BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-2, SUB 1107

In the Matter of:)	
Application of Duke Energy Progress, LLC)	
For Approval of Fuel and Fuel-Related Cost)	**NCSEA'S**
Adjustments for Electric Utilities Pursuant)	**POST-HEARING BRIEF**
to G.S. 62-133.2 and Commission Rule)	
R8-55)	

NCSEA'S POST-HEARING BRIEF

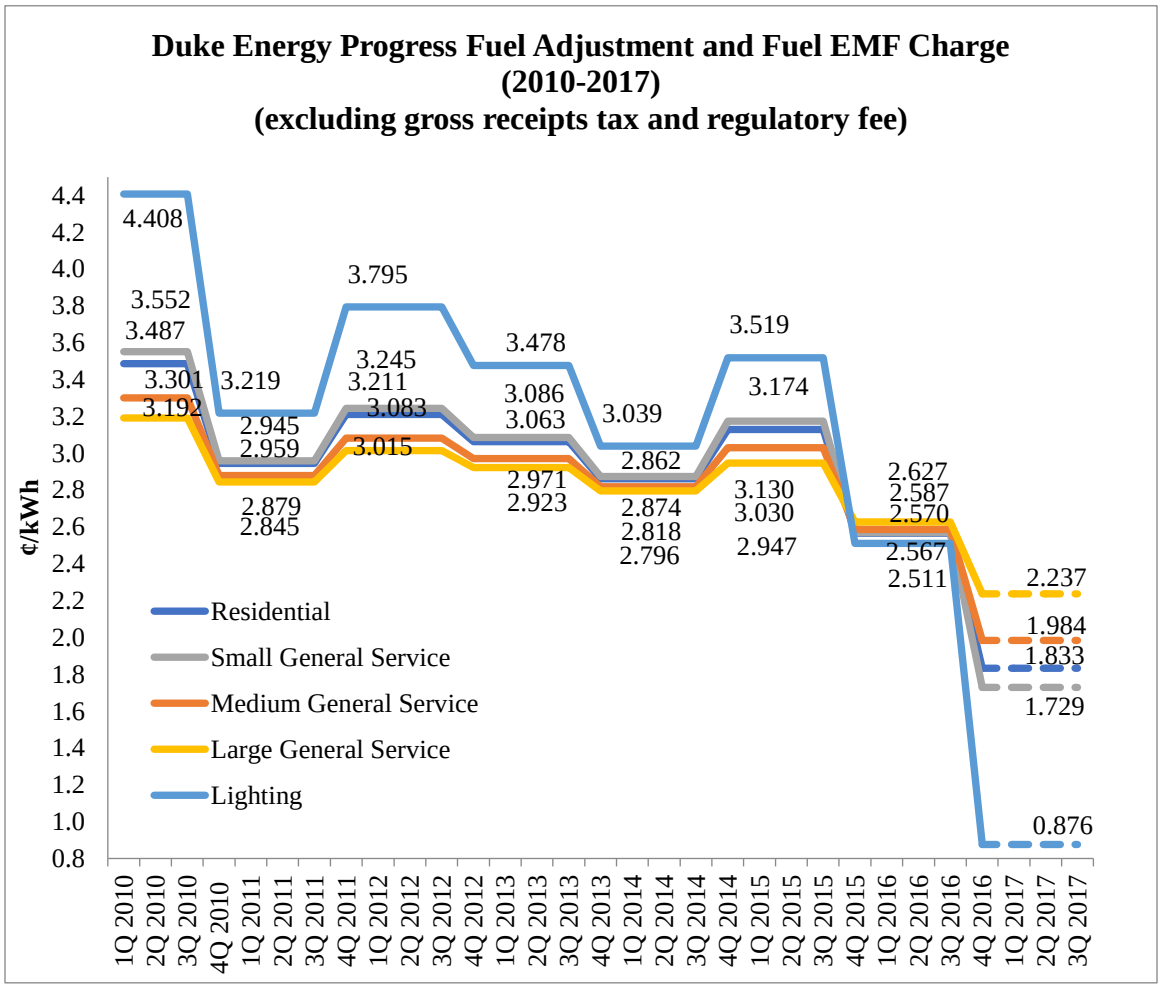
The North Carolina Sustainable Energy Association ("NCSEA") submits this post-hearing brief in accordance with the *Notice of Due Date for Post-Hearing Filings* issued by the North Carolina Utilities Commission ("Commission") on October 17, 2016. NCSEA does not challenge any costs for which Duke Energy Progress, LLC ("DEP") seeks recovery in its fuel and fuel-related rider application as unreasonable or imprudent. NCSEA does, however, wish to focus the Commission's attention on DEP's natural gas hedging practices and how other practices can also effectively help minimize the risk of future "rate shocks" to ratepayers.

