,640			0		0	556,640
2014	March	11,883		568,523		568,523			0		0	568,523
2014	April	281,424		849,947		849,947			0		0	849,947
2014	May	159,225		1,009,172		1,009,172			0		0	1,009,172
2014	June	83,724		1,092,896		1,092,896			0		0	1,092,896
2014	July	140,104		1,233,000		1,233,000			0		0	1,233,000
2014	August	74,927		1,307,927		1,307,927			0		0	1,307,927
2014	September	377,296		1,685,223		1,685,223			0		0	1,685,223
2014	October	130,771		1,815,993		1,815,993	5,487		5,487		5,487	1,821,480
2014	November	857,066		2,673,059		2,673,059	35,425		40,913		40,913	2,713,972
2014	December	34,340		2,707,400		2,707,400			40,913		40,913	2,748,312

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2012	January			0		0			0		0	0			-			-
2012	February			0		0			0		0	0			-			-
2012	March			0		0			0		0	0			-			-
2012	April			0		0			0		0	0			-			-
2012	May			0		0			0		0	0			-			-
2012	June			0		0			0		0	0			-			-
2012	July			0		0			0		0	0			-			-
2012	August			0		0			0		0	0			-			-
2012	September			0		0			0		0	0			-			-
2012	October			0		0			0		0	0			-			-
2012	November			0		0			0		0	0			-			-
2012	December	10		10		10			0		0	10	2,878		2,878	9.79		9.79
2013	January			10		10			0		0	10	2,878		2,878	9.79		9.79
2013	February			10		10			0		0	10	2,878		2,878	9.79		9.79
2013	March			10		10			0		0	10	2,878		2,878	9.79		9.79
2013	April			10		10			0		0	10	2,878		2,878	9.79		9.79
2013	May	22		32		32			0		0	32	662		662	1.17		1.17
2013	June	3		35		35			0		0	35	587		587	1.02		1.02
2013	July	0		35		35			0		0	35	554		554	0.96		0.96
2013	August	0		35		35			0		0	35	519		519	0.90		0.90
2013	September	1		36		36			0		0	36	462		462	0.80		0.80
2013	October	441		477		477			0		0	477	1,253		1,253	3.58		3.58
2013	November	246		723		723			0		0	723	1,247		1,247	3.53		3.53
2013	December	83		806		806			0		0	806	982		982	2.66		2.66
2014	January	156		962		962			0		0	962	1,140		1,140	2.69		2.69
2014	February	211		1,172		1,172			0		0	1,172	1,298		1,298	2.73		2.73
2014	March	17		1,189		1,189			0		0	1,189	1,236		1,236	2.58		2.58
2014	April	391		1,580		1,580			0		0	1,580	1,604		1,604	2.98		2.98
2014	May	223		1,802		1,802			0		0	1,802	1,515		1,515	2.71		2.71
2014	June	115		1,917		1,917			0		0	1,917	1,546		1,546	2.71		2.71
2014	July	195		2,112		2,112			0		0	2,112	1,625		1,625	2.78		2.78
2014	August	107		2,220		2,220			0		0	2,220	1,498		1,498	2.54		2.54
2014	September	166		2,385		2,385			0		0	2,385	1,560		1,560	2.21		2.21
2014	October	48		2,433		2,433	8		8		8	2,441	1,482	2,744	1,484	1.99	3.76	1.99
2014	November	56		2,489		2,489	49		56		56	2,545	1,911	2,557	1,918	1.78	3.51	1.80
2014	December	21		2,510		2,510			56		56	2,567	1,908	2,557	1,915	1.77	3.51	1.79

Table 1		Participation											
Year	Month	Program Participants											
		VA						NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
		[A]	[-A retired]	[E] = Σ[A] + Σ[-A retired]	[B]	[F] = Σ[A] + Σ[-A retired] + B		[C]	[-C retired]	[G] = Σ[C] + Σ[-C retired]	[D]	[H] = Σ[C] + Σ[-C retired] + D	E+G
2015	January	20	0	1,439		1,439		0	0	16		16	1,455
2015	February	16	0	1,455		1,455		0	0	16		16	1,471
2015	March	7	0	1,462		1,462		0	0	16		16	1,478
2015	April	2	0	1,464		1,464		0	0	16		16	1,480
2015	May	0	0	1,464		1,464		0	0	16		16	1,480
2015	June	0	0	1,464		1,464		1	0	17		17	1,481
2015	July	17	0	1,481		1,481		17	0	34		34	1,515
2015	August	10	0	1,491		1,491		60	0	94		94	1,585
2015	September	0	0	1,491		1,491		0	0	94		94	1,585
2015	October	0	0	1,491		1,491		0	0	94		94	1,585
2015	November	0	0	1,491		1,491		0	0	94		94	1,585
2015	December	1	0	1,492		1,492		0	0	94		94	1,586
2016	January	6	0	1,498		1,498		0	0	94		94	1,592
2016	February	1	0	1,499		1,499		0	0	94		94	1,593
2016	March	0	0	1,499		1,499		0	0	94		94	1,593
2016	April	0	0	1,499		1,499		0	0	94		94	1,593
2016	May	1	0	1,500		1,500		0	0	94		94	1,594
2016	June	7	0	1,507		1,507		0	0	94		94	1,601
2016	July	0	0	1,507		1,507		0	0	94		94	1,601
2016	August	11	0	1,518		1,518		6	0	100	6	100	1,618
2016	September	13	0	1,531		1,531		1	0	101	7	101	1,632
2016	October	29	0	1,560		1,560		2	0	103	9	103	1,663
2016	November	34	0	1,594		1,594		0	0	103	9	9	1,697
2016	December	23	0	1,617		1,617		3	0	106		12	1,723
2017	January	13	0	1,630		1,630		0	0	106		12	1,736
2017	February	1	0	1,631		1,631		1	0	107		13	1,738
2017	March	1	0	1,632		1,632		1	0	108		14	1,740
2017	April	0	0	1,632		1,632		0	0	108		14	1,740
2017	May	0	0	1,632		1,632		0	0	108		14	1,740
2017	June	0	0	1,632		1,632		0	0	108		14	1,740
2017	July	0	0	1,632		1,632		0	0	108		14	1,740
2017	August	0	0	1,632		1,632		0	0	108		14	1,740
2017	September	0	0	1,632		1,632		0	0	108		14	1,740
2017	October	0	0	1,632		1,632		0	0	108		14	1,740
2017	November	0	0	1,632		1,632		0	0	108		14	1,740
2017	December	0	0	1,632		1,632		0	0	108		14	1,740

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2015	January	27,464		2,734,863		2,734,863			40,913		40,913	2,775,776
2015	February	20,849		2,755,713		2,755,713			40,913		40,913	2,796,625
2015	March	4,565		2,760,278		2,760,278			40,913		40,913	2,801,190
2015	April	157		2,760,434		2,760,434			40,913		40,913	2,801,347
2015	May			2,760,434		2,760,434			40,913		40,913	2,801,347
2015	June			2,760,434		2,760,434	150		41,063		41,063	2,801,497
2015	July	126		2,760,560		2,760,560	7,487		48,550		48,550	2,809,110
2015	August	86		2,760,646		2,760,646	5,232		53,782		53,782	2,814,428
2015	September			2,760,646		2,760,646			53,782		53,782	2,814,428
2015	October			2,760,646		2,760,646			53,782		53,782	2,814,428
2015	November			2,760,646		2,760,646			53,782		53,782	2,814,428
2015	December	7		2,760,653		2,760,653			53,782		53,782	2,814,435
2016	January	80		2,760,733		2,760,733			53,782		53,782	2,814,515
2016	February	11		2,760,745		2,760,745			53,782		53,782	2,814,526
2016	March			2,760,745		2,760,745			53,782		53,782	2,814,526
2016	April			2,760,745		2,760,745			53,782		53,782	2,814,526
2016	May	3,895		2,764,639		2,764,639			53,782		53,782	2,818,421
2016	June	189,137		2,953,776		2,953,776			53,782		53,782	3,007,558
2016	July	9,106		2,962,883		2,962,883			53,782	0	53,782	3,016,665
2016	August	41,529		3,004,412		3,004,412	167		53,949	167	53,949	3,058,360
2016	September	37,327		3,041,739		3,041,739	17		53,966	185	53,966	3,095,705
2016	October	38,343		3,080,082		3,080,082	11,666		65,632	11,851	65,632	3,145,714
2016	November	111,756		3,191,838		3,191,838			65,632	11,851	11,851	3,257,470
2016	December	90,905		3,282,742		3,282,742	9,448		75,081		21,299	3,357,823
2017	January	11,186		3,293,929		3,293,929	23,986		99,067		45,285	3,392,995
2017	February	2,201		3,296,130		3,296,130	22,224		121,291		67,509	3,417,421
2017	March	778		3,296,908		3,296,908	7,983		129,274		75,492	3,426,181
2017	April			3,296,908		3,296,908			129,274		75,492	3,426,181
2017	May			3,296,908		3,296,908			129,274		75,492	3,426,181
2017	June			3,296,908		3,296,908			129,274		75,492	3,426,181
2017	July			3,296,908		3,296,908			129,274		75,492	3,426,181
2017	August			3,296,908		3,296,908			129,274		75,492	3,426,181
2017	September			3,296,908		3,296,908			129,274		75,492	3,426,181
2017	October			3,296,908		3,296,908			129,274		75,492	3,426,181
2017	November			3,296,908		3,296,908			129,274		75,492	3,426,181
2017	December			3,296,908		3,296,908			129,274		75,492	3,426,181

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2015	January	4		2,514		2,514			56		56	2,570	1,901	2,557	1,908	1.75	3.51	1.77
2015	February	1		2,515		2,515			56		56	2,571	1,894	2,557	1,901	1.73	3.51	1.75
2015	March	0		2,515		2,515			56		56	2,571	1,888	2,557	1,895	1.72	3.51	1.74
2015	April	0		2,515		2,515			56		56	2,571	1,886	2,557	1,893	1.72	3.51	1.74
2015	May			2,515		2,515			56		56	2,571	1,886	2,557	1,893	1.72	3.51	1.74
2015	June			2,515		2,515	0		56		56	2,572	1,886	2,415	1,892	1.72	3.31	1.74
2015	July	0		2,515		2,515	11		67		67	2,583	1,864	1,428	1,854	1.70	1.98	1.70
2015	August	0		2,516		2,516	8		75		75	2,591	1,852	572	1,776	1.69	0.80	1.63
2015	September			2,516		2,516			75		75	2,591	1,852	572	1,776	1.69	0.80	1.63
2015	October			2,516		2,516			75		75	2,591	1,852	572	1,776	1.69	0.80	1.63
2015	November			2,516		2,516			75		75	2,591	1,852	572	1,776	1.69	0.80	1.63
2015	December	0		2,516		2,516			75		75	2,591	1,850	572	1,775	1.69	0.80	1.63
2016	January	0		2,516		2,516			75		75	2,591	1,843	572	1,768	1.68	0.80	1.63
2016	February	0		2,516		2,516			75		75	2,591	1,842	572	1,767	1.68	0.80	1.63
2016	March			2,516		2,516			75		75	2,591	1,842	572	1,767	1.68	0.80	1.63
2016	April			2,516		2,516			75		75	2,591	1,842	572	1,767	1.68	0.80	1.63
2016	May	5		2,521		2,521			75		75	2,596	1,843	572	1,768	1.68	0.80	1.63
2016	June	256		2,777		2,777			75		75	2,852	1,960	572	1,879	1.84	0.80	1.78
2016	July	12		2,789		2,789			75	0	75	2,864	1,966	572	1,884	1.85	0.80	1.79
2016	August	56		2,845		2,845	0		75	0	75	2,921	1,979	539	1,890	1.87	0.75	1.81
2016	September	50		2,896		2,896	0		75	0	75	2,971	1,987	534	1,897	1.89	0.75	1.82
2016	October	52		2,948		2,948	16		91	16	91	3,039	1,974	637	1,892	1.89	0.89	1.83
2016	November	152		3,099		3,099			91	16	91	3,191	2,002	637	1,920	1.94	0.89	1.88
2016	December	123		3,222		3,222	13		104		29	3,326	2,030	708	1,949	1.99	0.98	1.93
2017	January	15		3,237		3,237	51		155		80	3,392	2,021	935	1,954	1.99	1.46	1.95
2017	February	5		3,242		3,242	48		203		128	3,445	2,021	1,134	1,966	1.99	1.89	1.98
2017	March	1		3,243		3,243	17		220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	April			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	May			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	June			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	July			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	August			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	September			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	October			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	November			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2017	December			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99

Table 1		Participation											
Year	Month	Program Participants											
		VA		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System Cum for IRP E+G	
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]					
2018	January	0	0	1,632		1,632	0	0	108		14	1,740	
2018	February	0	0	1,632		1,632	0	0	108		14	1,740	
2018	March	0	0	1,632		1,632	0	0	108		14	1,740	
2018	April	0	0	1,632		1,632	0	0	108		14	1,740	
2018	May	0	0	1,632		1,632	0	0	108		14	1,740	
2018	June	0	0	1,632		1,632	0	0	108		14	1,740	
2018	July	0	0	1,632		1,632	0	0	108		14	1,740	
2018	August	0	0	1,632		1,632	0	0	108		14	1,740	
2018	September	0	0	1,632		1,632	0	0	108		14	1,740	
2018	October	0	0	1,632		1,632	0	0	108		14	1,740	
2018	November	0	0	1,632		1,632	0	0	108		14	1,740	
2018	December	0	0	1,632		1,632	0	0	108		14	1,740	
2019	January	0	0	1,632		1,632	0	0	108		14	1,740	
2019	February	0	0	1,632		1,632	0	0	108		14	1,740	
2019	March	0	0	1,632		1,632	0	0	108		14	1,740	
2019	April	0	0	1,632		1,632	0	0	108		14	1,740	
2019	May	0	0	1,632		1,632	0	0	108		14	1,740	
2019	June	0	0	1,632		1,632	0	0	108		14	1,740	
2019	July	0	0	1,632		1,632	0	0	108	0	14	1,740	
2019	August	0	0	1,632		1,632	0	0	108	0	14	1,740	
2019	September	0	0	1,632		1,632	0	0	108	0	14	1,740	
2019	October	0	0	1,632		1,632	0	0	108	0	14	1,740	
2019	November	0	0	1,632		1,632	0	0	108	0	14	1,740	
2019	December	0	-1	1,631		1,631	0	0	108		0	1,740	
2020	January	0	0	1,631		1,631	0	0	108		0	1,739	
2020	February	0	0	1,631		1,631	0	0	108		0	1,739	
2020	March	0	0	1,631		1,631	0	0	108		0	1,739	
2020	April	0	0	1,631		1,631	0	0	108		0	1,739	
2020	May	0	-26	1,605		1,605	0	0	108		0	1,713	
2020	June	0	-7	1,598		1,598	0	0	108		0	1,706	
2020	July	0	-2	1,596		1,596	0	0	108		0	1,704	
2020	August	0	-3	1,593		1,593	0	0	108		0	1,701	
2020	September	0	-6	1,587		1,587	0	0	108		0	1,695	
2020	October	0	-88	1,499		1,499	0	0	108		0	1,607	
2020	November	0	-72	1,427		1,427	0	0	108		0	1,535	
2020	December	0	-98	1,329		1,329	0	0	108		0	1,437	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2018	January			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	February			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	March			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	April			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	May			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	June			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	July			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	August			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	September			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	October			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	November			3,296,908		3,296,908			129,274		75,492	3,426,181
2018	December			3,296,908		3,296,908			129,274		75,492	3,426,181
2019	January			3,296,908		3,296,908			129,274		75,492	3,426,181
2019	February			3,296,908		3,296,908			129,274		75,492	3,426,181
2019	March			3,296,908		3,296,908			129,274		75,492	3,426,181
2019	April			3,296,908		3,296,908			129,274		75,492	3,426,181
2019	May			3,296,908		3,296,908			129,274		75,492	3,426,181
2019	June			3,296,908		3,296,908			129,274		75,492	3,426,181
2019	July			3,296,908		3,296,908			129,274	0	75,492	3,426,181
2019	August			3,296,908		3,296,908			129,274	0	75,492	3,426,181
2019	September			3,296,908		3,296,908			129,274	0	75,492	3,426,181
2019	October			3,296,908		3,296,908			129,274	0	75,492	3,426,181
2019	November			3,296,908		3,296,908			129,274	0	75,492	3,426,181
2019	December		-2,878	3,296,908		3,296,908			129,274	0	0	3,426,181
2020	January			3,294,030		3,294,030			129,274		0	3,423,303
2020	February			3,294,030		3,294,030			129,274		0	3,423,303
2020	March			3,294,030		3,294,030			129,274		0	3,423,303
2020	April			3,294,030		3,294,030			129,274		0	3,423,303
2020	May		-15,005	3,279,025		3,279,025			129,274		0	3,408,298
2020	June		-2,060	3,276,964		3,276,964			129,274		0	3,406,238
2020	July		-3	3,276,962		3,276,962			129,274		0	3,406,235
2020	August		-283	3,276,679		3,276,679			129,274		0	3,405,953
2020	September		-565	3,276,114		3,276,114			129,274		0	3,405,387
2020	October		-145,815	3,130,299		3,130,299			129,274		0	3,259,572
2020	November		-88,973	3,041,326		3,041,326			129,274		0	3,170,599
2020	December		-42,085	2,999,241		2,999,241			129,274		0	3,128,514

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA		VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired										
2018	January			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	February			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	March			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	April			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	May			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	June			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	July			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	August			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	September			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	October			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	November			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2018	December			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	January			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	February			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	March			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	April			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	May			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	June			3,243		3,243			220		145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	July			3,243		3,243			220	0	145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	August			3,243		3,243			220	0	145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	September			3,243		3,243			220	0	145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	October			3,243		3,243			220	0	145	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	November			3,243		3,243			220	0	0	3,463	2,020	1,197	1,969	1.99	2.04	1.99
2019	December		-10	3,233		3,233			220	0	0	3,453	2,020	1,197	1,969	1.98	2.04	1.99
2020	January			3,233		3,233			220	0	0	3,453	2,020	1,197	1,969	1.98	2.04	1.99
2020	February			3,233		3,233			220	0	0	3,453	2,020	1,197	1,969	1.98	2.04	1.99
2020	March			3,233		3,233			220	0	0	3,453	2,020	1,197	1,969	1.98	2.04	1.99
2020	April			3,233		3,233			220	0	0	3,453	2,020	1,197	1,969	1.98	2.04	1.99
2020	May		-22	3,212		3,212			220	0	0	3,431	2,043	1,197	1,990	2.00	2.04	2.00
2020	June		-3	3,209		3,209			220	0	0	3,428	2,051	1,197	1,997	2.01	2.04	2.01
2020	July		0	3,209		3,209			220	0	0	3,428	2,053	1,197	1,999	2.01	2.04	2.01
2020	August		0	3,208		3,208			220	0	0	3,428	2,057	1,197	2,002	2.01	2.04	2.02
2020	September		-1	3,207		3,207			220	0	0	3,427	2,064	1,197	2,009	2.02	2.04	2.02
2020	October		-441	2,767		2,767			220	0	0	2,986	2,088	1,197	2,028	1.85	2.04	1.86
2020	November		-246	2,521		2,521			220	0	0	2,740	2,131	1,197	2,066	1.77	2.04	1.79
2020	December		-83	2,437		2,437			220	0	0	2,657	2,257	1,197	2,177	1.83	2.04	1.85

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2012		1		1			-		-	1
	2013		302		302			-		-	302
	2014		1,116		1,116			16		16	1,132
	2015		73		73			78		78	151
	2016		125		125			12		12	137
	2017		15		15			2		2	17
	2018		-		-			-		-	-
	2019		-1		-1			-		-	-1
	2020		-302		-302			-		-	-302

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			1		1			-		-	1
2013			302		302			-		-	302
2014			1,116		1,116			16		16	1,132
2015			73		73			78		78	151
2016			125		125			12		12	137
2017			15		15			2		2	17
2018			-		-			-		-	-
2019			-1		-1			-		-	-1
2020			-302		-302			-		-	-302

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			2,878		2,878			-		-	2,878
2013			795,628		795,628			-		-	795,628
2014			12,334,893		12,334,893			87,312		87,312	12,422,206
2015			607,157		607,157			72,134		72,134	679,290
2016			2,197,238		2,197,238			45,352		45,352	2,242,590
2017			166,229		166,229			612,123		612,123	778,352
2018			-		-			-		-	-
2019			-2,878		-2,878			-		0	-2,878
2020			-795,628		-795,628			-		-	-795,628

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			34,540		34,540			-		-	34,540
2013			3,537,467		3,537,467			-		-	3,537,467
2014			28,916,792		28,916,792			490,951		490,951	29,407,743
2015			639,041		639,041			154,431		154,431	793,472
2016			6,265,069		6,265,069			255,588		255,588	6,520,657
2017			169,986		169,986			650,312		650,312	820,299
2018			-		-			-		-	-
2019			-34,540		-34,540			-		-	-34,540
2020			-3,537,467		-3,537,467			-		-	-3,537,467

Table 2. EM&V Data Incremental by Vintage Year												Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			10		10			-		-	10	2,878	-	2,878	9.79	-	9.79
2013			796		796			-		-	796	2,635	-	2,635	2.64	-	2.64
2014			1,704		1,704			56		56	1,761	11,053	5,457	10,974	1.53	3.51	1.56
2015			5		5			19		19	24	8,317	925	4,499	0.07	0.24	0.16
2016			707		707			29		29	736	17,578	3,779	16,369	5.65	2.40	5.37
2017			21		21			116		116	137	11,082	306,061	45,785	1.40	57.93	8.05
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-10		-10			-		-	-10	2,878	-	2,878	9.79	-	9.79
2020			-796		-796			-		-	-796	2,635	-	2,635	2.64	-	2.64

Table 3. EM&V Data Annualized by Vintage Year												Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012			10		10			-		-	10	34,540	-	34,540	9.79	-	9.79
2013			796		796			-		-	796	11,713	-	11,713	2.64	-	2.64
2014			1,704		1,704			56		56	1,761	25,911	30,684	25,979	1.53	3.51	1.56
2015			5		5			19		19	24	8,754	1,980	5,255	0.07	0.24	0.16
2016			707		707			29		29	736	50,121	21,299	47,596	5.65	2.40	5.37
2017			21		21			116		116	137	11,332	325,156	48,253	1.40	57.93	8.05
2018			-		-			-		-	-	-	-	-	-	-	-
2019			-10		-10			-		-	-10	34,540	-	34,540	9.79	-	9.79
2020			-796		-796			-		-	-796	11,713	-	11,713	2.64	-	2.64

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Program Participants		VA PPI						NC PPI		System
2012			1					-		1
2013			303					-		303
2014			1,419					16		1,435
2015			1,491					94		1,585
2016			1,314					106		1,420
2017			213					92		305
2018			140					14		154
2019			14					2		16
2020			-303					-		-303

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										
Program Participants		VA IRP		VA NLR		NC IRP		NC NLR		System IRP
2012			1		1		-		-	1
2013			303		303		-		-	303
2014			1,419		1,419		16		16	1,435
2015			1,492		1,492		94		94	1,586
2016			1,617		1,617		106		12	1,723
2017			1,632		1,632		108		14	1,740
2018			1,632		1,632		108		14	1,740
2019			1,631		1,631		108		-	1,739
2020			1,329		1,329		108		-	1,437

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Program Participants		VA IRP		VA NLR		NC IRP		NC NLR		System IRP
2012			1				-			1
2013			303				-			303
2014			1,419				16			1,435
2015			1,492				94			1,586
2016			1,617				106			1,723
2017			1,632				108			1,740
2018			1,632				108			1,740
2019			1,632				108			1,740
2020			1,632				108			1,740
2021			1,632				108			1,740
2022			1,632				108			1,740
2023			1,632				108			1,740
2024			1,632				108			1,740
2025			1,632				108			1,740

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Net Energy (kWh) for PPI									
			VA PPI					NC PPI		System
2012			2,878					-		2,878
2013			830,168					-		830,168
2014			15,906,900					87,312		15,994,212
2015			33,061,416					563,085		33,624,500
2016			31,753,071					690,734		32,443,805
2017			7,070,339					1,022,142		8,092,481
2018			6,435,055					905,900		7,340,955
2019			167,108					650,312		817,420
2020			-830,168					-		-830,168

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2012			2,878		2,878			0		0	2,878
2013			830,168		830,168			0		0	830,168
2014			15,906,900		15,906,900			87,312		87,312	15,994,212
2015			33,095,955		33,095,955			563,085		563,085	33,659,040
2016			35,325,078		35,325,078			690,734		583,170	36,015,812
2017			39,559,138		39,559,138			1,513,093		867,711	41,072,231
2018			39,562,895		39,562,895			1,551,282		905,900	41,114,177
2019			39,560,016		39,560,016			1,551,282		754,917	41,111,299
2020			38,732,727		38,732,727			1,551,282		0	40,284,009

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Net Energy (kWh)									
			VA IRP					NC IRP		System IRP
2012			2,878					-		2,878
2013			833,046					-		833,046
2014			16,739,946					87,312		16,827,259
2015			49,835,902					650,397		50,486,299
2016			85,160,979					1,341,131		86,502,111
2017			124,720,117					2,854,224		127,574,341
2018			164,283,011					4,405,507		168,688,518
2019			203,843,028					5,956,789		209,799,817
2020			242,575,754					7,508,072		250,083,826
2021			266,231,749					8,972,042		275,203,791
2022			272,698,688					9,960,239		282,658,927
2023			276,936,505					10,820,787		287,757,293
2024			276,940,262					10,858,977		287,799,239
2025			276,940,262					10,858,977		287,799,239

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										PPI Energy Savings/Participant Net kWh/Participant for IRP			PPI Capacity Savings/Participant Net kW/Participant for IRP		
	Net Peak Demand (kW)									Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2012		10					-		10		-			-	
2013		806					-		806		-			-	
2014		2,510					56		2,567		5,457			3.51	
2015		2,506					75		2,581		5,990			0.80	
2016		2,416					104		2,520		6,516			0.98	
2017		733					164		897		11,110			1.78	
2018		728					145		872		64,707			10.34	
2019		11					116		127		325,156			57.93	
2020		-806					-		-806		-			-	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)										IRP Energy Savings/Participant			IRP Capacity Savings/Participant			
	Net Peak Demand (kW)									Net kWh/Participant			Net kWh/Participant			
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2012		10		10			-		-	10	2,878	-	2,878	9.79	-	9.79
2013		806		806			-		-	806	2,740	-	2,740	2.66	-	2.66
2014		2,510		2,510			56		56	2,567	11,210	5,457	11,146	1.77	3.51	1.79
2015		2,516		2,516			75		75	2,591	22,182	5,990	21,223	1.69	0.80	1.63
2016		3,222		3,222			104		29	3,326	21,846	6,516	20,903	1.99	0.98	1.93
2017		3,243		3,243			220		145	3,463	24,240	14,010	23,605	1.99	2.04	1.99
2018		3,243		3,243			220		145	3,463	24,242	14,364	23,629	1.99	2.04	1.99
2019		3,233		3,233			220		-	3,453	24,255	14,364	23,641	1.98	2.04	1.99
2020		2,437		2,437			220		-	2,657	29,144	14,364	28,033	1.83	2.04	1.85

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										IRP Energy Savings/Participant Net kWh/Participant			IRP Capacity Savings/Participant Net kWh/Participant		
	Net Peak Demand (kW)									Net kWh/Participant			Net kWh/Participant		
		VA IRP					NC IRP		System IRP	VA	NC	System	VA	NC	System
2012		10					-		10	2,878	-	2,878	9.79	-	9.79
2013		806					-		806	2,749	-	2,749	2.66	-	2.66
2014		2,510					56		2,567	11,797	5,457	11,726	1.77	3.51	1.79
2015		2,516					75		2,591	33,402	6,919	31,832	1.69	0.80	1.63
2016		3,222					104		3,326	52,666	12,652	50,204	1.99	0.98	1.93
2017		3,243					220		3,463	76,422	26,428	73,319	1.99	2.04	1.99
2018		3,243					220		3,463	100,664	40,792	96,947	1.99	2.04	1.99
2019		3,243					220		3,463	124,904	55,155	120,575	1.99	2.04	1.99
2020		3,243					220		3,463	148,637	69,519	143,726	1.99	2.04	1.99
2021		3,243					220		3,463	163,132	83,074	158,163	1.99	2.04	1.99
2022		3,243					220		3,463	167,095	92,224	162,448	1.99	2.04	1.99
2023		3,243					220		3,463	169,691	100,192	165,378	1.99	2.04	1.99
2024		3,243					220		3,463	169,694	100,546	165,402	1.99	2.04	1.99
2025		3,243					220		3,463	169,694	100,546	165,402	1.99	2.04	1.99

Program:	Non-residential Heating & Cooling Efficiency
DSM Phase:	3
Type:	
Program Life in years	
Starting from 2014:	15.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2014	January	0	0	0		0	0	0	0		0	0
2014	February	0	0	0		0	0	0	0		0	0
2014	March	0	0	0		0	0	0	0		0	0
2014	April	0	0	0		0	0	0	0		0	0
2014	May	0	0	0		0	0	0	0		0	0
2014	June	0	0	0		0	0	0	0		0	0
2014	July	0	0	0		0	0	0	0		0	0
2014	August	0	0	0		0	0	0	0		0	0
2014	September	0	0	0		0	0	0	0		0	0
2014	October	0	0	0		0	0	0	0		0	0
2014	November	1	0	1		1	0	0	0		0	1
2014	December	5	0	6		6	0	0	0		0	6
2015	January	0	0	6		6	0	0	0		0	6
2015	February	1	0	7		7	0	0	0		0	7
2015	March	0	0	7		7	0	0	0		0	7
2015	April	16	0	23		23	2	0	2		2	25
2015	May	34	0	57		57	1	0	3		3	60
2015	June	16	0	73		73	0	0	3		3	76
2015	July	26	0	99		99	0	0	3		3	102
2015	August	2	0	101		101	0	0	3		3	104
2015	September	7	0	108		108	0	0	3		3	111
2015	October	5	0	113		113	0	0	3		3	116
2015	November	2	0	115		115	0	0	3		3	118
2015	December	5	0	120		120	0	0	3		3	123
2016	January	7	0	127		127	0	0	3		3	130
2016	February	9	0	136		136	0	0	3		3	139
2016	March	4	0	140		140	0	0	3		3	143
2016	April	6	0	146		146	1	0	4		4	150
2016	May	6	0	152		152	1	0	5		5	157
2016	June	12	0	164		164	2	0	7		7	171
2016	July	7	0	171		171	0	0	7	0	7	178
2016	August	12	0	183		183	1	0	8	1	8	191
2016	September	7	0	190		190	0	0	8	1	8	198
2016	October	6	0	196		196	0	0	8	1	8	204
2016	November	6	0	202		202	1	0	9	2	2	211
2016	December	7	0	209		209	0	0	9		2	218

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
												System Cum for IRP
2014	January			0		0			0		0	0
2014	February			0		0			0		0	0
2014	March			0		0			0		0	0
2014	April			0		0			0		0	0
2014	May			0		0			0		0	0
2014	June			0		0			0		0	0
2014	July			0		0			0		0	0
2014	August			0		0			0		0	0
2014	September			0		0			0		0	0
2014	October			0		0			0		0	0
2014	November	50,347		50,347		50,347			0		0	50,347
2014	December	34,644		84,991		84,991			0		0	84,991
2015	January			84,991		84,991			0		0	84,991
2015	February	1,891		86,882		86,882			0		0	86,882
2015	March			86,882		86,882			0		0	86,882
2015	April	172,470		259,352		259,352	2,214		2,214		2,214	261,566
2015	May	83,052		342,404		342,404	3,103		5,317		5,317	347,721
2015	June	24,256		366,660		366,660			5,317		5,317	371,977
2015	July	117,432		484,092		484,092			5,317		5,317	489,409
2015	August	797		484,890		484,890			5,317		5,317	490,206
2015	September	133,376		618,266		618,266			5,317		5,317	623,583
2015	October	49,146		667,412		667,412			5,317		5,317	672,728
2015	November	36,808		704,220		704,220			5,317		5,317	709,537
2015	December	30,012		734,232		734,232			5,317		5,317	739,548
2016	January	20,785		755,017		755,017			5,317		5,317	760,333
2016	February	19,914		774,931		774,931			5,317		5,317	780,247
2016	March	17,139		792,070		792,070			5,317		5,317	797,386
2016	April	141,968		934,037		934,037	640		5,957		5,957	939,994
2016	May	53,218		987,255		987,255	3,590		9,547		9,547	996,802
2016	June	56,304		1,043,559		1,043,559	12,212		21,759		21,759	1,065,318
2016	July	25,740		1,069,299		1,069,299			21,759	0	21,759	1,091,058
2016	August	148,579		1,217,878		1,217,878	374		22,132	374	22,132	1,240,010
2016	September	178,828		1,396,706		1,396,706			22,132	374	22,132	1,418,838
2016	October	41,980		1,438,685		1,438,685			22,132	374	22,132	1,460,818
2016	November	42,293		1,480,978		1,480,978	72		22,204	445	445	1,503,183
2016	December	49,346		1,530,325		1,530,325			22,204		445	1,552,529

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2014	January			0		0			0		0	0			-			-
2014	February			0		0			0		0	0			-			-
2014	March			0		0			0		0	0			-			-
2014	April			0		0			0		0	0			-			-
2014	May			0		0			0		0	0			-			-
2014	June			0		0			0		0	0			-			-
2014	July			0		0			0		0	0			-			-
2014	August			0		0			0		0	0			-			-
2014	September			0		0			0		0	0			-			-
2014	October			0		0			0		0	0			-			-
2014	November	237		237		237			0		0	237	50,347		50,347	236.82		236.82
2014	December	120		357		357			0		0	357	14,165		14,165	59.51		59.51
2015	January			357		357			0		0	357	14,165		14,165	59.51		59.51
2015	February	1		359		359			0		0	359	12,412		12,412	51.22		51.22
2015	March			359		359			0		0	359	12,412		12,412	51.22		51.22
2015	April	435		794		794	16		16		16	810	11,276	1,107	10,463	34.51	8.24	32.41
2015	May	270		1,064		1,064	2		19		19	1,083	6,007	1,772	5,795	18.67	6.28	18.05
2015	June	206		1,270		1,270			19		19	1,289	5,023	1,772	4,894	17.40	6.28	16.96
2015	July	292		1,562		1,562			19		19	1,581	4,890	1,772	4,798	15.78	6.28	15.50
2015	August	10		1,572		1,572			19		19	1,591	4,801	1,772	4,714	15.57	6.28	15.30
2015	September	390		1,963		1,963			19		19	1,982	5,725	1,772	5,618	18.17	6.28	17.85
2015	October	189		2,152		2,152			19		19	2,171	5,906	1,772	5,799	19.04	6.28	18.71
2015	November	45		2,196		2,196			19		19	2,215	6,124	1,772	6,013	19.10	6.28	18.77
2015	December	105		2,301		2,301			19		19	2,320	6,119	1,772	6,013	19.17	6.28	18.86
2016	January	58		2,359		2,359			19		19	2,378	5,945	1,772	5,849	18.57	6.28	18.29
2016	February	153		2,512		2,512			19		19	2,531	5,698	1,772	5,613	18.47	6.28	18.21
2016	March	54		2,566		2,566			19		19	2,585	5,658	1,772	5,576	18.33	6.28	18.07
2016	April	189		2,755		2,755	0		19		19	2,774	6,398	1,489	6,267	18.87	4.80	18.49
2016	May	35		2,789		2,789	55		74		74	2,863	6,495	1,909	6,349	18.35	14.78	18.24
2016	June	188		2,977		2,977	10		83		83	3,060	6,363	3,108	6,230	18.15	11.92	17.90
2016	July	96		3,073		3,073			83	0	83	3,156	6,253	3,108	6,130	17.97	11.92	17.73
2016	August	204		3,277		3,277	0		84	0	84	3,361	6,655	2,767	6,492	17.91	10.48	17.60
2016	September	127		3,404		3,404			84	0	84	3,488	7,351	2,767	7,166	17.92	10.48	17.62
2016	October	102		3,506		3,506			84	0	84	3,590	7,340	2,767	7,161	17.89	10.48	17.60
2016	November	122		3,628		3,628	0		84	1	84	3,712	7,332	2,467	7,124	17.96	9.34	17.59
2016	December	132		3,760		3,760			84		84	3,844	7,322	2,467	7,122	17.99	9.34	17.63

Table 1		Participation												
Year	Month	Program Participants												
		VA					NC							System System Cum for IRP
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$			
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]		[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]				
2017	January	9	0	218		218	0	0	9		2	227		
2017	February	9	0	227		227	0	0	9		2	236		
2017	March	1	0	228		228	0	0	9		2	237		
2017	April	2	0	230		230	0	0	9		2	239		
2017	May	13	0	243		243	1	0	10		3	253		
2017	June	23	0	266		266	1	0	11		4	277		
2017	July	12	0	278		278	0	0	11		4	289		
2017	August	10	0	288		288	0	0	11		4	299		
2017	September	8	0	296		296	1	0	12		5	308		
2017	October	5	0	301		301	0	0	12		5	313		
2017	November	10	0	311		311	0	0	12		5	323		
2017	December	1	0	312		312	0	0	12		5	324		
2018	January	0	0	312		312	0	0	12		5	324		
2018	February	10	0	322		322	0	0	12		5	334		
2018	March	3	0	325		325	1	0	13		6	338		
2018	April	7	0	332		332	2	0	15		8	347		
2018	May	5	0	337		337	0	0	15		8	352		
2018	June	4	0	341		341	0	0	15		8	356		
2018	July	10	0	351		351	0	0	15		8	366		
2018	August	10	0	361		361	0	0	15		8	376		
2018	September	10	0	371		371	0	0	15		8	386		
2018	October	10	0	381		381	0	0	15		8	396		
2018	November	4	0	385		385	0	0	15		8	400		
2018	December	4	0	389		389	0	0	15		8	404		
2019	January	4	0	393		393	0	0	15		8	408		
2019	February	10	0	403		403	0	0	15		8	418		
2019	March	3	0	406		406	1	0	16		9	422		
2019	April	0	0	406		406	0	0	16		9	422		
2019	May	0	0	406		406	0	0	16		9	422		
2019	June	0	0	406		406	0	0	16		9	422		
2019	July	0	0	406		406	0	0	16	0	9	422		
2019	August	0	0	406		406	0	0	16	0	9	422		
2019	September	0	0	406		406	0	0	16	0	9	422		
2019	October	0	0	406		406	0	0	16	0	9	422		
2019	November	0	0	406		406	0	0	16	0	0	422		
2019	December	0	0	406		406	0	0	16		0	422		

Table 1		Energy Savings										
Year	Month	Net kWh VA					NC					System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	
2017	January	7,215		1,537,540		1,537,540			22,204		445	1,559,744
2017	February	33,247		1,570,787		1,570,787			22,204		445	1,592,991
2017	March	5,038		1,575,825		1,575,825			22,204		445	1,598,029
2017	April	11,998		1,587,823		1,587,823			22,204		445	1,610,027
2017	May	139,193		1,727,016		1,727,016	4,318		26,523		4,764	1,753,539
2017	June	39,301		1,766,318		1,766,318	25		26,547		4,788	1,792,865
2017	July	58,370		1,824,688		1,824,688			26,547		4,788	1,851,235
2017	August	9,039		1,833,727		1,833,727			26,547		4,788	1,860,274
2017	September	58,800		1,892,527		1,892,527	497		27,044		5,285	1,919,571
2017	October	24,408		1,916,935		1,916,935			27,044		5,285	1,943,980
2017	November	31,487		1,948,423		1,948,423			27,044		5,285	1,975,467
2017	December	20,970		1,969,392		1,969,392			27,044		5,285	1,996,436
2018	January			1,969,392		1,969,392			27,044		5,285	2,038,684
2018	February	42,248		2,011,640		2,011,640			27,044		5,285	2,090,751
2018	March	10,931		2,022,571		2,022,571	4,435		31,479		9,721	2,054,051
2018	April	27,965		2,050,536		2,050,536	8,735		40,214		18,456	2,118,900
2018	May	28,149		2,078,686		2,078,686			40,214		18,456	2,142,681
2018	June	23,781		2,102,467		2,102,467			40,214		18,456	2,201,990
2018	July	59,309		2,161,776		2,161,776			40,214		18,456	2,439,829
2018	August	237,839		2,399,615		2,399,615			40,214		18,456	2,496,549
2018	September	56,720		2,456,335		2,456,335			40,214		18,456	2,542,147
2018	October	45,598		2,501,932		2,501,932			40,214		18,456	2,549,786
2018	November	7,639		2,509,572		2,509,572			40,214		18,456	2,582,370
2018	December	32,584		2,542,155		2,542,155			40,214		18,456	2,592,988
2019	January	10,619		2,552,774		2,552,774			40,214		18,456	2,630,667
2019	February	37,678		2,590,452		2,590,452	10		40,225		18,466	2,776,521
2019	March	145,843		2,736,296		2,736,296	3,575		43,799		22,041	2,780,095
2019	April			2,736,296		2,736,296			43,799		22,041	2,780,095
2019	May			2,736,296		2,736,296			43,799		22,041	2,780,095
2019	June			2,736,296		2,736,296			43,799		22,041	2,780,095
2019	July			2,736,296		2,736,296			43,799	0	22,041	2,780,095
2019	August			2,736,296		2,736,296			43,799	0	22,041	2,780,095
2019	September			2,736,296		2,736,296	1,262		45,062	1,262	23,303	2,781,358
2019	October			2,736,296		2,736,296			45,062	1,262	23,303	2,781,358
2019	November			2,736,296		2,736,296			45,062	1,262	1,262	2,781,358
2019	December			2,736,296		2,736,296			45,062		1,262	2,781,358