DEP'S PROPOSED RIDER CHARGES IN CONTEXT

As illustrated in **Figure 1** below, the fuel and fuel-related charges passed on by DEP in its fuel rider to its North Carolina retail customers have fluctuated over recent years, but seem generally to be declining over time. In this proceeding, DEP is requesting a 1.833¢ per kWh charge for the residential class, a 0.734¢ decrement from the current rider; a 1.729¢ per kWh charge for the small general service class, a 0.841¢ decrement from the current rider; a 1.984¢ per kWh charge for the medium general service class, a 0.603¢ decrement from the current rider; a 2.237¢ per kWh charge for the large general service class, a 0.39¢ decrement from the current rider; and a 0.876¢ per kWh charge for the

lighting class, a 1.635¢ decrement from the current rider. The proposed fuel charge will be in effect after December 1, 2016.

Figure 1[1]



NCSEA does not challenge any costs for which DEP seeks recovery in its fuel and fuel-related rider application as unreasonable or imprudent, but NCSEA does wish to focus

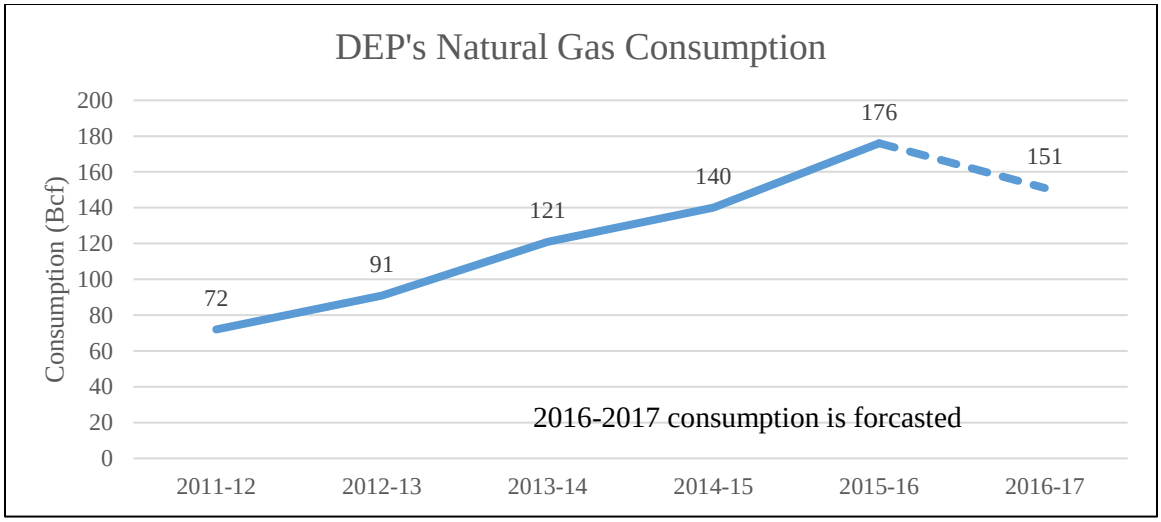
[1] *Order Approving Fuel Charge Adjustment*, p. 15, Commission Docket No. E-2, Sub 949 (November 16, 2009); *Order Approving Fuel Charge Adjustment*, p. 22, Commission Docket No. E-2, Sub 976 (November 17, 2010); *Order Approving Fuel Charge Adjustment*, pp. 17-18, Commission Docket No. E-2, Sub 1001 (November 14, 2011); *Order Approving Fuel Charge Adjustment*, p. 18, Commission Docket No. E-2, Sub 1018 (November 16, 2012); *Order Approving Fuel Charge Adjustment*, Appendix A, p. 2, Commission Docket No. E-2, Sub 1031 (November 25, 2013); *Order Approving Fuel Charge Adjustment*, Appendix A, p. 1, Commission Docket No. E-2, Sub 1045, (November 19, 2014); *Order Approving Fuel Charge Adjustment*, Appendix A, Commission Docket No. E-2, Sub 1069 (November 11, 2015); *Joint Proposed Order of DEP and the Public Staff*, p. 29, Commission Docket No. E-2, Sub 1107 (October 18, 2016).

the Commission's attention on DEP's natural gas hedging practices, the costs of these practices, and how these costs may be mitigated to an extent by further integration of renewable energy into DEP's generation fleet.

DEP'S HEDGING PRACTICES

While DEP's consumption of natural gas during the test period is expected to be less than during the test period, DEP's overall consumption has increased significantly since 2011, as illustrated in **Figure 2** below.

Figure 2[2]

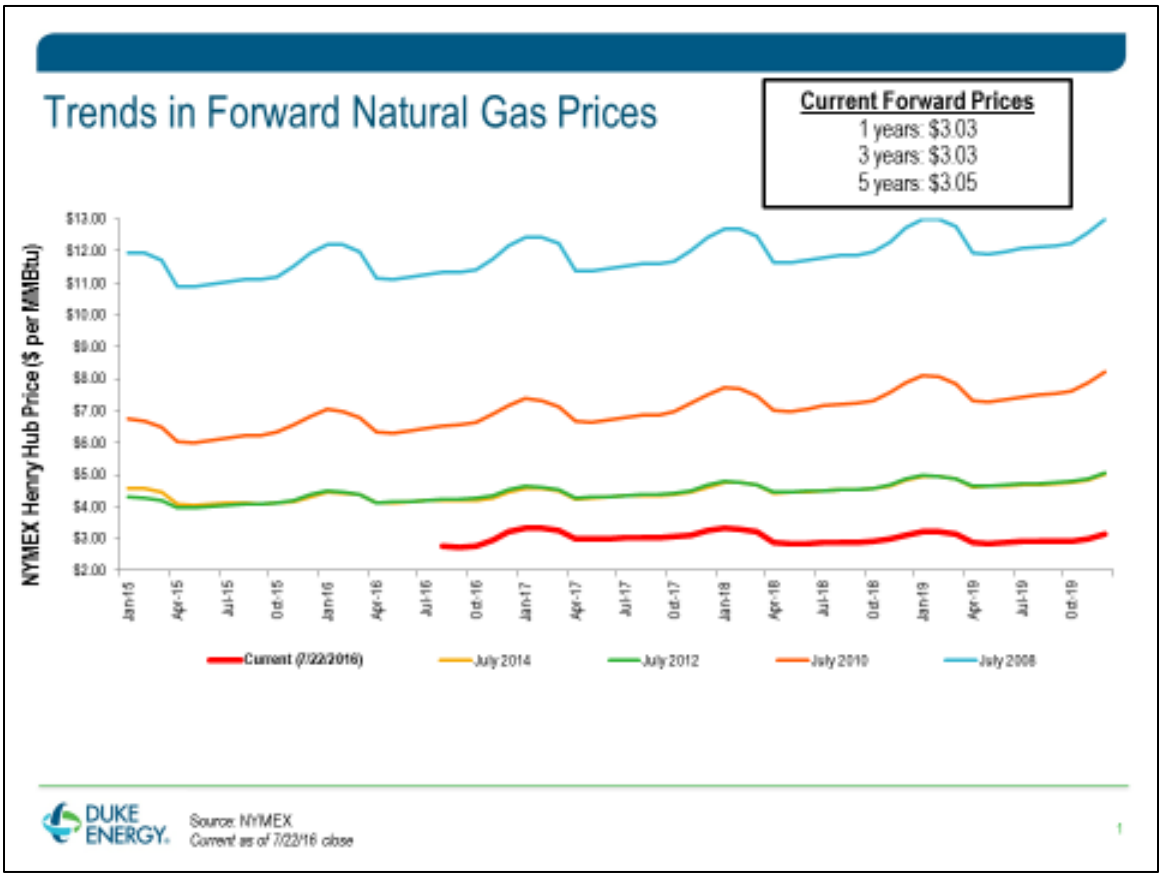


As DEP's consumption of natural gas increases, it becomes increasingly reasonable and prudent to try to protect customers from the price volatility that has historically been associated with natural gas. Natural gas hedging is one means of providing DEP's customers with insulation from or insurance against price volatility. To this end, DEP's hedging plan is designed "to manage fuel cost price risk and dampen price volatility for