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System					
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2017	January	18		3,778		3,778			84		1	3,862	7,053	2,467	6,871	17.33	9.34	17.01
2017	February	47		3,825		3,825			84		1	3,909	6,920	2,467	6,750	16.85	9.34	16.56
2017	March	8		3,833		3,833			84		1	3,917	6,912	2,467	6,743	16.81	9.34	16.53
2017	April	5		3,838		3,838			84		1	3,922	6,904	2,467	6,737	16.69	9.34	16.41
2017	May	1,029		4,868		4,868	-27		57		-27	4,924	7,107	2,652	6,931	20.03	5.69	19.46
2017	June	25		4,892		4,892	0		57		-27	4,949	6,640	2,413	6,472	18.39	5.17	17.87
2017	July	59		4,952		4,952			57		-27	5,009	6,564	2,413	6,406	17.81	5.17	17.33
2017	August	5		4,957		4,957			57		-27	5,014	6,367	2,413	6,222	17.21	5.17	16.77
2017	September	93		5,051		5,051	-1		56		-28	5,106	6,394	2,254	6,232	17.06	4.66	16.58
2017	October	34		5,084		5,084			56		-28	5,140	6,369	2,254	6,211	16.89	4.66	16.42
2017	November	28		5,113		5,113			56		-28	5,169	6,265	2,254	6,116	16.44	4.66	16.00
2017	December	10		5,123		5,123			56		-28	5,179	6,312	2,254	6,162	16.42	4.66	15.98
2018	January			5,123		5,123			56		-28	5,179	6,312	2,254	6,162	16.42	4.66	15.98
2018	February	20		5,143		5,143			56		-28	5,199	6,247	2,254	6,104	15.97	4.66	15.56
2018	March	14		5,157		5,157	4		60		-24	5,217	6,223	2,421	6,077	15.87	4.59	15.43
2018	April	11		5,168		5,168	55		115		32	5,283	6,176	2,681	6,025	15.57	7.68	15.23
2018	May	19		5,187		5,187			115		32	5,302	6,168	2,681	6,020	15.39	7.68	15.06
2018	June	62		5,249		5,249			115		32	5,365	6,166	2,681	6,019	15.39	7.68	15.07
2018	July	47		5,297		5,297			115		32	5,412	6,159	2,681	6,016	15.09	7.68	14.79
2018	August	151		5,448		5,448			115		32	5,563	6,647	2,681	6,489	15.09	7.68	14.79
2018	September	42		5,490		5,490			115		32	5,605	6,621	2,681	6,468	14.80	7.68	14.52
2018	October	45		5,534		5,534			115		32	5,649	6,567	2,681	6,420	14.53	7.68	14.27
2018	November	-30		5,504		5,504			115		32	5,619	6,518	2,681	6,374	14.30	7.68	14.05
2018	December	17		5,521		5,521			115		32	5,636	6,535	2,681	6,392	14.19	7.68	13.95
2019	January	25		5,546		5,546			115		32	5,661	6,496	2,681	6,355	14.11	7.68	13.88
2019	February	29		5,575		5,575			115		32	5,690	6,428	2,681	6,293	13.83	7.68	13.61
2019	March	85		5,660		5,660	0		115		32	5,775	6,740	2,514	6,579	13.94	7.20	13.69
2019	April			5,660		5,660	8		123		40	5,783	6,740	2,737	6,588	13.94	7.70	13.70
2019	May			5,660		5,660			123		40	5,783	6,740	2,737	6,588	13.94	7.70	13.70
2019	June			5,660		5,660			123		40	5,783	6,740	2,737	6,588	13.94	7.70	13.70
2019	July			5,660		5,660			123	0	40	5,783	6,740	2,737	6,588	13.94	7.70	13.70
2019	August			5,660		5,660			123	0	40	5,783	6,740	2,737	6,588	13.94	7.70	13.70
2019	September			5,660		5,660	1		125	1	41	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2019	October			5,660		5,660			125	1	41	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2019	November			5,660		5,660			125	1	1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2019	December			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]	[F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]	[H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	E+G	
2020	January	0	0	406		406	0	0	16		0	422	
2020	February	0	0	406		406	0	0	16		0	422	
2020	March	0	0	406		406	0	0	16		0	422	
2020	April	0	0	406		406	0	0	16		0	422	
2020	May	0	0	406		406	0	0	16		0	422	
2020	June	0	0	406		406	0	0	16		0	422	
2020	July	0	0	406		406	0	0	16		0	422	
2020	August	0	0	406		406	0	0	16		0	422	
2020	September	0	0	406		406	0	0	16		0	422	
2020	October	0	0	406		406	0	0	16		0	422	
2020	November	0	0	406		406	0	0	16		0	422	
2020	December	0	0	406		406	0	0	16		0	422	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System System Cum for IRP
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2020	January			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	February			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	March			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	April			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	May			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	June			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	July			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	August			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	September			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	October			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	November			2,736,296		2,736,296			45,062		1,262	2,781,358
2020	December			2,736,296		2,736,296			45,062		1,262	2,781,358

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System Cum for IRP	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)							
2020	January			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	February			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	March			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	April			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	May			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	June			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	July			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	August			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	September			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	October			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	November			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71
2020	December			5,660		5,660			125		1	5,784	6,740	2,816	6,591	13.94	7.78	13.71

Table 2. EM&V Data Incremental by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			6		6			-		-	
2015			114		114			3		3	11
2016			89		89			6		2	9
2017			103		103			3		3	10
2018			77		77			3		3	8
2019			17		17			1		-	1
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			6		6			-		-	
2015			114		114			3		3	11
2016			89		89			6		2	9
2017			103		103			3		3	10
2018			77		77			3		3	8
2019			17		17			1		-	1
2020			-		-			-		-	

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
	Program Participants		VA PPI					NC PPI		System
2014			6					-		6
2015			120					3		123
2016			209					9		218
2017			306					12		318
2018			269					12		281
2019			197					7		204
2020			94					4		98

Table 2. EM&V Data Incremental by Vintage Year											
Net Incremental Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			135,338		135,338			-		-	135,338
2015			3,900,391		3,900,391			44,748		44,748	3,945,139
2016			4,609,959		4,609,959			121,977		89,092	4,731,936
2017			2,787,106		2,787,106			36,707		36,707	2,823,813
2018			3,173,969		3,173,969			122,967		122,967	3,296,936
2019			2,000,321		2,000,321			37,326		30,155	2,037,647
2020			-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
Net kWh											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			1,019,894		1,019,894			-		-	1,019,894
2015			7,790,886		7,790,886			63,801		63,801	7,854,687
2016			9,553,114		9,553,114			202,650		5,344	9,755,764
2017			5,268,813		5,268,813			58,080		58,080	5,326,893
2018			6,873,157		6,873,157			158,042		158,042	7,031,199
2019			2,329,686		2,329,686			58,170		15,149	2,387,856
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											
Net Energy (kWh) for PPI											
			VA PPI					NC PPI			System
2014			135,338					-			135,338
2015			4,920,284					44,748			4,965,032
2016			13,420,739					185,778			13,606,517
2017			20,131,106					303,158			20,434,264
2018			17,995,897					383,696			18,379,593
2019			14,142,291					253,447			14,395,738
2020			9,202,843					216,212			9,419,055

Table 2. EM&V Data Incremental by Vintage Year												Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			357		357			-		-	357	22,556	-	22,556	59.51	-	59.51
2015			1,944		1,944			19		19	1,963	34,214	14,916	33,719	17.05	6.28	16.78
2016			1,459		1,459			65		1	1,524	51,797	20,329	49,810	16.39	10.88	16.04
2017			1,363		1,363			-28		-28	1,334	27,059	12,236	26,640	13.23	-9.40	12.59
2018			398		398			59		59	457	41,220	40,989	41,212	5.17	19.76	5.72
2019			139		139			9		1	148	117,666	37,326	113,203	8.19	9.33	8.25
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year												Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			357		357			-		-	357	169,982	-	169,982	59.51	-	59.51
2015			1,944		1,944			19		19	1,963	68,341	21,267	67,134	17.05	6.28	16.78
2016			1,459		1,459			65		1	1,524	107,338	33,775	102,692	16.39	10.88	16.04
2017			1,363		1,363			-28		-28	1,334	51,154	19,360	50,254	13.23	-9.40	12.59
2018			398		398			59		59	457	89,262	52,681	87,890	5.17	19.76	5.72
2019			139		139			9		1	148	137,040	58,170	132,659	8.19	9.33	8.25
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)												PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)												Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI			System	VA	NC	System	VA	NC	System
2014			357					-			357		-			-	
2015			2,301					19			2,320		14,916			6.28	
2016			3,760					84			3,844		20,642			9.34	
2017			4,766					56			4,821		25,263			4.66	
2018			3,220					96			3,316		31,975			8.03	
2019			1,900					40			1,940		36,207			5.77	
2020			537					69			606		54,053			17.15	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants		VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			6		6			-		-	6
2015			120		120			3		3	123
2016			209		209			9		2	218
2017			312		312			12		5	324
2018			389		389			15		8	404
2019			406		406			16		-	422
2020			406		406			16		-	422

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											
	Program Participants										System IRP
			VA IRP					NC IRP			
2014			6					-			6
2015			120					3			123
2016			209					9			218
2017			312					12			324
2018			389					15			404
2019			406					16			422
2020			406					16			422
2021			406					16			422
2022			406					16			422
2023			406					16			422
2024			406					16			422
2025			406					16			422
2026			406					16			422
2027			406					16			422
2028			406					16			422
2029			406					16			422
2030			406					16			422
2031			406					16			422
2032			406					16			422
2033			406					16			422
2034			406					16			422
2035			406					16			422

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Net Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			135,338		135,338			0		0	135,338
2015			4,920,284		4,920,284			44,748		44,748	4,965,032
2016			13,420,739		13,420,739			185,778		142,260	13,606,517
2017			21,151,000		21,151,000			303,158		42,051	21,454,158
2018			26,806,677		26,806,677			447,498		186,391	27,254,174
2019			32,506,185		32,506,185			519,898		214,711	33,026,084
2020			32,835,550		32,835,550			540,742		15,149	33,376,293

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Net Energy (kWh)										
			VA IRP					NC IRP		System IRP
2014			135,338					-		135,338
2015			5,055,623					44,748		5,100,371
2016			18,476,362					230,526		18,706,887
2017			39,627,362					533,684		40,161,045
2018			66,434,038					981,181		67,415,219
2019			98,940,223					1,501,080		100,441,303
2020			131,775,774					2,041,822		133,817,596
2021			164,611,324					2,582,564		167,193,888
2022			197,446,874					3,123,307		200,570,181
2023			230,282,424					3,664,049		233,946,474
2024			263,117,975					4,204,792		267,322,766
2025			295,953,525					4,745,534		300,699,059
2026			328,789,075					5,286,276		334,075,352
2027			361,624,625					5,827,019		367,451,644
2028			394,460,176					6,367,761		400,827,937
2029			427,160,388					6,908,504		434,068,891
2030			455,075,654					7,404,498		462,480,152
2031			474,490,465					7,759,463		482,249,928
2032			486,175,015					7,997,047		494,172,062
2033			492,203,889					8,090,292		500,294,181
2034			492,533,254					8,111,136		500,644,390
2035			492,533,254					8,111,136		500,644,390

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
		VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014		357		357			-		-	357	22,556	-	22,556	59.51	-	59.51
2015		2,301		2,301			19		19	2,320	41,002	14,916	40,366	19.17	6.28	18.86
2016		3,760		3,760			84		1	3,844	64,214	20,642	62,415	17.99	9.34	17.63
2017		5,123		5,123			56		-28	5,179	67,792	25,263	66,217	16.42	4.66	15.98
2018		5,521		5,521			115		32	5,636	68,912	29,833	67,461	14.19	7.68	13.95
2019		5,660		5,660			125		1	5,784	80,064	32,494	78,261	13.94	7.78	13.71
2020		5,660		5,660			125		1	5,784	80,876	33,796	79,091	13.94	7.78	13.71

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
		VA IRP					NC IRP			System IRP	VA	NC	System	VA	NC	System
2014		357					-			357	22,556	-	22,556	59.51	-	59.51
2015		2,301					19			2,320	42,130	14,916	41,466	19.17	6.28	18.86
2016		3,760					84			3,844	88,404	25,614	85,811	17.99	9.34	17.63
2017		5,123					84			5,207	127,011	44,474	123,954	16.42	4.66	15.98
2018		5,521					115			5,636	170,782	65,412	166,869	14.19	7.68	13.95
2019		5,660					125			5,784	243,695	93,817	238,013	13.94	7.78	13.71
2020		5,660					125			5,784	324,571	127,614	317,103	13.94	7.78	13.71
2021		5,660					125			5,784	405,447	161,410	396,194	13.94	7.78	13.71
2022		5,660					125			5,784	486,322	195,207	475,285	13.94	7.78	13.71
2023		5,660					125			5,784	567,198	229,003	554,376	13.94	7.78	13.71
2024		5,660					125			5,784	648,074	262,799	633,466	13.94	7.78	13.71
2025		5,660					125			5,784	728,950	296,596	712,557	13.94	7.78	13.71
2026		5,660					125			5,784	809,825	330,392	791,648	13.94	7.78	13.71
2027		5,660					125			5,784	890,701	364,189	870,738	13.94	7.78	13.71
2028		5,660					125			5,784	971,577	397,985	949,829	13.94	7.78	13.71
2029		5,660					125			5,784	1,052,119	431,781	1,028,599	13.94	7.78	13.71
2030		5,660					125			5,784	1,120,876	462,781	1,095,925	13.94	7.78	13.71
2031		5,660					125			5,784	1,168,696	484,966	1,142,772	13.94	7.78	13.71
2032		5,660					125			5,784	1,197,475	499,815	1,171,024	13.94	7.78	13.71
2033		5,660					125			5,784	1,212,325	505,643	1,185,531	13.94	7.78	13.71
2034		5,660					125			5,784	1,213,136	506,946	1,186,361	13.94	7.78	13.71
2035		5,660					125			5,784	1,213,136	506,946	1,186,361	13.94	7.78	13.71

Program:	Non-residential Window Film
DSM Phase:	3
Type:	
Program Life in years	
Starting from 2014:	10.0

Table 1		Participation										
		Program Participants										
Year	Month	VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	System System Cum for IRP E+G
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2014	January	0	0	0		0	0	0	0		0	0
2014	February	0	0	0		0	0	0	0		0	0
2014	March	0	0	0		0	0	0	0		0	0
2014	April	0	0	0		0	0	0	0		0	0
2014	May	0	0	0		0	0	0	0		0	0
2014	June	0	0	0		0	0	0	0		0	0
2014	July	0	0	0		0	0	0	0		0	0
2014	August	0	0	0		0	0	0	0		0	0
2014	September	0	0	0		0	0	0	0		0	0
2014	October	1	0	1		1	0	0	0		0	1
2014	November	0	0	1		1	0	0	0		0	1
2014	December	2	0	3		3	0	0	0		0	3
2015	January	2	0	5		5	0	0	0		0	5
2015	February	3	0	8		8	0	0	0		0	8
2015	March	1	0	9		9	0	0	0		0	9
2015	April	2	0	11		11	0	0	0		0	11
2015	May	2	0	13		13	0	0	0		0	13
2015	June	3	0	16		16	0	0	0		0	16
2015	July	1	0	17		17	0	0	0		0	17
2015	August	2	0	19		19	0	0	0		0	19
2015	September	1	0	20		20	0	0	0		0	20
2015	October	2	0	22		22	0	0	0		0	22
2015	November	1	0	23		23	0	0	0		0	23
2015	December	2	0	25		25	0	0	0		0	25
2016	January	4	0	29		29	0	0	0		0	29
2016	February	4	0	33		33	0	0	0		0	33
2016	March	7	0	40		40	0	0	0		0	40
2016	April	7	0	47		47	0	0	0		0	47
2016	May	6	0	53		53	0	0	0		0	53
2016	June	4	0	57		57	0	0	0		0	57
2016	July	3	0	60		60	0	0	0	0	0	60
2016	August	11	0	71		71	0	0	0	0	0	71
2016	September	10	0	81		81	0	0	0	0	0	81
2016	October	7	0	88		88	0	0	0	0	0	88
2016	November	6	0	94		94	0	0	0	0	0	94
2016	December	1	0	95		95	0	0	0		0	95

Table 1		Energy Savings										
Year	Month	Net kWh										
		VA					NC				System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP
2014	January			0		0			0		0	0
2014	February			0		0			0		0	0
2014	March			0		0			0		0	0
2014	April			0		0			0		0	0
2014	May			0		0			0		0	0
2014	June			0		0			0		0	0
2014	July			0		0			0		0	0
2014	August			0		0			0		0	0
2014	September			0		0			0		0	0
2014	October	177		177		177			0		0	177
2014	November			177		177			0		0	177
2014	December	76,654		76,832		76,832			0		0	76,832
2015	January	8		76,840		76,840			0		0	76,840
2015	February	145		76,985		76,985			0		0	76,985
2015	March	35		77,020		77,020			0		0	77,020
2015	April	204,145		281,165		281,165			0		0	281,165
2015	May	24		281,189		281,189			0		0	281,189
2015	June	264		281,453		281,453			0		0	281,453
2015	July	-2		281,452		281,452			0		0	281,452
2015	August	113		281,564		281,564			0		0	281,564
2015	September	0		281,564		281,564			0		0	281,564
2015	October	294		281,858		281,858			0		0	281,858
2015	November	132		281,990		281,990			0		0	281,990
2015	December	30		282,019		282,019			0		0	282,019
2016	January	11,318		293,337		293,337			0		0	293,337
2016	February	612		293,949		293,949			0		0	293,949
2016	March	1,908		295,857		295,857			0		0	295,857
2016	April	1,688		297,545		297,545			0		0	297,545
2016	May	358		297,903		297,903			0		0	297,903
2016	June	283		298,185		298,185			0		0	298,185
2016	July	2,429		300,614		300,614			0	0	0	300,614
2016	August	1,315		301,929		301,929			0	0	0	301,929
2016	September	3,332		305,261		305,261			0	0	0	305,261
2016	October	1,670		306,931		306,931			0	0	0	306,931
2016	November	6,062		312,992		312,992			0	0	0	312,992
2016	December	14		313,006		313,006			0		0	313,006

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2014	January			0		0			0		0	0			-			-
2014	February			0		0			0		0	0			-			-
2014	March			0		0			0		0	0			-			-
2014	April			0		0			0		0	0			-			-
2014	May			0		0			0		0	0			-			-
2014	June			0		0			0		0	0			-			-
2014	July			0		0			0		0	0			-			-
2014	August			0		0			0		0	0			-			-
2014	September			0		0			0		0	0			-			-
2014	October	1		1		1			0		0	1	177		177	0.64		0.64
2014	November			1		1			0		0	1	177		177	0.64		0.64
2014	December	186		187		187			0		0	187	25,611		25,611	62.17		62.17
2015	January	0		187		187			0		0	187	15,368		15,368	37.32		37.32
2015	February	1		187		187			0		0	187	9,623		9,623	23.43		23.43
2015	March	0		188		188			0		0	188	8,558		8,558	20.84		20.84
2015	April	497		684		684			0		0	684	25,560		25,560	62.20		62.20
2015	May	0		684		684			0		0	684	21,630		21,630	52.65		52.65
2015	June	1		685		685			0		0	685	17,591		17,591	42.84		42.84
2015	July	0		686		686			0		0	686	16,556		16,556	40.32		40.32
2015	August	0		686		686			0		0	686	14,819		14,819	36.10		36.10
2015	September	0		686		686			0		0	686	14,078		14,078	34.30		34.30
2015	October	1		687		687			0		0	687	12,812		12,812	31.24		31.24
2015	November	0		688		688			0		0	688	12,260		12,260	29.90		29.90
2015	December	0		688		688			0		0	688	11,281		11,281	27.51		27.51
2016	January	46		733		733			0		0	733	10,115		10,115	25.29		25.29
2016	February	2		736		736			0		0	736	8,908		8,908	22.29		22.29
2016	March	10		746		746			0		0	746	7,396		7,396	18.65		18.65
2016	April	6		752		752			0		0	752	6,331		6,331	16.00		16.00
2016	May	1		753		753			0		0	753	5,621		5,621	14.21		14.21
2016	June	1		754		754			0		0	754	5,231		5,231	13.23		13.23
2016	July	7		761		761			0	0	0	761	5,010		5,010	12.68		12.68
2016	August	4		765		765			0	0	0	765	4,253		4,253	10.78		10.78
2016	September	9		775		775			0	0	0	775	3,769		3,769	9.56		9.56
2016	October	6		781		781			0	0	0	781	3,488		3,488	8.87		8.87
2016	November	19		799		799			0	0	0	799	3,330		3,330	8.50		8.50
2016	December	0		800		800			0		0	800	3,295		3,295	8.42		8.42

Table 1		Participation										
Year	Month	Program Participants										System System Cum for IRP E+G
		VA		VA Cum. for IRP (New + Retired) [E] = Σ[A] + Σ[-A retired]	VA Rate Reset Adj. [B]	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [F] = Σ[A] + Σ[-A retired] + B	NC		NC Cum. for IRP (New + Retired) [G] = Σ[C] + Σ[-C retired]	NC Rate Reset Adj. [D]	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.) [H] = Σ[C] + Σ[-C retired] + D	
		VA Monthly New [A]	VA Monthly Retired [-A retired]				NC Monthly New [C]	NC Monthly Retired [-C retired]				
2017	January	4	0	99		99	0	0	0		0	99
2017	February	3	0	102		102	0	0	0		0	102
2017	March	4	0	106		106	0	0	0		0	106
2017	April	1	0	107		107	0	0	0		0	107
2017	May	7	0	114		114	0	0	0		0	114
2017	June	1	0	115		115	0	0	0		0	115
2017	July	3	0	118		118	0	0	0		0	118
2017	August	15	0	133		133	0	0	0		0	133
2017	September	7	0	140		140	0	0	0		0	140
2017	October	8	0	148		148	0	0	0		0	148
2017	November	6	0	154		154	0	0	0		0	154
2017	December	0	0	154		154	0	0	0		0	154
2018	January	3	0	157		157	0	0	0		0	157
2018	February	10	0	167		167	0	0	0		0	167
2018	March	2	0	169		169	0	0	0		0	169
2018	April	4	0	173		173	0	0	0		0	173
2018	May	12	0	185		185	0	0	0		0	185
2018	June	6	0	191		191	0	0	0		0	191
2018	July	3	0	194		194	0	0	0		0	194
2018	August	9	0	203		203	1	0	1		1	204
2018	September	10	0	213		213	0	0	1		1	214
2018	October	12	0	225		225	0	0	1		1	226
2018	November	6	0	231		231	0	0	1		1	232
2018	December	14	0	245		245	0	0	1		1	246
2019	January	4	0	249		249	0	0	1		1	250
2019	February	4	0	253		253	0	0	1		1	254
2019	March	0	0	253		253	0	0	1		1	254
2019	April	0	0	253		253	0	0	1		1	254
2019	May	0	0	253		253	0	0	1		1	254
2019	June	0	0	253		253	0	0	1		1	254
2019	July	0	0	253		253	0	0	1	0	1	254
2019	August	0	0	253		253	0	0	1	0	1	254
2019	September	0	0	253		253	0	0	1	0	1	254
2019	October	0	0	253		253	0	0	1	0	1	254
2019	November	0	0	253		253	0	0	1	0	1	254
2019	December	0	0	253		253	0	0	1		0	254

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System System Cum for IRP
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2017	January	1,721		314,727		314,727			0		0	314,727
2017	February	12,469		327,196		327,196			0		0	327,196
2017	March	7,936		335,132		335,132			0		0	335,132
2017	April	10,276		345,408		345,408			0		0	345,408
2017	May	797		346,205		346,205			0		0	346,205
2017	June	2,600		348,805		348,805			0		0	348,805
2017	July	12,911		361,716		361,716			0		0	361,716
2017	August	32,299		394,015		394,015			0		0	394,015
2017	September	1,253		395,268		395,268			0		0	395,268
2017	October	5,118		400,386		400,386			0		0	400,386
2017	November	28,160		428,546		428,546			0		0	428,546
2017	December	104		428,650		428,650			0		0	428,650
2018	January	4,014		432,664		432,664			0		0	432,664
2018	February	-25		432,639		432,639			0		0	432,639
2018	March	343		432,982		432,982			0		0	432,982
2018	April	725		433,708		433,708			0		0	433,708
2018	May	266		433,974		433,974			0		0	433,974
2018	June	589		434,562		434,562			0		0	434,562
2018	July	219		434,781		434,781			0		0	434,781
2018	August	1,467		436,248		436,248	301		301		301	436,549
2018	September	1,146		437,394		437,394			301		301	437,695
2018	October	790		438,184		438,184			301		301	438,486
2018	November	632		438,816		438,816			301		301	439,117
2018	December	1,231		440,047		440,047			301		301	440,348
2019	January	208		440,255		440,255			301		301	440,556
2019	February	389		440,644		440,644			301		301	440,945
2019	March			440,644		440,644			301		301	440,945
2019	April			440,644		440,644			301		301	440,945
2019	May			440,644		440,644			301		301	440,945
2019	June			440,644		440,644			301		301	440,945
2019	July			440,644		440,644			301	0	301	440,945
2019	August			440,644		440,644			301	0	301	440,945
2019	September			440,644		440,644			301	0	301	440,945
2019	October			440,644		440,644			301	0	301	440,945
2019	November			440,644		440,644			301	0	0	440,945
2019	December			440,644		440,644			301		0	440,945

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA											System			VA		
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	VA	NC	System	VA	NC	System
2017	January	7		807		807			0		0	807	3,179		3,179	8.15		8.15
2017	February	43		850		850			0		0	850	3,208		3,208	8.33		8.33
2017	March	25		875		875			0		0	875	3,162		3,162	8.26		8.26
2017	April	34		909		909			0		0	909	3,228		3,228	8.49		8.49
2017	May	3		912		912			0		0	912	3,037		3,037	8.00		8.00
2017	June	13		925		925			0		0	925	3,033		3,033	8.04		8.04
2017	July	44		968		968			0		0	968	3,065		3,065	8.20		8.20
2017	August	93		1,061		1,061			0		0	1,061	2,963		2,963	7.98		7.98
2017	September	5		1,066		1,066			0		0	1,066	2,823		2,823	7.62		7.62
2017	October	23		1,089		1,089			0		0	1,089	2,705		2,705	7.36		7.36
2017	November	87		1,176		1,176			0		0	1,176	2,783		2,783	7.64		7.64
2017	December	0		1,177		1,177			0		0	1,177	2,783		2,783	7.64		7.64
2018	January	15		1,192		1,192			0		0	1,192	2,756		2,756	7.59		7.59
2018	February	1		1,193		1,193			0		0	1,193	2,591		2,591	7.14		7.14
2018	March	1		1,194		1,194			0		0	1,194	2,562		2,562	7.06		7.06
2018	April	2		1,196		1,196			0		0	1,196	2,507		2,507	6.91		6.91
2018	May	2		1,198		1,198			0		0	1,198	2,346		2,346	6.48		6.48
2018	June	2		1,201		1,201			0		0	1,201	2,275		2,275	6.29		6.29
2018	July	1		1,202		1,202			0		0	1,202	2,241		2,241	6.20		6.20
2018	August	6		1,208		1,208	1		1		1	1,208	2,149	301	2,140	5.95	0.59	5.92
2018	September	6		1,214		1,214			1		1	1,214	2,053	301	2,045	5.70	0.59	5.67
2018	October	3		1,216		1,216			1		1	1,217	1,947	301	1,940	5.41	0.59	5.39
2018	November	3		1,219		1,219			1		1	1,220	1,900	301	1,893	5.28	0.59	5.26
2018	December	4		1,223		1,223			1		1	1,223	1,796	301	1,790	4.99	0.59	4.97
2019	January	1		1,224		1,224			1		1	1,224	1,768	301	1,762	4.91	0.59	4.90
2019	February	1		1,225		1,225			1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	March			1,225		1,225			1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	April			1,225		1,225			1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	May			1,225		1,225			1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	June			1,225		1,225			1		1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	July			1,225		1,225			1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	August			1,225		1,225			1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	September			1,225		1,225			1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	October			1,225		1,225			1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	November			1,225		1,225			1	0	1	1,225	1,742	301	1,736	4.84	0.59	4.82
2019	December			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82

Table 1		Participation											
Year	Month	Program Participants											
		VA					NC					System	
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP	
		[A]	[-A retired]	[E] = $\Sigma[A] + \Sigma[-A \text{ retired}]$	[B]	[F] = $\Sigma[A] + \Sigma[-A \text{ retired}] + B$	[C]	[-C retired]	[G] = $\Sigma[C] + \Sigma[-C \text{ retired}]$	[D]	[H] = $\Sigma[C] + \Sigma[-C \text{ retired}] + D$	E+G	
2020	January	0	0	253		253	0	0	1		0	254	
2020	February	0	0	253		253	0	0	1		0	254	
2020	March	0	0	253		253	0	0	1		0	254	
2020	April	0	0	253		253	0	0	1		0	254	
2020	May	0	0	253		253	0	0	1		0	254	
2020	June	0	0	253		253	0	0	1		0	254	
2020	July	0	0	253		253	0	0	1		0	254	
2020	August	0	0	253		253	0	0	1		0	254	
2020	September	0	0	253		253	0	0	1		0	254	
2020	October	0	0	253		253	0	0	1		0	254	
2020	November	0	0	253		253	0	0	1		0	254	
2020	December	0	0	253		253	0	0	1		0	254	

Table 1		Energy Savings										
Year	Month	Net kWh		VA Cum. for IRP (New + Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	NC		NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System
		VA Monthly New	VA Monthly Retired				NC Monthly New	NC Monthly Retired				
2020	January			440,644		440,644			301		0	440,945
2020	February			440,644		440,644			301		0	440,945
2020	March			440,644		440,644			301		0	440,945
2020	April			440,644		440,644			301		0	440,945
2020	May			440,644		440,644			301		0	440,945
2020	June			440,644		440,644			301		0	440,945
2020	July			440,644		440,644			301		0	440,945
2020	August			440,644		440,644			301		0	440,945
2020	September			440,644		440,644			301		0	440,945
2020	October			440,644		440,644			301		0	440,945
2020	November			440,644		440,644			301		0	440,945
2020	December			440,644		440,644			301		0	440,945

Table 1		Capacity Savings											Energy Savings / Participant			Capacity Savings / Participant		
Year	Month	Net kW											Net kWh/Participant for IRP			Net kW/Participant for IRP		
		VA					NC					System	VA	NC	System	VA	NC	System
		VA Monthly New	VA Monthly Retired	VA Cum. for IRP (New+Retired)	VA Rate Reset Adj.	VA Cum. for Net Lost Revenue (NLR)	NC Monthly New	NC Monthly Retired	NC Cum. for IRP (New + Retired)	NC Rate Reset Adj.	NC Cum. for Net Lost Revenue (NLR) (New + Retired + Rate Reset Adj.)	System Cum for IRP						
2020	January			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	February			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	March			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	April			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	May			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	June			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	July			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	August			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	September			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	October			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	November			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82
2020	December			1,225		1,225			1		0	1,225	1,742	301	1,736	4.84	0.59	4.82

Table 2. EM&V Data Incremental by Vintage Year											
		Program Participants									
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2014		3		3			-		-	
	2015		22		22			-		-	2
	2016		70		70			-		-	7
	2017		59		59			-		-	5
	2018		91		91			1		1	9
	2019		8		8			-		-	
	2020		-		-			-		-	

Table 3. EM&V Data Annualized by Vintage Year											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			3		3			-		-	
2015			22		22			-		-	2
2016			70		70			-		-	7
2017			59		59			-		-	5
2018			91		91			1		1	9
2019			8		8			-		-	
2020			-		-			-		-	

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Program Participants										
			VA PPI					NC PPI		System
2014			3					-		
2015			25					-		2
2016			95					-		9
2017			151					-		15
2018			220					1		22
2019			158					1		15
2020			99					1		10

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
	Program Participants										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			3		3			-		-	
2015			25		25			-		-	2
2016			95		95			-		-	9
2017			154		154			-		-	15
2018			245		245			1		1	24
2019			253		253			1		-	25
2020			253		253			1		-	25

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
	Program Participants									
			VA IRP					NC IRP		System IRP
2014			3					-		
2015			25					-		2
2016			95					-		9
2017			154					-		15
2018			245					1		24
2019			253					1		25
2020			253					1		25
2021			253					1		25
2022			253					1		25
2023			253					1		25
2024			253					1		25
2025			253					1		25
2026			253					1		25
2027			253					1		25
2028			253					1		25
2029			253					1		25
2030			253					1		25

Table 2. EM&V Data Incremental by Vintage Year											
	Net Incremental Energy (kWh)										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
	2014		77,187		77,187			-		-	77,187
	2015		1,843,118		1,843,118			-		-	1,843,118
	2016		233,275		233,275			-		-	233,275
	2017		669,985		669,985			-		-	669,985
	2018		82,201		82,201			1,505		1,505	83,706
	2019		6,775		6,775			-		-	6,775
	2020		-		-			-		-	-

Table 3. EM&V Data Annualized by Vintage Year											
	Net kWh										
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			921,980		921,980			-		-	921,980
2015			2,462,252		2,462,252			-		-	2,462,252
2016			371,835		371,835			-		-	371,835
2017			1,387,732		1,387,732			-		-	1,387,732
2018			136,764		136,764			3,613		3,613	140,376
2019			7,165		7,165			-		-	7,165
2020			-		-			-		-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)										
Net Energy (kWh) for PPI										
			VA PPI					NC PPI		System
2014			77,187					-		77,187
2015			2,765,099					-		2,765,099
2016			3,617,508					-		3,617,508
2017			3,504,073					-		3,504,073
2018			1,841,768					1,505		1,843,273
2019			1,531,271					3,613		1,534,883
2020			143,928					3,613		147,541

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											
Net Energy (kWh)											
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP
2014			77,187		77,187			0		0	77,187
2015			2,765,099		2,765,099			0		0	2,765,099
2016			3,617,508		3,617,508			0		0	3,617,508
2017			4,426,053		4,426,053			0		0	4,426,053
2018			5,226,001		5,226,001			1,505		1,505	5,227,506
2019			5,287,339		5,287,339			3,613		3,011	5,290,951
2020			5,287,728		5,287,728			3,613		0	5,291,341

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)										
Net Energy (kWh)										
			VA IRP					NC IRP		System IRP
2014			77,187					-		77,187
2015			2,842,286					-		2,842,286
2016			6,459,793					-		6,459,793
2017			10,885,846					-		10,885,846
2018			16,111,847					1,505		16,113,352
2019			21,399,185					5,118		21,404,304
2020			26,686,914					8,731		26,695,644
2021			31,974,642					12,344		31,986,985
2022			37,262,370					15,956		37,278,326
2023			42,550,098					19,569		42,569,667
2024			47,760,639					23,182		47,783,821
2025			50,283,268					26,795		50,310,063
2026			51,953,489					30,407		51,983,897
2027			52,815,164					34,020		52,849,184
2028			52,876,891					36,128		52,913,019
2029			52,877,281					36,128		52,913,409
2030			52,877,281					36,128		52,913,409

Table 2. EM&V Data Incremental by Vintage Year											Incremental Energy Savings/Participant			Incremental Capacity Savings/Participant			
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			187		187			-		-	187	25,729	-	25,729	62.17	-	62.17
2015			501		501			-		-	501	83,778	-	83,778	22.78	-	22.78
2016			112		112			-		-	112	3,332	-	3,332	1.60	-	1.60
2017			377		377			-		-	377	11,356	-	11,356	6.39	-	6.39
2018			46		46			1		1	47	903	1,505	910	0.51	0.59	0.51
2019			2		2			-		-	2	847	-	847	0.25	-	0.25
2020			-		-			-		-	-	-	-	-	-	-	-

Table 3. EM&V Data Annualized by Vintage Year											Annualized Energy Savings/Participant			Annualized Capacity Savings/Participant			
	Net Peak Demand (kW)										Net kWh/Participant for IRP			Net kW/Participant for IRP			
			VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
2014			187		187			-		-	187	307,327	-	307,327	62.17	-	62.17
2015			501		501			-		-	501	111,921	-	111,921	22.78	-	22.78
2016			112		112			-		-	112	5,312	-	5,312	1.60	-	1.60
2017			377		377			-		-	377	23,521	-	23,521	6.39	-	6.39
2018			46		46			1		1	47	1,503	3,613	1,526	0.51	0.59	0.51
2019			2		2			-		-	2	896	-	896	0.25	-	0.25
2020			-		-			-		-	-	-	-	-	-	-	-

Table 4. EM&V Data Accumulated through Vintage Year (for PPI)											PPI Energy Savings/Participant			PPI Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant for IRP			Net kW/Participant for IRP		
			VA PPI					NC PPI		System	VA	NC	System	VA	NC	System
2014			187					-		187		-			-	
2015			688					-		688		-			-	
2016			800					-		800		-			-	
2017			990					-		990		-			-	
2018			535					1		536		1,505			0.59	
2019			425					1		426		3,613			0.59	
2020			48					1		49		3,613			0.59	

Table 5. EM&V Data Accumulated through Vintage Year (for IRP and NLR)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant				
		Net Peak Demand (kW)									Net kWh/Participant			Net kWh/Participant				
				VA IRP		VA NLR			NC IRP		NC NLR	System IRP	VA	NC	System	VA	NC	System
	2014			187		187			-		-	187	25,729	-	25,729	62.17	-	62.17
	2015			688		688			-		-	688	110,604	-	110,604	27.51	-	27.51
	2016			800		800			-		-	800	38,079	-	38,079	8.42	-	8.42
	2017			1,177		1,177			-		-	1,177	28,741	-	28,741	7.64	-	7.64
	2018			1,223		1,223			1		1	1,223	21,331	1,505	21,250	4.99	0.59	4.97
	2019			1,225		1,225			1		-	1,225	20,899	3,613	20,831	4.84	0.59	4.82
	2020			1,225		1,225			1		-	1,225	20,900	3,613	20,832	4.84	0.59	4.82

Table 6. Cumulative EM&V Data through Vintage Year (Lifetime)											IRP Energy Savings/Participant			IRP Capacity Savings/Participant		
Net Peak Demand (kW)											Net kWh/Participant			Net kWh/Participant		
			VA IRP					NC IRP		System IRP	VA	NC	System	VA	NC	System
2014			187					-		187	25,729	-	25,729	62.17	-	62.17
2015			688					-		688	113,691	-	113,691	27.51	-	27.51
2016			800					-		800	67,998	-	67,998	8.42	-	8.42
2017			1,177					-		1,177	70,687	-	70,687	7.64	-	7.64
2018			1,223					1		1,223	65,763	1,505	65,501	4.99	0.59	4.97
2019			1,225					1		1,225	84,582	5,118	84,269	4.84	0.59	4.82
2020			1,225					1		1,225	105,482	8,731	105,101	4.84	0.59	4.82
2021			1,225					1		1,225	126,382	12,344	125,933	4.84	0.59	4.82
2022			1,225					1		1,225	147,282	15,956	146,765	4.84	0.59	4.82
2023			1,225					1		1,225	168,182	19,569	167,597	4.84	0.59	4.82
2024			1,225					1		1,225	188,777	23,182	188,125	4.84	0.59	4.82
2025			1,225					1		1,225	198,748	26,795	198,071	4.84	0.59	4.82
2026			1,225					1		1,225	205,350	30,407	204,661	4.84	0.59	4.82
2027			1,225					1		1,225	208,756	34,020	208,068	4.84	0.59	4.82
2028			1,225					1		1,225	209,000	36,128	208,319	4.84	0.59	4.82
2029			1,225					1		1,225	209,001	36,128	208,321	4.84	0.59	4.82
2030			1,225					1		1,225	209,001	36,128	208,321	4.84	0.59	4.82



APPENDIX E. GLOSSARY OF TERMS

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APPENDIX E. GLOSSARY OF TERMS

Below is a list of selected key terms used in energy efficiency impact evaluation. All terms below are from the Glossary of Terms (Version 1.0): A Project of the Regional Evaluation, Measurement and Verification Forum, Mar. 2009. Prepared by Paul Horowitz of PAH Associates for the Northeast Energy Efficiency Partnerships.