[2] *Direct Testimony of Sasha J. Weintraub*, p. 8, Commission Docket No. E-2, Sub 1031 (June 12, 2013); *Direct Testimony of Sasha J. Weintraub*, p. 8, Commission Docket No. E-2, Sub 1045 (June 18, 2014); *Direct Testimony of Swati V. Daji*, p. 8, Commission Docket No. E-2, Sub 1069 (June 17, 2015); *Direct Testimony of Swati V. Daji*, p. 7, Commission Docket No. E-2, Sub 1107 (June 22, 2016).

customers[.]" *Natural Gas Hedging Report for Duke Energy Carolinas, LLC and Duke Energy Progress, Inc.*, p. 1, Commission Docket No. E-100 Sub 47A (January 31, 2014). Hedging can, however, provide the ancillary benefit of locking in low fuel prices, and it is worth noting that natural gas prices are currently near historic lows, as shown in **Figure 3**.

Figure 3[3]

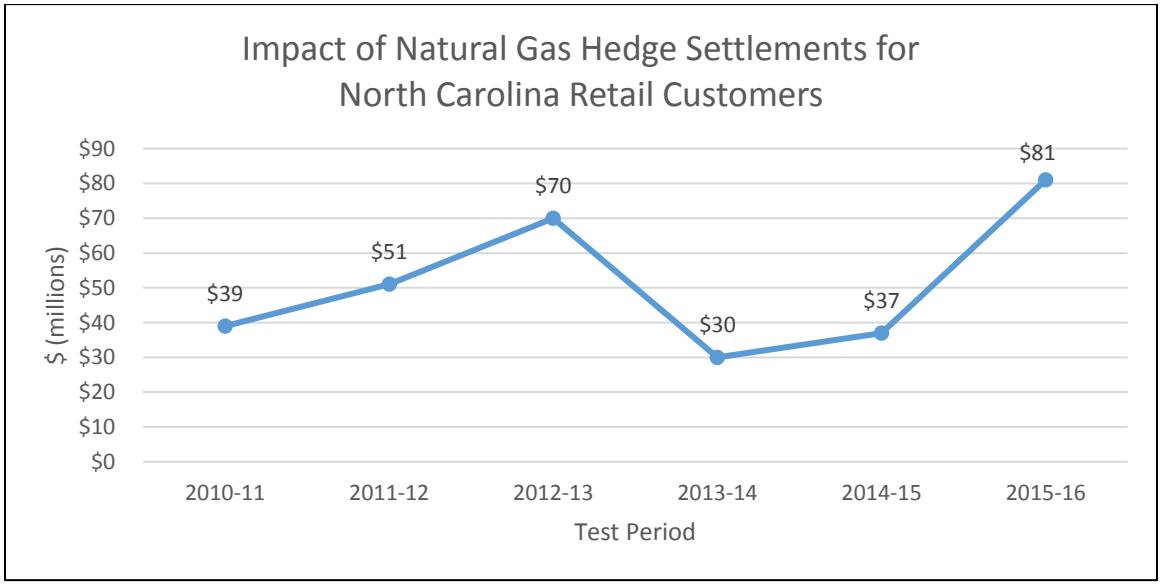


DEP has been implementing a natural gas hedging strategy for the last several years in order to mitigate the price volatility of natural gas; however, as a consequence of falling prices, DEP's natural gas hedging practices – while prudent – have come at a cost to customers. As **Figure 4** below illustrates, from 2010 to 2014 DEP's hedging practices cost

[3] *DEP Response to NCSEA Data Request No. 1, Item No. 1-2*, Commission Docket No. E-2, Sub 1107, a copy of which is attached as **Exhibit A**.

consumers approximately $227 million. During the 2015 test period, DEP's hedging practices resulted in roughly $81 million of additional costs for North Carolina's retail customers. In total, DEP's hedging practices have cost North Carolina's consumers approximately $308 million from 2010 to 2015. Put in the perspective of an average bill, during the test period, DEP's hedging practices added an additional $2.28 per month for a typical residential customer consuming 1,000 kWh per month.[4]

Figure 4[5]



Hedging is not a tool designed to "lock-in" low prices. Rather, hedging is designed to mitigate volatility in fuel prices, and the "rate shock" to customers that volatility can cause. However, another means to mitigate volatility in fuel prices is to diversify DEP's generation fleet to include more generating facilities that do not consume fuel (or that consume only renewable fuels) and to implement energy efficiency measures.

[4] *DEP Response to NCSEA Data Request No. 1, Item No. 1-10*, Commission Docket No. E-2, Sub 1107, a copy of which is attached as **Exhibit B**.
[5] *NCSEA's Public Post-Hearing Brief*, p. 6, Commission Docket No. E-2, Sub 1069 (October 15, 2015). Exhibit B. *DEP Response to Public Staff Data Request No. 6, Item No. 6-7*, Commission Docket No. E-2, Sub 1069, a copy of which is attached as **Exhibit C**.

NCSEA has previously advocated that the Commission should adopt the process of risk-aware regulation, which is

> an approach whereby regulators proactively seek to identify, understand and minimize the risks involved in a specific regulatory decision; and then to allocate fairly the remaining risk between the utility and customers. The goal of risk-aware regulation is to ensure that society's limited resources are spent wisely, and to minimize overall costs over the long term.

Transcript of Testimony (Heard 6-3-2014 in Raleigh), p. 117, Commission Docket No. E-7, Sub 1051 (June 6, 2014). One component of risk-aware regulation is diversification of the generation fleet used to serve load so that it includes resources that consume only renewable fuels or that do not consume fuel. *NCSEA's Post-Hearing Brief*, p. 5, Commission Docket No. E-7, Sub 1051 (July 7, 2014).

Continuing the diversification of the generation fleet that serves DEP's customers will reduce reliance on any single fuel, thereby reducing exposure to volatility in any one individual fuel's prices. One way to encourage ongoing diversification into renewable generation is to set DEPs avoided cost rates as accurately as possible, including the avoided hedging cost component therein. The Commission will likely be faced with valuing avoided hedging costs within DEP's broader avoided cost rate calculation in the upcoming proceeding in Commission Docket No. E-100, Sub 148. NCSEA encourages the Commission to keep fuel rider proceedings in mind as it considers the value of avoided hedging costs in the upcoming avoided cost proceeding, as it did in the previous avoided cost proceeding.[6]

[6] *See, e.g.*, *Order Setting Avoided Cost Input Parameters*, p. 42, Commission Docket No. E-100, Sub 140 (31 December 2014) (evidencing that the Commission has thus far kept the fuel rider proceedings in mind as it has considered the value of avoided hedges).

CONCLUSION

NCSEA does not challenge any costs for which DEP seeks recovery in its fuel and fuel-related rider application as unreasonable or imprudent. NCSEA does, however, wish to focus the Commission's attention, in this docket and in others, on how renewable energy generation can act as a hedge and can effectively help minimize the risk of future "rate shocks" to ratepayers.

Respectfully submitted, this the 20th day of October, 2016.

/s/ Peter H. Ledford
Peter H. Ledford
Counsel for NCSEA
N.C. State Bar No. 42999
4800 Six Forks Road, Suite 300
Raleigh, NC 27609
919-832-7601 Ext. 107
peter@energync.org

CERTIFICATE OF SERVICE

I hereby certify that all persons on the docket service list have been served true and accurate copies of the foregoing Comments by hand delivery, first class mail deposited in the U.S. mail, postage pre-paid, or by email transmission with the party's consent.

This the 20th day of October, 2016.

/s/ Peter H. Ledford
Peter H. Ledford
Counsel for NCSEA
N.C. State Bar No.42999
4800 Six Forks Road, Suite 300
Raleigh, NC 27609
919-832-7601 Ext. 107
peter@energync.org

Exhibit A

DUKE ENERGY PROGRESS

Request:

In Docket No. E-7, Sub 1051, Duke Energy Carolinas' Witness Weintraub's testimony referenced a June 2014 *Natural Gas Forward Price Trends* graph, that was attached as Exhibit C to the Natural Gas Hedging Report for Duke Energy Carolinas, LLC and Duke Energy Progress, Inc. Weintraub Testimony Tr. at pp. 67-69 in Docket No. E-7, Sub 1051. Please provide the most recent version of this graph, as an Excel file if applicable, with a brief description of the price trends being reflected in the graph. Please provide the data underlying the graph in a format substantially similar to Duke Energy Carolinas' response to NCSEA DR1-2 in Docket No. E-7, Sub 1072.