Assumed Error Ratio – The strength of the association between the actual value and the estimated value. It is the primary driver of the sample size required to satisfy a given confidence interval.

Coincidence Factor - The ratio, expressed as a numerical value or as a percentage, of the simultaneous maximum demand within a specified period of a group of electrical appliances or consumers within a specified period, to the sum of their individual maximum demands within the same period.

Confidence - An indication of how close, expressed as a probability, the true value of the quantity in question is within a specified distance to the estimate of the value. Confidence is the likelihood that the evaluation has captured the true value of a variable within a certain estimated range. Also see Precision.

Deemed Savings - An estimate of energy or demand savings for a single unit of an installed energy efficiency measure that (a) has been developed from data sources and analytical methods that are widely considered acceptable for the measure and purpose, and (b) is applicable to the situation being evaluated. Individual parameters or calculation methods can also be deemed.

Energy Efficiency Measure - An installed piece of equipment or system, or modification of equipment, systems, or operations on end-use customer facilities that reduces the total amount of electrical energy and capacity that would otherwise have been needed to deliver an equivalent or improved level of end-use service.

Evaluation, Measurement and Verification (EM&V) - A subset of program impact evaluation that is associated with the documentation of energy savings at individual sites or projects using one or more methods that can involve measurements, engineering calculations, statistical analyses, and/or computer simulation modeling.

Ex Ante Savings Estimate - Forecasted savings used for program and portfolio planning purposes.

Ex Post Savings Estimate - Savings estimate reported by an evaluator after the energy impact evaluation has been completed.

Free Driver - A program non-participant who has adopted a particular efficiency measure or practice as a result of the evaluated program. Also see Spillover.

Free-Rider - A program participant who would have implemented the program measure or practice in the absence of the program. Free-riders can be (1) total, in which the participant's activity would have completely replicated the program measure; (2) partial, in which the participant's activity would have partially replicated the program measure; or (3) deferred, in which the participant's activity would have completely replicated the program measure, but at a future time than the program's timeframe.



Free-Ridership Rate - The percent of savings attributable to free-riders.

Gross Savings - The change in energy consumption and/or demand that results directly from program-related actions taken by participants in an efficiency program, regardless of why they participated.

Impact Evaluation - An evaluation of the program-specific measures directly induced quantitative changes (e.g., kWh, kW) attributable to an energy efficiency program.

Load Shapes - Representations such as graphs, tables, and databases that show the time-of-use pattern of customer or equipment energy use. These are typically shown over a 24 hour or whole year (8760 hours) period.

Model Based Statistical Sampling - MBSS™ methodology is used to develop efficient sample designs and to assess the likely statistical precision.

Net Savings - The total change in load that is attributable to an energy efficiency program. This change in load may include, implicitly or explicitly, the effects of free drivers, free-riders, energy efficiency standards, changes in the level of energy service, and other causes of changes in energy consumption or demand.

Peak Demand - The maximum level of metered demand during a specified period, such as a billing month or a peak demand period.

Peak Load - The highest electrical demand within a particular period of time. Daily electric peaks on weekdays typically occur in late afternoon and early evening. Annual peaks typically occur on hot summer days.

Precision - The indication of the closeness of agreement among repeated measurements of the same physical quantity. It is also used to represent the degree to which an estimated result in social science (e.g. energy savings) would be replicated with repeated studies.

Prescriptive Program - An energy efficiency program focused on measures that are one-for-one replacements of the existing equipment and for which fixed customer incentives can be developed based on the anticipated similar savings that will accrue from their installation.

Program Participant - A consumer that received a service offered through an efficiency program in a given program year. The term "service" can be one or more of a wide variety of services, including financial rebates, technical assistance, product installations, training, energy efficiency information or other services, items, or conditions.

Realization Rate - The term is used in several contexts in the development of reported program savings. The primary applications include the ratio of project tracking system savings data (e.g., initial estimates of project savings) to savings (1) adjusted for data errors, (2) that incorporate evaluated or verified results of the tracked savings, and (3) that account for free-ridership and/or spillover.

Representative Sample - A sample that has approximately the same distribution of characteristics as the population from which it was drawn.

Sampling Error - The error that is caused by observing a sample and not the entire population.



Spillover - Reductions in energy consumption and/or demand caused by the presence of an energy efficiency program, beyond the program-related gross savings of the participants and without financial or technical assistance from the program.

Standard Error - A measure of the variability in a data sample, how far a "typical" data point is from the mean of a sample. In a large sample, about 2/3 of observations lie within one standard error of the mean, and 95% of observations lie within two standard errors.

Stratified Ratio Estimation - A sampling method that combines a stratified sample design with a ratio estimator to reduce the coefficient of variation by using the correlation of a known measure for the unit (e.g., expected energy savings) to stratify the population and allocate sample from strata for optimal sampling.

Verification - An independent assessment of the reliability (considering completeness and accuracy) of claimed energy savings



APPENDIX F. STANDARD TRACKING AND ENGINEERING PROTOCOLS (STEP) MANUAL VERSION 10

F.1 Standard Tracking and Engineering Protocols (STEP) Manual for Residential Programs Version 10

F.2 Standard Tracking and Engineering Protocols (STEP) Manual for Non- residential Programs Version 10



Appendix F1 Standard Tracking and Engineering Protocols Manual for Residential Programs

Virginia and North Carolina

Protocols to Track Demand-Side Management Programs (DSM)
Resource Savings

Version 2020 (Updated from STEP Version 10.0)

Prepared by DNV Energy Insights USA Inc.

May 14, 2021





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1 INTRODUCTION

This manual presents Standard Tracking and Engineering Protocols (STEP) for demand-side management (DSM) programs approved by State Corporation Commission of Virginia (SCC) Order as well as the North Carolina Utilities Commission's (NCUC) Orders. These protocols assess gross program impacts and resource savings, including annual electric energy and peak capacity savings, for technologies and measures supported by Virginia Electric and Power Company (Dominion, or the Company) in Virginia and North Carolina. Protocols to determine resource savings for each program are presented for each eligible measure and technology.

1.1 Purpose

The STEP Manual was developed to estimate resource savings from installed DSM technologies and measures, and provide the primary estimates of annual energy and peak demand reductions for tracking, monitoring, and reporting. The consulting firm DNV, under contract with Dominion, developed the STEP Manual using industry-standard approaches for estimating annual energy savings and peak demand reductions. This document references authoritative studies in Technical Reference Manuals (TRMs) issued by regulatory agencies in other states, primarily the Mid-Atlantic TRM version 2019 managed by the Northeast Energy Efficiency Partnerships (NEEP) for its Mid-Atlantic partners, Maryland, Delaware, and the District of Columbia, with significant involvement by the respective states' Public Service Commissions (PSCs). Other reference sources include TRMs and impact study results from California, Connecticut, Maine, Massachusetts, New Jersey, New York, Michigan, North Carolina, Ohio, Pennsylvania, the Tennessee Valley Authority (TVA), and Vermont, as well as other engineering resources such as the American Society of Heating, Refrigeration & Air Conditioner Engineers (ASHRAE), the 2012 International Energy Conservation Code, the National Electrical Manufacturers Association (NEMA) Standards Publication Condensed MG 1-2007, ENERGY STAR®, the US Energy Information Administration Residential Energy Consumption Survey and Commercial Building Energy Consumption Survey, and the Energy Conservatory.

The STEP Manual is not intended to be the sole source or final word on gross annual energy and peak demand reductions estimates. Rather, the STEP Manual serves as the foundation for ongoing program operations and as the basis for further refinement through evaluation, measurement & verification (EM&V). Savings estimates from the STEP Manual will be coupled with the results of actual EM&V activities to calibrate the annual energy and peak demand reductions estimates derived from the STEP Manual to report population-level estimates.

This version of the STEP Manual is version 2020 (v2020.0). This version is designed to estimate gross savings in concert with program tracking data received from Dominion through its business intelligence (BI) data system, which is populated by its program implementation vendors. Dominion has developed data specification requirements (listed in Table 1-1) for each of the programs and this STEP Manual is designed to leverage that data.

Table 1-1: Program Tracking Data Specifications

Program	Data Specification Version	
	Virginia	North Carolina
Residential Income and Age Qualifying Home Improvement (DSM Phase IV)	1.2	1.2
Residential AC Cycling	2.0	2.0
Residential Home Energy Assessment (DSM Phase VII)	7.14	7.14
Residential Efficient Product Marketplace	Program: 7.14 Lighting: 4.0	Program: 7.14 Lighting: 4.0
Residential Appliance Recycling (DSM Phase VII)	7.4	7.4



Program	Data Specification Version	
	Virginia	North Carolina
Non-residential Lighting Systems and Controls (DSM Phase III)	4.0	2.0
Non-residential Lighting Systems and Controls (DSM Phase VII)	7.5	7.5
Non-residential Heating and Cooling Efficiency (DSM Phase III)	3.3	3.3
Non-residential Heating and Cooling Efficiency (DSM Phase VII)	7.6	7.6
Non-residential Window Film (DSM Phase III)	2.0	1.0
Non-residential Window Film (DSM Phase VII)	7.3	7.3
Non-residential Small Business Improvement (DSM Phase V)	3.3	3.3
Non-residential Prescriptive (DSM Phase VI)	6.4	6.4
Non-residential Distributed Generation	Final	-
Non-residential Small Manufacturing (DSM Phase VII)	3.4	3.4
Non-residential Small Office (DSM Phase VII)	7.3	7.3

For Dominion, these protocols also serve the following purposes:

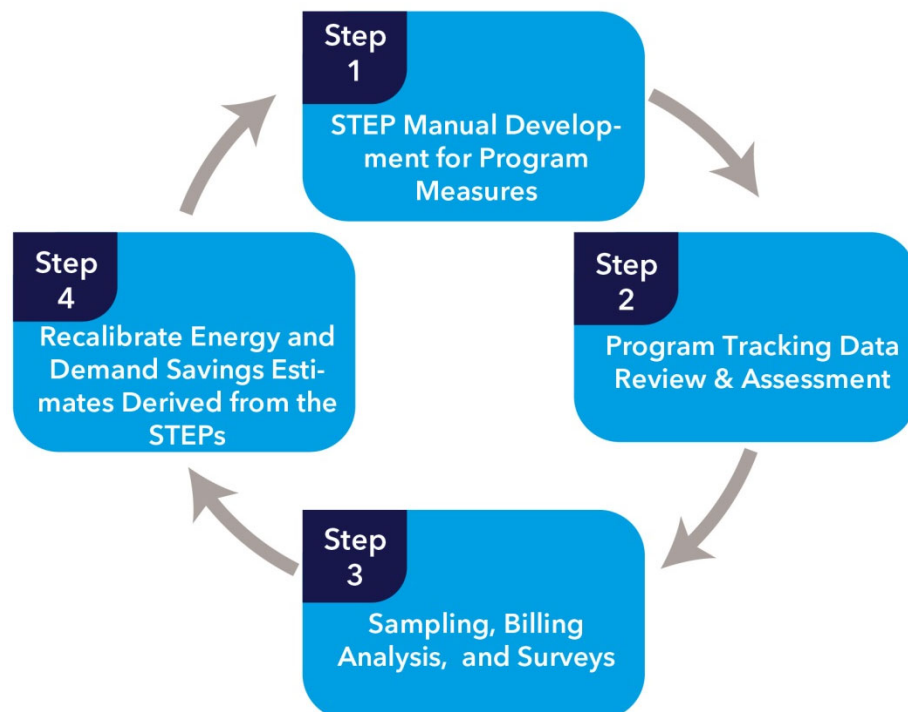
1. Establish a common resource for Dominion's gross annual energy and peak demand reductions estimates across business units.
2. Ensure all internal parties (e.g., program managers, implementation contractors, etc.) use the same protocols, input values, assumptions, and algorithms.
3. Assist in defining program data tracking elements in the change-management process.
4. Serve as a basis to assess performance of program implementation progress.
5. Allow Dominion program managers and their implementation contractors to manage the programs to meet their annual energy savings (kWh/year) and peak demand (kW) reductions objectives.

Figure 1-1 shows how these protocols shall be updated regularly to reflect the addition of new programs, modifications to existing programs, updates based on measured data, regulatory requirements, and the results of future program evaluations. Some examples of key drivers to updating and revising the STEP Manual include the following:

- Updates of input factors based on primary research
- Updates of input approaches or input factors in source documents of secondary data or revised modeled outputs
- Added efficiency measures
- Corrections of errors in prior STEP Manuals



Figure 1-1: STEP Manual DSM development, measurement, and update cycle



The next scheduled update of the STEP Manual is fall 2020. This version of the STEP manual (for the May 1, 2020 Virginia and North Carolina EM&V report filing) applies to the period from January 1 through December 31, 2019 in both states.

1.2 Algorithms

The algorithms calculate gross customer electric savings without counting line losses (from the generator to the customer), spillover, or persistence. A free-ridership assumption is specified for each program. For energy efficiency programs, the algorithms are driven by a change in efficiency level for the installed, energy-efficient (EE) measure compared to a baseline (base) level of efficiency. This change is reflected in both energy savings and demand reductions. The basic algorithms are presented below.

$$\text{Electric demand savings} = \Delta kW = kW_{base} - kW_{ee}$$

$$\text{Annual electric energy savings} = \Delta kWh = \Delta kW \times EFLH$$

$$\text{Electric coincident demand reduction} = \Delta kW \times CF$$

Where:

EFLH = annual equivalent full load hours of operation for the installed measure
CF = coincidence factor

Algorithms for each of the program measures may incorporate additional factors to reflect specific conditions associated with a program or measure such as accounting for coincidence of multiple installations, or interaction



between different measures.¹ In some cases, a savings factor is provided in place of the expanded algorithm if the factor is properly documented and applicable.

1.3 Measure Life

Measure lives are provided at the end of each section of this manual devoted to the measures offered as shown in Table 1-2. These are used for estimating lifetime savings for planning or in benefit/cost studies spanning more than one year. Measure lives are included in the initial planning assumptions as filed with the SCC and NCUC state regulatory commissions when each program was considered for approval. Program-level measure lives are a composite estimate of the associated measures that comprise the program. Programs no longer active are still included in this table because their measures are still delivering annual energy savings that are captured in the appendices within the annual report.

Table 1-2: Measure Life Assumptions

DSM Phase	Program	Program-Weighted Measure Life (Years)
Residential Programs		
1	Residential Lighting Program	9.40
1	Residential Low Income Program	13.60
2	Residential Duct Testing and Sealing Program	18.00
2	Residential Heat Pump Tune-Up Program	5.00
2	Residential Heat Pump Upgrade Program	15.00
2	Residential Home Energy Check-up Program	10.00
4	Residential Appliance Recycling Program	8.00
4	Residential Income and Age Qualifying Home Improvement Program	15.00
5	Residential Retail LED Lighting Program	20.00
7	Residential Appliance Recycling Program	8.00
7	Residential Efficient Products Marketplace Program	16.50
7	Residential Home Energy Assessment Program	12.41
Non-residential Programs		
1	Commercial HVAC Upgrade Program	15.00
1	Commercial Lighting Program	10.00
2	Non-residential Duct Testing and Sealing Program	25.00
2	Non-residential Energy Audit Program	7.00
3	Non-residential Heating and Cooling Efficiency Program	15.00
3	Non-residential Lighting & Controls Program	9.00
3	Non-residential Window Film Program	10.00
5	Non-residential Small Business Improvement Program	14.00
6	Non-residential Prescriptive Program	6.30
7	Non-residential Heating and Cooling Efficiency Program	15.00
7	Non-residential Lighting Systems & Controls Program	10.59

¹ Interactive effects include those from the installation of multiple measures at a single participant site. Where those interactive effects are accounted for in referenced technical reference manuals, they will also be documented in this STEP Manual.



DSM Phase	Program	Program-Weighted Measure Life (Years)
7	Non-residential Office Program	7.00
7	Non-residential Small Manufacturing Program	12.24
7	Non-residential Window Film Program	10.00
Peak-shaving Programs		
1	Residential AC Cycling Program	15.00
2	Non-residential Distributed Generation Program	N/A

1.4 Data and Input Values

Input values and algorithms in the protocols and on the program application forms are based primarily on the best available and applicable data for Dominion's programs. In more detail, the input values are taken primarily from two sources: program application forms completed during enrolment, or from standard values based on measured or industry data. As stated earlier, the STEP Manual leverages the Mid-Atlantic TRM whenever possible.

Many input values, including site-specific data, are taken directly from program application forms, worksheets, and field tools. Site-specific data on the application forms are used for measures with important variations in one or more input values (e.g., delta watts, efficiency rating, capacity, etc.).

Standard input values are based on the best available measured or industry data, including metered data, measured data from prior evaluations (applied prospectively), field data and program results, and standards from industry associations. Many input values are based on evaluations of programs in other similar regions.

For the standard input assumptions for which metered or measured data were not available, the input values (e.g., delta watts, delta efficiency, equipment capacity, operating hours, and coincidence factors) were based on the best available industry data or standards. These input values were developed from a review of literature from industry organizations, equipment manufacturers, and suppliers.

Program evaluation will be used to assess key data and input values to either confirm that current values should continue to be used or update the values going forward.

1.5 Peak Definition

Gross coincident peak demand reduction or potential represents the average expected connected load over a peak period defined by the power system operators. In most cases, demand reductions are calculated using a CF, which represents the fraction of the annual average connected load expected to be coincident with the defined peak period.

Peak demand reduction calculations for individual measures in this document are based on the respective source TRM's demand reduction calculations, as referenced in each section. Depending on the TRM referenced and the jurisdiction that it applies to, peak demand reduction can be defined differently per TRM and thus per measure in this Manual. Table 1-3 lists the peak period definitions for TRMs referenced in this Manual.

The Mid-Atlantic TRM uses data and assumptions specific to the Mid-Atlantic region, wherever possible. For this reason, the DNV leverages energy and demand calculations from the Mid-Atlantic TRM in its STEP calculations. However, several assumptions and peak coincidence factors (CFs) originate in other regions because they are the



most transferable resources available.² These other TRMs have some variation in peak performance period definition, geography, climate, and customer characteristics.

Table 1-3: Definition of Peak Demand in STEP Manual Reference TRMs

Peak period definition source	Dates ³	Hours ⁴	TRMs using this period
PJM Summer Peak Performance Hours	June 1 – August 31	2 pm - 6 pm	All versions of the Mid-Atlantic TRM (non-cooling measures); Pennsylvania TRM
Peak Performance Hours	June 1 – August 31	3 pm - 6 pm Summer: 3 pm - 6 pm	2016 Pennsylvania TRM; 2017 Arkansas TRM
ISO New England Seasonal Peak Demand Savings	Summer: June 1 through August 31 Winter: December 1 through January 31	Summer: 1 pm - 5 pm Winter: 5 pm - 7 pm	2016 Maine Commercial TRM; 2014 Massachusetts TRM
2015 Avoided Energy Supply Costs in New England Report	Summer: June to September Winter: October to May	7 am - 11 pm	2015 Vermont TRM
Peak Performance Hours	Summer: June 1 through September 30 Winter: December 1 through March 31	Summer: 2 pm - 5 pm Winter: 6 am - 8 am	2016 TVA TRM
Summer Peak Period	Summer: June to August	Summer: 1 pm - 4 pm	2019 Wisconsin TRM
Peak Period	Summer: June through August (Non-weather sensitive) Summer: July 30 (Weather sensitive) Winter: October to May	Summer: 3 pm - 6 pm (Non-weather sensitive) Summer: 6 pm (Weather sensitive) Winter: 9 am – 10 pm	2019 Iowa TRM
Summer System Peak	Mid-Atlantic TRM: Summer System Peak days (hottest summer weekdays)	5 pm	2014 Mid-Atlantic TRM (cooling measures)
	TVA TRM: Summer and Winter System Peak hours	Summer: 10 hottest hours Winter: 10 coldest hours	2013 TVA TRM (weather-sensitive measures)
	New York TRM: hottest summer day in June through August	5 pm	2019 New York TRM
Coincident Peak	June 1 through September 30	2 pm - 6 pm	2018 Michigan Energy Measure Database
	June 1 through August 31	12 pm - 8 pm	2019 New Jersey Clean Energy Program Protocols to Measure Resource Savings
Coincident Summer Peak	June 1 through August 31	1 pm - 5 pm	2019 Illinois TRM

² For more discussion about the transferability of consumption data, see the EM&V Forum Report: Cataloguing Available End-Use and Efficiency Measure Load Data, October 2009 at <https://neep.org/end-use-load-data-update-phase-1>.

³ Excluding weekends and federal holidays

⁴ Local time zone



As this Manual provides deemed energy savings and peak demand, impact evaluations conducted on a regular basis can be used to adjust them for Dominion's needs. Dominion peak demand is defined as the hour ending at 1700 hour on Dominion's July summer peak day for that year. Coincidence factor is defined as the ratio of this coincident peak load to annual (non-coincident) peak for that measure's load shape.

Gross coincident demand reduction results are used for comparison against Dominion's program goals for this same metric. They are also used for bidding energy efficiency resources in wholesale electric capacity markets operated by regional bulk power system operators, such as the PJM Reliability Pricing Model and the ISO New England Forward Capacity Market.

1.6 Program Descriptions and Protocols

Sections 2 through 6 of this appendix provide descriptions of each program and the protocol for calculating energy savings and demand reductions for the measures under each program. For each measure, its section gives the energy savings and demand reduction algorithms, input values, default savings calculations, and sources for the protocols.

Dominion's residential programs are provided in Sections 2 through 6 and non-residential programs are provided in Appendix F2. Unless the states in which they are implemented are specifically listed below, the programs are implemented in both Virginia and North Carolina.

To go to a particular program's description and protocol, simply click on one of the provided section links:

Section 2: Residential Income and Age Qualifying Home Improvement Program, DSM Phase IV

Section 3: Residential AC Cycling Program, DSM Phase I

Section 4: Residential Appliance Recycling Program, DSM Phase VII

Section 5: Residential Home Energy Assessment Program, DSM Phase VII

Section 6: Residential Efficient Products Marketplace Program, DSM Phase VII

Section 7-8: Intentionally left blank to align with cross-references from Appendix F-2

Section 9: References

Section 10: Sub-appendices



2 RESIDENTIAL INCOME AND AGE QUALIFYING HOME IMPROVEMENT PROGRAM, DSM PHASE IV

The Residential Income and Age Qualifying Home Improvement Program provides direct install energy efficiency improvements to age and income qualifying homeowners in order to reduce electric use. The measures offered through the program and the sections that contain the savings algorithms for each measure are presented in Table 2-1.

Table 2-1: Income & Age Qualifying Home Improvement Program Measure List

End-Use	Measure	Manual Section
Domestic Hot Water	Domestic Hot Water Pipe Insulation	Section 2.1.1
	Kitchen & Bathroom Aerator	Section 2.1.2
	Low-flow Showerhead	Section 2.1.3
HVAC	Attic Insulation	Section 2.2.1
Lighting	LED Lighting	Section 2.3.1

The program has been offered in Virginia since 2015 and in North Carolina since 2016.

2.1 Domestic Hot Water (DHW) End Use

2.1.1 Domestic Hot Water Pipe Insulation

2.1.1.1 Measure Description

This measure realizes energy savings by adding insulation to uninsulated domestic hot water piping. The measure assumes the pipe wrap is installed to the first elbow of the hot water carrying pipe. The baseline condition is uninsulated hot water copper piping.

This measure is also offered through the Residential Home Energy Assessment Program as indicated in Section 5.2.1, but uses the savings estimation approach described in this section.

2.1.1.2 Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \frac{\left(\frac{1}{R_{base}} - \frac{1}{R_{ee}} \right) \times L \times C \times \Delta T \times 8,760 \text{ hours}}{3,412 \frac{Btu/h}{kW} \times \eta_{DHW}}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh}{8,760 \text{ hours}}$$

Where:

ΔkWh = per measure gross annual electric energy savings
 ΔkW = per measure gross coincident demand reduction



R_{base}	= assumed R-value of existing uninsulated piping
R_{ee}	= R-value of existing pipe plus installed insulation
L	= length of piping insulated
C	= circumference of piping
ΔT	= temperature difference between water at the inlet pipe and ambient air
8,760	= hours per year
3,412	= conversion factor between kW and Btu/h
η_{DHW}	= recovery efficiency of electric, domestic water heater with storage tank

2.1.1.3 Input Variables

Table 2-2: Input Values for Domestic Water Heater Pipe Insulation Savings Calculations

Component	Type	Value	Unit	Source(s)
R_{base}	Fixed	R-1.0	hour·°F·feet ² /Btu	Mid-Atlantic TRM 2019, p. 186 ⁵
R_{ee}	Fixed	R-2.5	hour·°F·feet ² /Btu	Program design
L	Variable	See customer application	feet	Customer application
		Default = 1		Mid-Atlantic TRM 2019, p. 187
C	Variable	See customer application ⁶	feet	Customer application
		Default = 0.13		Mid-Atlantic TRM 2019, p. 187
ΔT	Fixed	65	°F	Mid-Atlantic TRM 2019, p. 187 ⁷
η_{DHW}	Fixed	0.98	percent	Mid-Atlantic TRM 2019, p. 187 ⁸

2.1.1.4 Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default per measure gross annual electric energy savings will be assigned according to the following calculation.

$$\Delta kWh = \frac{\left(\frac{1}{R_{base}} - \frac{1}{R_{ee}}\right) \times L \times C \times \Delta T \times 8,760 \text{ hours}}{3,412 \frac{Btu/h}{kW} \times \eta_{DHW}}$$

$$= \frac{\left(\frac{1}{1.0} - \frac{1}{2.5}\right) \frac{Btu}{hr \cdot ^\circ F \cdot ft^2} \times 1 \text{ ft} \times 0.13 \text{ ft} \times 65 ^\circ F \times 8,760 \text{ hours}}{3,412 \frac{Btu/h}{kW} \times 0.98}$$

⁵ Mid-Atlantic TRM 2019, p. 186. Navigant Consulting Inc., April 2009; "Measures and Assumptions for Demand Side Management (DSM) Planning; Appendix C Substantiation Sheets," p. 77, presented to the Ontario Energy Board. http://www.ontarioenergyboard.ca/oeb/_Documents/EB-2008-0346/Navigant_Appendix_C_substantiation_sheet_20090429.pdf. Accessed 9/16/2019.

⁶ If the application pipe diameter is greater than 0.25 feet (3 inches) or a circumference of 0.76 feet, we will assume that the value provided is incorrect and apply the default circumference.

⁷ Mid-Atlantic TRM 2019, p. 187. Assumes 130°F water leaving the hot water tank and an average basement temperature of 65°F.

⁸ Mid-Atlantic TRM 2019, p. 187. Electric water heaters have a recovery efficiency of 98%. http://www.ahrinet.org/App_Content/ahrifiles/Certification/GAMA/PG-CMW.pdf. Accessed 9/17/2019.



$$= 13.3 \text{ kWh}$$

The default per measure gross coincident demand reductions will be assigned according to the following calculation:

$$\begin{aligned} \Delta kW &= \frac{\Delta kWh}{8,760 \text{ hours}} \\ &= \frac{13.3 \text{ kWh}}{8,760 \text{ hours}} \\ &= 0.002 \text{ kW} \end{aligned}$$

2.1.1.5 Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 186-188.

2.1.1.6 Update Summary

The changes to this section, compared with last year, are described in Table 2-3.

Table 2-3: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	Source	Updated page numbers / version of the Mid-Atlantic TRM
	Input Variable	Clarified default assumption value

2.1.2 Kitchen and Bathroom Aerator

2.1.2.1 Measure Description

This measure realizes energy savings by installing a low-flow faucet aerator in a home's kitchen faucet and/or bathroom. Doing so reduces overall water usage, and in particular, the hot water load. Faucet aerators are changed from those that deliver an estimated 2.2 gallons per minute (gpm) to low-flow, ≤ 1.5 -gpm aerators.

This measure is also offered through the Residential Home Energy Assessment program, Section 5.2.3.

2.1.2.2 Savings Estimation Approach

Per measure, gross annual water savings are calculated according to the following equation:

$$\begin{aligned} \Delta Water &= [(Flow_{base} \times Throttle_{base}) - (Flow_{ee} \times Throttle_{ee})] \times Minutes_{faucet} \times Qty_{people} \\ &\quad \times Flow_{drain} \times 365 \text{ days} \end{aligned}$$



Per measure, gross annual electric energy savings⁹ are calculated according to the following equation:

$$\Delta kWh = \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \frac{\text{Btu/h}}{\text{kW}}}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh \times CF}{\text{Minutes}_{\text{faucet}} \times \text{Qty}_{\text{people}} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}}$$

Where:

- $\Delta Water$ = per measure gross annual water savings per faucet
- ΔkWh = per measure gross annual electric energy savings per faucet
- ΔkW = gross coincident demand reductions
- $\text{Flow}_{\text{base}}$ = baseline faucet flow rate
- Flow_{ee} = energy efficient (low-flow) faucet flow rate
- $\text{Qty}_{\text{people}}$ = number of people per household
- $\text{Flow}_{\text{drain}}$ = percentage of water flowing down drain
- $\text{Minutes}_{\text{faucet}}$ = average length of use of faucet per person per day
- $\text{Throttle}_{\text{base}}$ = baseline faucet throttling factor
- $\text{Throttle}_{\text{ee}}$ = energy efficient (low-flow) faucet throttling factor
- ΔT = change in temperature of the water used for kitchen and bathroom faucets and temperature entering the house ($\Delta T = T_{\text{faucet}} - T_{\text{in-house}}$)
- η_{DHW} = recovery efficiency of electric, storage-tank water heater
- CF = peak coincidence factor

2.1.2.3 Input Variables

Table 2-4: Input Values for Kitchen and Bathroom Aerators Savings Calculations

Component	Type	Value	Unit	Source(s)
Flow_{base}	Fixed	2.2	gallons/minute	Mid-Atlantic TRM 2019, p. 177 ¹⁰
Flow_{ee}	Fixed	1.5	gallons/minute	Program design ¹¹
Qty_{people}	Variable	See customer application	-	Customer application
		Default = 2.53		Mid-Atlantic TRM 2019, p. 178 ¹²
Flow_{drain}	Variable	Kitchen: 0.5 Bathroom: 0.7	-	Mid-Atlantic TRM 2019, p. 178 ¹³
Throttle_{base}	Fixed	0.83	-	Mid-Atlantic TRM 2019, p. 178
Throttle_{ee}	Fixed	0.95	-	Mid-Atlantic TRM 2019, p. 178 ¹⁴

⁹ Mid-Atlantic TRM 2019, p. 177. Note, the algorithm and variables are provided as documentation for the deemed savings result provided which should be claimed for all faucet aerator installations.

¹⁰ Mid-Atlantic TRM 2019, p. 177. In 1998, the Department of Energy adopted a maximum flow rate standard of 2.2 gpm at 60 psi for all faucets: 63 Fed. Reg. 13307; March 18, 1998.

¹¹ Based on program eligibility requirements.

¹² Mid-Atlantic TRM 2019, p. 178. U.S. Energy Information Administration, Residential Energy Consumption Survey; http://www.eia.doe.gov/emeu/recs/recs2005/hc2005_tables/hc3demographics/pdf/tablehc11.3.pdf.

¹³ Mid-Atlantic TRM 2019, p. 178. Estimate consistent with Ontario Energy Board, "Measures and Assumptions for Demand Side Management Planning."

¹⁴ Mid-Atlantic TRM 2019, p. 178. Schultdt, Marc, and Debra Tachibana, "Energy Related Water Fixture Measurements: Securing the Baseline for Northwest Single Family Homes." 2008 ACEEE Summer Study on Energy Efficiency in Buildings, 2008, page 1-265.



Component	Type	Value	Unit	Source(s)
Minutes_{faucet}	Fixed	Kitchen: 4.5 Bathroom: 1.6	minutes/ person/day	Mid-Atlantic TRM 2019, p. 178 ¹⁵
ΔT	Variable	Kitchen: 32.1 Bathroom: 25.1	°F	Mid-Atlantic TRM 2019, p. 178 ¹⁶
η_{bHW}	Fixed	0.98	-	Mid-Atlantic TRM 2019, p. 178 ¹⁷
CF	Fixed	0.00262	-	Mid-Atlantic TRM 2019, p. 179 ¹⁸

2.1.2.4 Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default per measure gross annual water savings will be assigned according to the following calculations.

Kitchen:

$$\begin{aligned}
 \Delta Water &= [(Flow_{base} \times Throttle_{base}) - (Flow_{ee} \times Throttle_{ee})] \times Minutes_{faucet} \\
 &\quad \times Qty_{people} \times Flow_{drain} \times 365 \text{ days} \\
 &= [(2.2 \text{ gpm} \times 0.83) - (1.5 \text{ gpm} \times 0.95)] \times \frac{4.5 \text{ min./person}}{\text{day}} \times 2.53 \text{ people} \times 0.5 \\
 &\quad \times 365 \text{ days} \\
 &= 833 \text{ gallons}
 \end{aligned}$$

Bathroom:

$$\begin{aligned}
 \Delta Water &= [(Flow_{base} \times Throttle_{base}) - (Flow_{ee} \times Throttle_{ee})] \times Minutes_{faucet} \\
 &\quad \times Qty_{people} \times Flow_{drain} \times 365 \text{ days} \\
 &= [(2.2 \text{ gpm} \times 0.83) - (1.5 \text{ gpm} \times 0.95)] \times \frac{1.6 \text{ min./person}}{\text{day}} \times 2.53 \text{ people} \times 0.7 \\
 &\quad \times 365 \text{ days} \\
 &= 415 \text{ gallons}
 \end{aligned}$$

The default per measure gross annual electric energy savings will be assigned according to the following calculations:

¹⁵ Mid-Atlantic TRM 2019, p. 178. Cadmus and Opinion Dynamics Evaluation Team. Showerhead and Faucet Aerator Meter Study. For Michigan Evaluation Working Group. June 2013. If aerator location is known, use the corresponding kitchen/bathroom value. If unknown, use 3 min./person/day as the average length of use value, which is the total for the household: kitchen (4.5 min./person/day) + bathroom (1.6 min./person/day) = 6.1 min/person/day/2. Via Pennsylvania TRM.

¹⁶ Assuming kitchen faucet temperature is 93.0 °F, bathroom faucet temperature is 86.0 °F and the water temperature coming in to the house is 60.9 °F based on Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential Retrofit Programs." April 4, 2014, Appendix E, p. 66.

¹⁷ Mid-Atlantic TRM 2019, p. 178. Electric water heater has recovery efficiency of 98%. http://www.ahrinet.org/App_Content/ahri/files/Certification/GAMA/PG-CMW.pdf. Accessed 9/17/2019.

¹⁸ Mid-Atlantic TRM 2019, p. 179. "Calculated as follows: Assume 13% faucet use takes place during peak hours (based on http://s3.amazonaws.com/zanran_storage/www.aquacraft.com/ContentPages/47768067.pdf). 13% * 3.6 minutes per day (10.9 * 2.56 / 3.5 / 2.2 = 3.6) = 0.47 minutes = 0.47 / 180 (minutes in peak period) = 0.00262." Website was provided in Mid-Atlantic TRM and could not be accessed when DNV GL attempted on 8/4/2016 (or anytime since).



Kitchen:

$$\begin{aligned}\Delta kWh &= \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\ &= \frac{833 \text{ gallons} \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times 32.1^\circ\text{F}}{0.98 \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\ &= 66 \text{ kWh}\end{aligned}$$

Bathroom:

$$\begin{aligned}\Delta kWh &= \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\ &= \frac{415 \text{ gallons} \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^\circ\text{F} \times 25.1^\circ\text{F}}{0.98 \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\ &= 26 \text{ kWh}\end{aligned}$$

The default per measure gross coincident demand reductions will be assigned according to the following calculation:

Kitchen:

$$\begin{aligned}\Delta kW &= \frac{\Delta kWh \times CF}{\text{Minutes}_{faucet} \times \text{Qty}_{people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}} \\ &= \frac{66 \text{ kWh} \times 0.00262}{4.5 \text{ minutes} \times 2.53 \text{ people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}} \\ &= 0.0025 \text{ kW}\end{aligned}$$

Bathroom:

$$\begin{aligned}\Delta kW &= \frac{\Delta kWh \times CF}{\text{Minutes}_{faucet} \times \text{Qty}_{people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}} \\ &= \frac{26 \text{ kWh} \times 0.00262}{1.6 \text{ minutes} \times 2.53 \text{ people} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}} \\ &= 0.0028 \text{ kW}\end{aligned}$$

2.1.2.5 Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 177-181.



2.1.2.6 Update Summary

The changes to this section, compared with last year, are described in Table 2-5.

Table 2-5: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	Source	Updated page numbers / version of the Mid-Atlantic TRM
	Input Variable	Updated kitchen values for ΔT and $Flow_{drain}$
	Equation	Updated equation for water savings

2.1.3 Low-Flow Showerhead

2.1.3.1 Measure Description

This measure realizes energy savings by replacing an existing showerhead with a low-flow showerhead. Doing so reduces overall water usage, and in particular, the need to heat water. Showerheads are changed from those that deliver an estimated 2.5 gpm to low-flow, ≤ 2.0 -gpm aerators. The baseline condition is a showerhead with a flow rate of 2.5 gpm.

2.1.3.2 Savings Estimation Approach

Gross annual water savings per showerhead are calculated according to the following equation:

$$\Delta Water = \frac{[(Flow_{base} - Flow_{ee}) \times Qty_{people} \times Minutes_{shower} \times Showers_{daily} \times 365 \text{ days}]}{Qty_{showerheads}}$$

Gross annual electric energy savings per showerhead are calculated according to the following equation:

$$\Delta kWh = \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot Btu/\text{lb}^\circ\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \text{ Btu/kWh}}$$

Gross coincident demand reduction per showerhead is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh \times CF}{Minutes_{shower} \times Qty_{people} \times Showers_{daily} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}}$$

Where:

- $\Delta Water$ = gross annual water savings per showerhead
- $\Delta kWh/\text{year}$ = gross annual electric energy savings per showerhead
- ΔkW = gross coincident demand reduction per showerhead
- $Flow_{base}$ = baseline showerhead flow rate
- $Flow_{ee}$ = energy efficient (low-flow) showerhead flow rate
- Qty_{people} = number of people per household
- $Minutes_{shower}$ = average shower duration
- $Showers_{daily}$ = average showers per person per day
- Qty_{shower} = number of showers in home
- ΔT = change in temperature of the water used for shower and temperature entering the house
($\Delta T = T_{shower} - T_{in \text{ house}}$)



η_{DHW} = recovery efficiency of electric, storage-tank water heater
CF = peak coincidence factor

2.1.3.3 Input Variables

Table 2-6: Input Values for Low-Flow Shower Head Savings Calculations

Component	Type	Value	Unit	Source(s)
Flow_{base}	Fixed	2.5	gpm	Mid-Atlantic TRM 2019, p. 172 ¹⁹
Flow_{ee}	Variable	2.0	gpm	Program design
Qty_{people}	Variable	See customer application	-	Customer application
		Default = 2.53		Mid-Atlantic TRM 2019, p. 173 ²⁰
Minutes_{shower}	Fixed	7.8	Minutes/ shower	Mid-Atlantic TRM 2019, p. 173 ²¹
Showers_{daily}	Fixed	0.6	showers/ person/day	Mid-Atlantic TRM 2019, p. 173 ²²
Qty_{shower}	Variable	See customer application	showers/ home	Customer application
		Default: 1.3		Mid-Atlantic TRM 2019, p. 173 ²³
ΔT	Fixed	44.1	°F	Mid-Atlantic TRM 2019, p. 173: $T_{\text{shower}} = 105.0^{\circ}\text{F}^{24}$ $T_{\text{in house}} = 60.9^{\circ}\text{F}^{25}$
η_{DHW}	Fixed	0.98	-	Mid-Atlantic TRM 2019, p. 173 ²⁶
CF	Fixed	0.0039	-	Mid-Atlantic TRM 2019, p. 174 ²⁷

²⁰ Mid-Atlantic TRM 2019, p. 172. The Energy Policy Act of 1992 (EPA) established the maximum flow rate for showerheads at 2.5 gallons per minute (gpm)

²¹ Mid-Atlantic TRM 2019, p. 173. US Energy Information Administration, Residential Energy Consumption Survey; <https://www.eia.gov/consumption/residential/data/2015/hc/php/hc9.7.php>

²² Mid-Atlantic TRM 2019, p. 173. Table 6. Cadmus and Opinion Dynamics Evaluation Team. Showerhead and Faucet Aerator Meter Study. For Michigan Evaluation Working Group. June 2013. The study compared shower length by single-family and multifamily populations, finding no statistical difference in showering times. For the energy-saving analysis, the study used the combined single-family and multifamily average shower length of 7.8 minutes. Per Pennsylvania TRM-2016.

²³ Mid-Atlantic TRM 2019, p. 173. Table 8. Cadmus and Opinion Dynamics Evaluation Team. Showerhead and Faucet Aerator Meter Study. For Michigan Evaluation Working Group. June 2013. For each shower fixture metered, the evaluation team knew the total number of showers taken, the length of time meters remained in each home, and the total number of occupants reported to live in the home. From these values average showers taken per day, per person was calculated. The study compared showers per day, per person by single-family and multifamily populations, finding no statistical difference in the values. For the energy-saving analysis, the study used the combined single-family and multifamily average showers per day, per person of 0.6. Per Pennsylvania TRM-2016.

²⁴ Mid-Atlantic TRM 2019, p. 173. Table 9; Cadmus and Opinion Dynamics Evaluation Team. Showerhead and Faucet Aerator Meter Study. For Michigan Evaluation Working Group. June 2013

²⁵ Mid-Atlantic TRM 2018, p. 171. Connecticut Energy Efficiency Fund; CL&P and UI Program Savings Documentation for 2008 Program Year. The Mid-Atlantic TRM 2016 source has a bookmark error, but since the value is the same as that listed in the Mid-Atlantic TRM 2013, the same source was retained.

²⁶ Mid-Atlantic TRM 2019, p. 173. Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential Retrofit Programs." April 4, 2014, Appendix E, page 66.

²⁷ Mid-Atlantic TRM 2019, p. 173. Electric water heater has recovery efficiency of 98%. http://www.ahrinet.org/App_Content/ahri/files/Certification/GAMA/PG-CMW.pdf. Accessed 9/17/2019

²⁸ Mid-Atlantic TRM 2019, p. 174. Calculated as follows: Assume 9% showers take place during peak hours (based on http://s3.amazonaws.com/zanran_storage/www.aquacraft.com/ContentPages/47768067.pdf). Accessed 9/18/2019. Nine percent x 7.8 minutes per day = 0.702 minutes; 0.702 / 180 (minutes in peak period) = 0.0039. Website that was provided in Mid-Atlantic TRM, however, could not be accessed when DNV GL attempted on the same date.



2.1.3.4 Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values.

The default per measure gross annual water savings will be assigned according to the following calculation:

$$\begin{aligned}\Delta Water &= \left[(Flow_{base} - Flow_{ee}) \times Qty_{people} \times Minutes_{shower} \times Showers_{daily} \times 365 \text{ days} \right] \\ &\quad \div Qty_{shower} \\ &= \left[(2.5 \text{ gpm} - 2.0 \text{ gpm}) \times 2.53 \text{ people} \times 7.8 \frac{\text{min.}}{\text{shower}} \times 0.6 \frac{\text{showers}}{\text{day}} \right. \\ &\quad \left. \times 365 \text{ days} \right] \div 1.3 \text{ showers} \\ &= 1,662 \text{ gallons}\end{aligned}$$

The default per measure gross annual electric energy savings will be assigned according to the following calculation:

$$\begin{aligned}\Delta kWh &= \frac{\Delta Water \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^{\circ}\text{F} \times \Delta T}{\eta_{DHW} \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\ &= \frac{1,662 \text{ gal} \times 8.3 \text{ lb/gal} \cdot \text{Btu/lb/}^{\circ}\text{F} \times 44.1 \text{ }^{\circ}\text{F}}{0.98 \times 3,412 \frac{\text{Btu/h}}{\text{kW}}} \\ &= 181.5 \text{ kWh}\end{aligned}$$

The default per measure gross coincident demand reductions will be assigned according to the following calculation:

$$\begin{aligned}\Delta kW &= \frac{\Delta kWh \times CF}{Qty_{people} \times Minutes_{shower} \times Showers_{daily} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}} \\ &= \frac{181.5 \text{ kWh} \times 0.0039}{2.53 \text{ people} \times 7.8 \frac{\text{min}}{\text{shower}} \times 0.6 \frac{\text{shower}}{\text{day}} \times \frac{1 \text{ hour}}{60 \text{ min.}} \times 365 \text{ days}} \\ &= 0.010 \text{ kW}\end{aligned}$$

2.1.3.5 Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp.172-181.

2.1.3.6 Update Summary

The changes to this section, compared with last year, are described in Table 2-7.

Table 2-7: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	Source	Updated page numbers / version of the Mid-Atlantic TRM
	Input Variable	Updated Qty_{shower} to use customer application data when available



2.2 Heating Ventilation and Air Conditioning (HVAC End Use)

2.2.1 Attic Insulation

2.2.1.1 Measure Description

This measure characterization is for the installation of new insulation in the attic/roof/ceiling of a residential building. The measure assumes that an auditor, contractor or utility staff member is on location, and will measure and record the existing and new insulation depth and type (to calculate R-values), the surface area of insulation added, and where possible the efficiency of the heating and cooling system used in the home. Through the program, attic insulation is brought up to a maximum of R-49.

2.2.1.2 Savings Estimation Approach

R-values:

$$R_{base} = R_{base,insulation} + R_{roof}$$

$$R_{ee} = R_{ee,insulation} + R_{roof}$$

Annual cooling energy savings per measure are calculated according to the following equations:

$$\Delta kWh_{cool} = \frac{\left(\frac{1}{R_{base}} - \frac{1}{R_{ee}}\right) \times CDH \times DUA \times Area \times Adj_{cool}}{1,000 \times \eta_{cool}}$$

Annual heating savings are only applicable for homes with electric heating and calculated as follows:

$$\Delta kWh_{heat} = \frac{\left(\frac{1}{R_{base}} - \frac{1}{R_{ee}}\right) \times HDD \times 24 \frac{hours}{day} \times Area \times 293.1 \frac{kWh}{MMBtu} \times Adj_{heat}}{1,000,000 \times \eta_{heat}}$$

Heating and cooling energy savings are added together to calculate the per measure gross annual electric energy savings:

$$\Delta kWh = \Delta kWh_{heat} + \Delta kWh_{cool}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh_{cool}}{EFLH_{cool}} \times CF$$

Where:

- ΔkWh_{cool} = per measure gross annual electric energy savings from reduced cooling load
- ΔkWh_{heat} = per measure gross annual electric energy savings from reduced heating load
- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident demand reduction
- R_{roof} = R-value of roof assembly
- $R_{base,insulation}$ = R-value of any existing insulation
- R_{base} = R-value of roof assembly plus any existing insulation



$R_{ee_insulation}$ = R-value of new insulation
 R_{ee} = R-value of roof assembly plus new insulation
 CDH = cooling degree hours
 DUA = discretionary use adjustment
 Area = square footage of area covered by new insulation
 η_{cool} = efficiency (in SEER) of air conditioning equipment
 HDD = heating degree days
 η_{heat} = efficiency (in COP) of heating equipment
 $EFLH_{cool}$ = equivalent full load cooling hours
 CF = gross coincident demand reduction coincidence factor
 Adj_{cool} = adjustment for cooling savings to account for inaccuracies in engineering algorithms
 Adj_{heat} = adjustment for electric heating savings to account for inaccuracies in engineering algorithms

2.2.1.3 Input Variables

Table 2-8: Input Values, Income and Age Qualifying Insulation Upgrades

Component	Type	Value	Units	Source(s)
R_{roof}	Fixed	R-5	hr-F-ft ² /Btu	Mid-Atlantic TRM 2019, p. 261 ²⁸
$R_{base_insulation}$	Variable	See customer application	hr-F-ft ² /Btu	Customer application
		Default = 0		Mid-Atlantic TRM 2019, p. 261
$R_{ee_insulation}$	Variable	See customer application	hr-°F-ft ² /Btu	See customer application; Maximum of R-49 from program planning. See Table 2-6 for average R-values by material.
CDH	Fixed	See Table 10-3, using a base temperature of 65°F	degree-hours	Sub-appendix I: Cooling and Heating Degree Days and Hours ²⁹ from the National Solar Radiation Data Base, National Renewable Energy Laboratory (NREL)
DUA	Fixed	0.75	-	Mid-Atlantic TRM 2019, p. 261 ³⁰
Area	Variable	Variable	ft ²	Customer application
η_{cool}	Variable	See Table 10-7: baseline efficiency	Btu/watt-hr	Federal efficiency requirements
		Default = SEER 14.0		Mid-Atlantic TRM 2019 ³¹

²⁸ "The R-5 assumption for roof assembly is based on J.Neymark & Associates and National Renewable Energy Laboratory, June 2009; "BESTEST-EX Interim Test Procedure" p. 27. The attic floor and roof should be modeled as a system including solar gains and attic ventilation, and R-5 is the standard assumption for the thermal resistance of the whole attic/roof system." Mid-Atlantic TRM 2019, p. 260.

²⁹ These CDH values are calculated by DNV GL using base temperatures of 65°F rather than 75°F for cooling degree hours, as was done in the Mid-Atlantic TRM.

³⁰ To account for the fact that people do not always operate their air conditioning system when the outside temperature is greater than 75°F. Based on Energy Center of Wisconsin, May 2008 metering study; "Central Air Conditioning in Wisconsin, A Compilation of Recent Field Research", p31. Mid-Atlantic TRM 2019, p. 261

³¹ Assumed same as baseline efficiency used for residential HVAC measures for consistency. Mid-Atlantic TRM 2018, p. 82. The latest version of the Mid-Atlantic TRM i.e. 2019 is not having the SEER value for the systems manufactured after 2015 as the previous version of Mid-Atlantic TRM is having



Component	Type	Value	Units	Source(s)
HDD	Fixed	See Table 10-2, using a base temperature of 65°F	degree-days	Sub-appendix I: Cooling and Heating Degree Days and Hours ³² from National Solar Radiation Data Base, National Renewable Energy Laboratory (NREL)
η_{heat}	Variable	See Table 10-7: Default: no electric heat & no heating savings	-	Federal efficiency requirements
EFLH_{cool}	Variable	See Table 10-5	hours (annual)	Mid-Atlantic TRM 2019, p. 91, and ENERGY STAR® calculator ³³
CF	Fixed	0.69	-	Mid-Atlantic TRM 2019, p. 263
Adj_{cool}	Fixed	1.21	-	Mid-Atlantic TRM 2019, p. 261 ³⁴
Adj_{heat}	Fixed	0.60	-	Mid-Atlantic TRM 2019, p. 263 ³⁵

Table 2-9: Average R-Values per Inch of Thickness by Insulating Material

Insulating Material	Avg. R-value, per inch
Blanket: batts and rolls (fiberglass)	3.2
Loose-fill and blown-in (cellulose, fiberglass, mineral—rock or slag—wool)	3.3
Foam board or rigid foam (polystyrene, polyisocyanurate, polyurethane)	4.8

Insulation R-values per inch, shown in Table 2-9, are from the 2013 ASHRAE Handbook – Fundamentals, Table 1. Building and Insulating Materials: Design Values. The values given are average R-values. If needed, insulation manufacturers can be contacted for the R-values of insulating materials not listed above.

2.2.1.4 Default Savings

If the values are not supplied, default input values may be applied using conservative assumptions.

2.2.1.5 Source(s)

The primary sources for this deemed savings approach are the Mid-Atlantic TRM 2019, p. 91, pp. 260-265, the 2013 ASHRAE Handbook Fundamentals, and ENERGY STAR® guidelines.

2.2.1.6 Update Summary

The changes to this section, compared with last year, are described in Table 2-10.

³² These HDD values are calculated by DNV GL using base temperatures of 65°F rather than 60°F for heating degree days, as was done in the Mid-Atlantic TRM.

³³ ENERGY STAR®. Heat Pumps "Savings Calculator," Heating Usage, https://www.energystar.gov/index.cfm?c=airsrc_heat.pr_proc_as_heat_pumps. Accessed 9/27/2019.

³⁴ From Illinois TRM, 9 as demonstrated in two years of metering evaluation by Opinion Dynamics. Adjusts savings derived through engineering algorithms to actual savings measured in field. Note: The value given in the Mid-Atlantic TRM is different than their reference in Illinois TRM and the value used here is the value given in the Illinois TRM

³⁵ From Illinois TRM, 9 as demonstrated in two years of metering evaluation by Opinion Dynamics.



Table 2-10: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	Source	Updated page numbers / version of the Mid-Atlantic TRM and ASHRAE Handbook Fundamentals
	Input Variable	Clarified default assumption values

2.3 Lighting End Use

2.3.1 LED Lighting

2.3.1.1 Measure Description

Existing incandescent light bulbs will be replaced with their respective equivalents LED bulbs.

This measure is also offered through the Residential Home Energy Assessment program, Section 5. For the Residential Income and Age Qualified Program the quantity is limited to six. The Residential Home Energy Assessment program does not have a specified quantity limit.

2.3.1.2 Savings Estimation Approach

Per unit savings are multiplied by the number of total bulbs installed based on the program tracking data. Based on the program design, the maximum number of bulbs installed is six.

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \frac{watts_{base} - watts_{ee}}{1,000 W/kW} \times ISR \times HOU \times [WHFe_{heat} + (WHFe_{cool} - 1)]$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{watts_{base} - watts_{ee}}{1,000 W/kW} \times ISR \times WHFd \times CF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident peak demand savings
- $watts_{base}$ = wattage of incandescent bulb being replaced
- $watts_{ee}$ = wattage of new efficient LED bulb
- ISR = in service rate
- HOU = hours of use per year
- $WHFe_{heat}$ = waste heat factor to account for electric heating increase due to reduced waste heat from efficient lighting
- $WHFe_{cool}$ = waste heat factor to account for electric cooling savings due to reduced waste heat from efficient lighting
- $WHFd$ = waste heat factor for summer coincident peak demand savings to account for cooling savings from efficient lighting
- CF = peak coincidence factor



2.3.1.3 Input Variables

Table 2-11: Input Values for LED Lighting Savings

Component	Type	Value	Units	Sources
watts_{base}	Variable	For Residential Income and Age Qualifying Home Improvement program: 40 W 60 W	watts	Dominion Residential Income and Age Qualifying Home Improvement program requirements, US EPA Energy Independence and Security Act of 2007 Frequently Asked Questions, p. 1
		For Residential Home Energy Assessment Program: See Table 2-12		Dominion Residential Home Energy Assessment Program requirements
watts_{ee}	Variable	For Residential Income and Age Qualifying Home Improvement program: 9 (for 40 W base) or 14.5 (for 60 W base)	watts	Dominion Residential Income and Age Qualifying Home Improvement program assumptions
		For Residential Home Energy Assessment Program: See Table 2-12		Dominion Residential Home Energy Assessment Program assumptions
ISR	Fixed	0.98	-	Mid-Atlantic TRM 2019, p. 34
HOU	Fixed	See Table 10-9, Sub-appendix F1-IV: Residential Lighting Factors	hour/ year	Mid-Atlantic TRM 2019, p. 34
		Default = 760 for Unknown room location		
WHF_{heat}	Fixed	See Table 10-9, Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 35
		Default = 0.899 for Unknown room location		
WHF_{cool}	Fixed	See Table 10-9, Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 35
		Default = 1.077 for Unknown room location		
WHF_d	Fixed	See Table 10-9, Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 36
		Default = 1.17 for Unknown room location		
CF	Fixed	See Table 10-9, Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 37
		Default = 0.058 for Unknown room location		

Table 2-12: LED Lighting Savings for Eligible Measures

Measure	watts _{base}	watts _{ee}
A-line LED 40 W Equivalent	29	5
A-line LED 60 W Equivalent	43	9



Measure	watts _{base}	watts _{ee}
A-line LED 75 W Equivalent	53	12
A-line LED 100 W Equivalent	53	12
A-line LED 3 Way 75 W / 100 W / 150 W Equivalent	53	12
Decorative LED 25W Equivalent	25	2.7
Decorative LED 40W Equivalent	29	4
LED Downlight 50 W Equivalent	30	6
LED Downlight 65 W Equivalent	45	8
LED Downlight 75 W Equivalent	50	10
LED Downlight 90 W Equivalent	75	14

2.3.1.4 Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. In the event that either watts_{base} or watts_{ee} is missing, the savings are calculated using default values. The default gross annual electric energy savings will be assigned according to the following equations as follow.

40 W LEDs:

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\begin{aligned}
 \Delta kWh &= \frac{watts_{base} - watts_{ee}}{1,000 W/kW} \times ISR \times HOU \times [WHFe_{heat} + (WHFe_{cool} - 1)] \\
 &= \frac{29 - 9}{1,000 W/kW} \times 0.98 \times 760 \times [0.899 + (1.077 - 1)] \\
 &= 14.54 kWh
 \end{aligned}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\begin{aligned}
 \Delta kW &= \frac{watts_{base} - watts_{ee}}{1,000 W/kW} \times ISR \times WHFd \times CF \\
 &= \frac{29 - 9}{1,000 W/kW} \times 0.98 \times 1.17 \times 0.058 \\
 &= 0.001 kW
 \end{aligned}$$

60 W LEDs:

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \frac{watts_{base} - watts_{ee}}{1,000 W/kW} \times ISR \times HOU \times [WHFe_{heat} + (WHFe_{cool} - 1)]$$



$$= \frac{43 - 14.5}{1,000 \text{ W/kW}} \times 0.98 \times 760 \times [0.899 + (1.077 - 1)]$$

$$= 20.72 \text{ kWh}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\text{watts}_{base} - \text{watts}_{ee}}{1,000 \text{ W/kW}} \times ISR \times WHFd \times CF$$

$$= \frac{43 - 14.5}{1,000 \text{ W/kW}} \times 0.98 \times 1.17 \times 0.058$$

$$= 0.002 \text{ kW}$$

2.3.1.5 Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 21-42. Wattage values are based on program assumptions.

2.3.1.6 Update Summary

The changes to this section, compared with last year, are described in Table 2-13.

Table 2-13: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	- Revised baseline wattages for Residential Home Energy Assessment Program to reflect the DOE's rollback of the EISA lighting efficiency standard that would scheduled to take effect in 2020 but did not. - Updated default savings calculation with revised baseline wattages.
v10	Source	Updated page numbers / version of the Mid-Atlantic TRM



3 RESIDENTIAL AC CYCLING PROGRAM, DSM PHASE I

3.1 Heating Ventilation and Air Conditioning End Use

3.1.1 Residential AC Cycling

3.1.1.1 Measure Description

Under the program, when AC cycling events are called, a radiofrequency (RF) paging signal is broadcast throughout the Company's service area. The signal is received by load curtailment switches installed on central air conditioners and heat pumps of participating residential customers. The dispatch of the RF signal to the load curtailment switch reduces the duty cycle of the registered AC units up to 50% during an event. The objective of the program is to reduce kW demand during AC cycling events.

3.1.1.2 Evaluation History

At the conclusion of the 2014 program event season, DNV (then DNV GL) conducted an ex ante regression analysis to predict kW impacts per dispatched AC Cycling participant specific to hour of day and weather conditions. This ex ante value was derived by averaging historical ex-ante impacts over the 2011–2014 event seasons. In 2015, due to the elapsed time between 2011 and 2014, the decline in average connected load per participant, and other longitudinal factors, the 2015 ex ante model was based solely on 2015 ex post impacts. Since 2015, ex ante models are built on current year ex post impacts only.

3.1.1.3 Savings Estimation Approach

The regression analysis that DNV (then DNV GL) used to estimate the ex post kW impacts per participant in 2020 is derived by fitting a linear regression model for each event hour ending 16–18 with the temperature humidity index (THI) as a predictor variable. The event hours included in the ex post analysis is determined by the start and end of each event.³⁶

Ex ante event day demand reduction is calculated according to the following equations:

$$\text{Predicted Ex Ante kW Impact}_{16:00, \text{day}} = \hat{\beta}_{0,16:00} + \hat{\beta}_{1,16:00} * (THI_{16:00})$$

$$\text{Predicted Ex Ante kW Impact}_{17:00, \text{day}} = \hat{\beta}_{0,17:00} + \hat{\beta}_{1,17:00} * (THI_{17:00})$$

$$\text{Predicted Ex Ante kW Impact}_{18:00, \text{day}} = \hat{\beta}_{0,18:00} + \hat{\beta}_{1,18:00} * (THI_{18:00})$$

Where:

$\text{Predicted Ex Ante kW Impact}_{\text{hour}}$ = estimated ex ante load impact estimate for hour

$\hat{\beta}_{0, \text{hour}}$ = fixed estimate for the ex-ante kW impact

$\hat{\beta}_{1, \text{hour}}$ = increase to the ex ante kW impact estimate when THI increases by one

THI_{hour} = THI value for a specific hour.

The Dominion peak condition for planning purposes is assumed to be 95°F, 43% relative humidity at hour ending 17:00. This corresponds with a THI of 83.4. Therefore, the gross coincident summer peak demand savings are calculated according to the following equations:

³⁶ The impact analysis follows protocols outlined in Miriam L. Goldberg & G. Kennedy Agnew. Measurement and Verification for Demand Response, National Forum on the National Action Plan on Demand Response, <https://www.ferc.gov/industries/electric/indus-act/demand-response/dr-potential/napdr-mv.pdf>.



$$\text{Predicted Ex Ante kW Impact}_{17:00, \text{day}} = \hat{\beta}_{0,17:00} + \hat{\beta}_{1,17:00} * (83.4 \text{ THI})$$

$$\text{Predicted Ex Ante kW Impact}_{17:00, \text{day}} = -2.88650 + 0.04221 * (83.4)$$

3.1.1.4 Input Variables

Table 3-1: Input Values for Residential AC Cycling Program Reductions Calculations

Component	Type	Value	Unit	Source
$\hat{\beta}_{0,16:00}$	Fixed	0.92100	kW	Ex ante model regression
$\hat{\beta}_{0,17:00}$	Fixed	2.88650	kW	Ex ante model regression
$\hat{\beta}_{0,18:00}$	Fixed	2.71946	kW	Ex ante model regression
$\hat{\beta}_{1,16:00}$	Fixed	0.01742	kW	Ex ante model regression
$\hat{\beta}_{1,17:00}$	Fixed	0.04221	kW	Ex ante model regression
$\hat{\beta}_{1,18:00}$	Fixed	0.04069	kW	Ex ante model regression
$THI_{16:00}$	Variable	–	THI	NOAA
$THI_{17:00}$	Variable	-	THI	NOAA
$THI_{18:00}$	Variable	-	THI	NOAA

3.1.1.5 Default Savings

The kW impact per AC Cycling Program participant during Dominion's peak conditions for 2020 is 0.63 kW. DNV conducts a yearly impact analysis to support an ex ante model specification that is based on updated ex post impacts.

3.1.1.6 Source

Local weather data are gathered from [NOAA, National Centers for Environmental Information](#).

3.1.1.7 Update Summary

The changes to this section, compared with last year, are described in Table 3-2.

Table 3-2: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Source	Updated regression coefficients for 2020 ex post results
v10	Source	Updated regression coefficients for 2019 ex post results



4 RESIDENTIAL APPLIANCE RECYCLING PROGRAM, DSM PHASE VII

The Residential Appliance Recycling Program provides a financial incentive to residential customers to recycle aged refrigerators and/or freezers. Customers are limited to two units per electric account and eligible units must be at least 10 years old and operational.

4.1 Refrigeration End Use

4.1.1 Refrigerator and Freezer Recycling

4.1.1.1 Measure Description

Under this measure Dominion will remove older, less efficient refrigerators and/or freezers directly from customers' homes. Savings are realized through the decommissioning of secondary refrigerators or replacing older primary refrigerators with new units.

4.1.1.2 Savings Estimation Approach

Per measure, gross energy savings for refrigerators and freezers are defined in the equations below. Baseline kWh is from a linear regression model and energy efficient kWh is a weighted average of the federal baseline maximum energy usage for the measure multiplied by a dummy variable equal to 1 if the unit will be replaced and 0 if not. The coefficients can be found in Table 4-2 and Table 4-3.

Refrigerators:

$$\begin{aligned}\Delta kWh &= kWh_{base} - kWh_{ee} \\ kWh_{ee} &= ((0.018333 \times Size + 0.5211) + (0.021573 \times Size + 0.6075) \\ &\quad + (4.619268 \times Size + 133.76988) + (0.11914 \times Size + 4.1692) \\ &\quad + (1.455825 \times Size + 52.1465) + (0.02268 \times Size + 1.04058) \\ &\quad + (2.05814 \times Size + 104.3048)) \times Replacement \\ kWh_{base} &= \left[0.80460 + (Age \times 0.02107) + (Pre1990 \times 1.03605) + (Size \times 0.05930) \right. \\ &\quad + (SingleDoor \times -1.75138) + (SideBySide \times 1.11963) \\ &\quad + (Primary \times 0.55990) + \left(\frac{HDD}{365} \times Unconditioned \times -0.04013 \right) \\ &\quad \left. + \left(\frac{CDD}{365} \times Unconditioned \times 0.02622 \right) \right] \times 365 \times PUF\end{aligned}$$

Freezers:

$$\begin{aligned}\Delta kWh &= kWh_{base} - kWh_{ee} \\ kWh_{ee} &= (3.166988 \times Size + 83.87742) + (4.611654 \times Size + 68.19428) \times Replacement\end{aligned}$$



$$kWh_{base} = \left[-0.95470 + (Age \times 0.04536) + (Pre1990 \times 0.54341) + (Size \times 0.12023) \right. \\ \left. + (ChestFreezer \times 0.29816) + \left(\frac{HDD}{365} \times Unconditioned \times -0.03148 \right) \right. \\ \left. + \left(\frac{CDD}{365} \times Unconditioned \times 0.08217 \right) \right] \times 365 \times PUF$$

Per-measure gross coincident peak demand reduction for both refrigerators and freezers is calculated according to the following equation:

$$\Delta kW = \left(\frac{\Delta kWh}{8,760} \right) \times TAF \times LSAF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident peak demand savings
- kWh_{base} = baseline annual electric energy consumption
- kWh_{ee} = annual electric energy consumption of efficient unit
- Age = age of refrigerator or freezer
- Pre1990 = adjustment variables for refrigerators and freezers manufactured before 1990
- Size = size of refrigerator or freezer
- Replacement = dummy variable for if the recycled freezer or refrigerator will be replaced
- SingleDoor = adjustment factor for single-door refrigerators
- SideBySide = adjustment factor for side-by-side refrigerators
- ChestFreezer = adjustment factor for chest freezers
- Primary = adjustment factor for refrigerators or freezers that were primary units
- HDD = Heating Degree Days for location of appliance removal
- CDD = Cooling Degree Days for location of appliance removal
- Unconditioned = adjustment factor for refrigerators or freezers in unconditioned space
- PUF = Part-use Factor to account for units that do not run throughout the year
- TAF = Temperature Adjustment Factor
- LSAF = Load-shape Adjustment Factor

4.1.1.3 Input Variables

Table 4-1: Refrigerator and Freezer Recycling Input Values

Component	Type	Value	Unit	Source(s)
Age	Variable	See customer application	years	Customer application
		Default = 18.61, for refrigerators 23.79, for freezers		
Pre1990	Variable	See customer application	-	Customer application
		Default = 0.20 for refrigerators, 0.46 for freezers		
Size	Variable	See customer application	cubic feet	Customer application
		Default = 19.43, for refrigerators 15.86, for freezers		
SingleDoor	Variable	See customer application	-	Customer application
		Default = 0.02		



Component	Type	Value	Unit	Source(s)
SideBySide	Variable	See customer application	-	Customer application
		Default = 0.34		
ChestFreezer	Variable	See customer application	-	Customer application
		Default = 0.21		
Primary	Variable	See customer application	-	Customer application
		Default = 0.64		
HDD	Variable	Location-dependent value using a base temperature of 65°F	Heating Degree Days (HDD)	See Table 10-2 in Sub-appendix F1-I: Cooling and Heating Degree Days and Hours from National Solar Radiation Data Base, National Renewable Energy Laboratory (NREL)
CDD	Variable	Location-dependent value using a base temperature of 65°F	Cooling Degree Days (CDD)	See Table 10-2 in Sub-appendix F1-I: Cooling and Heating Degree Days and Hours from National Solar Radiation Data Base, National Renewable Energy Laboratory (NREL)
Unconditioned	Variable	See customer application	-	Customer application
		Default = 0.22 for refrigerators, 0.55 for freezers		
PUF	Variable	See customer application	-	Customer application
		Default = 0.95, for refrigerators 0.86, for freezers		Mid-Atlantic TRM 2019, p. 69
TAF	Fixed	1.23	-	Mid-Atlantic TRM 2019, p. 70
LSAF	Fixed	1.066	-	Mid-Atlantic TRM 2019, p. 70
Replacement	Variable	See customer application	-	Customer application

Table 4-2: Model Coefficients Used for Refrigerator-recycling Energy Savings

Independent Variable Description	Estimate Coefficient
Intercept	0.80460
Age (years)	0.02107
Pre-1990 (=1 if manufactured pre-1990)	1.03605
Size (cubic feet)	0.05930
Dummy: Single Door (=1 if single door)	-1.75138
Dummy: Side-by-Side (=1 side-by-side)	1.11963
Dummy: Primary Usage Type (=1 if primary unit)	0.55990
Interaction: Located in Unconditioned Space x HDD/365	-0.04013



Independent Variable Description	Estimate Coefficient
Interaction: Located in Unconditioned Space x CDD/365	0.02622

Table 4-3: Model Coefficients Used for Freezer-recycling Energy Savings

Independent Variable Description	Estimate Coefficient
Intercept	-0.95470
Age (years)	0.04530
Pre-1990 (=1 if manufactured pre-1990)	0.54341
Size (cubic feet)	0.12023
Dummy: Chest Freezer Configuration (=1 if chest freezer)	0.29816
Interaction: Located in Unconditioned Space x HDD/365	-0.03148
Interaction: Located in Unconditioned Space x CDD/365	0.08217

4.1.1.4 Default Savings

Savings are calculated as shown in the equations that follow if variable values are not provided in the data. These are established using default values provided in Table 4-1.

Refrigerators that are not replaced, in Virginia:

$$\begin{aligned}
 \Delta kWh &= [0.80460 + (Age \times 0.02107) + (Pre1990 \times 1.03605 + (Size \times 0.05930) \\
 &\quad + (SingleDoor \times -1.75138) + (SideBySide \times 1.11963) \\
 &\quad + (Primary \times 0.55990) + (HDD/365 \times Unconditioned \\
 &\quad \times -0.04013) + (CDD/365 \times Unconditioned \times 0.02622)] \times 365 \\
 &\quad \times PUF \\
 &= \left[0.80460 + (18.61 \text{ years} \times 0.02107) + (0.20 \times 1.03605) \right. \\
 &\quad + (19.43 \text{ cu. ft.} \times 0.05930) + (0.02 \times -1.75138) \\
 &\quad + (0.34 \times 1.11963) + (0.64 \times 0.55990) \\
 &\quad + \left(3,863 \frac{HDD}{365} \times 0.22 \times -0.04013 \right) \\
 &\quad \left. + \left(1,436 \frac{CDD}{365} \times 0.22 \times 0.02622 \right) \right] \times 365 \times 0.95 \\
 &= 1,105.9 \text{ kWh}
 \end{aligned}$$



Refrigerators that are replaced, in Virginia:

$$\begin{aligned}
 \Delta kWh &= [0.80460 + (Age \times 0.02107) + (Pre1990 \times 1.03605 + (Size \times 0.05930) \\
 &\quad + (SingleDoor \times -1.75138) + (SideBySide \times 1.11963) \\
 &\quad + (Primary \times 0.55990) + (HDD/365 \times Unconditioned \\
 &\quad \times -0.04013) + (CDD/365 \times Unconditioned \times 0.02622)] \times 365 \\
 &\quad \times PUF \\
 &\quad - [(0.018333 \times Size + 0.5211) + (0.021573 \times Size + 0.6075) \\
 &\quad + (4.619268 \times Size + 133.76988) + (0.11914 \times Size + 4.1692) \\
 &\quad + (1.455825 \times Size + 52.1465) + (0.02268 \times Size + 1.04058) \\
 &\quad + (2.05814 \times Size + 104.3048)] \times Replacement \\
 &= \left[\left[0.80460 + (18.61 \text{ years} \times 0.02107) + (0.20 \times 1.03605) \right. \right. \\
 &\quad + (19.43 \text{ cu. ft.} \times 0.05930) + (0.02 \times -1.75138) \\
 &\quad + (0.34 \times 1.11963) + (0.64 \times 0.55990) \\
 &\quad + \left(3,863 \frac{HDD}{365} \times 0.22 \times -0.04013 \right) \\
 &\quad \left. + \left(1,436 \frac{CDD}{365} \times 0.22 \times 0.02622 \right) \right] \times 365 \Bigg] \\
 &\quad - [(0.018333 \times 19.43 \text{ cu. ft.} + 0.5211) \\
 &\quad + (0.021573 \times 19.43 \text{ cu. ft.} + 0.6075) \\
 &\quad + (4.619268 \times 19.43 \text{ cu. ft.} + 133.76988) \\
 &\quad + (0.11914 \times 19.43 \text{ cu. ft.} + 4.1692) \\
 &\quad + (1.455825 \times 19.43 \text{ cu. ft.} + 52.1465) \\
 &\quad + (0.02268 \times 19.43 \text{ cu. ft.} + 1.04058) \\
 &\quad + (2.05814 \times 19.43 \text{ cu. ft.} + 104.3048)] \times 1 \Bigg] \\
 &= 1,105.9 - 458.1 \\
 &= 647.8 \text{ kWh}
 \end{aligned}$$

Refrigerators that are not replaced, in North Carolina:

$$\begin{aligned}
 \Delta kWh &= \left[0.80460 + (18.61 \times 0.02107) + (0.20 \times 1.03605) + (19.43 \times 0.05930) \right. \\
 &\quad + (0.02 \times -1.75138) + (0.34 \times 1.11963) + (0.64 \times 0.55990) \\
 &\quad \left. + \left(\frac{2,712}{365} \times 0.22 \times -0.04013 \right) + \left(\frac{1,748}{365} \times 0.22 \times 0.02622 \right) \right] \\
 &\quad \times 365 \times 0.95
 \end{aligned}$$



$$= 1,117.3 \text{ kWh}$$

Refrigerators that are replaced, in North Carolina:

$$\begin{aligned} \Delta kWh &= \left[\left[0.80460 + (18.61 \times 0.02107) + (0.20 \times 1.03605) + (19.43 \times 0.05930) \right. \right. \\ &\quad + (0.02 \times -1.75138) + (0.34 \times 1.11963) + (0.64 \times 0.55990) \\ &\quad + \left(\frac{2,712}{365} \times 0.22 \times -0.04013 \right) + \left(\frac{1,748}{365} \times 0.22 \times 0.02622 \right) \left. \right] \\ &\quad \times 365 \times 0.95 \left. \right] \\ &\quad - \left[\left[(0.018333 \times 19.43 \text{ cu. ft.} + 0.5211) + (0.021573 \right. \right. \\ &\quad \times 19.43 \text{ cu. ft.} + 0.6075) + (4.619268 \\ &\quad \times 19.43 \text{ cu. ft.} + 133.76988) + (0.11914 \\ &\quad \times 19.43 \text{ cu. ft.} + 4.1692) + (1.455825 \\ &\quad \times 19.43 \text{ cu. ft.} + 52.1465) + (0.02268 \\ &\quad \times 19.43 \text{ cu. ft.} + 1.04058) + (2.05814 \\ &\quad \times 19.43 \text{ cu. ft.} + 104.3048) \left. \right] \times 1 \left. \right] \\ &= 1,117.3 - 458.1 \\ &= 659.2 \text{ kWh} \end{aligned}$$

Freezers that are not replaced, in Virginia:

$$\begin{aligned} \Delta kWh &= \left[-0.95470 + (23.79 \times 0.04536) + (0.46 \times 0.54341) + (15.86 \times 0.12023) \right. \\ &\quad + (0.210.29816) + \left(\frac{3,863}{365} \times 0.55 \times -0.03148 \right) \\ &\quad + \left(\frac{1,436}{365} \times 0.55 \times 0.08217 \right) \left. \right] \times 365 \times 0.86 \\ &= 734.0 \text{ kWh} \end{aligned}$$



Freezers that are replaced, in Virginia:

$$\begin{aligned}
 \Delta kWh &= \left[-0.95470 + (23.79 \times 0.04536) + (0.46 \times 0.54341) + (15.86 \times 0.12023) \right. \\
 &\quad \left. + (0.21 \times 0.29816) + \left(\frac{3,863}{365} \times 0.55 \times -0.03148 \right) \right. \\
 &\quad \left. + \left(\frac{1,436}{365} \times 0.55 \times 0.08217 \right) \right] \times 365 \times 0.86 \\
 &\quad - [(3.166988 \times 15.86 + 83.87742) \\
 &\quad + (4.611654 \times 15.86 + 68.19428)] \times 1 \\
 &= 734.0 - 275.4 \\
 &= 458.6 kWh
 \end{aligned}$$

Freezers that are not replaced, in North Carolina:

$$\begin{aligned}
 \Delta kWh &= \left[-0.95470 + (23.79 \times 0.04536) + (0.46 \times 0.54341) + (15.86 \times 0.12023) \right. \\
 &\quad \left. + (0.21 \times 0.29816) + \left(\frac{2,712}{365} \times 0.55 \times -0.03148 \right) \right. \\
 &\quad \left. + \left(\frac{1,748}{365} \times 0.55 \times 0.08217 \right) \right] \times 365 \times 0.86 \\
 &= 763.3 kWh
 \end{aligned}$$

Freezers that are replaced, in North Carolina:

$$\begin{aligned}
 \Delta kWh &= \left[-0.95470 + (23.79 \times 0.04536) + (0.46 \times 0.54341) + (15.86 \times 0.12023) \right. \\
 &\quad \left. + (0.21 \times 0.29816) + \left(\frac{2,712}{365} \times 0.55 \times -0.03148 \right) \right. \\
 &\quad \left. + \left(\frac{1,748}{365} \times 0.55 \times 0.08217 \right) \right] \times 365 \times 0.86 \\
 &\quad - [(3.166988 \times 15.86 + 83.87742) \\
 &\quad + (4.611654 \times 15.86 + 68.19428)] \times 1 \\
 &= 763.3 - 275.4 \\
 &= 487.8 kWh
 \end{aligned}$$

Summer per measure gross coincident peak demand savings for both refrigerators and freezers are calculated according to the following equations.



Refrigerators that are not replaced in Virginia:

$$\begin{aligned}\Delta kW &= \left(\frac{\Delta kWh}{8,760} \right) \times TAF \times LSAF \\ &= \left(\frac{1,105.9}{8,760} \right) \times 1.23 \times 1.066 \\ &= 0.166 \text{ kW}\end{aligned}$$

Refrigerators that are replaced in Virginia:

$$\begin{aligned}\Delta kW &= \left(\frac{647.8}{8,760} \right) \times 1.23 \times 1.066 \\ &= 0.097 \text{ kW}\end{aligned}$$

Refrigerators that are not replaced in North Carolina:

$$\begin{aligned}\Delta kW &= \left(\frac{1,117.3}{8,760} \right) \times 1.23 \times 1.066 \\ &= 0.167 \text{ kW}\end{aligned}$$

Refrigerators that are replaced in North Carolina:

$$\begin{aligned}\Delta kW &= \left(\frac{659.2}{8,760} \right) \times 1.23 \times 1.066 \\ &= 0.099 \text{ kW}\end{aligned}$$

Freezers that are not replaced in Virginia:

$$\begin{aligned}\Delta kW &= \left(\frac{734.0}{8,760} \right) \times 1.23 \times 1.066 \\ &= 0.110 \text{ kW}\end{aligned}$$

Freezers that are replaced in Virginia:

$$\begin{aligned}\Delta kW &= \left(\frac{458.6}{8,760} \right) \times 1.23 \times 1.066 \\ &= 0.069 \text{ kW}\end{aligned}$$

Freezers that are not replaced in North Carolina:

$$\Delta kW = \left(\frac{763.3}{8,760} \right) \times 1.23 \times 1.066$$



$$= 0.114 \text{ kW}$$

Freezers that are replaced in North Carolina:

$$\begin{aligned} \Delta kW &= \left(\frac{487.8}{8,760} \right) \times 1.23 \times 1.066 \\ &= 0.073 \text{ kW} \end{aligned}$$

4.1.1.5 Sources

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 57-62 and 67-71.

4.1.1.6 Update Summary

The changes to this section, compared with last year, are described in Table 4-4.

Table 4-4: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	New Measure	New section



5 RESIDENTIAL HOME ENERGY ASSESSMENT PROGRAM, DSM PHASE VII

The Residential Home Energy Assessment Program provides energy efficiency measures to homeowners in order to reduce electric use. The measures offered through the program and the sections that contain the savings algorithms for each measure are presented in Table 5-1.