Response:

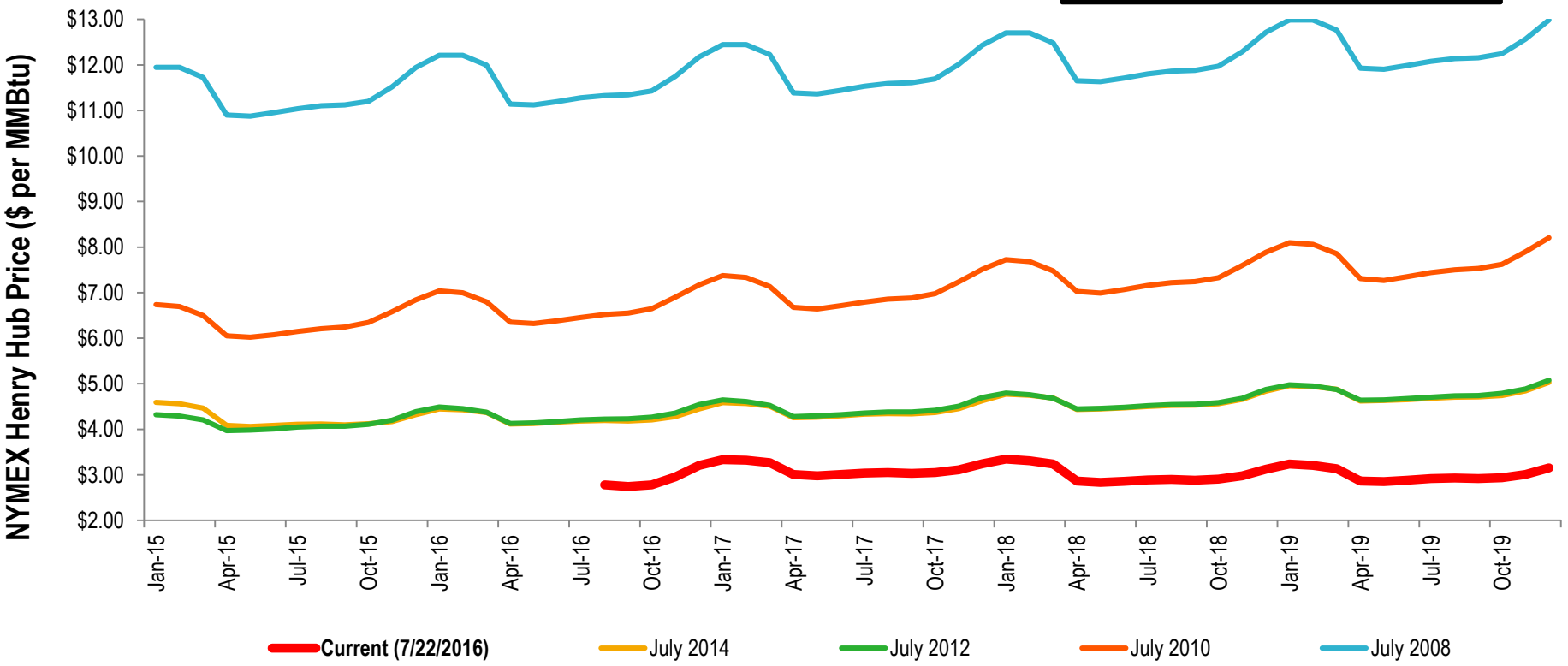
Please see attached summary power point slide and attached excel sheet with supporting data for slide. As the price trends on the slide illustrate, forward prices are currently at the lower end of the historical price trend for the applicable periods although forward prices for the period of 2016 through 2019 have increased from the lows observed earlier in the year due largely to the increase in overall US gas supply due to shale production growth over the last several years. With the growth in supply, overall prices have declined although recently have begun to trend higher from historically low levels seen earlier in 2016. In addition to general price trends, the structure of the forward natural gas price curve has flattened with less summer and winter seasonal price spreads than existed several years ago. As noted above, prices have increased from historically low levels in response to factors such as, but not limited to, reduced capital spending by producers given lower overall prices which has reduced gas rig count.