Table 5-1: Home Energy Assessment Program Measure List

End-Use	Measure	Legacy Program	Manual Section
Envelope	Cool Roof	-	Section 5.1.1
Domestic Hot Water	Domestic Hot Water Pipe Insulation	Income & Age Qualifying Home Improvement Program	Section 2.1.1
	Heat Pump Domestic Hot Water Heater	-	Section 5.2.2
	Low-Flow Aerator	Income & Age Qualifying Home Improvement Program	Section 2.1.2
	Low-Flow Showerhead	Income & Age Qualifying Home Improvement Program	Section 2.1.3
	Water Heater Temperature Setback	-	Section 5.1.4
HVAC	Heat Pump Upgrades	-	Section 5.2.1
	Heat Pump Tune-Up	-	Section 5.2.2
	ECM Fan Motors	-	Section 5.2.4
	Duct Insulation	-	Section 5.2.5
	Duct Sealing	-	Section 5.3.5

The program has been offered in Virginia since 2019.

5.1 Building Envelope End Use

5.1.1 Cool Roof

5.1.1.1 Measure Description

The cool roof measure involves the replacement of an existing roof with a roofing material that is designed to reduce the amount of heat absorbed through a home's roof. Cool roof materials have a higher solar reflectance and thermal emittance compared to typical residential roofing products. This reduces the overall heat gain within a home and thereby reduces the cooling load during warm seasons. On the other hand, the decrease in the amount of heat absorbed by the roof also increased the heating load during the cold seasons. Therefore, this measure yields significant energy savings during the warm seasons that are somewhat offset by increased energy usage during the cold season. As such, cool roofs are most beneficial in warm climates.

The baseline condition is the existing home's roofing material whereas the efficient condition is a material that has been rated by the Cool Roof Rating Council and meets ENERGY STAR® roof product performance specifications. Annual electric energy and demand savings are presented for cool roofs according to the rated 3-year reflectance of the installed cool roof product and the type of roof (low-slope, high-slope) on which it is installed.



5.1.1.2 Savings Estimation Approach

Deemed savings estimates for this measure are developed using BEopt™ 2.8, a program developed and maintained by the U.S. Department of Energy for modeling residential energy-efficiency measures using the EnergyPlus simulation engine. Savings will be calculated based on approved customer applications. The BEopt model uses the collected variables as provided in Table 5-2. and well as some default assumptions about the home's construction³⁷ to calculate the energy saved by installing a cool roof. The default assumptions will be informed by the applicant's house attributes (e.g., number of stories) and HVAC system(s) (e.g., heat pump system), but industry standards are assumed for those characteristics not gathered. The kWh term in the equations below is calculated from the results generated from the baseline- and efficient-case BEopt models. TMY3 weather station data will be assigned based upon the home's location.

Per-roof, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = kWh_{base} - kWh_{ee}$$

Per-roof, gross coincident peak demand reduction is calculated according to the following equation:

$$\Delta kW = kW_{base} - kW_{ee}$$

Where:

- ΔkWh = gross annual electric energy savings
- ΔkW = gross coincident peak demand reduction
- kWh_{base} = gross annual energy consumption of the baseline case
- kWh_{ee} = gross annual energy consumption of the efficient case
- kW_{base} = gross coincident peak demand of baseline case
- kW_{ee} = gross coincident peak demand of efficient case

5.1.1.3 Input Variables

The model inputs are based on customer application parameters as shown in Table 5-2.

Table 5-2. Input Parameters for BEopt Cool Roof Models

Component	Type	Value	Units	Source(s)
Total Roof Area	Variable	See customer application	sq.ft.	Customer application
Cool Roof Area	Variable	See customer application	sq.ft.	Customer application
Conditioned Area	Variable	See customer application	sq.ft.	Customer application
Number of Floors	Variable	See customer application	floors	Customer application
Roof Type, Base	Variable	See customer application	-	Customer application
Roof Type, Efficient	Variable	See customer application	-	Customer application
Roof Color, Base	Variable	See customer application	-	Customer application
Roof Color, Efficient	Variable	See customer application	-	Customer application
Home Age	Variable	See customer application	years	Customer application

³⁷ Wilson, E., C. Engebrecht Metzger, S. Horowitz, and R. Hendron. "2014 Building America House Simulation Protocols," for National Renewable Energy Laboratory, NREL/TP-5500-60988, March 2014. (www.energy.gov/sites/prod/files/2014/03/f13/house_simulation_protocols_2014.pdf)



Component	Type	Value	Units	Source(s)
Ceiling Insulation R-value	Variable	See customer application	-	Customer application
Thermal Emittance, Base	Variable	Based on roof type, base	-	Customer application
Thermal Emittance Efficient	Variable	Based on roof type, efficient	-	Customer application
Solar Reflectance, Base	Variable	Based of roof type, base	-	Customer application
Solar Reflectance, efficient	Variable	Based of roof type, efficient	-	Customer application
Above Sheathing Ventilation	Variable	See customer application	-	Customer application
Roof Pitch, Average	Variable	See customer application	-	Customer application
Radiant Barrier	Variable	See customer application	-	Customer application
Duct in Conditioned Space	Variable	See customer application	-	Customer application
Duct Leakage Tested and Sealed	Variable	See customer application	-	Customer application

5.1.1.4 Default Savings

If the proper values are not available, zero savings will be given for both gross annual electric energy savings.

5.1.1.5 Source(s)

The primary source for deemed savings approach is the Texas TRM Residential Measures 2020, pp. 253-284 which uses the BEopt 2.8 Modeling software to calculate energy savings.

5.1.1.6 Update Summary

The changes to this section, compared with last year, are described in Table 5-3.

Table 5-3: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	New Measure	New section

5.2 Domestic Hot Water (DHW) End Use

5.2.1 Domestic Hot Water Pipe Insulation

This measure is also provided by the Residential Income and Age Qualifying Home Improvement Program. The savings are determined using the methodology described in Section 2.1.1.

5.2.2 Heat Pump Domestic Water Heater

5.2.2.1 Measure Description

This measure involves replacing a electric storage water heater with a heat-pump water heater (HPWH) having an input power rating of less than or equal to 12 kW.³⁸ The baseline condition is a new electric storage water heater

³⁸. Mid-Atlantic TRM 2019, p. 193.



satisfying the minimum efficiency standards in effect since December 29, 2016.^{39,40} For this measure, the ENERGY STAR-qualified heat-pump water heater⁴¹ represents the efficient condition.

5.2.2.2 Savings Estimation Approach

The amount of heat contained in the hot water produced per home each year, DHW_{annual} , is calculated as follows:

$$DHW_{annual} = Gallon_{daily} \times Qty_{people} \times 365 \text{ days} \times \gamma_{water} \times (T_{out} - T_{in}) \times 1.0 \frac{Btu}{lb \text{ } ^\circ F}$$

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \frac{DHW_{annual} \times \left(\frac{1}{UEF_{base}} - \frac{1}{UEF_{ee}} \right)}{3,412 \frac{Btu/h}{kW}} + kWh_{cool} - kWh_{heat}$$

The space-conditioning cooling savings by using the heat in the house to heat the water is calculated according to the following equation:⁴²

$$kWh_{cool} = \frac{DHW_{annual} \times \frac{1}{UEF_{ee}} \times LF \times 0.33}{3,412 \frac{Btu/h}{kW} \times COP_{cool}}$$

The heating savings by using the heat in the house to heat the water is calculated according to the following equation:

$$kWh_{heat} = \frac{DHW_{annual} \times \frac{1}{UEF_{ee}} \times LF \times 0.47}{3,412 \frac{Btu/h}{kW} \times COP_{heat}}$$

Per measure, gross coincident demand reduction is fixed as follows:⁴³

$$\Delta kW = 0.17$$

Where:

ΔkWh = per measure gross annual electric energy savings
 ΔkW = per measure gross coincident demand savings
 DHW_{annual} = heat added to annual domestic hot water usage

³⁹ Docket No. EERE-2015-BT-TP-0007. Mid-Atlantic TRM, p. 193.

⁴⁰ The federal minimum standard for water heaters >55 gallon was increased to EF≥2.0, compared to an EF≥0.907 for water heaters ≤55 gallons. Since the standard went into effect, sales of the larger units have declined dramatically. Evaluators in Maryland hypothesize that customers are using a variety of strategies to avoid the higher efficiency standard, including combining multiple smaller water heaters, increasing set points on smaller heaters, etc. To address this concern, some TRM stakeholders recommended that a common practice baseline be used for this measure rather than the minimum federal standard. To maintain consistency with other measures in the Mid-Atlantic TRM, however, the decision was made to use the federal minimum efficiency for the standard baseline, recognizing that individual jurisdictions may depart from the federal standard baseline and use a common practice baseline instead (per Mid-Atlantic TRM 2019, p. 193).

⁴¹ ENERGY STAR® v3.2 Program Requirements for Residential Water Heaters. Mid-Atlantic TRM 2019, p. 193.

⁴² This algorithm calculates the heat removed from the air by subtracting the HPWH electric consumption from the total water heating energy delivered. This is then adjusted to account for the location of the HP unit and the coincidence of the waste with cooling requirements, the efficiency of the central cooling and latent cooling demands. Mid-Atlantic TRM 2019, p. 195.

⁴³ Based on a chart showing summer weekday average electrical demand on page 10 of FEMP Study "Field Testing of Pre-Production Prototype Residential Heat Pump Water Heaters" (http://www1.eere.energy.gov/femp/pdfs/tir_heatpump.pdf). Using data points from the chart, the average delta kW in heat pump mode during the peak hours compared to resistance mode is 0.17 kW.



UEF _{base}	= uniform energy factor (UEF) of base electric storage water heater
UEF _{ee}	= uniform energy factor of efficient heat pump water heater
kWh _{cool}	= cooling savings from conversion of heat in home to water heat
kWh _{heat}	= heating cost from conversion of heat in water to water heat (dependent on heating fuel)
Gallon _{daily}	= gallons per day of hot water usage per person
Qty _{people}	= average number of people per household
Y _{water}	= specific weight of water
T _{out}	= tank temperature
T _{in}	= incoming temperature from well or municipal system
1.0	= heat capacity of water
3,412	= conversion factor from Btu/h to kW
LF	= location factor
0.33	= proportion of removed heat that results in cooling savings ⁴⁴
COP _{cool}	= coefficient of performance (COP) of central air conditioning
0.47	= proportion of removed heat that results in increased space heating load ⁴⁵
COP _{heat}	= coefficient of performance (COP) of electric heating system

5.2.2.3 Input Variables

Table 5-4: Input Values for the Heat Pump Domestic Hot Water Heater Savings Calculations

Component	Type	Value	Unit	Source(s)
DHW _{annual}	Fixed	8,869,183	Btu	Mid-Atlantic TRM 2019, pp. 194-195
UEF _{base}	Variable	See Table 5-5	-	2015 ENERGY STAR EF Standard and 2017 Uniform Energy Factor (UEF) Standard
		Default=0.945		Mid-Atlantic TRM 2019, p. 195 ⁴⁶
UEF _{efficient}	Variable	See customer application	-	Customer application
		Default=2.000		Mid-Atlantic TRM 2019, p. 195 ⁴⁶
Gallon _{daily}	Fixed	18.35	gallon/day	Mid-Atlantic TRM 2019, p. 195 ⁴⁶
Qty _{people}	Fixed	2.48	people	Mid-Atlantic TRM 2019, p. 195 ⁴⁶
Y _{water}	Fixed	8.33	pound/ gallon	Mid-Atlantic TRM 2019, p. 195
T _{out}	Fixed	125.0	°F	Mid-Atlantic TRM 2019, p. 195
T _{in}	Fixed	60.9	°F	Mid-Atlantic TRM 2019, p. 195 ⁴⁷
LF	Variable	Conditioned space=1.0 Unconditioned space=0.0	-	Mid-Atlantic TRM 2019, p. 196
		Default=0.5		

⁴⁴ REMRate determined percentage (33%) of lighting savings that result in reduced cooling loads for several different building configurations in Wilmington, DE, Baltimore, MD and Washington, DC (lighting is used as a proxy for hot water heating since load shapes suggest their seasonal usage patterns are similar). Mid-Atlantic TRM 2019, p. 196.

⁴⁵ REMRate determined percentage (47%) of lighting savings that result in increased heating loads (lighting is used as a proxy for hot water heating since load shapes suggest their seasonal usage patterns are similar). Mid-Atlantic TRM 2019, p. 196.

⁴⁶ 45.5 gallons hot water per day per household/2.48 people per household. US Energy Information Administration, Residential Energy Consumption Survey 2015; EIA RECS demographics for South Atlantic regions. Mid-Atlantic TRM 2019, p. 195.

⁴⁷ Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential Retrofit Programs." April 4, 2014, Appendix E, p. 66. Mid-Atlantic TRM 2019, p. 195.



Component	Type	Value	Unit	Source(s)
COP_{cool}	Variable	See customer application	-	Customer application
		Default=3.08		Mid-Atlantic TRM 2019, p. 196
COP_{heat}	Variable	See customer application	-	Customer application
		Default=2.40		Mid-Atlantic TRM 2019, p. 196-197 ⁴⁸

Table 5-5: Consumer Electric Storage Water Heater Efficiency Criteria

Standard	Baseline		Efficient	
	≥20 and ≤55 gallons	>55 gallons	≤55 gallons	>55 gallons
2015 ENERGY STAR Energy Factor (EF) Standard	0.960 - (0.00300 x V _s)	2.057 -(0.00113 x V _s)	2.0	2.2
2017 Uniform Energy Factor (UEF) Standard	Very small draw pattern (first-hour rating <18 gal.; nom. 10 gal./day)			
	0.8808 -(0.00080 x V _s)	1.9236 -(0.00110 x V _s)	N/A	N/A
	Low draw pattern (first-hour rating ≥18 and <51 gal.; nom. 38 gal./day)			
	0.9254 -(0.00030 x V _s)	2.0440 -(0.00110 x V _s)	N/A	N/A
	Medium draw pattern (first-hour rating ≥51 and <75 gal.; nom. 55 gal./day)			
	0.9307 -(0.00020 x V _s)	2.1171 -(0.00110 x V _s)	2.0	2.2
	High draw pattern (first-hour rating ≥75 gal.; nom. 84 gal./day)			
	0.9349 -(0.00010 x V _s)	2.2418 -(0.00110 x V _s)	2.0	2.3

If first hour rating is unknown, assume medium draw pattern for electric storage water heaters having ≤50-gallon capacity and high draw pattern for those having >50-gallon capacity.

5.2.2.4 Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default gross annual electric energy savings will be assigned according to the sequence of equations that follow. First, the amount of hot water produced per home each year is calculated as follows:

⁴⁸ The default system efficiencies are based on the applicable minimum Federal Standards. In 2006, the Federal Standard for Heat Pumps was adjusted. While one would expect the average system efficiency to be higher than this minimum, the likely degradation of efficiencies over time mean that using the minimum standard is appropriate. Mid-Atlantic TRM 2019, pp. 196-197.



$$\begin{aligned}
 DHW_{annual} &= Gallon_{daily} \times Qty_{people} \times 365 \text{ days} \times \gamma_{water} \times (T_{out} - T_{in}) \times 1.0 \frac{Btu}{lb \text{ } ^\circ F} \\
 &= 18.35 \frac{gallon}{day} \times 2.48 \text{ people} \times 365 \text{ days} \times 8.33 \frac{lb}{gallon} \times (125^\circ F - 60.9^\circ F) \\
 &\quad \times 1.0 \frac{Btu}{lb \text{ } ^\circ F} \\
 &= 8,869,184 \text{ Btu}
 \end{aligned}$$

The cooling savings due to using the heat in the house to heat the water is calculated according to the following equation:⁴⁹

$$\begin{aligned}
 kWh_{cool} &= \frac{DHW_{annual} \times \frac{1}{UEF_{ee}} \times LF \times 0.33}{3,412 \frac{Btu/h}{kW} \times COP_{cool}} \\
 &= \frac{8,869,184 \text{ Btu} \times \frac{1}{2.00} \times 0.5 \times 0.33}{3,412 \frac{Btu/h}{kW} \times 3.08} \\
 &= 69.6 \text{ kWh}
 \end{aligned}$$

The heating savings due to using the heat in the house to heat the water is calculated according to the following equation:

$$\begin{aligned}
 kWh_{heat} &= \frac{DHW_{annual} \times \frac{1}{UEF_{ee}} \times LF \times 0.47}{3,412 \frac{Btu/h}{kW} \times COP_{heat}} \\
 &= \frac{8,869,184 \text{ Btu} \times \frac{1}{2.00} \times 0.5 \times 0.47}{3,412 \frac{Btu/h}{kW} \times 2.40} \\
 &= 127.3 \text{ kWh}
 \end{aligned}$$

Gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \frac{DHW_{annual} \times \left(\frac{1}{UEF_{base}} - \frac{1}{UEF_{ee}} \right)}{3,412 \frac{Btu/h}{kW}} + kWh_{cool} - kWh_{heat}$$

⁴⁹ This algorithm calculates the heat removed from the air by subtracting the HPWH electric consumption from the total water heating energy delivered. This is then adjusted to account for the location of the HP unit and the coincidence of the waste with cooling requirements, the efficiency of the central cooling and latent cooling demands. Mid-Atlantic TRM 2019, p. 195.



$$= \frac{8,869,184 \text{ Btu} \times \left(\frac{1}{0.945} - \frac{1}{2.00} \right)}{3,412 \frac{\text{Btu/h}}{\text{kW}}} + 69.63 \text{ kWh} - 127.26 \text{ kWh}$$

$$= 1,393.4 \text{ kWh}$$

5.2.2.5 Source(s)

The primary sources for this deemed savings approach are the Mid-Atlantic TRM 2019, pp. 193-200.

5.2.2.6 Update Summary

The changes to this section, compared with last year, are described in Table 5-6.

Table 5-6: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	New Measure	New section

5.2.3 Low-Flow Aerator

This measure is also provided by the Residential Income and Age Qualifying Home Improvement Program. The savings are determined using the methodology described in Section 2.1.2.

5.2.4 Low-Flow Showerhead

This measure is also provided by the Residential Income and Age Qualifying Home Improvement Program. The savings are determined using the methodology described in Section 2.1.3.

5.2.5 Water Heater Temperature Setback

5.2.5.1 Measure Description

This measure involves lowering the thermostat setting for an existing electric storage water heater. The savings are provided to account for the resulting reduction in standby losses.

The baseline condition is an electric storage water heater with its thermostat set at ≥ 130 °F. The efficient condition is an electric storage water heater with its thermostat set 10 °F lower, but not lower than 120 °F.

5.2.5.2 Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \frac{U \times A \times (T_{base} - T_{ee}) \times HOU}{3,412 \text{ Btu/kWh} \times \eta_{DHW}}$$



Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh}{8,760 \text{ hr}}$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident demand savings
U	= overall heat transfer coefficient of storage tank
A	= surface area of storage tank
T_{base}	= temperature setting of storage water heater prior to measure
T_{ee}	= temperature setting of storage water heater subsequent to measure
HOU	= annual hours of use
η_{DHW}	= recovery efficiency of electric, domestic hot water heater with storage tank

5.2.5.3 Input Variables

Table 5-7: Input Values for the Water Heater Temperature Setback Savings Calculations

Component	Type	Value	Unit	Source(s)
U	Fixed	0.083	Btu/h· °F· ft ²	Mid-Atlantic TRM 2019, p. 207
A	Variable	See customer application	ft ²	Customer application
		Default: assume 50-gallon tank thus A = 24.99		Mid-Atlantic TRM 2019, p. 207
T_{base}	Fixed	135	°F	Mid-Atlantic TRM 2019, p. 208
T_{ee}	Fixed	120	°F	Mid-Atlantic TRM 2019, p. 208
HOU	Fixed	8,760	hours, annual	No. of hours in a year
η_{DHW}	Fixed	0.98	-	Mid-Atlantic TRM 2019, p. 208 ⁵⁰

5.2.5.4 Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values. The default per- measure gross annual electric energy savings will be assigned according to the following calculation:

$$\begin{aligned} \Delta kWh &= \frac{U \times A \times (T_{base} - T_{ee}) \times HOU}{3,412 \frac{Btu/h}{kW} \times \eta_{DHW}} \\ &= \frac{0.083 \times 24.99 \text{ ft}^2 \times (135^\circ\text{F} - 120^\circ\text{F}) \times 8,760 \text{ hr}}{3,412 \text{ Btu/kWh} \times 0.98} \\ &= 81.5 \text{ kWh} \end{aligned}$$

⁵⁰ Electric storage water heaters have a minimum recovery efficiency of 98%: <http://www.ahridirectory.org/ahridirectory/pages/home.aspx>. Mid-Atlantic TRM 2019, p. 208.



The default per measure gross coincident demand reductions will be assigned according to the following calculation:

$$\begin{aligned}\Delta kW &= \frac{\Delta kWh}{8,760 \text{ hr}} \\ &= \frac{81.5 \text{ kWh}}{8,760 \text{ hr}} \\ &= 0.009 \text{ kW}\end{aligned}$$

5.2.5.5 Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 207-208.

5.2.5.6 Update Summary

The changes to this section, compared with last year, are described in Table 5-8.

Table 5-8: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	New Measure	New section

5.3 Heating Ventilation and Air Conditioning End Use

5.3.1 Heat Pump Upgrade

5.3.1.1 Measure Description

This measure upgrades an existing air-source heat pump or a ductless, mini-split heat pump with a new one—of like kind—that meets the ENERGY STAR efficiency standards as provided in Table 10-7 of Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings. A ductless, mini-split heat pump (DHP) is a type of heat pump with an outdoor condensing unit connected via a refrigerant line to one or more indoor evaporator coil(s). Heat pumps deliver cooling with an efficiency that is the same as or higher than standard central AC units, but they can also deliver heat.

The baseline condition for the measure is an air-source and ductless split-system heat pump that meets the minimum Federal standards defined above. The efficient condition is an air source and ductless split-system heat pump that meets the ENERGY STAR standards defined above or other specifications as determined by the programs.

5.3.1.2 Savings Estimation Approach

Per measures, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \Delta kWh_{cool} + \Delta kWh_{heat}$$



Cooling Savings:

$$\Delta kWh_{cool} = Size_{cool} \times \left(\frac{1}{SEER_{base}} - \frac{1}{SEER_{ee}} \right) \times EFLH_{cool} \times \frac{1 \text{ kBtu/h}}{1,000 \text{ Btu/h}}$$

Heating Savings:

$$\Delta kWh_{heat} = Size_{heat} \times \left(\frac{1}{HSPF_{base}} - \frac{1}{HSPF_{ee}} \right) \times EFLH_{heat} \times \frac{1 \text{ kBtu/h}}{1,000 \text{ Btu/h}}$$

Per measure, gross coincident demand reduction is calculated according to the following equation:

$$\Delta kW = Size_{cool} \times \left(\frac{1}{EER_{base}} - \frac{1}{EER_{ee}} \right) \times \frac{1 \text{ kBtu/h}}{1,000 \text{ Btu/h}} \times CF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident demand reduction
- $Size_{cool}$ = cooling capacity of efficient heat pump
- $Size_{heat}$ = heating capacity of efficient heat pump
- $EFLH_{cool}$ = equivalent full load cooling hours
- $EFLH_{heat}$ = equivalent full load heating hours
- CF = coincidence factor
- $SEER_{base}$ = seasonal energy efficiency ratio (SEER) of the existing or baseline air conditioning equipment.
It is used for heat pumps and AC units that are smaller than 65,000 Btu/h.
- $SEER_{ee}$ = seasonal energy efficiency ratio (SEER) of the installed air conditioning equipment. It is used for heat pumps and AC units that are smaller than 65,000 Btu/h.
- $HSPF_{base}$ = heating seasonal performance factor (HSPF) of existing or baseline heat pump. HSPF is used in heating savings for air-source heat pumps.
- $HSPF_{ee}$ = heating seasonal performance factor (HSPF) of installed heat pump. HSPF is used in heating savings for air-source heat pumps.
- EER_{base} = energy efficiency ratio (EER) of baseline air conditioning equipment. EER is used to analyse demand performance of heat pumps and AC units.
- EER_{ee} = energy efficiency ratio (EER) of installed air conditioning equipment. EER is used to analyse performance of heat pumps and AC units.

5.3.1.3 Input Variables

Table 5-9: Input Values for Heat Pump Upgrade Savings Calculations

Component	Type	Value	Unit	Source(s)
$Size_{cool}$	Variable	See customer application ⁵¹	Btu/h	Customer application
$Size_{heat}$	Variable	See customer application ⁵²	Btu/h	Customer application
		Default = $Size_{cool}$		Customer-provided cooling size

⁵¹ Residential cooling system size is assumed to be less than 5.4 tons (65 kBtu/h).

⁵² When customer-provided heating system size is <80% or >156% of customer-provided cooling system size, a default value will be used, instead. In such instances, it is assumed that the heating system size was incorrectly documented. The acceptable range is based on a review of the AHRI database across numerous manufacturers and heat pump types.



Component	Type	Value	Unit	Source(s)
EFLH _{cool}	Variable	See Table 10-5 in Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours, annual	Mid-Atlantic TRM 2019, p. 89
EFLH _{heat}	Variable	See Table 10-5 in Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours, annual	Mid-Atlantic TRM 2019, p. 91
HSPF/SEER/EER _{base}	Variable	See Table 10-7 in Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings	kBtu/kWh (except COP is dimensionless)	10 CFR Ch. II (1-1-12 Edition) §430.32
HSPF/SEER/ER _{ee}	Variable	See customer application	kBtu/kWh (except COP is dimensionless)	Customer application
CF	Fixed	0.30	-	Mid-Atlantic TRM 2019, p. 124, PJM Summer Peak (June to August weekdays between 2 pm and 6 pm)

5.3.1.4 Default Savings

If the proper values are not available, zero savings will be given for both gross annual electric energy savings and gross demand energy savings.

5.3.1.5 Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 87-97.

5.3.1.6 Update Summary

The changes to this section, compared with last year, are described in Table 5-10.

Table 5-10: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	Added acceptable bounds for cooling capacity and the ratio of heating to cooling capacity.
v10	New Measure	New section

5.3.2 Heat Pump Tune-Up

5.3.2.1 Measure Description

This measure realizes energy savings by tuning up an existing air-source and ductless mini-split heat pump system.

5.3.2.2 Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = Size \times \frac{12 \text{ kBtu/h}}{ton} \times \left(\frac{EFLH_{cool}}{SEER} + \frac{EFLH_{heat}}{HSPF} \right) \times ESF$$



Per measure, gross coincident demand reductions are calculated according to the following equations:

$$\Delta kW_{cool} = Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{SEER} \times DRF$$

$$\Delta kW_{heat} = Size \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \frac{1}{HSPF} \times DRF$$

$$\Delta kW = MAX(\Delta kW_{cool}, \Delta kW_{heat})$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident demand reductions
Size	= cooling capacity of heat pump
SEER	= seasonal energy efficiency ratio of heat pump
EER	= energy efficiency ratio of heat pump
HSPF	= heating seasonal performance factor of heat pump
$EFLH_{cool}$	= equivalent cooling full load hours
$EFLH_{heat}$	= equivalent heating FLH
ESF	= annual energy savings factor attributed to tune-up
DRF	= demand reduction savings factor attributed to tune-up

5.3.2.3 Input Variables

Table 5-11: Input Values for Heat Pump Tune-Up Savings Calculations

Component	Type	Value	Unit	Source(s)
Size	Variable	See customer application ⁵³	tons	Customer application
SEER/EER/ HSPF	Variable	See customer application ⁵⁴	Btu/W- hr	Customer application
		Default: See Table 10-7 in Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings		Mid-Atlantic TRM 2019, p. 87 ^{55 56}
$EFLH_{cool}$	Fixed	See Table 10-5 in Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours, annual	Mid-Atlantic TRM 2019, p. 89
$EFLH_{heat}$	Fixed	See Table 10-5 in Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours, annual	Mid-Atlantic TRM 2019, p. 91
ESF	Fixed	0.05	-	Massachusetts TRM 2014, p. 74 ⁵⁷

⁵³ Residential cooling system size is assumed to be less than 5.4 tons (65 kBtu/h)

⁵⁴ If customer application efficiency values are outside of reasonable bounds, the default value is used.

⁵⁵ Mid-Atlantic TRM 2019, p. 87. ENERGY STAR and Minimum Federal Standard

⁵⁶ Actual customer application efficiency ratings are typically considered inaccurate due to presumed age of system and resulting deterioration of efficiency

⁵⁷ Massachusetts TRM 2014, p. 74. "Massachusetts Common Assumption."



Component	Type	Value	Unit	Source(s)
DRF	Fixed	0.05	-	Massachusetts TRM 2014, p. 74

5.3.2.4 Default Savings

If the proper values are not available, zero savings will be given for both gross annual electric energy savings and gross demand energy savings.

5.3.2.5 Source(s)

The primary sources for this deemed savings approach are the Massachusetts TRM 2014, p. 74, and the Mid-Atlantic TRM 2016, pp. 103-110.

5.3.2.6 Update Summary

The changes to this section, compared with last year, are described in Table 5-12.

Table 5-12: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	Added acceptable bounds for cooling capacity and efficiency values. Removed default cooling capacity as this is a required field
v10	New Measure	New section

5.3.3 ECM Fan Motor

5.3.3.1 Measure Description

Conventional natural-gas furnaces and air-conditioning systems that contain a permanent split capacitor (PSC) blower motor to deliver the conditioned air to the home are eligible to be replaced with a brushless DC motor, commonly called an electronically commutated motor (ECM). The baseline condition is a furnace or air handler with a PSC motor at the fan; the efficient condition is an ECM motor in place of the PSC motor.

5.3.3.2 Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = \Delta kWh_{cool} + \Delta kWh_{heat} + \Delta kWh_{fan}$$

$$\Delta kWh_{cool} = tons_{cool} \times EFLH_{cool} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{1}{SEER_{base}} - \frac{1}{SEER_{ee}} \right) \times AC$$

$$\Delta kWh_{heat} = EFLH_{heat} \times \Delta kW_{heat}$$



$$\Delta kWh_{fan} = HOU_{fan} \times \Delta kW_{fan}$$

Summer per measure coincident peak demand reduction is calculated according to the following equation:

$$\Delta kW = tons_{cool} \times \frac{12 \text{ kBtu/h}}{\text{ton}} \times \left(\frac{1}{EER_{base}} - \frac{1}{EER_{ee}} \right) \times CF \times AC$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident demand reduction
- tons = cooling capacity of equipment
- $EFLH_{cool}$ = equivalent full-load hours for cooling
- $SEER_{base}$ = baseline-case Seasonal Energy Efficiency Rating (SEER)
- $SEER_{ee}$ = efficient-case Seasonal Energy Efficiency Rating (SEER)
- AC = proportion of furnaces with cooling
- $EFLH_{heat}$ = equivalent full-load hours for heating
- ΔkW_{heat} = electric energy savings in heating mode
- HOU_{fan} = annual hours of fan-only operation
- ΔkW_{fan} = electric energy savings in fan-only mode
- EER_{base} = baseline-case Energy Efficiency Rating (EER)
- EER_{ee} = efficient-case Energy Efficiency Rating (EER)
- CF = Coincidence Factor

5.3.3.3 Input Variables

Table 5-13: Input Values for ECM Fan Motors Savings Calculations

Component	Type	Value	Units	Sources
$tons_{cool}$	Variable	See customer application ⁵⁸	tons, cooling	Customer application
ΔkW_{fan}	Fixed	211.14	kWh	Wisconsin TRM 2019, pg. 968
$EFLH_{cool}$	Variable	See Table 10-5 of Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours, annual	Mid-Atlantic TRM 2019, p. 89
$SEER_{base}$	Fixed	12.0	Btu/W-hr	Wisconsin TRM 2019, p. 968
$SEER_{ee}$	Fixed	13.0	Btu/W-hr	
AC	Fixed	1.00	-	

⁵⁸ Residential cooling system size is assumed to be less than 5.4 tons (65 kBtu/h)



Component	Type	Value	Units	Sources
EFLH_{heat}	Variable	See Table 10-5 of Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours, annual	Mid-Atlantic TRM 2019, p. 90
ΔkW_{heat}	Variable	0.116	kW	Wisconsin TRM 2019, pg. 968. (Default Source: Focus on Energy, Deemed savings report 2014, CADMUS metering study)
HOU_{fan}	Fixed	1,020	hours, annual	Wisconsin TRM 2019, pg. 968
ΔkW_{fan}	Fixed	0.207	kW	Wisconsin TRM 2019, pg. 968 (Default Source: Focus on Energy, Deemed savings report 2014, CADMUS metering study)
EER_{base}	Fixed	10.5	Btu/W-hr	Wisconsin TRM 2019, p. 968
EER_{ee}	Fixed	11.0	Btu/W-hr	Wisconsin TRM 2019, p. 968
CF	Fixed	0.68	-	Wisconsin TRM 2019, p. 968

5.3.3.4 Default Savings

If the proper values are not available, zero savings will be given for both gross annual electric energy savings and gross demand energy savings Source(s)

The primary source for this deemed savings approach is the Wisconsin TRM 2019, pp. 967-968.

5.3.3.5 Update Summary

The changes to this section, compared with last year, are described in Table 5-14.

Table 5-14: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	Added acceptable bounds for cooling capacity and removed default cooling capacity and default savings as this is a required field.
v10	New Measure	New section



5.3.4 Duct Insulation

5.3.4.1 Measure Description

Energy and demand savings are realized through reductions in the home cooling and heating loads by insulating ductwork in unconditioned areas (e.g., attic with floor insulation, vented crawlspace, unheated garages). Basements shall be considered conditioned spaces.

The baseline condition is the existing uninsulated or poorly insulated ductwork in unconditioned spaces. The efficient condition is ductwork in unconditioned areas that has been insulated.

5.3.4.2 Savings Estimation approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\begin{aligned}\Delta kWh &= \Delta kWh_{cool} + \Delta kWh_{heat} \\ \Delta kWh_{cool} &= \left(\frac{1}{R_{base}} - \frac{1}{R_{base} + R_{ee}} \right) \times Length \times Perimeter \times EFLH_{cool} \times \Delta T_{cool,avg}. \\ &\quad \times \left(\frac{1}{1,000 \text{ W/kW} \times SEER} \right) \\ \Delta kWh_{heat} &= \left(\frac{1}{R_{base}} - \frac{1}{R_{base} + R_{ee}} \right) \times Length \times Perimeter \times EFLH_{heat} \times \Delta T_{heat,avg}. \times \\ &\quad \left(\frac{1}{3,412 \text{ Btu/kWh} \times HSPF} \right)\end{aligned}$$

Summer per measure gross coincident peak demand reduction is calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh_{cool}}{EFLH_{cool}} \times CF$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross summer coincident demand reduction
R_{base}	= duct heat loss coefficient of existing duct and insulation
R_{ee}	= duct heat loss coefficient with new insulation
Length	= length of the duct exposed to the unconditioned space that has been insulated
Perimeter	= perimeter of the duct exposed to the unconditioned space that has been insulated
$EFLH_{cool}$	= Equivalent Full Load Hours of cooling
$\Delta T_{cool,avg.}$	= average temperature difference during cooling season between outdoor air temperature, assuming 60°F supply air temperature
SEER	= Seasonal Energy Efficiency Ratio (SEER) of the cooling system
$EFLH_{heat}$	= Equivalent Full Load Hours of heating
$\Delta T_{heat,avg.}$	= Average temperature difference during heating season between outdoor air temperature, assuming 115°F supply air temperature
HSPF	= efficiency of the heating system
CF	= summer system peak coincidence factor for cooling



5.3.4.3 Input Variables

Table 5-15: Input Values for Duct Insulation Savings Calculations

Component	Type	Value	Units	Sources
R_{base}	Fixed	Default: 1.0 minimum for uninsulated duct	hr-°F-ft ² /Btu	Iowa 2019 Res TRM, pg. 215
R_{ee}	Variable	See customer application	hr-°F-ft ² /Btu	Customer application
		Default: 6.0		Iowa 2019 Res TRM, pg. 215.
Length	Variable	See customer application	ft	Customer application
		Default: 10		Engineer estimate
Perimeter	Fixed	1.57 ⁵⁹	ft	Iowa 2019 Res TRM, p. 215
EFLH_{cool}	Variable	Table 10-5:	hours	Mid-Atlantic TRM 2019, p. 89
ΔT_{cool,avg.}	Variable	Default: VA: 20.0 NC: 18.9	°F	Iowa 2019 Res TRM, pg. 215. Values are derived from TMY data of Elizabeth City and Rocky Mount-Wilson (for NC), and Richmond (for VA), using 60°F supply temperature and an average OA temperature. ⁶⁰
SEER/HSPF	Variable	See customer application ⁶¹	kBtu/kWh	Customer application
		Default: See Table 10-7 in Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings		Mid-Atlantic TRM 2019, p. 89
EFLH_{heat}	Variable	See Table 10-5 of Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours	Mid-Atlantic TRM 2019, p. 90
ΔT_{heat,avg.}	Variable	Default: VA: 64.9 NC: 61.6	°F	Iowa 2019 Res TRM, pg. 215. Values are derived from TMY data of Elizabeth City and Rocky Mount-Wilson (for NC), and Richmond (for VA), using 115°F supply temperature and an average OA temperature. ⁶²
CF	Fixed	Default: 0.69	-	Mid-Atlantic 2019 TRM, page 84.

5.3.4.4 Default Savings

If the proper values are not supplied, a default savings may be applied using conservative input values.

⁵⁹ Based on an assumed circumference of 6 inches and circular duct (0.5 ft x 3.14 = 1.57)

⁶⁰ Cooling season is estimated as May through August, only during 8 AM to 8 PM each day. See Iowa TRM pg. 215, footnote 568.

⁶¹ If customer application efficiency values are outside of reasonable bounds, the default value is used.

⁶² Heating Season is estimated as September through April. See Iowa TRM, pg. 215, footnote 568.



The default per measure gross annual electric energy savings will be assigned according to the following calculation: (e.g., for residential homes in Virginia, with Central Air SEER=13, heat pump COP=2.0, and 10 ft. of uninsulated standard 6-inch round duct in an unconditioned space).

$$\begin{aligned}\Delta kWh_{cool} &= \left(\frac{1}{R_{base}} - \frac{1}{R_{base} + R_{ee}} \right) \times Area \times EFLH_{cool} \times \Delta T_{cool,avg.} \times \left(\frac{1}{1,000 \text{ W/kW} \times \eta_{cool}} \right) \\ &= \left(\frac{1}{1.0} - \frac{1}{1.0 + 6.0} \right) \times (\pi \times 0.5 \text{ ft} \times 10 \text{ ft}) \times 613 \text{ hours} \times 20.0^\circ \text{F} \times \left(\frac{1}{1,000 \text{ W/kW} \times 13.0} \right) \\ &= 12.7 \text{ kWh} \\ kWh_{heat} &= \left(\frac{1}{R_{base}} - \frac{1}{R_{base} + R_{ee}} \right) \times Area \times EFLH_{heat} \times \Delta T_{avg,heat} \times \left(\frac{1}{3,412 \text{ Btu/kWh} \times \eta_{heat}} \right) \\ &= \left(\frac{1}{1.0} - \frac{1}{1.0 + 6.0} \right) \times (\pi \times 0.5 \text{ ft} \times 10 \text{ ft}) \times 789 \text{ hours} \times 64.9^\circ \text{F} \times \left(\frac{1}{3,412 \text{ Btu/kWh} \times 2.0} \right) \\ &= 101.0 \text{ kWh}\end{aligned}$$

The default summer per measure gross coincident peak demand reduction will be assigned according to the following calculation:

$$\begin{aligned}\Delta kW &= \frac{\Delta kWh_{cool}}{EFLH_{cool}} \times CF \\ &= \frac{12.7 \text{ kWh}}{613 \text{ hours}} \times 0.68 \\ &= 0.014 \text{ kW}\end{aligned}$$

5.3.4.5 Source(s)

The primary source for this deemed savings approach is the Iowa TRM 2019, pp. 214-217. Other assumptions such as heating/cooling full load hours and temperature differences are based on NOAA TMY data estimations.

5.3.4.6 Update Summary

The changes to this section, compared with last year, are described in Table 5-16.

Table 5-16: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Equation	Modified kWh cooling and heating equations to include the R_{base} in the efficient case as the total R-value will be additive.
	Inputs	- Adjusted R_{efficient} default to account for the modification to the kWh equations - Added acceptable bounds for efficiency values
v10	New Measure	New section



5.3.5 Duct Sealing

5.3.5.1 Measure Description

This measure realizes energy savings by identifying and sealing leaky duct work in unconditioned space using mastic sealant or metal tape.

Three methodologies for estimating the savings associated with sealing the ducts are provided. The first method requires the use of a blower door and the second requires the use of a duct blaster.

1. Modified Blower Door Subtraction - this technique is described in of the Energy Conservatory Blower Door Manual:

<http://energyconservatory.com/wp-content/uploads/2017/08/Blower-Door-Subtraction-Method.pdf>

2. Total Leakage Test / Aerosol Test Equipment – this technique is described in detail on p. 18 – 24 of the Energy Conservatory Duct Blaster Manual:

<https://energyconservatory.com/wp-content/uploads/2014/07/Duct-Blaster-Manual-Series-B-DG700.pdf>

3. Duct Blaster Testing – this technique is described in detail on p. 16 of the RESNET Standard, Test 803.7:

<https://energyconservatory.com/wp-content/uploads/2014/09/RESNET-Standards-Chapter-8.pdf>

4. Prescriptive – this method will make assumptions about the pre- and post-sealing leakage proportions.

The existing baseline condition is leaky duct work within the unconditioned space. The efficient condition is sealed duct work throughout the unconditioned space in the home.

5.3.5.2 Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to duct leakage reduction and based on the methodology used:

Methodology 1: Modified Blower Door Subtraction Leakage

$$cfm50_{DL} = (cfm50_{whole\ house} - cfm50_{envelope\ only}) \times SCF$$

$$\Delta cfm25_{DL} = (Pre_cfm50_{DL} - Post_cfm50_{DL}) \times 0.64 \times (SLF + RLF)$$

Per measure, gross annual electric energy savings are calculated according to the following equations:

$$\Delta kWh = \Delta kWh_{cool} + \Delta kWh_{heat}$$

$$\Delta kWh_{cool} = \frac{\Delta cfm25_{DL} \times EFLH_{cool} \times 30 \frac{Btu/h}{cfm}}{1,000 \frac{W}{kW} \times SEER}$$

$$\Delta kWh_{heat} = \frac{\Delta cfm25_{DL} \times EFLH_{heat} \times 293.1 \frac{kW}{MMBtu} \times 30 \frac{Btu/h}{cfm}}{1,000,000 \frac{Btu}{MMBtu} \times COP}$$



Methodology 2: Total Leakage Test / Aerosol Test Equipment

$$\Delta cfm25_{DL} = (Pre_cfm25_{DL} - Post_cfm25_{DL}) * DLF$$

Per measure, gross annual electric energy savings are calculated according to the following equations:

$$\begin{aligned} \Delta kWh &= \Delta kWh_{cool} + \Delta kWh_{heat} \\ \Delta kWh_{cool} &= \frac{\Delta cfm25_{DL} \times EFLH_{cool} \times 30 \frac{Btu/h}{cfm}}{1,000 \frac{W}{kW} \times SEER} \\ \Delta kWh_{heat} &= \frac{\Delta cfm25_{DL} \times EFLH_{heat} \times 293.1 \frac{kW}{MMBtu} \times 30 \frac{Btu/h}{cfm}}{1,000,000 \frac{Btu}{MMBtu} \times COP} \end{aligned}$$

Methodology 3: Duct Blaster Testing

Per measure, gross annual electric energy savings are calculated according to the following equations:

$$\begin{aligned} \Delta kWh &= \Delta kWh_{cool} + \Delta kWh_{heat} \\ \Delta kWh_{cool} &= \frac{(Pre_cfm25_{DL} - Post_cfm25_{DL}) \times EFLH_{cool} \times 30 \frac{Btu/h}{cfm}}{1,000 \frac{W}{kW} \times SEER} \\ \Delta kWh_{heat} &= \frac{(Pre_cfm25_{DL} - Post_cfm25_{DL}) \times EFLH_{heat} \times 293.1 \frac{kW}{MMBtu} \times 30 \frac{Btu/h}{cfm}}{1,000,000 \frac{Btu}{MMBtu} \times COP} \end{aligned}$$

After obtaining gross annual electric energy savings from one of the above methods, per measure, gross coincident demand reductions are calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh_{cool}}{EFLH_{cool}} \times CF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkWh_{cool} = gross annual electric energy cooling savings
- ΔkWh_{heat} = gross annual electric energy heating savings
- ΔkW = per measure gross coincident demand reductions
- $cfm50_{DL}$ = duct leakage, calculate pre & post of $cfm50_{whole\ house}$ and $cfm50_{envelope\ only}$
- $\Delta cfm25_{DL}$ = duct leakage reduction
- Pre_cfm25_{DL} = duct leakage in CFM25 as measured by duct blaster test before sealing
- $Post_cfm25_{DL}$ = duct leakage in CFM25 as measured by duct blaster test after sealing
- $cfm50_{whole\ house}$ = standard blower door test result finding cubic feet per minute at 50 Pascal pressure differential
- $cfm50_{envelope\ only}$ = blower door test result finding cubic feet per minute at 50 Pascal pressure differential with all supply and return registers sealed



- SCF = subtraction correction factor used to account for underestimation of duct leakage due to connections between duct system and the home. This value is determined by measuring pressure in duct system with registers sealed and using look up table provided by Energy Conservatory.
- SLF = supply loss factor; percentage of leaks sealed located in supply ducts x 1⁶³
- RLF = return loss factor; percentage of leaks sealed located in return ducts x 0.5⁶⁴
- $\Delta\text{cfm}_{25\text{DL}}$ = duct leakage reduction in CFM25
- $\text{EFLH}_{\text{cool}}$ = equivalent cooling full load hours (FLH)
- $\text{EFLH}_{\text{heat}}$ = equivalent heating full load hours (FLH)
- SEER = seasonal energy efficiency ratio of air conditioning equipment
- COP = coefficient of performance of heating equipment⁶⁵
- DLF = duct leakage to outside factor

5.3.5.3 Input Variables

Table 5-17: Input Values for Duct Sealing Savings Calculations

Component	Type	Value	Units	Sources
cfm50_{whole house}	Variable	See customer application	cfm	Customer application
cfm50_{envelope only}	Variable	See customer application	cfm	Customer application
SCF	Variable	See Table 5-18	-	Mid-Atlantic TRM 2019, p. 110
SLF	Fixed	0.50	-	Mid-Atlantic TRM 2019, p. 111 ⁶⁶
RLF	Fixed	0.25	-	Mid-Atlantic TRM 2019, p. 111 ⁶⁷
Pre_cfm25_{DL}	Variable	See customer application Prescriptive method default = 30% x Btu/h / (12,000 Btu/ton-h) x 400 cfm/ton	cfm	Customer application Dominion Residential Duct Testing Program participant data ⁶⁸
Post_cfm25_{DL}	Variable	See customer application Prescriptive method default = 15% x Btu/h / (12,000 Btu/ton-h) x 400 cfm/ton	cfm	Customer application Dominion Residential Duct Testing Program participant data
$\Delta\text{cfm}_{25\text{DL}}$	Variable	See duct leakage calculations	cfm	Mid-Atlantic TRM 2019, p. 111

⁶³ Mid-Atlantic TRM 2019, p. 111. Assumes that for each percent of supply air loss there is one percent annual energy penalty. This assumes supply side leaks are direct losses to the outside and are not recaptured back to the house. This could be adjusted downward to reflect regain of usable energy to the house from duct leaks. For example, during the winter some of the energy lost from supply leaks in a crawlspace will probably be regained back to the house (sometimes 1/2 or more may be regained). More information provided in "Appendix E Estimating HVAC System Loss From Duct Airtightness Measurements" <https://energyconservatory.com/wp-content/uploads/2014/07/Duct-Blaster-Manual-Series-B-DG700.pdf>. Accessed 10/01/2019.

⁶⁴ Mid-Atlantic TRM 2019, p. 111. Assumes that for each percent of return air loss there is a half percent annual energy penalty. Note that this assumes that return leaks contribute less to energy losses than do supply leaks. This value could be adjusted upward if there was reason to suspect that the return leaks contribute significantly more energy loss than "average" (e.g., pulling return air from a super-heated attic), or can be adjusted downward to represent significantly less energy loss (e.g. pulling return air from a moderate temperature crawl space). More information provided in "Appendix E Estimating HVAC System Loss From Duct Airtightness Measurements" from <https://energyconservatory.com/wp-content/uploads/2014/07/Duct-Blaster-Manual-Series-B-DG700.pdf>. Accessed 10/01/2019.

⁶⁵ If a HSPF value is provided for residential split heat pump systems, COP = HSPF x 3.412.

⁶⁶ Mid-Atlantic TRM 2019, p. 111. Assumes 50% of leaks are in supply ducts.

⁶⁷ Mid-Atlantic TRM 2019, p. 111. Assumes 50% of leaks are in return ducts.

⁶⁸ DNV GL reviewed the customer application data on total leakage duct blaster method PreCFM25DL percentages in the Residential Duct Testing Program from program start dates through the end of 2014 (12/31/2014). The average pre-sealing duct leakage percentage (PreCFM25DL / (system size in tons x 400 CFM/ton)) was 30% for VA customers. There were no NC participants in this program at the end of 2014. To calculate customer specific PreCFM25DL, 30% was converted to 289 CFM for VA and 287 CFM for NC. For VA, the calculation = 28,903Btu/h 400CFM/ton x 30% / 12000 Btu/ton-hr, assuming a default of 28,903 Btu/h for Richmond, VA. These values were not updated for 2016 as average heat pump capacity varied little between 2014 and 2015.



Component	Type	Value	Units	Sources
EFLH_{cool}	Fixed	See Table 10-5 of Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours (annual)	Mid-Atlantic TRM 2019, p. 89
EFLH_{heat}	Fixed	See Table 10-5 of Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment	hours (annual)	Mid-Atlantic TRM 2019, p. 90
SEER	Variable	See customer application	Btu/W-h	Customer application
		Default: see Table 10-7 in Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings		Mid-Atlantic TRM 2019, pp. 111-112, based on Table C403.2.3(2) of 2012 IECC
COP	Variable	See customer application	-	Customer application
		Default: see Table 10-7 in Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings		Mid-Atlantic TRM 2019, p. 114, which is based on Table C403.2.3(2) of 2012 IECC
DLF	Variable	1 floor: 0.75 2 floors: 0.67	-	DEER Update Study (2004-2005), pp. 8-19 ⁶⁹
CF	Fixed	0.69	-	Mid-Atlantic TRM 2019, p. 116 ⁷⁰

Table 5-18: Correction Table for Blower Door Subtraction⁷¹

House to Duct Pressure (Taped Off)	Subtraction Correction Factor (SCF)	House to Duct Pressure (Taped Off)	Subtraction Correction Factor (SCF)
50	1.00	30	2.23
49	1.09	29	2.32
48	1.14	28	2.42
47	1.19	27	2.52
46	1.24	26	2.64
45	1.29	25	2.76
44	1.34	24	2.89
43	1.39	23	3.03
42	1.44	22	3.18
41	1.49	21	3.35

⁶⁹ Itron prepared for SCE, Database for Energy Efficiency Resources (DEER) Update Study, Final Report (2004 – 2005), p. 8-19, http://deeresources.com/files/deer2005/downloads/DEER2005UpdateFinalReport_ItronVersion.pdf. Accessed 8/16/2016.

⁷⁰ Mid-Atlantic TRM 2019, p. 116. Summer system peak coincidence factor for central A/C (hour ending 5pm on hottest summer weekday). "Based on BG&E "Development of Residential Load Profiler for Central Air Conditioner and Heat Pumps" research, the Maryland Peak Definition coincidence factor is 0.69.

⁷¹ Table sourced from p.1 of the Energy Conservatory blower door manual – blower door subtraction method: <http://energyconservatory.com/wp-content/uploads/2017/08/Blower-Door-Subtraction-Method.pdf>. Accessed 10/1/2019.



House to Duct Pressure (Taped Off)	Subtraction Correction Factor (SCF)
40	1.54
39	1.60
38	1.65
37	1.71
36	1.78
35	1.84
34	1.91
33	1.98
32	2.06
31	2.14

House to Duct Pressure (Taped Off)	Subtraction Correction Factor (SCF)
20	3.54
19	3.74
18	3.97
17	4.23
16	4.51
15	4.83
14	5.20
13	5.63
12	6.12
11	6.71

5.3.5.4 Default Savings

No default savings will be awarded for this measure if pre- and post-duct testing values are not provided in the customer application.

5.3.5.5 Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 106–119.

5.3.5.6 Update Summary

The changes to this section, compared with last year, are described in Table 5-19.

Table 5-19: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	For prescriptive approach (methodology 3) we changed the default for Post_cfm25_{DL} to only be based on historical program participant data only and not compare to individual contractor's historical values
	Equation	- Removed size from the numerator and denominator of the kWh_{heat} and kWh_{cool} equations and added unit conversion. These values cancel out once units are accounted for. - Removed gross annual electric savings component for heating from equation for gross coincident demand reduction
v10	New Measure	New section



5.4 Lighting End Use

5.4.1 LED Lighting

This measure is also provided by the Residential Income and Age Qualifying Home Improvement Program. The savings are determined using the methodology described in Section 2.3.1.



6 RESIDENTIAL EFFICIENT PRODUCTS MARKETPLACE PROGRAM, DSM PHASE VII

6.1 Lighting End Use

6.1.1 Lighting Lamps & Fixtures

6.1.1.1 Measure Description

This measure describes savings from the purchase and installation of an ENERGY STAR Integrated Screw Based SSL (LED) Lamp in place of an in situ lamp. For time of sale, the baseline wattage is assumed to be that of an incandescent or EISA-compliant (where applicable) lamp installed in a screw-base socket. Note that the baseline will be EISA-compliant lamps for all categories to which EISA applies.

6.1.1.2 Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = (watts_{base} - watts_{ee}) \times ISR \times HOU \times NRS \times [WHFe_{heat} + (WHFe_{cool} - 1)] \times \frac{1 kW}{1,000 W} \times DCP$$

Per measure, gross summer coincident peak demand savings are calculated according to the following equation:

$$\Delta kW = (watts_{base} - watts_{ee}) \times ISR \times NRS \times WHFd \times CF \times \frac{1 kW}{1,000 W} \times DCP$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident peak demand savings
$watts_{base}$	= assumed wattage of lamp being replaced based on lumens of LED
$watts_{ee}$	= wattage of efficient LED bulb
ISR	= in-service rate
HOU	= annual hours of use
NRS	= non-residential sales factor to account for lighting measures purchased by non-residential customers
$WHFe_{heat}$	= waste heat factor to account for electric heating increase due to reduced waste heat from efficient lighting
$WHFe_{cool}$	= waste heat factor to account for electric cooling savings due to reduced waste heat from efficient lighting
$WHFd$	= waste heat factor for summer coincident peak demand savings to account for cooling savings from efficient lighting
DCP	= Dominion Energy customer proportion to account for leakage due to non-Dominion customers making in-store purchases
CF	= peak coincidence factor



6.1.1.3 Input Variables

Table 6-1: Input Parameters for Lighting Savings

Component	Type	Value	Units	Sources
ISR	Variable	0.98	-	Mid-Atlantic TRM 2019, p. 34
watts_{base}	Variable	See Table 6-2	watts	Mid-Atlantic TRM 2019, p. 30
watts_{ee}	Variable	See customer application	watts	Customer application
HOU	Variable	See Table 10-9 in Sub-appendix F1-IV: Residential Lighting Factors	hour/year	Mid-Atlantic TRM 2019, p. 34
		Default = unknown fixture location		
NRS	Variable	In-store purchase = 0.90	-	Final EM&V Report for the 2013 Energy Efficient Lighting Program ⁷²
		Online marketplace = 1.0		Program assumption
WHFe_{heat}	Variable	See Table 10-9 in Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 35
		Default = 0.899		
WHFe_{cool}	Variable	See Table 10-9 in Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 35
		Default = 1.077		
WHFd	Variable	See Table 10-9 in Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 36
		Default = 1.170		
CF	Variable	See Table 10-9 in Sub-appendix F1-IV: Residential Lighting Factors	-	Mid-Atlantic TRM 2019, p. 37, based on PJM Coincidence Factors
		Default = 0.058		
DCP	Variable	Varies by store location; See Table 10-10 in Sub-appendix F1-IV: Residential Lighting Factors	-	Dominion Energy
		Default = 1.0, for on-line purchases		On-line purchases by Dominion Energy customers, exclusively
		Default = Unknown		

Table 6-2 is taken directly from the Mid-Atlantic TRM 2019, but with the addition of the left-most column that maps the “Lamp Types” to the “Product Types” categories offered by the program. The “Product Types” are mapped to the

⁷² Final EM&V Report for the 2013 Energy Efficient Lighting Program, for Duke Energy Progress, by Navigant Consulting, Inc., August 13, 2014, p. 27.



"Lamp Types" most similar to the "Product Type" category and having the largest lumen range to accommodate a range of lighting types. The minimum and maximum lumen values are used in combination with "Product Type" to determine watts_{base}.



Table 6-2: Baseline Wattage Determination⁷³

Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Omnidirectional, Medium Screw Base Lamps (A, BT, P, PS, S, or T) (†, ◇ see exceptions that follow)	250	309	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"A15" "A19" "A21" "A23" "S14"	"NO"	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	749	29				
	750	1,049	43				
	1,050	1,489	53				
	1,490	2,600	72				
	3,601	3,300	150				
	3,301	3,999	200				
	4,000	6,000	300				
†S Shape: ≤749 lumens; T Shape: ≤749 lumens or >10" length)	250	309	25				
	310	749	40				

⁷³ Gray cells in this table indicates those lamp types that are not currently used by the tracking data because not enough tracking data details are available to map to them.



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Decorative, Medium Screw Base (G Shape) (‡ see exceptions that follow)	250	309	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"G16.5", "G25", "G30", "G40"	"NO" "YES" " "	"E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	749	29				
	750	1,049	43				
	1,050	1,300	53				
‡G16-1/2, G25, G30 ≤499 lumens	250	309	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"G16.5", "G25", "G30", "G40"	"NO" "YES" " "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	349	25				
	350	499	40				



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
‡G Shape with diameter ≥5"	250	349	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"G16.5", "G25", "G30", "G40"	"NO" "YES" " "	"E12 (CANDELABRA)" "E17"
	350	499	40				
	500	574	60				
	575	649	75				
	650	1,099	100				
	1,100	1,300	150				



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3- way Lamp	Program Measure, Base Type
Decorative, Medium Screw Base (B, BA, C, CA, DC, F, and ST) (*see exceptions that follow)	70	89	10	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"C7" "C9" "C11" "B10" "B11" "B13" "BA10" "BA11" "C7" "C9" "C11" "CA10" "F10" "F15" "F20" "ST" "ST12" "ST18" "ST19"	"NO" "YES" " "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	90	149	15				
	150	299	25				
	300	309	40				
	310	499	29				
	500	699	29	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"C7" "C9" "C11" "B10" "B11" "B13" "BA10" "BA11" "C7" "C9" "C11" "CA10" "F10" "F15" "F20" "ST" "ST12" "ST18" "ST19"	"NO" "YES" " "	"E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
*B, BA, CA, and F ≤499 lumens	70	89	10	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"C7" "C9" "C11" "B10" "B11" "B13" "BA10" "BA11" "C7" "C9" "C11" "CA10" "F10" "F15" "F20" "ST" "ST12" "ST18" "ST19"	"NO" "YES" " "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	90	149	15				
	150	299	25				
	300	309	40				
	310	499	40				
Omnidirectional, Intermediate Screw Base Lamps (A, BT, P, PS, S, or T) (†see exceptions that follow)	250	309	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"A15" "A19" "A21" "A23" "S14"	"NO"	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	749	40				
†S Shape: first number symbol ≤12.5; T Shape: first number symbol ≤8 and nominal overall length <12"	250	309	25				
	310	749	40				



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Decorative, Intermediate Screw Base (G Shape) (†see exception that follows)	250	309	25				
	310	349	25				
	350	499	40				
‡G Shape: first numeral <12.5 or diameter ≥5"	250	349	25				
	350	499	40				
Decorative, Intermediate Screw Base (B, BA, C, CA, DC, F, and ST)	70	89	10				
	90	149	15				
	150	299	25				
	300	309	40				
	310	499	40				
Omnidirectional, Candelabra Screw Base Lamps (A, BT, P, PS, S, or T) (†see exceptions that follow) ‡S Shape: first number symbol ≤12.5; T Shape: first number symbol ≤8 and nominal overall length <12"	250	309	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"A15" "A19" "A21" "A23" "S14"	"NO"	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	749	40				
	750	1,049	60				
	250	309	25				
	310	749	40				
	750	1,049	60				
Decorative, Candelabra Screw Base (G Shape)	250	309	25				



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
(‡see exceptions that follow)	310	349	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"G16.5", "G25", "G30", "G40"	"NO" "YES" " "	"E12 (CANDELABRA)" "E17"
	350	499	40				
	500	574	60				
‡G Shape: first numeral <12.5 or diameter ≥5"	250	349	25				
	350	499	40				
	500	574	60	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"C7" "C9" "C11" "B10" "B11" "B13" "BA10" "BA11" "C7" "C9" "C11" "CA10" "F10" "F15" "F20" "ST" "ST12" "ST18" "ST19"	"NO" "YES" " "	"E12 (CANDELABRA)" "E17"



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Decorative, Candelabra Screw Base (B, BA, C, CA, DC, and F, and ST)	70	89	10				
	90	149	15				
	150	299	25				
	300	309	40				
	310	499	40				
	500	699	60				
Directional, Medium Screw Base: diameter ≤2.25"	400	449	40	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"MR16" "MRX16" "PAR16" "R14" "R16"	"NO" "YES" " "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	450	499	45				
	500	649	50				
	650	1,199	65				



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Directional, Medium Screw Base, R, ER, BR, BPAR or similar bulb shapes of diameter >2.5" (**see exceptions that follow)	640	739	40	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"PAR30" "PAR30L" "PAR30S" "PAR38" "R40"	"NO" "YES" " "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	740	849	45				
	850	1,179	50				
	1,180	1,419	65				
	1,420	1,789	75				
	1,790	2,049	90				
	2,050	2,579	100				
	2,580	3,300	120				
	3,301	3,429	120				
	3,430	4,270	150				



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
Directional, Medium Screw Base, R, ER, BR, BPAR or similar bulb shapes with medium screw bases w/ diameter > 2.26" and ≤ 2.5" (**see exceptions that follow)	540	629	40	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"PAR20"	"NO" "YES" " "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	630	719	45				
	720	999	50	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"R20" "PAR20"	"NO" "YES" " "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	1,000	1,199	65				
	1,200	1,519	75				
	1,520	1,729	90				
	1,730	2,189	100				
	2,190	2,899	120				
	2,900	3,300	120				
	3,301	3,850	150				
**ER30, BR30, BR40, or ER40	400	449	40	"FIXTURE" "RETROFIT KIT"	" "	" " "NO"	" "
	450	499	45				
	500	649 to 1,179	50				
**BR30, BR40, or ER40	650	1,419	65				



Mid-Atlantic TRM 2019 Lamp Type	Lumen Range		watts _{base}	Tracking Data Categories			
	Lower Bound	Upper Bound		Product Type	ENERGY STAR Bulb Type	Program Measure, 3-way Lamp	Program Measure, Base Type
**R20	400	449	40	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"R20"	"NO" "YES" " "	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	450	719	45				
**All reflector lamps below lumen ranges previously specified	200	299	20	"FIXTURE" "RETROFIT KIT"	" "	" " "NO"	" "
	300	399 to 639	30				
Rough service, shatter resistant, 3-way incandescent, and vibration service	250	309	25	"A-LINE" "BULGED REFLECTOR" "CANDELABRA BASE" "CANDLE" "FLAME" "GLOBE" "MULTIFACETED REFLECTOR" "PARABOLIC ALUMINIZED REFLECTOR" "REFLECTOR" "SPECIALTY"	"A15" "A19" "A21" "A23" "S14"	"YES"	" " "E12 (CANDELABRA)" "E17" "E26 (MEDIUM)" "E26D" "GU10" "GU24" "GU5.3" "GX5.3"
	310	749	40				
	750	1,049	60				
	1,050	1,489	75				
	1,490	2,600	100				
	2,601	3,300	150				
	3,301	3,999	200				
	4,000	6,000	300				



6.1.1.4 Default Savings

No savings will be given when required information is missing.

6.1.1.5 Source

The primary sources for this deemed savings approach include the Mid-Atlantic TRM v.9 2019, pp. 29-41, and Navigant's Final EM&V Report for the 2013 Energy Efficient Lighting Program for Duke Energy Progress, pp. 22-23.

6.1.1.6 Update Summary

The changes to this section, compared with last year, are described in Table 6-3.

Table 6-3: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	Revised baseline wattages to reflect the DOE's rollback of the 2007 EISA lighting efficiency standard
v10	New Measure	New section



6.2 Plug Load End Use

6.2.1 Air Purifier

6.2.1.1 Measure Description

An air purifier (cleaner) is a portable electric appliance that removes dust and fine particles from indoor air. This measure characterizes the purchase and installation of a unit meeting the energy efficiency specifications of ENERGY STAR in place of a baseline model.

The baseline equipment is assumed to be a conventional non-ENERGY STAR unit with the consumption estimates based upon EPA research on available models in 2011. The efficient equipment is defined as an air purifier that meets the specifications of ENERGY STAR as provided below:

The efficient equipment is defined as an air purifier that meets the specifications of ENERGY STAR as provided below:

Minimum Clean Air Delivery Rate (CADR), dust-free: 50 cfm

Minimum energy efficiency requirement: 2.0 CADR/watt

Maximum Standby Power Requirement: 2.0 watts; qualifying models that perform secondary consumer functions (e.g., clock, remote control) must also meet the standby power requirement.

Maximum ozone production: 50 parts per billion (ppb), per UL Standard 867 for models that emit ozone as a by-product of air cleaning.

6.2.1.2 Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation:

$$\Delta kWh = kWh_{base} - kWh_{ee}$$

Per measure, gross summer coincident peak savings are calculated according to the following equation:

$$\Delta kW = \frac{\Delta kWh}{HOU} \times CF$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident demand reduction
kWh_{base}	= baseline annual electric energy usage
kWh_{ee}	= efficient annual electric energy usage
HOU	= average annual hours of use
CF	= Summer Peak Coincidence Factor

6.2.1.3 Input Variables

Table 6-4: Input Values for Air Purifier Savings Calculations

Component	Type	Value	Unit	Source(s)
kWh_{base}	Variable	See Table 6-6	kWh	Mid Atlantic TRM 2019, p. 240, footnote 532



Component	Type	Value	Unit	Source(s)
kWh_{ee}	Variable	See Table 6-6	kWh	Mid Atlantic TRM 2019, p. 240, footnote 533
HOU	Fixed	5,840	hours, annual	Mid Atlantic TRM 2019, p. 240, footnote 534
CF	Fixed	0.67	-	Mid Atlantic TRM 2019, pp. 240-241, footnote 535
Range_{CADR}	Variable	See customer application	-	See customer application
		Default: CADR 50-100		

Table 6-5: Annual Electric Energy Usage by Clear Air Delivery Rate (CADR)

Clean Air Delivery Rate (CADR)	Baseline kWh _{base} (kWh/year)	Efficient kWh _{ee} (kWh/year)
CADR 50-100	441	148
CADR 101-150	733	245
CADR 151-200	1,025	342
CADR Over 250	1,609	537

6.2.1.4 Default Savings

Default per measure gross annual electric energy savings are calculated according to the following equation, by assuming that Range_{CADR}=CADR 50-100:

$$\begin{aligned}
 \Delta kWh &= kWh_{base} - kWh_{ee} \\
 &= 441 \text{ kWh} - 148 \text{ kWh} \\
 &= 293 \text{ kWh}
 \end{aligned}$$

Default per measure gross summer coincident peak savings are calculated according to the following equation, by assuming that Range_{CADR}=CADR 50-100:

$$\begin{aligned}
 \Delta kW &= \frac{\Delta kWh}{HOU} \times CF \\
 &= \frac{293 \text{ kWh}}{5,840 \text{ hours}} \times 0.67 \\
 &= 0.034 \text{ kW}
 \end{aligned}$$

6.2.1.5 Source(s)

The primary source for this deemed savings approach is the Mid-Atlantic TRM v9.0 2019, pp. 239 -241.



6.2.1.6 Update Summary

The changes to this section, compared with last year, are described in Table 6-6.

Table 6-6: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	New Measure	New section

6.2.2 Clothes Washer

6.2.2.1 Measure Description

This measure relates to the purchase (time of sale) and installation of a clothes washer exceeding either the ENERGY STAR/CEE Tier 1, ENERGY STAR Most Efficient/CEE Tier 2, or CEE Tier 3 minimum qualifying efficiency standards.

6.2.2.2 Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\begin{aligned} \Delta kWh &= \left[(Size \times 1/IMEF_{base} \times N_{cycle}) \right. \\ &\quad \times (CW_{base} + (DHW_{base} \times DHW_{electric}) + (Dryer_{base} \times Dryer_{electric})) \left. \right] \\ &\quad - \left[(Size \times 1/IMEF_{ee} \times N_{cycle}) \right. \\ &\quad \times (CW_{ee} + (DHW_{ee} \times DHW_{electric}) + (Dryer_{ee} \times Dryer_{electric})) \left. \right] \end{aligned}$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = \Delta kWh/HOU \times CF$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident peak demand savings
Size	= clothes washer capacity
$IMEF_{base}$	= Integrated Modified Energy Factor of baseline unit
$IMEF_{ee}$	= Integrated Modified Energy Factor of efficient unit
N_{cycle}	= number of wash cycles per year
CW_{base}	= proportion of total energy consumption of baseline clothes washer operation
DHW_{base}	= proportion of total energy consumption for water heating of baseline unit
$Dryer_{base}$	= proportion of total energy consumption for baseline dryer operation
CW_{ee}	= proportion of total energy consumption for efficient clothes washer operation
DHW_{ee}	= proportion of total energy consumption for water heating of efficient unit
$Dryer_{ee}$	= proportion of total energy consumption for efficient dryer operation
$DHW_{electric}$	= proportion of DHW savings assumed to be electric
$Dryer_{electric}$	= proportion of dryer savings assumed to be electric
HOU	= annual hours of use of clothes washer
CF	= Summer Peak Coincidence Factor



6.2.2.3 Input Variables

Table 6-7: Input Variables for Clothes Washer Savings Calculation

Component	Type	Value	Unit	Source(s)
Size	Variable	See customer application	feet ³	Mid-Atlantic TRM 2019, p. 212
		Default = 3.45		
IMEF _{base}	Fixed	1.66	-	Mid-Atlantic TRM 2019, p. 212, the weighted average of front loading and top loading is used.
IMEF _{ee}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 213
		Default = 2.26		
N _{cycle}	Fixed	254	-	Mid-Atlantic TRM 2019, p. 213, footnote 482
%CW _{base}	Fixed	0.08	-	Mid-Atlantic TRM 2019, p. 213
%CW _{ee}	Variable	See Table 6-9	-	Mid-Atlantic TRM 2019, p. 213
		Default = 0.08		
%DHW _{base}	Fixed	0.31	-	Mid-Atlantic TRM 2019, p. 213
%DHW _{ee}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 213
		Default = 0.23		
%Dryer _{base}	Fixed	0.61	-	Mid-Atlantic TRM 2019, p. 213
%Dryer _{ee}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 213
		Default = 0.69		
%DHW _{electric}	Variable	See Table 6-9	-	Mid-Atlantic TRM 2019, p. 214
		Default = 0.65		
%Dryer _{electric}	Variable	See Table 6-9	-	Mid-Atlantic TRM 2019, p. 214
		Default = 0.79		
Type _{Loading}	Variable	See customer application	-	See customer application
η_{Tier}	Variable	See customer application	-	See customer application
		Default = Tier 1		
HOU	Fixed	265	hours, annual	Mid-Atlantic TRM 2019, p. 215, footnote 487
CF	Fixed	0.029	-	Mid-Atlantic TRM 2019, p. 215, footnote 488

For baseline IMEF, the weighted average is used regardless of the efficient case loading type.

Table 6-8: IMEF based on Efficiency Level and Loading Type

Efficiency Level	Loading Type		
	Front Loading	Top Loading	Weighted Average
Federal Standard (baseline)	1.84	1.57	1.66



Efficiency Level	Loading Type		
	Front Loading	Top Loading	Weighted Average
ENERGYSTAR, CEE Tier 1	2.38	2.06	2.26
ENERGYSTAR, most efficient, CEE Tier 2	2.74	2.74	2.74
CEE Tier 3	2.92	N/A	2.92

Table 6-9: Proportion of Total Energy Consumption based on Efficiency Level

Efficiency Level	Total Energy Consumption Proportions		
	CW	DHW	Dryer
Federal Standard (baseline)	0.08	0.31	0.61
ENERGY STAR, CEE Tier 1	0.08	0.23	0.69
ENERGY STAR, most efficient, CEE Tier 2	0.14	0.10	0.76
CEE Tier 3	0.14	0.10	0.76

Table 6-10: Proportion of Savings Assumed based on DHW Fuel

DHW Fuel	DHW _{electric}
Electric	1.00
Fossil Fuel	0.00
Unknown	0.65

Table 6-11: Proportion of Savings Assumed base on Dryer Fuel

Dryer Fuel	Dryer _{electric}
Electric	1.00
Fossil Fuel	0.00
Unknown	0.79

6.2.2.4 Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided.

$$\begin{aligned}
 \Delta kWh = & \left[(Size \times 1/IMEF_{base} \times N_{cycle}) \right. \\
 & \times (CW_{base} + (DHW_{base} \times DHW_{electric}) + (Dryer_{base} \times Dryer_{electric})) \left. \right] \\
 & - \left[(Size \times 1/IMEF_{ee} \times N_{cycle}) \right. \\
 & \times (CW_{ee} + (DHW_{ee} \times DHW_{electric}) + (Dryer_{ee} \times Dryer_{electric})) \left. \right]
 \end{aligned}$$



$$= [(3.45 \times 1/1.66 \times 254) \times (0.08 + (0.31 \times 0.65) + (0.61 \times 0.79))] \\ - [(3.45 \times 1/2.26 \times 254) \times (0.08 + (0.23 \times 0.65) + (0.69 \times 0.79))] \\ = 102.6 \text{ kWh}$$

$$\Delta kW = 102.6 \text{ kWh} / 265 \text{ hours} \times 0.029 \\ = 0.011 \text{ kW}$$

6.2.2.5 Sources

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 211-220.

6.2.2.6 Update Summary

The changes to this section, compared with last year, are described in Table 6-12.

Table 6-12: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	Adjusted %CW_{ee}, %DHW_{ee}, and %Dryer_{ee}, %Dryer_{electric} and %DHW_{electric} from a fixed value to use customer application. The previous values are assigned as defaults if not provided by the application.
v10	New Measure	New section

6.2.3 Clothes Dryer

6.2.3.1 Measure Description

This measure relates to the installation of a residential clothes dryer meeting the ENERGY STAR criteria. ENERGY STAR qualified clothes dryers save energy through a combination of more efficient drying and reduced runtime of the drying cycle. More efficient drying is achieved through increased insulation, modifying operating conditions such as air flow and/or heat input rate, improving air circulation through better drum design or booster fans, and improving efficiency of motors. Reducing the runtime of dryers through automatic termination by temperature and moisture sensors is believed to have the greatest potential for reducing energy use in clothes dryers. ENERGY STAR provides criteria for both gas and electric clothes dryers.

6.2.3.2 Savings Estimation Approach

Per measure, gross annual electric energy savings are calculated according to the following equation.

$$\Delta kWh = \left(\frac{Load}{CEF_{base}} - \frac{Load}{CEF_{ee}} \right) \times N_{cycle} \times Dryer_{electric}$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.



$$\Delta kW = \Delta kWh / HOU \times CF$$

Where:

ΔkWh = gross annual electric energy savings
 ΔkW = gross coincident peak demand savings
Load = the average total weight of clothes per drying cycle
 CEF_{base} = Combined Energy Factor (CEF) of the baseline unit
 CEF_{ee} = Combined Energy Factor (CEF) of the efficient unit
 N_{cycle} = number of dryer cycles per year
 $Dryer_{electric}$ = proportion of overall savings coming from electricity
HOU = annual hours of use of clothes dryer
CF = summer peak coincidence factor for measure

6.2.3.3 Input Variables

Table 6-13: Input Variables for Clothes Dryer Savings Calculation

Component	Type	Value	Unit	Source(s)
Load	Variable	See customer application	lb	Mid-Atlantic TRM 2019, p. 242
		Default = 8.45		
CEF_{base}	Variable	See customer application	lb/kWh	Mid-Atlantic TRM 2019, p. 243
		Default = 3.11		
CEF_{ee}	Variable	See customer application	lb/kWh	Mid-Atlantic TRM 2019, pg. 243
		Default = 3.93		
N_{cycle}	Fixed	311	-	Mid-Atlantic TRM 2019, pp. 243-244
$Dryer_{electric}$	Variable	See Table 6-16		Mid-Atlantic TRM 2019, p. 244
		Default = 1.00		
HOU	Fixed	290	hours, annual	Mid-Atlantic TRM 2019, p. 244
CF	Fixed	0.029	-	Mid-Atlantic TRM 2019, p. 244
Size_{dryer}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 243
		Default = Standard		
Class	Variable	See customer application	-	Mid-Atlantic TRM 2019, pp. 243-244
		Default = Vented or Ventless Electric, Standard ($\geq 4.4 \text{ ft}^3$)		
Building	Variable	See customer application	-	See customer application
		Default = Single Family		

Table 6-14: Load Based on Dryer Size

Dryer Size	Default Load (lb)
Standard	8.45
Compact	3.00



Table 6-15: CEF_{base} and CEF_{ee} based on Product Class

Product Class	Default CEF _{base} (lb/kWh)	Default CEF _{ee} (lb/kWh)
Vented or Ventless Electric, Standard (≥ 4.4 ft ³)	3.11	3.93
Vented or Ventless Electric, Compact, 120V (< 4.4 ft ³)	3.01	3.80
Vented Electric, Compact, 240V (< 4.4 ft ³)	2.73	3.45
Ventless Electric, Compact, 240V (< 4.4 ft ³)	2.13	2.68
Vented Gas	2.84	3.48

Table 6-16: Proportion of Overall Savings From Electric Based on Fuel Type

Clothes Dryer Fuel Type	Dryer _{electric}
Electric	1.00
Gas	0.16

6.2.3.4 Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided.

$$\begin{aligned}
 \Delta kWh &= \left(\frac{Load}{CEF_{base}} - \frac{Load}{CEF_{ee}} \right) \times N_{cycle} \times Fuel_{electric} \\
 &= \left(\frac{8.45 \text{ lb}}{3.11 \text{ lb/kWh}} - \frac{8.45 \text{ lb}}{3.93 \text{ lb/kWh}} \right) \times 311 \times 1.00 \\
 &= 176.3 \text{ kWh} \\
 \Delta kW &= \Delta kWh / HOU \times CF \\
 &= 176.3 \text{ kWh} / 290 \text{ hours} \times 0.029 \\
 &= 0.018 \text{ kW}
 \end{aligned}$$

6.2.3.5 Sources

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 242-246.

6.2.3.6 Update Summary

The changes to this section, compared with last year, are described in Table 6-17.



Table 6-17: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Input	Corrected error in the Load based on Dryer Size Table, fossil fuel was changed to compact
v10	New Measure	New section

6.2.4 Dehumidifier

6.2.4.1 Measure Description

This measure relates to the purchase (time of sale) and installation of a dehumidifier meeting the minimum qualifying efficiency standard established by the current ENERGY STAR (Version 4.0) in place of a unit that meets the minimum federal standard efficiency.

6.2.4.2 Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\Delta kWh = Capacity \times \frac{0.473 \text{ L/pint}}{24 \text{ hr/day}} \times HOU \times \left(\frac{1}{L/kWh_{base}} - \frac{1}{L/kWh_{ee}} \right)$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = \Delta kWh / HOU \times CF$$

Where:

- ΔkWh = per measure gross annual electric energy savings
- ΔkW = per measure gross coincident peak demand savings
- Capacity = capacity of the unit
- HOU = annual hours of use
- L/kWh_{base} = liters of water per kWh consumed for the baseline unit
- L/kWh_{ee} = liters of water per kWh consumed for the energy efficient unit

6.2.4.3 Input Variables

Table 6-18: Input Variables for Dehumidifier Savings Calculation

Component	Type	Value	Unit	Source(s)
Capacity	Variable	See customer application	pint/day	Customer application
		Default = 25		Mid-Atlantic TRM 2019, p. 232
HOU	Fixed	Default = 1,632	hours, annual	Mid-Atlantic TRM v2019, p. 232, footnote 520
L/kWh_{base}	Variable	See Table 6-19	liter/kWh	Mid-Atlantic TRM 2019, p. 232
		Default = 1.30		



Component	Type	Value	Unit	Source(s)
L/kWh_{ee}	Variable	See Table 6-20	l/kWh	Mid-Atlantic TRM 2019, p. 232
CF	Fixed	Default = 0.37	-	Mid-Atlantic TRM 2019, p. 234, footnote 522

Table 6-19: L/kWh_{base} Based on Dehumidifier Capacity

Capacity Range (pint/day)	Minimum baseline (Federal standard) criteria (L/kWh _{base})
≤25	1.30
>25 and ≤ 50	1.60
>50	2.80

Table 6-20: L/kWh_{ee} based on capacity

Capacity Range (pint/day)	ENERGY STAR criteria (L/kWh)
≤25	1.57
>25 and ≤ 50	1.80
>50 and ≤185	3.30

6.2.4.4 Default Savings

Per-measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided, depending on the manufacturing date of the unit.

$$\begin{aligned}
 \Delta kWh &= Capacity \times \frac{0.473 \text{ L/pint}}{24 \text{ hr/day}} \times HOU \times \left(\frac{1}{L/kWh_{base}} - \frac{1}{L/kWh_{ee}} \right) \\
 &= 25 \frac{\text{pint}}{\text{day}} \times \frac{0.473 \text{ L/pint}}{24 \text{ hr/day}} \times 1,632 \text{ hours} \times \left(\frac{1}{1.30 \text{ L/kWh}} - \frac{1}{1.57 \text{ L/kWh}} \right) \\
 &= 106.4 \text{ kWh}
 \end{aligned}$$

$$\begin{aligned}
 \Delta kW &= \Delta kWh / HOU \times CF \\
 &= 106.4 \text{ kWh} / 1,632 \text{ hours} \times 0.37 \\
 &= 0.024 \text{ kW}
 \end{aligned}$$

6.2.4.5 Source

The primary source for this deemed savings approach is the Mid-Atlantic TRM 2019, pp. 211-220.