NYMEX Price Slide July 22 2016.pptx


Detailed Support Price Data for Slide D

Trends in Forward Natural Gas Prices

Current Forward Prices
1 years: $3.03
3 years: $3.03
5 years: $3.05



Source: NYMEX
Current as of 7/22/16 close

Column1	Current (7/22/2016)	July 2014	July 2012	July 2010	July 2008
Jan-15		4.587	4.32	6.739	11.947
Feb-15		4.561	4.288	6.694	11.947
Mar-15		4.466	4.203	6.494	11.727
Apr-15		4.085	3.968	6.049	10.897
May-15		4.06	3.983	6.019	10.877
Jun-15		4.082	4.009	6.077	10.952
Jul-15		4.11	4.046	6.147	11.037
Aug-15		4.114	4.066	6.21	11.102
Sep-15		4.099	4.069	6.243	11.122
Oct-15		4.119	4.106	6.345	11.202
Nov-15		4.169	4.196	6.58	11.517
Dec-15		4.32	4.386	6.84	11.942
Jan-16		4.447	4.486	7.04	12.212
Feb-16		4.425	4.454	6.995	12.212
Mar-16		4.366	4.371	6.795	11.992
Apr-16		4.116	4.126	6.35	11.142
May-16		4.127	4.141	6.32	11.122
Jun-16		4.156	4.167	6.38	11.192
Jul-16		4.182	4.202	6.455	11.277
Aug-16	2.77700	4.19	4.222	6.52	11.327
Sep-16	2.74300	4.181	4.226	6.55	11.347
Oct-16	2.78200	4.203	4.263	6.65	11.427
Nov-16	2.95200	4.278	4.353	6.9	11.747
Dec-16	3.20500	4.447	4.543	7.17	12.177
Jan-17	3.33300	4.583	4.643	7.378	12.447
Feb-17	3.31800	4.564	4.61	7.333	12.447
Mar-17	3.26800	4.505	4.525	7.133	12.227
Apr-17	3.00600	4.252	4.28	6.678	11.387
May-17	2.97700	4.265	4.295	6.643	11.362
Jun-17	3.00900	4.295	4.32	6.713	11.442
Jul-17	3.03900	4.33	4.355	6.793	11.532
Aug-17	3.04900	4.344	4.377	6.858	11.592
Sep-17	3.02900	4.34	4.381	6.883	11.612
Oct-17	3.05100	4.366	4.417	6.978	11.692
Nov-17	3.10800	4.449	4.507	7.236	12.012
Dec-17	3.24200	4.628	4.697	7.514	12.432
Jan-18	3.34400	4.769	4.792	7.724	12.702
Feb-18	3.31000	4.749	4.76	7.679	12.702
Mar-18	3.23400	4.689	4.68	7.479	12.482
Apr-18	2.86600	4.434	4.445	7.024	11.652
May-18	2.83200	4.448	4.455	6.989	11.632
Jun-18	2.86000	4.471	4.48	7.069	11.712
Jul-18	2.89000	4.501	4.515	7.159	11.802
Aug-18	2.89900	4.521	4.54	7.219	11.862
Sep-18	2.88100	4.527	4.545	7.244	11.882
Oct-18	2.90700	4.559	4.582	7.329	11.972

Nov-18	2.97700	4.654	4.68	7.599	12.292
Dec-18	3.12200	4.834	4.875	7.884	12.717
Jan-19	3.23700	4.959	4.977	8.099	12.987
Feb-19	3.20400	4.938	4.95	8.059	12.987
Mar-19	3.13600	4.877	4.872	7.859	12.767
Apr-19	2.86400	4.617	4.637	7.309	11.927
May-19	2.85300	4.631	4.647	7.269	11.907
Jun-19	2.88300	4.653	4.672	7.349	11.987
Jul-19	2.91900	4.681	4.707	7.439	12.077
Aug-19	2.93200	4.703	4.732	7.504	12.137
Sep-19	2.91800	4.709	4.742	7.529	12.157
Oct-19	2.93500	4.742	4.787	7.619	12.247
Nov-19	3.00500	4.84	4.885	7.899	12.567
Dec-19	3.15100	5.031	5.08	8.204	12.987

Exhibit B

DUKE ENERGY PROGRESS

Request:

Please provide the annual hedge cost per typical residential customer with a 1,000 kWh monthly usage, with support for the calculation, in Excel format.