6.2.4.6 Update Summary

The changes to this section, compared with last year, are described in Table 6-21.

Table 6-21: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	- Clarified that $\text{l/kWh}_{\text{base}}$ comes from Federal Standard rather than the customer application - Removed the default kWh_{ee} values referencing the previous version of ENERGY STAR requirements that were replaced October 31, 2019
v10	New Measure	New section



6.2.5 Dishwasher

6.2.5.1 Measure Description

A dishwasher meeting the efficiency specifications of ENERGY STAR is installed in place of a model meeting the federal standard. This measure is only for standard dishwashers and not compact dishwashers. A compact dishwasher is a unit that holds fewer than eight place settings with six serving pieces.

6.2.5.2 Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\Delta kWh = (kWh_{base} - kWh_{ee}) \times [Elec_{op} + (Elec_{heat} \times Elec_{DHW})]$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = \Delta kWh / HOU \times CF$$

Where:

ΔkWh	= per measure gross annual electric energy savings
ΔkW	= per measure gross coincident peak demand savings
kWh_{base}	= kWh consumption per year of the baseline unit
kWh_{ee}	= kWh consumption per year of the energy efficient unit
$Elec_{op}$	= percent of dishwasher energy consumption used for unit operation
$Elec_{heat}$	= percent of dishwasher energy consumption used for water heating
$Elec_{DHW}$	= percentage of DHW savings assumed to be electric
HOU	= annual hours of use
CF	= summer peak coincidence factor

6.2.5.3 Input Variables

Table 6-22: Input Variables for Dishwasher Savings Calculations

Component	Type	Value	Unit	Source(s)
kWh_{base}	Fixed	307	kWh	Mid-Atlantic TRM 2019, pp. 247-248
kWh_{ee}	Fixed	270	kWh	Mid-Atlantic TRM 2019, p. 248
$Elec_{op}$	Fixed	0.44	-	Mid-Atlantic TRM 2019, p. 248
$Elec_{heat}$	Fixed	0.56	-	Mid-Atlantic TRM 2019, p. 248
$Elec_{DHW}$	Variable	See Table 6-10 Default = 0.65	-	Mid-Atlantic TRM 2019, p. 248
HOU	Fixed	210	hours, annual	Mid-Atlantic TRM 2019, p. 248
CF	Fixed	0.026	-	Mid-Atlantic TRM 2019, p. 249
$Fuel_{DHW}$	Variable	See customer application	-	Customer application



6.2.5.4 Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations for all dishwashers.

$$\begin{aligned}\Delta kWh &= (kWh_{base} - kWh_{ee}) \times [Elec_{op} + (Elec_{heat} \times Elec_{DHW})] \\ &= (307 kWh - 270 kWh) \times (0.44 + (0.56 \times 0.65)) \\ &= 29.75 kWh \\ \Delta kW &= \Delta kWh / HOU \times CF \\ &= 29.75 kWh / 210 hours \times 0.0260 \\ &= 0.004 kW\end{aligned}$$

6.2.5.5 Source

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 211-220.

6.2.5.6 Update Summary

The changes to this section, compared with last year, are described in Table 6-23.

Table 6-23: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Inputs	Adjusted $Elec_{DHW}$ and $Fuel_{DHW}$ from fixed values to use customer application
v10	New Measure	New section

6.2.6 Freezer

6.2.6.1 Measure Description

This measure relates to the upstream promotion of residential freezers meeting the ENERGY STAR criteria through the Energy Star Retail Products Program. In the measure, a freezer meeting the efficiency specifications of ENERGY STAR is installed in place of a model meeting the federal standard (NAECA).

6.2.6.2 Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\Delta kWh = kWh_{base} - kWh_{ee}$$

Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = (\Delta kWh / 8,760) \times TAF \times LSAF$$

Where:

ΔkWh = per measure gross annual electric energy savings



ΔkW = per measure gross coincident peak demand savings
 kWh_{base} = annual baseline electric energy consumption per year
 kWh_{ee} = annual ENERGY STAR electric energy consumption
 TAF = Temperature Adjustment Factor
 LSAF = Load Shape Adjustment Factor

6.2.6.3 Input Variables

Table 6-24: Input Variables for Freezer Savings Calculations

Component	Type	Value	Unit	Source(s)
Volume_{total}	Variable	See customer application	feet ³	Customer application
		Default = 11.764		
Volume_{adj.}	Variable	See customer application	feet ³	Mid-Atlantic TRM 2019, p. 54, footnote 121
		Default = 19.100		
TAF	Fixed	Default = 1.23	-	Mid-Atlantic TRM 2019, p. 55, footnote 126
LSAF	Fixed	Default = 1.15	-	Mid-Atlantic TRM 2019, p. 56, footnote 127
kWh_{base}	Fixed	See customer application	kWh	Customer application
		Default = 313.0		Mid-Atlantic TRM 2019, p. 55
kWh_{ee}	Variable	See customer application	kWh	Customer application
		Default = 281.0		Mid-Atlantic TRM 2019, p. 55
Freezer_{type}	Variable	See customer application	-	Mid-Atlantic TRM 2019, p. 54, footnote 124

Table 6-25: kWh_{base} and kWh_{ee} based on Freezer_{type} and Volume_{adj.}

Freezer _{type}	kWh _{base}	kWh _{ee}	Weighting if Freezer _{type} Unknown
Upright Freezer	8.62 x Volume _{adj.} + 228.3	7.76 x Volume _{adj.} + 205.5	0.37
Chest Freezer	7.29 x Volume _{adj.} + 107.8	6.56 x Volume _{adj.} + 97.0	0.63

Table 6-26: Savings based on Product Category Defaults

Freezer _{type}	Total Volume _{total}	Adjusted Volume _{adj.}	kWh _{base}	kWh _{ee}	ΔkWh savings	ΔkW savings
Upright Freezer	14.1	24.4	438.6	394.8	43.8	0.007
Chest Freezer	10.4	18.0	239.0	214.1	23.9	0.004
Default⁷⁴	-	-	313.0	282.0	31.0	0.005

⁷⁴ Default is used if Freezer type is unknown. This is calculated as the weighted average of both freezer types (0.37 upright, 0.63 chest).



6.2.6.4 Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided.

$$\begin{aligned}\Delta kWh &= kWh_{base} - kWh_{ee} \\ &= 313.0 - 282.0 \\ &= 31 kWh\end{aligned}$$

$$\begin{aligned}\Delta kW &= (\Delta kWh / 8,760) \times TAF \times LSAF \\ &= 31 / 8,760 \times 1.23 \times 1.15 \\ &= 0.005 kW\end{aligned}$$

6.2.6.5 Source

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 54-56.

6.2.6.6 Update Summary

The changes to this section, compared with last year, are described in Table 6-27.

Table 6-27: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	New Measure	New section

6.2.7 Refrigerator

6.2.7.1 Measure Description

This measure relates to the purchase and installation of a new refrigerator meeting either ENERGY STAR or Consortium for Energy Efficiency (CEE) Tier 2 or Tier 3 specifications (defined as consuming $\geq 10\%$, $\geq 15\%$, or $\geq 20\%$ less energy than an equivalent unit meeting federal standard requirements, respectively).

6.2.7.2 Savings Estimation Approach

Per measure, gross annual energy savings are calculated according to the following equation.

$$\Delta kWh = kWh_{base} \times ESF$$



Per measure, gross summer coincident peak savings are calculated according to the following equation.

$$\Delta kW = (\Delta kWh / 8,760) \times TAF \times LSAF$$

Where:

ΔkWh = per measure gross annual electric energy savings
 ΔkW = per measure gross coincident peak demand savings
 kWh_{base} = baseline annual electric energy consumption per
ESF = energy savings factor of efficient unit
TAF = Temperature Adjustment Factor
LSAF = Load Shape Adjustment Factor

6.2.7.3 Input Variables

Table 6-28: Input Variables for Refrigerator Savings Calculation

Component	Type	Value	Unit	Source(s)
Volume_{adj.}	Variable	See customer application	feet ³	Customer application
		Default = 25.8 ⁷⁵		Mid-Atlantic TRM 2019, p. 58
Tier	Variable	See customer application	-	Customer application
		Default = ENERGY STAR		
kWh_{base}	Variable	Table 6-30	kWh	Pennsylvania TRM 2016, pp. 129-136
ESF	Variable	See Table 6-29	-	Mid-Atlantic TRM 2019, p. 58
Category	Variable	See customer application	-	Customer application
TAF	Fixed	Default = 1.23	-	Mid-Atlantic TRM 2019, p. 59
LSAF	Fixed	Default = 1.15	-	Mid-Atlantic TRM 2019, p. 60

Table 6-29: Energy Savings Factor Based on Efficiency Tier

Tier	ENERGY STAR	CEE Tier 2	CEE Tier 3
Energy Savings Factor (ESF)	0.10	0.15	0.20

Table 6-30: Default kWh_{base} Based on Category⁷⁶

Category	Formula for kWh _{base}
1. Refrigerator-freezers and refrigerators other than all-refrigerators with manual defrost	$7.99 \times Volume_{adj.} + 225.0$
1A. All-refrigerators—manual defrost	$6.79 \times Volume_{adj.} + 193.6$

⁷⁵ Volume_{adj.} is based on the ENERGY STAR calculator assumption that the average refrigerator has 14.75 ft³ of fresh volume and 6.76 ft³ of freezer volume where Volume_{adj.} = Volume_{fresh} + (1.63 x Volume_{freezer}).

⁷⁶ Pennsylvania TRM 2016 Pg. 129-136



Category	Formula for kWh _{base}
2. Refrigerator-Freezer—partial automatic defrost	$7.99 \times Volume_{adj.} + 225.0$
3. Refrigerator-Freezers--automatic defrost with top-mounted freezer without an automatic icemaker	$8.07 \times Volume_{adj.} + 233.7$
3-BI. Built-in refrigerator-freezer—automatic defrost with top-mounted freezer without an automatic icemaker.	$9.15 \times Volume_{adj.} + 264.9$
3I. Refrigerator-freezers—automatic defrost with top-mounted freezer with an automatic icemaker without through-the-door ice service.	$8.07 \times Volume_{adj.} + 317.7$
3I-BI. Built-in refrigerator-freezers—automatic defrost with top-mounted freezer with an automatic icemaker without through-the-door ice service.	$9.15 \times Volume_{adj.} + 348.9$
3A. All-refrigerators—automatic defrost.	$7.07 \times Volume_{adj.} + 201.6$
3A-BI. Built-in All-refrigerators—automatic defrost.	$8.02 \times Volume_{adj.} + 228.5$
4. Refrigerator-Freezers--automatic defrost with side-mounted freezer without an automatic icemaker	$8.51 \times Volume_{adj.} + 297.8$
4-BI. Built-In Refrigerator-freezers—automatic defrost with side-mounted freezer without an automatic icemaker.	$10.22 \times Volume_{adj.} + 357.4$
4I. Refrigerator-freezers—automatic defrost with side-mounted freezer with an automatic icemaker without through-the-door ice service.	$8.51 \times Volume_{adj.} + 381.8$
4I-BI. Built-In Refrigerator-freezers—automatic defrost with side-mounted freezer with an automatic icemaker without through-the-door ice service.	$10.22 \times Volume_{adj.} + 441.4$
5. Refrigerator-Freezers--automatic defrost with bottom-mounted freezer without an automatic icemaker	$8.85 \times Volume_{adj.} + 317.0$
5-BI. Built-In Refrigerator-freezers—automatic defrost with bottom-mounted freezer without an automatic icemaker.	$9.40 \times Volume_{adj.} + 336.9$
5I. Refrigerator-freezers—automatic defrost with bottom-mounted freezer with an automatic icemaker without through-the-door ice service.	$8.85 \times Volume_{adj.} + 401.0$
5I-BI. Built-In Refrigerator-freezers—automatic defrost with bottom-mounted freezer with an automatic icemaker without through-the-door ice service.	$9.40 \times Volume_{adj.} + 420.9$
5A. Refrigerator-freezer—automatic defrost with bottom-mounted freezer with through-the-door ice service.	$9.25 \times Volume_{adj.} + 475.4$
5A-BI. Built-in refrigerator-freezer—automatic defrost with bottom-mounted freezer with through-the-door ice service.	$9.83 \times Volume_{adj.} + 499.9$
6. Refrigerator-Freezers--automatic defrost with top-mounted freezer with through-the-door ice service	$8.40 \times Volume_{adj.} + 385.4$
7. Refrigerator-Freezers--automatic defrost with side-mounted freezer with through-the-door ice service	$8.54 \times Volume_{adj.} + 432.8$
7-BI. Built-In Refrigerator-freezers—automatic defrost with side-mounted freezer with through-the-door ice service.	$10.25 \times Volume_{adj.} + 502.6$
11. Compact Refrigerator and Refrigerator-Freezer other than All-Refrigerator - manual defrost	$9.03 \times Volume_{adj.} + 252.3$



Category	Formula for kWh _{base}
11A. Compact All-Refrigerator - manual defrost	$7.84 \times Volume_{adj.} + 219.1$
12. Compact Refrigerator-Freezer - partial automatic defrost	$5.91 \times Volume_{adj.} + 335.8$
13. Compact refrigerator-freezers - automatic defrost with top-mounted freezer	$11.80 \times Volume_{adj.} + 339.2$
13I. Compact refrigerator-freezers—automatic defrost with top-mounted freezer with an automatic icemaker.	$11.80 \times Volume_{adj.} + 423.2$
13A. Compact All-Refrigerators - automatic defrost	$9.17 \times Volume_{adj.} + 259.3$
14. Compact Refrigerator-Freezer - automatic defrost with side-mounted freezer	$6.82 \times Volume_{adj.} + 456.9$
14I. Compact Refrigerator-Freezer - automatic defrost with side-mounted freezer with an automatic icemaker	$6.82 \times Volume_{adj.} + 540.9$
15. Compact Refrigerator-Freezer - automatic defrost with Bottom-Mounted freezer	$11.80 \times Volume_{adj.} + 339.2$
15I. Compact Refrigerator-Freezer - automatic defrost bottom-mount- with an automatic icemaker	$11.80 \times Volume_{adj.} + 423.2$

6.2.7.4 Default Savings

Per measure gross annual energy savings and gross summer coincident peak savings, respectively, are calculated according to the following equations when input parameter values are not provided.

$$\begin{aligned}
 \Delta kWh &= kWh_{base} \times ESF \\
 &= 431.1 kWh \times 0.10 \\
 &= 43.1 kWh \\
 \\
 \Delta kW &= (\Delta kWh / 8,760) \times TAF \times LSAF \\
 &= 43.1 kWh / 8,760 hr \times 1.23 \times 1.15 \\
 &= 0.007 kW
 \end{aligned}$$

6.2.7.5 Sources

The primary source for this deemed savings approach is the Mid-Atlantic TRM v.9 2019, pp. 57-62 and Pennsylvania TRM 2016 pp. 129-136.

6.2.7.6 Update Summary

The changes to this section, compared with last year, are described in Table 6-31.



Table 6-31: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	New Measure	New section



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10 SUB-APPENDICES

10.1 Sub-appendix F1-I: Cooling and Heating Degree Days and Hours

This section provides the reference cooling degree days (CDD) and heating degree days (HDD) using TMY3 data found in the National Solar Radiation Data Base, 1991 – 2005 Update: Typical Meteorological Year 3 (TMY3) produced by the Renewable Resource Data Center (RRDC) of the National Renewable Energy Laboratory (NREL). Data for the following weather stations are used:

- Baltimore BLT-Washington International AP (Weather station number 724060)
- Richmond International AP (Weather station number 724010)
- Elizabeth City Coast Guard AP (Weather station number 746943)
- Rocky Mount-Wilson AP. (Weather station number 723068)

Weather station identification codes can be found at

<https://www.google.com/fusiontables/DataSource?docid=1EsB07O-9SiqyJDlzl69GO8jTHsomsNIpkA1SLL8#rows:id=1>.

TMY3 data can be found at http://rredc.nrel.gov/solar/old_data/nsrdb/1991-2005/tmy3.

TMY3 data spans a base time period between 1976 to 2005 wherever they are available (out of 1,020 locations) and from 1991 to 2005 for the remaining locations. The TMY3 data set provides a reasonably-sized annual dataset that holds hourly meteorological values that typify conditions at a specific location over a longer period of time. It represents a typical climatic condition for a location and excludes extremes. For the purposes of this document, DNV determined that it is more appropriate to use weather data that represents typical climatic conditions. Also, DNV uses actual temperatures from USAF stations in modeling consumption in post-installation evaluations. The corresponding temperatures from TMY3 are then used to predict weather-adjusted—or normalized—consumption. The goal is that models and predictions based on temperature data are using data from the same stations.

The TMY3 hourly data are available for 1,020 USAF stations. For each station, DNV calculates the average hourly temperature for each day. The CDD and HDD are calculated using a range of cooling and heating base temperature. If the average daily temperature is greater than the cooling base temperature, CDD is the deviation in degrees Fahrenheit from the average daily temperature with respect to a cooling base temperature and zero otherwise. If the average daily temperature is less than the heating base temperature, HDD is the deviation in degrees Fahrenheit from the average daily temperature with respect to a heating base temperature and zero otherwise. Daily CDD and HDD are summed for each station to come up with an annual estimate of CDD and HDD shown in this section, based on a typical meteorological year, as shown in Table 10-2. The same processes are repeated using average hourly temperatures to yield the Cooling Degree Hours (CDH) and Heating Degree Hours (HDH), provided in Table 10-3.

The Mid-Atlantic TRM uses different base temperatures for the HDD and CDD calculations, depending upon the measure type. Table 10-1 shows the base temperatures used to determine the CDD, HDD, CDH, and HDH values by the Mid-Atlantic TRM for each sector and end-use.



Table 10-1: Base Temperatures by Sector and End-use

Sector	End-Use	Cooling Base Temperature, °F	Heating Base Temperature, °F
Residential	Plug Load (appliance recycling, only)	65	65
Residential	HVAC	75	60
Residential	DHW	75	60
Residential	Building Envelope	75	60
Nonresidential	HVAC (except infrared heaters)	65	65

Based on the base temperatures used by the Mid-Atlantic TRM 2019, the two tables that follow, Table 10-2 and Table 10-3, provide the CDD, HDD, CDH, and HDH values using:

- Base temperatures of 65°F and 75°F for cooling metrics
- Base temperatures of 60°F and 65°F for heating metrics

Prior to the DSM Phase VII programs, savings for all residential measures are calculated using 65°F as the base temperature for CDD, HDD, CDH, and HDH. For DSM Phase VII and beyond, savings for all residential measures—besides refrigerator and freezer recycling—are calculated using 75°F as the base temperature for CDD and CDH and 60°F for HDD and HDH. For refrigerator and freezer recycling, savings are still calculated using 65°F as the base temperature for CDD, HDD, CDH, and HDH.



Table 10-2: Reference Cooling and Heating Degree Days

State	Weather Station Number	Location	Cooling Degree Days		Heating Degree Days	
			CDD – 65 °F ⁷⁷	CDD – 75 °F	HDD - 60 °F	HDD – 65 °F ⁷⁸
MD	724060	Baltimore-Washington International Airport	1,222	231	3,499	4,611
VA	724010	Richmond International Airport	1,436	319	2,891	3,863
NC	746943	Elizabeth City Coast Guard	1,748	363	1,831	2,712
	723068	Rocky Mount-Wilson	1,355	188	2,048	2,951
NC	746943 & 723068	Average of Elizabeth City and Rocky Mount-Wilson values ⁷⁹	1,552	275	1,940	2,832

⁷⁷ National Solar Radiation Data Base. 1991-2005 Update: Typical Meteorological Year 3. Accessed June 2017. http://rredc.nrel.gov/solar/old_data/nsrdb/1991-2005/tmy3

⁷⁸ Ibid.

⁷⁹ Values are calculated for Elizabeth City and Rocky Mount-Wilson using the same method, then the average values between these two locations will be used for North Carolina for more location accuracy within Dominion's service territory. The Richmond values will be used for Virginia.



Table 10-3: Reference Cooling and Heating Degree Hours

State	Weather Station Number	Location	Cooling Degree Hours		Heating Degree Hours	
			CDH - 65 °F ⁸⁰	CDH - 75 °F	HDH - 60 °F ⁸¹	HDH - 65 °F
MD	724060	Baltimore-Washington International Airport	32,841	9,616	87,360	113,644
VA	724010	Richmond International Airport	39,416	12,954	73,168	97,043
NC	746943	Elizabeth City Coast Guard	45,491	12,936	47,855	68,632
	723068	Rocky Mount-Wilson	38,294	10,759	54,648	76,594
NC	746943 & 723068	Average of Elizabeth City and Rocky Mount-Wilson values ⁸²	41,893	11,847	51,521	72,613

10.1.1.1 Update Summary

The changes to this section, compared with last year, are described in Table 10-4.

Table 10-4: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	Modified Weather Station	Updated North Carolina weather station from Charlotte to an average of Elizabeth City and Rocky Mount-Wilson
	Base Temperature	Modified base temperature used for some measures

⁸⁰ For consistency across all measures, DNV GL calculated cooling degree hours at the base 65°F temperature to be used in the attic insulation measure. These values are also used to derive the HVAC full load hours in Sub-appendix II: Residential HVAC Equipment Full Load Hours.

⁸¹ Ibid.

⁸² The CDD, CDH, and HDD values are calculated for Elizabeth City and Rocky Mount-Wilson using the same method, then the average values between these two locations will be used for North Carolina for more location accuracy within Dominion's Territory. The Richmond values will be used for Virginia.



10.2 Sub-appendix F1-II: Residential Equivalent Full-Load Hours for HVAC Equipment

Table 10-5 provides the equivalent full-load hours (EFLH) that are used as defaults to calculate gross annual electric energy savings for Dominion Energy residential programs. The Dominion full-load cooling and heating hours are determined by using ratios of the Cooling Degree Hours (CDH) and Heating Degree Hours (HDH) provided in Sub-appendix I: Cooling and Heating Degree Days and Hours to adapt the EFLH provided in the Mid-Atlantic TRM 2019 for Baltimore, MD to represent a location in Dominion Energy's service territory.

$$City_State_EFLH_{cool} = \frac{City_State_CDH}{Baltimore_MD_CDH} \times Baltimore_MD_EFLH_{cool}$$

The same method is used to determine the equivalent full-load hours for residential heating systems as follows:

$$City_State_EFLH_{heat} = \frac{City_State_HDH}{Baltimore_MD_HDH} \times Baltimore_MD_EFLH_{heat}$$



Table 10-5: Equivalent Full Load Cooling and Heating Hours for Residential Buildings

System Type	State	Location	Annual EFLH _{cool}	Annual EFLH _{heat}	Annual EFLH _{cool}	Annual EFLH _{heat}
Heat Pump	MD	Baltimore, MD: reference city from Mid-Atlantic TRM	744	866	744 ⁸³	866 ⁸⁴
	VA	Richmond, VA	-	-	842	789
	NC	Average of Elizabeth City, NC & Rocky Mount-Wilson, NC	-	-	936	533
Central AC	MD	Baltimore, MD: reference city from Mid-Atlantic TRM	542	-	542 ⁸⁵	-
	VA	Richmond, VA	-	-	613	-
	NC	Average of Elizabeth City, NC & Rocky Mount-Wilson, NC	-	-	682	-
Forced-air Furnace	MD	Baltimore, MD: reference city from Mid-Atlantic TRM	-	-	-	1,782 ⁸⁶
	VA	Richmond, VA	-	-	-	1,624
	NC	Average of Elizabeth City, NC & Rocky Mount-Wilson, NC	-	-	-	1,096
Window/ Room AC	MD	Baltimore, MD: reference city from Mid-Atlantic TRM			325 ⁸⁷	-
	VA	Richmond, VA			368 ⁸⁸	-
	NC	Average of Elizabeth City, NC & Rocky Mount-Wilson, NC			410	

10.2.1.1 Update Summary

The changes to this section, compared with last year, are described in Table 10-6.

⁸³ Mid-Atlantic TRM 2019, p. 90. Based on average of 5 utilities in Maryland from Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential HVAC Program." April 4, 2014, table 30, page 48.

⁸⁴ Mid-Atlantic TRM 2019, p. 91. Based on average of 5 utilities, two program years, in Maryland from Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential HVAC Program." April 4, 2014, table 30, page 48.

⁸⁵ Mid-Atlantic TRM 2019, p. 137. Based on average of 5 utilities in Maryland from Navigant Consulting "EmPOWER Maryland Draft Final Evaluation Report Evaluation Year 4 (June 1, 2012 – May 31, 2013) Residential HVAC Program." April 4, 2014, table 30, page 48.

⁸⁶ The full load hours for forced-air furnaces was calculated using $FLH_{heat} = HDD_{60°F} \times 24 \div (65°F - DesignTemperature_{heat})$ along with the HDD provided in Sub-appendix I: Cooling and Heating Degree Days and Hours and the 99% heating design temperature of 17.9 °F for Baltimore, MD per 2013 ASHRAE Handbook – Fundamentals (IP).

⁸⁷ Mid-Atlantic TRM 2019, p. 105. "VEIC calculated the average ratio of EFLH for Room AC (provided in RLW Report: Final Report Coincidence Factor Study Residential Room Air Conditioners, June 23, 2008) to EFLH for Central Cooling (provided by AHRI: http://www.energystar.gov/ia/business/bulk_purchasing/bpsavings_calc/Calc_CAC.xls) at 31%. Applying this to the EFLH for Central Cooling provided for Baltimore (1050) we get 325 EFLH for Room AC." DNV GL replicated the equation and calculated 325.5 EFLH_{cool} and rounded to 326 EFLH_{cool}.

⁸⁸ Used the same approach as Mid-Atlantic TRM, and multiplied Richmond full load cooling hours (1,188) by 31% and calculated 368 EFLH_{cool}.



Table 10-6: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	Modified Weather Station	Updated North Carolina weather station from Charlotte to an average of Elizabeth City and Rocky Mount-Wilson



10.3 Sub-appendix F1-III: Residential HVAC Equipment Efficiency Ratings⁸⁹

The efficiency ratings for residential baseline HVAC equipment, <65 kBtu/h, are based upon building code requirements in Virginia and North Carolina, as shown in Table 10-7.

Table 10-7: Residential Baseline and Efficient HVAC Equipment Efficiency Ratings

Standard	System Type	SEER (Btu/Wh)	EER (Btu/Wh)	HSPF (Btu/Wh)	COP (dimensionless)
Federal Standard⁹⁰ (baseline case)	Air conditioning system, split-system	13.0	<45 kBtu/h: 12.2 ≥45 kBtu/h: 11.7	-	-
	Air conditioning system, package	14.0	11.0	-	-
	Air-source heat pump, split-system	14.0	11.8 ⁹¹	8.2	3.40 ⁹²
	Air-source heat pump, package	14.0	11.8	8.0	3.35 ⁹³
	Ductless mini-split heat pump ⁹⁴	12.0	10.6 ⁹⁵	7.4	3.22 ⁹⁶
	Resistance heat	-	-	3.4	1.00

⁸⁹ Mid-Atlantic TRM 2019, p. 87. Baseline system efficiencies are based on the applicable minimum federal standards, consistent with 2015 IECC Table C403.2.3(2)–Minimum Efficiency Requirements: Electrically Operated Unitary and Applied Heat Pump. Further, the table provides minimum efficiency values for units less than 65,000 Btu/h.

⁹⁰ 10 CFR Ch. II (1-1-12 Edition) §430.32 at <https://www.govinfo.gov/content/pkg/CFR-2012-title10-vol3/pdf/CFR-2012-title10-vol3-sec430-32.pdf>, effective 2015-01-01.

⁹¹ Since this value was not provided by 10 CFR Ch. II (1-1-12 Edition) §430.32, it was estimated using Equation 3 in Sub-appendix III: Residential HVAC Equipment Efficiency Ratings.

⁹² Calculated using Equation 5 in Sub-appendix F1-V: General Equations

⁹³ Calculated using Equation 5 in Sub-appendix F1-V: General Equations

⁹⁴ 2018 North Carolina Energy Conservation Code (based on 2015 IECC with amendments) at https://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/BCC_Documents/Minutes_ah/2018%20NC%20Energy%20Conservation%20Code%20-%20Proposed.pdf, effective 2019-01-01. Virginia code follows 2015 IECC. (<https://www.energycodes.gov/adoption/states/virginia>)

⁹⁵ Since this value was not provided by North Carolina Energy Conservation Code, it was estimated using Equation 3 in Sub-appendix V: General Equations.

⁹⁶ Calculated using Equation 5 in Sub-appendix F1-V: General Equations



Standard	System Type	SEER (Btu/Wh)	EER (Btu/Wh)	HSPF (Btu/Wh)	COP (dimensionless)
ENERGY STAR⁹⁷ (efficient case)	Air conditioning, split system	15.0	12.5	-	-
	Air conditioning, package system	15.0	12.0	-	-
	Air-source heat pump, split-system	15.0	12.5	8.5	3.46 ⁹⁸
	Air-source heat pump, package system	15.0	12.0	8.2	3.40 ⁹⁹
	Ductless Mini-split heat pump ¹⁰⁰	15.0	12.5	8.5	3.46 ¹⁰¹

10.3.1.1 Update Summary

The changes to this section, compared with last year, are described in Table 10-8.

Table 10-8: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	No change
v10	Added equipment categories	- Added efficiency requirements for ductless mini-split heat pumps - Distinguished between split-system and packaged air-conditioning systems
	Added efficiency category	Added column for COP

⁹⁷ ENERGY STAR Air-Source Heat Pumps and Central Air Conditioners Key Product Criteria at https://www.energystar.gov/products/heating_cooling/heat_pumps_air_source/key_product_criteria (accessed 2019-12-04).

⁹⁸ Calculated using Equation 5 in Sub-appendix F1-V: General Equations

⁹⁹ Calculated using Equation 5 in Sub-appendix F1-V: General Equations

¹⁰⁰ Mid-Atlantic TRM 2019, p. 120. Ductless mini-split heat pump measure, efficient condition follows Energy Star standards.

¹⁰¹ Calculated using Equation 5 in Sub-appendix F1-V: General Equations



10.4 Sub-appendix F1-IV: Residential Lighting Factors

Table 10-9 provides the following associated values for residential LED Lighting measures:

- Annual hours of use (HOU)
- Annual electric waste heat factors for heating season (WHFe_{heat})
- Annual electric waste heat factors for cooling season (WHFe_{cool})
- Demand reduction waste heat factors (WHFd) and
- Coincident factor (CF)

Table 10-9: Input Values by Room Type for LED Lighting Savings

Fixture Location	Annual HOU ¹⁰² (hours)	WHFe _{heat} ¹⁰³	WHFe _{cool}	WHFd	CF
Dining Room	770	0.899	1.077	1.170	0.058
Bedroom	661	0.899	1.077	1.170	0.058
Bathroom	788	0.899	1.077	1.170	0.058
Hallway	920	0.899	1.077	1.170	0.058
Living Room	916	0.899	1.077	1.170	0.058
Kitchen	2,902	0.899	1.077	1.170	0.058
Indoors	679	0.899	1.077	1.170	0.058
Exterior	1,643	1.000	1.000	1.000	0.018
Garage	391	1.000	1.000	1.000	0.018
Unknown ¹⁰⁴	760	0.899	1.077	1.170	0.058

Table 10-10 provides the Dominion Energy customer proportion (DCP) to account for likely leakage rate due to purchased lighting products that are installed outside of the Dominion Energy service territory.

Table 10-10: DCP values for in-store lighting purchases¹⁰⁵

Store Location	DCP Value
10 Hebron Church Rd, Saxe, VA 23967	0.67
100 Old Fair Grounds Way, Kilmarnock, VA 22482	0.67
100 S Lynn Shores Dr, Virginia Beach, VA 23452	1.00
1000 19th Street, Virginia Beach, VA 23451	1.00
10001 Southpoint Pkwy, Fredericksburg, VA 22407	0.87

¹⁰² Hours of use for Dining Room, Bedroom, Bathroom, Hallway, Living Room, Kitchen, and Garage are from Navigant, EM&V Report for the 2012 Energy Efficient Lighting Program, Duke Energy Progress, July 2013, p. 23. Hours of use for Indoor ("Residential Interior and in-unit Multi-Family"), and Exterior are from the Mid-Atlantic TRM 2019, p. 34.

¹⁰³ The WHFe_{heat}, WHFe_{cool}, and WHFd factors were drawn from the Mid-Atlantic TRM 2019 pp. 29 – 41.

¹⁰⁴ For fixtures in unknown locations, the HOU is a weighted average of those for indoor-, outdoor-, and garage-located fixtures using the weights reported in Final EM&V Report for the 2013 Energy Efficient Lighting Program for Duke Energy Progress by Navigant, p. 23, of 89%, 9%, and 2%, respectively.

¹⁰⁵ Provided by program implementation vendor, CLEAResult.



Store Location	DCP Value
1001 Rices Depot Rd, Rice, VA 23966	0.67
10070 Jefferson Davis Hwy, Fredericksburg, VA 22407	0.92
10071 Highway One, South Hill, VA 23970	0.67
10080 Hull Street Rd, Richmond, VA 23236	1.00
10083 Brook Rd Ste 76, Glen Allen, VA 23059	0.90
1009 L P Bailey Memorial Hwy, Halifax, VA 24558	0.67
101 Tanglewood Pkwy N, Elizabeth City, NC 27909 United States	1.00
101 Washington Square Plz, Fredericksburg, VA 22405	0.84
1010 Chatham Rd, Halifax, VA 24558	0.67
10100 Brook Rd, Glen Allen, VA 23059	0.91
10101 Southpoint Pkwy, Fredericksburg, VA 22407	0.89
1013 Greenville Ave, Staunton, VA 24401	0.67
1020 Battlefield Blvd N, Chesapeake, VA 23320	1.00
1021 Virginia Beach Blvd, Virginia Beach, VA 23451	1.00
10233 Lakeridge Pkwy, Ashland, VA 23005	0.93
1027 Centerbrooke Ln, Suffolk, VA 23434	1.00
10301 New Guinea Rd, Fairfax, VA 22032	0.98
10310B Main St, Fairfax, VA 22030	0.82
10461 Midlothian Tpke, Richmond, VA 23235	1.00
1055 Independence Blvd, Virginia Beach, VA 23455	1.00
10586 Tinsbloom Mill Ln, King George, VA 22485	0.67
10611 Spotsylvania Ave, Fredericksburg, VA 22408	0.89
10629 Doyle Blvd, Mckenney, VA 23872	0.67
10689 Sudley Manor Dr, Manassas, VA 20109	0.68
10710 John Cussons Dr, Glen Allen, VA 23060	0.95
10731 Jefferson Ave, Newport News, VA 23601	1.00
10776 Sudley Manor Dr, Manassas, VA 20109	0.67
1085 Walmart Dr, Williamston, NC 27892	1.00
109 Lucy Ln, Waynesboro, VA 22980	0.67
10905 Hull Street Rd, Midlothian, VA 23112	1.00
1095 International Pkwy, Fredericksburg, VA 22406	0.72
1098 Frederick Blvd, Portsmouth, VA 23707	1.00
10989 General Puller Hwy, Hartfield, VA 23071	1.00
110 River Oaks Dr, Tarboro, NC 27886 United States	1.00



Store Location	DCP Value
1100 Stafford Market Pl, Stafford, VA 22556	0.67
11000 Buckley Hall Rd, Mathews, VA 23109	1.00
11008 Warwick Blvd Ste 400, Newport News, VA 23601	1.00
1105 S Military Hwy, Chesapeake, VA 23320	1.00
11073 Cople Hwy, Kinsale, VA 22488	0.67
111 River Oaks Dr, Tarboro, NC 27886	1.00
1112 London Blvd, Portsmouth, VA 23704	1.00
11181 Lee Hwy, Fairfax, VA 22030	0.85
112 Saxkey Rd, Drakes Branch, VA 23937	0.67
11213 Lee Hwy, Fairfax, VA 22030	0.90
11214 Jefferson Ave, Newport News, VA 23601	1.00
11260 W Broad St, Glen Allen, VA 23060	0.96
11290 W Broad St, Glen Allen, VA 23060	0.96
11301 Midlothian Tpke, Richmond, VA 23235	1.00
1139 Carolina Rd, Suffolk, VA 23434	1.00
114 River Oaks Drive, Tarboro, NC 27886 United States	1.00
11400 W Broad St, Glen Allen, VA 23060	0.96
1144 Wilkinson Rd, Richmond, VA 23227	0.98
1149 Nimmo Pkwy, Virginia Beach, VA 23456	1.00
1157 Nimmo Pkwy Ste 102, Virginia Beach, VA 23456	1.00
11640 Jefferson Davis Hwy, Chester, VA 23831	0.99
117 Market Place Dr, Hampton, VA 23666	1.00
1170 N Military Hwy, Norfolk, VA 23502	1.00
11740 W Broad St Ste 101, Richmond, VA 23233	0.96
1180 Carl D Silver Pkwy, Fredericksburg, VA 22401	0.94
11801 Peter Shane Way, Nokesville, VA 20181	0.67
1200 N Main St, Suffolk, VA 23434	1.00
12000 Iron Bridge Rd, Chester, VA 23831	0.99
12000 Ridgefield Pkwy, Richmond, VA 23233	0.99
1201 Gateway Blvd, Fredericksburg, VA 22401	0.88
1201 Mall Dr, Richmond, VA 23235	1.00
1204 S Military Hwy, Chesapeake, VA 23320	1.00
1205 S Church St, Smithfield, VA 23430	0.67
12101 Jefferson Davis Hwy, Chester, VA 23831	0.98



Store Location	DCP Value
1211 N Lee Hwy, Lexington, VA 24450	0.67
12121 Jefferson Ave, Newport News, VA 23602	1.00
12130 Jefferson Ave, Newport News, VA 23602	1.00
1216 N Main St, Suffolk, VA 23434	1.00
12197 Sunset Hills Rd, Reston, VA 20190	0.99
12200 Chattanooga Plz, Midlothian, VA 23112	1.00
1221 Harris St, Charlottesville, VA 22903	0.79
1226 Wilroy Rd, Suffolk, VA 23434	1.00
12275 Price Club Plz, Fairfax, VA 22030	0.84
12300 Chattanooga Plz, Midlothian, VA 23112	1.00
12300 Jefferson Davis Hwy, Chester, VA 23831	0.95
1236 Concord Ave, Richmond, VA 23228	0.98
12372 Dillingham Sq, Woodbridge, VA 22192	0.67
12401 Jefferson Ave, Newport News, VA 23602	1.00
12407 Jefferson Ave, Newport News, VA 23602	1.00
1245 N Military Hwy, Norfolk, VA 23502	1.00
12490 Warwick Blvd, Newport News, VA 23606	1.00
125 Washington Square Plz, Fredericksburg, VA 22405	0.84
1250 E Atlantic St, LaCrosse, VA 23950	0.67
126 General Puller Hwy, Saluda, VA 23149	0.97
1261 Cobb Corners Drive, Rocky Mount, NC 27804 United States	1.00
1261 N Military Hwy, Norfolk, VA 23502	1.00
1264 S Craig Ave, Covington, VA 24426	0.67
12651 Apollo Dr, Woodbridge, VA 22192	0.67
12725 Jefferson Ave, Newport News, VA 23602	1.00
1280 Smithfield Plz, Smithfield, VA 23430	0.67
13047 Fair Lakes Shopping Ctr, Fairfax, VA 22033	0.85
1305 Carmia Way, Richmond, VA 23235	1.00
13059 Fair Lakes Parkway, Fairfax, VA 22033	0.85
1308 Battlefield Blvd N, Chesapeake, VA 23320	1.00
1316 Greenbrier Pkwy, Chesapeake, VA 23320	1.00
1317 W Broad St, Waynesboro, VA 22980	0.67
1320 Greenbrier Pkwy Ste 320, Chesapeake, VA 23320	1.00
1320 N Laburnum Ave, Richmond, VA 23223	1.00