Response:

Please see attached Excel spreadsheet below.

DEP NCSEA 1-10 -
Test Year Hedge Cost

Docket No E-2 Sub 1107
Test Year Hedge Cost per Typical 1000 kWh Usage Residential Customer
NCSEA DR 1-10

Line No.		Source (Docket E-2, Sub 1107)		
1	Test Year Net System Cost of Hedge	Company Records	$	129,603,080
2	DEP NC Retail MWH Sales (Test Period)	Monthly Fuel Filings		38,368,435
3	DEP System MWH Sales (Test Period)	Monthly Fuel Filings		61,281,016
4	NC Retail % of DEP System Sales (Test Period)	Line 2 / Line 3		62.61%
5	Test Year Net NC Retail Cost of Hedge	Line 1 x Line 4	$	81,144,488
6	Residential Allocation %	See Note A		44.12%
7	Test Year Net NC Retail Residential Cost of Hedge	Line 5 x Line 6	$	35,803,653
8	DEP NC Projected Retail Residential MWH Sales	McGee Exh 2, Sch 1, Pg 2, Line 1		15,669,799
9	¢/kwh	Line 7 / Line 8		0.23
10	Residential kwh usage	Input		1000
11	Test Year Hedge Cost per 1000 kwh Month Residential Customer		**$**	**2.28**

			Months	
Note A	NC Incurred Cost Allocation percentage used in Monthly Fuel Filings - Sch. 4			
	2014 Residential Allocation Percentage for 12/14-11/15	Docket E-2, Sub 1045	8	44.83%
	2015 Residential Allocation Percentage for 12/15-11/16	Docket E-2 Sub 1069	4	42.71%
		Weighted Average		44.12%

Exhibit C

Duke Energy Progress, Inc.
Docket No. E-2, Sub 1069
Public Staff Data Request No. 6
Date Sent: July 15, 2015
Requested Due Date: July 27, 2015

Topic: Hedging

Please provide any available responses electronically. If a response is provided in Excel format, please include all working formulas.

7. Please provide the annual hedge cost per typical residential customer with a 1,000 kWh monthly usage with support for the calculation in Excel format.

RESPONSE:

Please see attached spreadsheet.

PS DEP NC Fuel
DR6-7 Test Year Hed

Docket No E-2 Sub 1069
Test Year Hedge Cost per Typical 1000 kWh Usage Residential Customer
Public Staff DR 6-7

Line No.		Source (Docket E-2, Sub 1069)			
1	Test Year Net System Cost of Hedge	Company Records		$	56,160,168
2	DEP NC Retail MWH Sales (Test Period)	Monthly Fuel Filings			39,345,924
3	DEP System MWH Sales (Test Period)	Monthly Fuel Filings			59,762,373
4	NC Retail % of DEP System Sales (Test Period)	Line 2 / Line 3			65.84%
5	Test Year Net NC Retail Cost of Hedge	Line 1 x Line 4		$	36,974,330
6	Residential Allocation %	See Note A			41.72%
7	Test Year Net NC Retail Residential Cost of Hedge	Line 5 x Line 6		$	15,426,923
8	DEP NC Retail Residential MWH Sales	McGee Exh 2, Sch 1, Pg 2, Line 1			15,699,600
9	¢/kwh	Line 7 / Line 8			0.098
10	Residential kwh usage	Input			1000
11	Test Year Hedge Cost per 1000 kwh Month Residential Customer			**$**	**0.98**
Note A	NC Incurred Cost Allocation percentage used in Monthly Fuel Filings - Sch. 4		Months		
	2013 Residential Allocation Percentage for 12/13-11/14	Docket E-2, Sub 1031	8		40.17%
	2014 Residential Allocation Percentage for 12/14-11/15	Docket E-2 Sub 1045	4		44.83%
		Weighted Average			41.72%