Store Location	DCP Value
13345 Worth Ave, Woodbridge, VA 22192	0.67
1348 Courthouse Rd, Stafford, VA 22554	0.67
13509 Boydton Plank Rd, Dinwiddie, VA 23841	0.67
13580 Minnieville Rd, Woodbridge, VA 22192	0.68
1361 Carl D Silver Pkwy, Fredericksburg, VA 22401	0.91
13653 Lee Jackson Memorial Hwy # B, Chantilly, VA 20151	0.89
1367 Kempsville Rd, Chesapeake, VA 23320	1.00
1383 Memorial Dr E, Ahoskie, NC 27910	1.00
1385 Fordham Dr Ste 113, Virginia Beach, VA 23464	1.00
13856 Metrotech Dr, Chantilly, VA 20151	0.86
1386 Carmia Way, Richmond, VA 23235	1.00
14 Lee Jackson Hwy, Staunton, VA 24401	0.67
1400 Tintern St, Chesapeake, VA 23320	1.00
1401 Emmet St N, Charlottesville, VA 22903	0.77
1401 Mall Dr, North Chesterfield, VA 23235	1.00
1405 Memorial Dr E, Ahoskie, NC 27910	1.00
1405B S Main St, Farmville, VA 23901	0.67
1410 Airport Road, Suffolk, VA 23434	1.00
14120 Lee Hwy # B, Centreville, VA 20120	0.77
1413 N Armistead Ave, Hampton, VA 23666	1.00
143 E Craig St, Craigsville, VA 24430	0.67
1432 Anderson Hwy, Cumberland, VA 23040	0.94
1435 Bainbridge Blvd, Chesapeake, VA 23324	1.00
14390 Chantilly Crossing Ln, Chantilly, VA 20151	0.83
14391 Chantilly Crossing Ln, Chantilly, VA 20151	0.86
14501 Hancock Village St, Chesterfield, VA 23832	0.99
14501 Spruce Ave, Chester, VA 23836	0.77
1457 Mt Pleasant Rd Ste 101A, Chesapeake, VA 23322	1.00
14610 Lee Hwy, Gainesville, VA 20155	0.67
15 Town Center Way, Hampton, VA 23666	1.00
1500 Cornerside Blvd Ste B, Vienna, VA 22182	1.00
1500 N Croatan Hwy, Kill Devil Hills, NC 27948	1.00
1500 New Bridge Rd, Mineral, VA 23117	0.66
1500 Wilson Blvd, Rosslyn, VA 22209	0.84



Store Location	DCP Value
1501 Sams Cir, Chesapeake, VA 23320	1.00
1502 Boulevard, Colonial Heights, VA 23834	0.70
1504 N Parham Rd, Richmond, VA 23229	1.00
1505 Lynnhaven Pkwy Ste 1355, Virginia Beach, VA 23453	1.00
15054 Kings Hwy, Montross, VA 22520	0.67
1509 Sams Cir, Chesapeake, VA 23320	1.00
1510 W Broad St, Richmond, VA 23220	1.00
1511 Benvenue Rd, Rocky Mount, NC 27804 United States	1.00
1512 Koger Center Blvd, Richmond, VA 23235	1.00
1521 Sams Cir, Chesapeake, VA 23320	1.00
1529 Tappahannock Rd, Tappahannock, VA 22560	0.67
1529 Washington St, Williamston, NC 27892	1.00
1540 International Blvd, Norfolk, VA 23513	1.00
15490 Warwick Blvd, Newport News, VA 23608	1.00
15575 Carrollton Blvd, Carrollton, VA 23314	0.71
157 Hillcrest Pkwy, Chesapeake, VA 23322	1.00
1600 Julian R Allsbrook Hwy, Roanoke Rapids, NC 27870	1.00
1605 W Ehringhaus St, Elizabeth City, NC 27909	1.00
1629 Tappahannock Blvd, Tappahannock, VA 22560	0.67
1642 Sparrow Rd # A, Chesapeake, VA 23325	1.00
16441 Merchants Ln, King George, VA 22485	0.66
1651 Reston Pkwy, Reston, VA 20194	0.96
16600 Mountain Rd, Montpelier, VA 23192	0.67
171 W Lee Hwy, Warrenton, VA 20186	0.67
1711 Effingham St, Portsmouth, VA 23704	1.00
172 Davis Hwy, Mineral, VA 23117	0.67
1720 E Little Creek Rd, Norfolk, VA 23518	1.00
17342 General Puller Hwy, Deltaville, VA 23043	1.00
17364 Richmond Rd, Callao, VA 22435	0.67
17413 Warwick Blvd, Newport News, VA 23603	1.00
1761 Jefferson Hwy, Fishersville, VA 22939	0.67
1800 Carl D Silver Pkwy, Fredericksburg, VA 22401	0.96
1800 Liberty St Ste 106, Chesapeake, VA 23324	1.00
18109 Triangle Shopping Plz, Dumfries, VA 22026	0.67



Store Location	DCP Value
1832 Kempsville Rd, Virginia Beach, VA 23464	1.00
1832 Peery Dr, Farmville, VA 23901	0.67
1839 West Ehringhus St., Elizabeth City, NC 27909 United States	1.00
187 W Ocean View Ave, Norfolk, VA 23503	1.00
1900 Cunningham Dr, Hampton, VA 23666	1.00
1901 Roane St, Richmond, VA 23222	1.00
1909 Landstown Centre Way, Virginia Beach, VA 23456	1.00
1918 William St, Fredericksburg, VA 22401	0.84
1920 Centerville Tpke, Virginia Beach, VA 23464	1.00
1937 E Pembroke Ave, Hampton, VA 23663	1.00
1948 Diamond Springs Rd, Virginia Beach, VA 23455	1.00
1949 Lynnhaven Pkwy Ste 1552, Virginia Beach, VA 23453	1.00
1950 Anderson Hwy, Powhatan, VA 23139	0.92
1952 Laskin Rd Ste 512, Virginia Beach, VA 23454	1.00
1973 S Military Hwy, Chesapeake, VA 23320	1.00
1991 Daniel Stuart Sq, Woodbridge, VA 22191	0.67
20 K V Rd, Victoria, VA 23974	0.67
20 Plantation Dr Ste 145, Fredericksburg, VA 22406	0.81
200 Marquis Pkwy, Williamsburg, VA 23185	1.00
2001 Clarendon Blvd, Arlington, VA 22201	0.95
2002 Power Plant Pkwy, Hampton, VA 23666	1.00
201 Beech Dr, Newport News, VA 23601	1.00
201 Hillcrest Pkwy, Chesapeake, VA 23322	1.00
201 Perimeter Dr, Midlothian, VA 23113	1.00
2014 S Croatan Hwy, Kill Devil Hills, NC 27948	1.00
202 E Williamsburg Rd, Sandston, VA 23150	1.00
2020 Lynnhaven Pkwy, Virginia Beach, VA 23456	1.00
2020 Rio Hill Ctr, Charlottesville, VA 22901	0.70
2021 Lynnhaven Pkwy, Virginia Beach, VA 23456	1.00
2040 Battlefield Blvd N, Chesapeake, VA 23324	1.00
2044 Victory Blvd, Portsmouth, VA 23702	1.00
206 N Main St, Bowling Green, VA 22427	0.67
2060 S Independence Blvd, Virginia Beach, VA 23453	1.00
2098 Nickerson Blvd Ste A, Hampton, VA 23663	1.00



Store Location	DCP Value
2098 Nickerson Blvd, Hampton, VA 23663	1.00
210 Monticello Ave, Williamsburg, VA 23185	1.00
2128 Hull St, Richmond, VA 23224	1.00
2131 E Washington St, Petersburg, VA 23803	0.67
21398 Price Cascades Plz, Sterling, VA 20164	0.81
215 Maple Ave W, Vienna, VA 22180	0.97
2150 US 13 SOUTH, AHOSKIE, NC 27910 United States	1.00
2150 Us 13 South, Ahoskie, NC 27910 United States	1.00
21800 Towncenter Plz Ste 237, Sterling, VA 20164	0.84
2201 W Washington St, Petersburg, VA 23803	0.67
2210 Portsmouth Blvd, Portsmouth, VA 23704	1.00
2217 W Beverley St, Staunton, VA 24401	0.67
222 W 21st St, Norfolk, VA 23517	1.00
2233 Upton Dr, Virginia Beach, VA 23454	1.00
22330 S Sterling Blvd Ste A123, Sterling, VA 20164	0.80
2301 Colley Ave Ste B, Norfolk, VA 23517	1.00
2311 Jefferson Ave, Newport News, VA 23607	1.00
2324 Elson Green Ave, Virginia Beach, VA 23456	1.00
233 Carmichael Way, Chesapeake, VA 23322	1.00
2336 Plank Rd, Fredericksburg, VA 22401	0.98
2356 George Washington Mem Hwy, Hayes, VA 23072	1.00
237 Battlefield Blvd S Ste 13, Chesapeake, VA 23322	1.00
2371 Carl D Silver Parkway, Fredericksburg, VA 22401	0.96
2371 Carl D. Silver Pkwy, Fredericksburg, VA 22401	0.96
2375 Pocahontas Trl, Quinton, VA 23141	1.00
2384 Hayes Rd, Hayes, VA 23072	1.00
2403 Virginia Beach Blvd, Virginia Beach, VA 23454	1.00
2410 Sheila Ln, Richmond, VA 23225	1.00
2420 E Little Creek Rd, Norfolk, VA 23518	1.00
2421 Old Taylor Rd, Chesapeake, VA 23321	1.00
2430 Sheila Ln, Richmond, VA 23225	1.00
2444 Chesapeake Square Ring Rd, Chesapeake, VA 23321	1.00
2448 Chesapeake Square Ring Rd, Chesapeake, VA 23321	1.00
25 S Gateway Dr, Fredericksburg, VA 22406	0.84



Store Location	DCP Value
2501 Sheila Ln, Richmond, VA 23225	1.00
251 PREMIER BLVD, ROANOKE RAPIDS, NC 27870 United States	1.00
251 Premier Blvd, Roanoke Rapids, NC 27870 United States	1.00
2530 Weir Rd, Chester, VA 23831	0.95
2536 New Market Rd, Richmond, VA 23231	1.00
2591 Tidewater Dr, Norfolk, VA 23509	1.00
2601 George Washington Mem Hwy, Yorktown, VA 23693	1.00
2601 Weir Pl, Chester, VA 23831	0.93
2622 Courtland Rd, South Prince George, VA 23805	0.67
263 Garrisonville Rd Ste 111, Stafford, VA 22554	0.67
264 Cedar Ln SE Ste Ab-C, Vienna, VA 22180	0.99
2707 General Puller Hwy, Saluda, VA 23149	1.00
271 Premier Blvd, Roanoke Rapids, NC 27870	1.00
2715 W Main St, Waynesboro, VA 22980	0.67
2720 N Mall Dr Ste 208, Virginia Beach, VA 23452	1.00
2728 Kings Hwy, Colonial Beach, VA 22443	0.67
2814 Stuarts Draft Hwy, Stuarts Draft, VA 24477	0.67
2815 Merrilee Dr, Fairfax, VA 22031	0.99
2864 Airline Blvd, Portsmouth, VA 23701	1.00
2905 District Ave, Fairfax, VA 22031	1.00
2910 North Ave, Richmond, VA 23222	1.00
299 Banks Ford Pkwy, Fredericksburg, VA 22406	0.83
300 Chatham Dr, Newport News, VA 23602	1.00
300 Tarrytown Ctr, Rocky Mount, NC 27804 United States	1.00
301 E Atlantic St, South Hill, VA 23970	0.67
304 Deacon Rd, Fredericksburg, VA 22405	0.81
3061 Plank Rd, Fredericksburg, VA 22401	0.94
308 Cavalier Sq, Hopewell, VA 23860	0.71
310 E Broadway, Hopewell, VA 23860	0.73
3101 Jefferson Davis Hwy, Alexandria, VA 22305	0.98
3102 Plank Rd Ste 600, Fredericksburg, VA 22407	0.83
3105 S Crater Rd, Petersburg, VA 23805	0.67
314 King St, Keysville, VA 23947	0.67
3140 Halifax Rd, South Boston, VA 24592	0.67



Store Location	DCP Value
3146 Western Branch Blvd, Chesapeake, VA 23321	1.00
315 Cowardin Ave, Richmond, VA 23224	1.00
3157 Magic Hollow Blvd, Virginia Beach, VA 23453	1.00
3171 District Ave, Charlottesville, VA 22901	0.77
3201 Holland Rd, Virginia Beach, VA 23453	1.00
3201 Old Lee Hwy, Fairfax, VA 22030	0.94
32032 N Main St, Boykins, VA 23827	0.67
3208 Holland Rd Ste 107, Virginia Beach, VA 23453	1.00
321 Thacker Ave, Covington, VA 24426	0.67
3230 Tidewater Dr, Norfolk, VA 23509	1.00
325 Chatham Dr, Newport News, VA 23602	1.00
326 High St, Portsmouth, VA 23704	1.00
3301 Jefferson Davis Hwy, Richmond, VA 23234	1.00
3302 S Military Hwy, Chesapeake, VA 23323	1.00
3330 S Crater Rd, Petersburg, VA 23805	0.67
3332 Princess Anne Rd, Virginia Beach, VA 23456	1.00
3345 Virginia Beach Blvd, Virginia Beach, VA 23452	1.00
335 Merchant Walk Sq Bldg 800, Charlottesville, VA 22902	0.86
3350 Chesapeake Blvd, Norfolk, VA 23513	1.00
3350 E Princess Anne Rd, Norfolk, VA 23502	1.00
3352 Virginia Beach Blvd, Virginia Beach, VA 23452	1.00
337 Perimeter Dr, Midlothian, VA 23113	1.00
3376 S Military Hwy, Chesapeake, VA 23323	1.00
3412 W Mercury Blvd, Hampton, VA 23666	1.00
3494 Catlett Rd, Catlett, VA 20119	0.67
3531 Tidewater Dr # 33, Norfolk, VA 23509	1.00
3565 Holland Rd, Virginia Beach, VA 23452	1.00
3569 Bridge Rd # 201, Suffolk, VA 23435	0.99
3601 Old Halifax Rd Ste 200, South Boston, VA 24592	0.67
3690 King St, Alexandria, VA 22302	0.90
3750 Virginia Beach Blvd Ste B, Virginia Beach, VA 23452	1.00
3818 Kecoughtan Rd, Hampton, VA 23669	1.00
3820A Mechanicsville Tpke, Richmond, VA 23223	1.00
3850 Conlon Way, Elizabeth City, NC 27909 United States	1.00



Store Location	DCP Value
3857 Kecoughtan Rd, Hampton, VA 23669	1.00
3877 Holland Rd, Virginia Beach, VA 23452	1.00
39 Town and Country Dr Ste 101, Fredericksburg, VA 22405	0.68
3903 Walmsley Blvd, Richmond, VA 23234	1.00
3915 Centreville Rd, Chantilly, VA 20151	0.85
3959 Twin Pines Rd, Portsmouth, VA 23703	1.00
3978 Meadowdale Blvd, Richmond, VA 23234	1.00
40 Main Street -, Mathews, VA 23109	1.00
400 S Pickett St, Alexandria, VA 22304	1.00
400 W 21st St, Norfolk, VA 23517	1.00
4000 Glenside Dr, Richmond, VA 23228	1.00
4008 E Little Creek Rd, Norfolk, VA 23518	1.00
402 Second St NE, Burkeville, VA 23922	0.67
4036 Victory Blvd, Portsmouth, VA 23701	1.00
4040 Victory Blvd, Portsmouth, VA 23701	1.00
4080 Jermantown Rd, Fairfax, VA 22030	0.89
4091 James Madison Hwy, Fork Union, VA 23055	0.67
411 Wythe Creek Rd, Poquoson, VA 23662	1.00
415 W Main St, Murfreesboro, NC 27855	1.00
416 13th Street, West Point, VA 23181	0.67
4171 Lee Jackson Hwy, Greenville, VA 24440	0.67
420 Pantops Ctr, Charlottesville, VA 22911	0.71
4200 Portsmouth Blvd Ste 600, Chesapeake, VA 23321	1.00
4239 Holland Rd Ste 788, Virginia Beach, VA 23452	1.00
4300 Portsmouth Blvd Ste 170, Chesapeake, VA 23321	1.00
4311 Walney Rd, Chantilly, VA 20151	0.89
43150 Broadlands Center Plz Ste 110, Ashburn, VA 20148	0.67
4318B George Washington Mem Hwy, Yorktown, VA 23692	1.00
433 England St, Ashland, VA 23005	0.67
4336 Virginia Beach Blvd, Virginia Beach, VA 23452	1.00
4340 S Laburnum Ave, Richmond, VA 23231	1.00
4368 Chantilly Shopping Center Dr, Chantilly, VA 20151	0.86
4386 Courtneys Corner Rd, Bealeton, VA 22712	0.67
4401 Pouncey Tract Rd, Glen Allen, VA 23060	0.95



Store Location	DCP Value
44110 Ashburn Shopping Plz, Ashburn, VA 20147	0.67
45 S Airport Dr, Highland Springs, VA 23075	1.00
4511 John Tyler Hwy Ste L, Williamsburg, VA 23185	1.00
4521 S Laburnum Ave, Richmond, VA 23231	1.00
45425 Dulles Crossing Plz, Sterling, VA 20166	0.78
455 Oriana Rd, Newport News, VA 23608	1.00
4551 S Laburnum Ave, Henrico, VA 23231	1.00
4554 Virginia Beach Blvd, Virginia Beach, VA 23462	1.00
4590 George Washington Hwy, Portsmouth, VA 23702	1.00
4601 Commonwealth Centre Pkwy, Midlothian, VA 23112	1.00
462 Wythe Creek Rd, Poquoson, VA 23662	1.00
4630 Monticello Ave, Williamsburg, VA 23188	1.00
4640 Monticello Ave, Williamsburg, VA 23188	1.00
465 Lee Hwy Ste 103, Verona, VA 24482	0.67
4655 Monticello Ave, Williamsburg, VA 23188	1.00
4670 Casey Blvd, Williamsburg, VA 23188	1.00
4708 Portsmouth Blvd, Chesapeake, VA 23321	1.00
4725 W Ox Rd, Fairfax, VA 22030	0.90
475 Kempsville Rd, Chesapeake, VA 23320	1.00
4750 Finlay St, Richmond, VA 23231	1.00
4787 Old Stage Hwy, Smithfield, VA 23430	0.67
4805 Shore Dr Ste B, Virginia Beach, VA 23455	1.00
4807 Shore Dr, Virginia Beach, VA 23455	1.00
4814 Penlan Rd, New Canton, VA 23123	0.67
4821 Virginia Beach Blvd, Virginia Beach, VA 23462	1.00
4914 George Washington Mem Hwy, Grafton, VA 23692	1.00
4925 W Broad St Ste 404, Richmond, VA 23230	1.00
500 S. Washington St, Falls Church, VA 22046	1.00
5000 S Croatan Hwy, Nags Head, NC 27959	1.00
5001 Holt Ave, Hampton, VA 23666	1.00
5001 Nine Mile Rd, Henrico, VA 23223	1.00
5007 Victory Blvd, Yorktown, VA 23693	1.00
501 E Main St, Louisa, VA 23093	0.67
5013 Virginia Beach Blvd, Virginia Beach, VA 23462	1.00



Store Location	DCP Value
502 W Ehringhaus St, Elizabeth City, NC 27909	1.00
504 Bud Dr, Chesapeake, VA 23322	1.00
505 Euclid Ave Ste 533, Colonial Beach, VA 22443	0.67
5061 Westfields Blvd, Centreville, VA 20120	0.81
5073 Jefferson Davis Hwy, Fredericksburg, VA 22408	0.91
508 Fort Evans Rd, Leesburg, VA 20176	0.67
5082 History Land Hwy, Farnham, VA 22460	0.67
5115 Leesburg Pike, Falls Church, VA 22041	1.00
514 N Main St, Emporia, VA 23847	0.67
5201 Hull Street Rd, Richmond, VA 23224	1.00
5210 Wilkinson Rd, Henrico, VA 23227	1.00
5215 Plank Rd, Fredericksburg, VA 22407	0.96
522 Caratoke Highway, Moyock, NC 27958	1.00
5221 Brook Rd, Richmond, VA 23227	0.99
5222 Oaklawn Blvd Ste B2, Hopewell, VA 23860	0.69
5236 Chamberlayne Rd, Richmond, VA 23227	0.99
5236 Mary Ball Rd, Lively, VA 22507	0.67
525 First Colonial Rd, Virginia Beach, VA 23451	1.00
5251 Nine Mile Rd, Richmond, VA 23223	1.00
5270A Chamberlayne Rd, Richmond, VA 23227	0.99
5275 Waterway Dr, Dumfries, VA 22025	0.67
5277 Princess Anne Rd, Virginia Beach, VA 23462	1.00
5300 N Croatan Hwy, Kitty Hawk, NC 27949	1.00
5381 Virginia Dare Trl N, Southern Shores, NC 27949	1.00
5400 N Croatan Hwy, Kitty Hawk, NC 27949	1.00
5401 W Broad St, Richmond, VA 23230	1.00
546 First Colonial Rd, Virginia Beach, VA 23451	1.00
5545 N Croatan Hwy, Southern Shores, NC 27949	1.00
5630 Princess Anne Rd Ste B, Virginia Beach, VA 23462	1.00
57 US Highway 64 E, Plymouth, NC 27962	1.00
57 W Windsor Blvd, Windsor, VA 23487	0.81
5700 Hopkins Rd, North Chesterfield, VA 23234	1.00
5700 Huell Matthews Hwy, South Boston, VA 24592	0.66
5720 Courthouse Rd, Spotsylvania, VA 22551	0.67



Store Location	DCP Value
5742 Three Notch D Rd, Crozet, VA 22932	0.71
5771 Plank Rd, Fredericksburg, VA 22407	0.95
5885 Kingstowne Blvd, Alexandria, VA 22315	1.00
5900 E Virginia Beach Blvd Ste 206, Norfolk, VA 23502	1.00
5900 Godwin Blvd, Suffolk, VA 23432	0.76
5920 Jefferson Ave, Newport News, VA 23605	1.00
599 Frost Ave, Warrenton, VA 20186	0.67
60 Broad Street Rd, Manakin Sabot, VA 23103	0.93
6000 Burke Commons Rd, Burke, VA 22015	0.99
603 W Virginia Ave, Crewe, VA 23930	0.67
605 Newmarket Dr N Ste 1, Newport News, VA 23605	1.00
6100 Arlington Blvd, Falls Church, VA 22044	1.00
6101 N Military Hwy Ste 100, Norfolk, VA 23518	1.00
6111 Jefferson Ave, Newport News, VA 23605	1.00
614 S Hicks St, Lawrenceville, VA 23868	0.67
6140 Rose Hill Dr, Alexandria, VA 22310	1.00
6198 Little River Tpke, Alexandria, VA 22312	1.00
6210 Seven Corners Ctr, Falls Church, VA 22044	1.00
6213 Belmont Rd, Chesterfield, VA 23832	1.00
6215 Portsmouth Blvd, Portsmouth, VA 23701	1.00
622 S Main St, Emporia, VA 23847	0.67
625 Richmond Tappahannock Hwy, Manquin, VA 23106	0.78
6255 College Dr, Suffolk, VA 23435	1.00
6259 College Dr, Suffolk, VA 23435	1.00
6303 Richmond Hwy, Alexandria, VA 22306	0.97
632 Grassfield Pkwy, Chesapeake, VA 23322	1.00
6421 Whaleyville Blvd, Suffolk, VA 23438	0.81
6425 Mechanicsville Tpke, Mechanicsville, VA 23111	1.00
6449 Centralia Rd, Chesterfield, VA 23832	0.98
649 Newtown Rd, Virginia Beach, VA 23462	1.00
6493 Mechanicsville Tpke, Mechanicsville, VA 23111	0.98
6500 Jefferson Davis Hwy, Spotsylvania, VA 22551	0.81
6501 Iron Bridge Pl, Richmond, VA 23234	1.00
6501 W Broad St, Richmond, VA 23230	1.00



Store Location	DCP Value
651 W Main St, Smithfield, VA 23430	0.67
6555 Little River Tpke, Alexandria, VA 22312	1.00
6569 Market Dr, Gloucester, VA 23061	1.00
657 Phoenix Dr, Virginia Beach, VA 23452	1.00
6600 Richmond Hwy, Alexandria, VA 22306	1.00
6600 Springfield Mall, Springfield, VA 22150	1.00
6610 Mooretown Rd, Williamsburg, VA 23188	1.00
663 Turnberry Blvd, Newport News, VA 23602	1.00
6659 George Washington Memorial Hwy, Gloucester, VA 23061	1.00
6691 Frontier Dr, Springfield, VA 22150	1.00
6700 Mooretown Rd, Williamsburg, VA 23188	1.00
6715 Backlick Rd, Springfield, VA 22150	1.00
672 Elden St, Herndon, VA 20170	0.96
673 Cedar Rd, Chesapeake, VA 23322	1.00
6730 Jefferson Davis Hwy, Richmond, VA 23237	1.00
6750 Richmond Hwy, Alexandria, VA 22306	0.98
6757 Lake Harbour Dr, Midlothian, VA 23112	1.00
6805 Commons Dr, Prince George, VA 23875	0.67
6819 Waltons Ln, Gloucester, VA 23061	1.00
6825 Phenix Main St, Phenix, VA 23959	0.67
6900 Main St, Gloucester, VA 23061	1.00
6920 Braddock Rd, Annandale, VA 22003	1.00
6920 Forest Ave, Richmond, VA 23230	1.00
6921 Waltons Ln, Gloucester, VA 23061	1.00
697 Colonial Trl E, Surry, VA 23883	0.67
7 Town Center Way, Hampton, VA 23666	1.00
700 N Wesleyan Blvd, Rocky Mount, NC 27804	1.00
7001 Winterpock Rd, Chesterfield, VA 23832	0.99
701 Battlefield Blvd N Ste D, Chesapeake, VA 23320	1.00
7041 Brookfield Plz, Springfield, VA 22150	1.00
7080 Bethel Rd, Scottsburg, VA 24589	0.67
7101 Harrison Rd, Fredericksburg, VA 22407	1.00
7107 Forest Hill Ave, Richmond, VA 23225	1.00
7115 Merrimac Trl, Williamsburg, VA 23185	1.00



Store Location	DCP Value
7126 Hayes Shopping Ct, Hayes, VA 23072	1.00
7147 Richmond Rd, Williamsburg, VA 23188	1.00
72 Coliseum Xing, Hampton, VA 23666	1.00
72 Doc Stone RD, Stafford, VA 22556	0.67
7218 Hull Street Rd, Richmond, VA 23235	1.00
7235 Bell Creek Rd, Mechanicsville, VA 23111	1.00
7251 Bell Creek Rd, Mechanicsville, VA 23111	0.99
7300 Midlothian Tpke Ste A, Richmond, VA 23225	1.00
731 E Rochambeau Dr, Williamsburg, VA 23188	1.00
736 Warrenton Rd, Fredericksburg, VA 22406	0.67
7373 Boston Blvd, Springfield, VA 22153	0.98
7390 Bell Creek Rd Ste 308A, Mechanicsville, VA 23111	1.00
7430 Bell Creek Rd, Mechanicsville, VA 23111	0.99
7448 Little River Tpke Ste B, Annandale, VA 22003	1.00
7525 Tidewater Dr, Norfolk, VA 23505	1.00
7528 Mechanicsville Tpke, Mechanicsville, VA 23111	1.00
7530 Smith Station Rd, Fredericksburg, VA 22407	0.93
7530 Tidewater Dr, Norfolk, VA 23505	1.00
7552 W Broad St, Richmond, VA 23294	1.00
7635 Granby St, Norfolk, VA 23505	1.00
7700 Gunston Plz # A, Lorton, VA 22079	0.90
7710 Richmond Hwy, Alexandria, VA 22306	1.00
7734 Hampton Blvd Ste A, Norfolk, VA 23505	1.00
7812 Richmond Hwy, Alexandria, VA 22306	1.00
7828 Midlothian Tpke, Richmond, VA 23235	1.00
7901 Brook Rd, Richmond, VA 23227	0.97
7910 Richmond Hwy, Alexandria, VA 22306	1.00
7940 Richmond Hwy, Alexandria, VA 22306	0.99
8001 Brook Rd, Richmond, VA 23227	0.97
801 E Rochambeau Dr, Williamsburg, VA 23188	1.00
801 Merrimac Trl, Williamsburg, VA 23185	1.00
8057 W Broad St Ste C, Richmond, VA 23294	1.00
809 S Washington St, Alexandria, VA 22314	1.00
8143 Buckley Hall Rd, Hudgins, VA 23076	1.00



Store Location	DCP Value
8147 Colonial Trl W, Spring Grove, VA 23881	0.67
8195 Pine Ridge Rd, Mechanicsville, VA 23116	0.94
830 Southpark Blvd, Colonial Heights, VA 23834	0.67
8300 Centreville Rd, Manassas, VA 20111	0.67
8315 Sudley Rd, Manassas, VA 20109	0.67
8401 Hampton Blvd Ste 2, Norfolk, VA 23505	1.00
8474 Chesapeake Blvd, Norfolk, VA 23518	1.00
8484 Kings Hwy, King George, VA 22485	0.67
8490 Centreville Rd # A, Manassas Park, VA 20111	0.67
850 Glenrock Rd, Norfolk, VA 23502	1.00
8601 Airport Rd, Quinton, VA 23141	1.00
869 S Pickett St, Alexandria, VA 22304	1.00
8734 Richmond Hwy, Alexandria, VA 22309	1.00
8766 Pocahontas Trl, Williamsburg, VA 23185	1.00
8784 Guinea Road, Hayes, VA 23072	1.00
8794 Sacramento Dr, Alexandria, VA 22309	1.00
8920 Patterson Ave, Richmond, VA 23229	1.00
900 Tidewater Dr, Norfolk, VA 23504	1.00
900 Walmart Way, Midlothian, VA 23113	1.00
9001 Staples Mill Rd, Henrico, VA 23228	0.98
901 Walmart Way, Midlothian, VA 23113	1.00
9140 Amelia St, Amelia Court House, VA 23002	0.67
9159 Atlee Rd, Mechanicsville, VA 23116	0.99
9161 Atlee Rd Ste A, Mechanicsville, VA 23116	0.96
922 N Main St Ste A, Suffolk, VA 23434	1.00
923 N Main St, Chase City, VA 23924	0.67
9232 Old Keene Mill Rd Ste B, Burke, VA 22015	1.00
928 Diamond Springs Rd Ste 102, Virginia Beach, VA 23455	1.00
9422 W Broad St, Richmond, VA 23294	0.97
9440 W Broad St, Richmond, VA 23294	0.97
9490 W Broad St, Richmond, VA 23294	0.97
9534 Main St, Fairfax, VA 22031	0.95
9536 Woodman Rd # 9540, Richmond, VA 23228	0.97
955 Providence Sq Shopping Ctr, Virginia Beach, VA 23464	1.00



Store Location	DCP Value
956 Bragg Rd, Fredericksburg, VA 22407	0.96
9573 Shore Dr, Norfolk, VA 23518	1.00
9620 Granby St, Norfolk, VA 23503	1.00
9650 W Broad St, Glen Allen, VA 23060	0.96
9651 Woods Cross Rd, Gloucester, VA 23061	0.96
969 Valley St, Scottsville, VA 24590	0.67
9692 Liberia Ave, Manassas, VA 20110	0.67
970 Hilton Heights Rd, Charlottesville, VA 22901	0.75
9714 Sliding Hill Rd, Ashland, VA 23005	0.90
9785 Jefferson Davis Hwy, Fredericksburg, VA 22407	0.84
9795 Courthouse Rd, Spotsylvania, VA 22553	0.89
9870 W Broad St, Glen Allen, VA 23060	0.98
99 Hill Carter Pkwy, Ashland, VA 23005	0.67
990 Hopeman Pkwy, Waynesboro, VA 22980	0.67
9901 County Dr, Disputanta, VA 23842	0.67

10.4.1.1 Update Summary

The changes to this section, compared with last year, are described in Table 10-11.

Table 10-11: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Values	Updated store locations and DCP Values
v10	New	New section



10.5 Sub-appendix F1-V: General Equations

Equation 1: Cooling Capacities – Btu/h to tons

$$Size_{ton} = \frac{Size_{Btu/h}}{12,000 \text{ Btu/h} \cdot \text{ton}}$$

Equation 2: Cooling Capacities – tons to Btu/h

$$Size_{Btu/h} = Size_{ton} \times 12,000 \text{ Btu/h} \cdot \text{ton}$$

Equation 3: Energy Efficiencies - SEER to EER,¹⁰⁶ for systems < 65,000 Btu/h

$$EER \cong -0.02 \times SEER^2 \mp 1.12 \times SEER$$

If $EER \leq 15.68$, then using the quadratic equation,

$$SEER \cong \frac{1.12 - \sqrt{(-1.12)^2 - (4 \times 0.02 \times EER)}}{2 \times 0.02}$$

Otherwise use,

$$SEER \cong \frac{EER}{0.9}$$

Equation 4: Energy Efficiencies - EER to IEER, for systems $\geq 65,000$ Btu/h

$$IEER \cong \frac{EER}{0.9}$$

Equation 5: Energy Efficiencies - HSPF to COP¹⁰⁷

If $HSPF \leq 11.7$, then

$$COP \cong -0.0255 \times HSPF^2 + 0.6239 \times HSPF$$

Otherwise, use

$$COP \cong \frac{HSPF}{3.412}$$

Equation 6: Energy Efficiencies - COP to HSPF

If $COP \leq 3.81$, then

¹⁰⁶ A Component-Based Model for Residential Air Conditioner and Heat Pump Energy Calculations. Master's Thesis, University of Colorado at Boulder, Wassmer, M. (2003). Note this is appropriate for single speed units only.

¹⁰⁷ Ibid.



$$HSPF \cong \frac{0.6239 + \sqrt{((-0.6239)^2 - (4 \times 0.0255 \times COP))}}{2 \times 0.0255}$$

Otherwise, use

$$HSPF \cong 3.412 \times COP$$

Equation 7: Energy Efficiencies - COP to EER

$$EER \cong 3.412 \times COP$$

Equation 8: Energy Efficiencies – $\frac{kW}{ton_{full-load}}$ to $\frac{kW}{ton_{IPLV}}$

$$\frac{kW}{ton_{IPLV}} \cong C \times \frac{kW}{ton_{full-load}}$$

where C = 0.80 for water-cooled chillers < 200 tons

= 0.95 for water-cooled chillers ≥ 200 tons

Equation 9: Energy Efficiencies – $EER_{full-load}$ to EER_{IPLV}

$$EER_{IPLV} \cong C \times EER_{full-load}$$

where C = 0.76 for air-cooled chillers

Equation 10: Heat to electric energy – Btu/h to kW

$$kW = 3,412 \text{ Btu/h}$$

10.5.1.1 Update Summary

The changes to this section, compared with last year, are described in Table 10-12.

Table 10-12: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	Equation	Changed COP to HSPF for $COP \leq 3.81$ equation
v10	New Equation	Heat to electric energy conversion added



10.6 Sub-appendix F1-VI: Definition of Terms

baseline condition	Typically the less efficient system that is being replaced (pre-retrofit); for HVAC equipment upgrades, the baseline energy efficiency values used to calculate savings equal the minimum requirements set forth by the state building code or federal standards, as relevant.
CDD	Annual cooling degree days
CEE	Consortium for Energy Efficiency
COP	The Coefficient of Performance (COP) of a heat pump is the ratio of the change in heat at the system output to the energy input of the heat pump
DBT	A Dry-Bulb Temperature (DBT) is the temperature of air measured using a thermometer freely exposed to the air but shielded from radiation and moisture. This is the most commonly reported measure of air temperature.
EER	The Energy Efficiency Ratio (EER), an energy efficiency rating for unitary air conditioning and heat pump equipment, is the ratio of cooling output to electric input at a prescribed set of interior and exterior conditions that reflect peak operation
energy-efficient condition	The efficient replacement system (post-retrofit)
ENERGY STAR®	A program, operated by the Environmental Protection Agency, to benchmark efficiency standards for energy-consuming equipment or buildings
HDD	Annual heating degree days
HOU	Annual hours of use for energy-consuming equipment
HSPF	The Heating Seasonal Performance Factor (HSPF) is an estimate of seasonal heating energy efficiency that represents the total heating output of a heat pump, including supplementary electric heat, during the normal heating season (in Btu) as compared to the total electricity consumed (in watt-hours) during the same period
IEER	The Integrated Energy Efficiency Ratio (IEER), an energy efficiency rating for unitary air conditioning and heat pump equipment larger than 65 kBtu/h, comprised of cooling part-load EER on the basis of weighted operation at various load capacities
ISR	In-service rate, the percentage of rebated equipment that remains installed and operational
kW/ton	Water-cooled chiller system efficiency, in kW/ton
ODP	Open, drip-proof (ODP) motor enclosure type
participant	Multiple strategies to count participants are in use (see Table 8-7)



Pascal	A Pascal is a derived SI unit of pressure equal to 1 kg/(m·s ²) or 1 N/m ²
ppb	Parts per billion
R	R-value of insulation ¹⁰⁸
rpm	Rotational speed of motor, in revolutions per minute (rpm)
SEER	The Seasonal Energy Efficiency Ratio (SEER), an energy efficiency rating for unitary air conditioning and heat pump equipment ≤65 kBtu/h, is the total cooling output divided by the total electric input across a typical cooling season
SVGe	Percentage of annual lighting energy saved by lighting control
SVGd	Percentage of lighting demand saved by lighting control
ΔT	Average difference in temperature between cold intake water and shower water
TEFC	Totally enclosed fan-cooled (TEFC) motor enclosure type
TRM	Technical Reference Manual
time of sale¹⁰⁹	Time at which new equipment purchase takes place to replace an older, pre-existing piece of equipment that has reached the end of its useful life. Also referred to as “replace on burn-out.”
VRF	This is a special type of air conditioner or heat pump that allows for Variable Refrigerant Flow (VRF) whereby refrigerant may be used as a cooling and heating medium simultaneously.
ΔWater	Customer annual water savings per residential unit, in gallons
WBT	The Wet-Bulb Temperature (WBT) is the air temperature measured with a wet cloth surrounding the thermometer bulb while moving the bulb to simulate a breeze.
WHF	Waste-heat factor to account for electric cooling savings and/or negative electric heating savings from replacing baseline equipment with efficient equipment (e.g., clothes dryers and lighting)

¹⁰⁸ New York Residential TRM. Prepared for New York Department of Public Service by New York Evaluation Advisory Contractor Team, p. 27.

¹⁰⁹ Mid-Atlantic TRM 2019, p. 18.



Table 10-13: Participant Definition by Program

Program	DNV Definition of Participant	IRP Definition of Participant
Residential AC Cycling	A unique electric account ID	Single AC or HP unit
Non-residential Distributed Generation	1 MW available to Dominion for dispatch	1 MW of generated energy
Residential Age and Income Qualifying	Only the first instance of a Dominion-approved rebate associated with a given electric account ID is counted as a unique participant. It is counted as a participant in the month that their first rebate is approved.	Single household
Non-residential Heating and Cooling Efficiency		Single building
Non-residential Lighting Systems and Controls	The savings associated with subsequent measure(s) for a repeated electric account ID will be attributed to the month of their Dominion-approved rebate but will not increase the participant tally.	
Non-residential Small Business Improvement		
Non-residential Prescriptive		
Non-residential Office		
Non-residential Small Manufacturing		
Non-residential Window Film		Square footage of installed window film at one building

10.6.1.1 Update Summary

The changes to this section, compared with last year, are described in Table 10-14.

Table 10-14: Summary of Update(s) from Previous Version

Version	Type of Change	Description of Change
2020	None	Removed the Residential Retail LED Program as this Program has been retired
v10	New table	Added table of participant definitions



ABOUT DNV

Driven by our purpose of safeguarding life, property, and the environment, DNV enables organizations to advance the safety and sustainability of their business. We provide classification, technical assurance, software, and independent expert advisory services to the maritime, oil & gas, and energy industries. We also provide certification services to customers across a wide range of industries. Combining leading technical and operational expertise, risk methodology and in-depth industry knowledge, we empower our customers' decisions and actions with trust and confidence. We continuously invest in research and collaborative innovation to provide our customers and society with operational and technological foresight. Operating in more than 100 countries, we are dedicated to helping our customers make the world safer, smarter, and greener.