

May 1, 2020

**VIA ELECTRONIC DELIVERY**

Ms. Kimberley A. Campbell, Chief Clerk  
North Carolina Utilities Commission  
Dobbs Building  
430 North Salisbury Street  
Raleigh, North Carolina 27603-5918

**Re: *Historical Review of 2016 REPS Plan*  
Docket Nos. E-100, Sub 147 & E-100, Sub 165**

Dear Ms. Campbell:

Enclosed for filing is Virginia Electric and Power Company d/b/a Dominion Energy North Carolina's ("DENC" or "the Company") historical review of the 2016 North Carolina Renewable Energy and Energy Efficiency Portfolio Standard Compliance Plan ("2016 REPS Plan"), as originally filed on April 29, 2016, in Docket No. E-100, Sub 147. The Company has reviewed its 2016 REPS Plan in accordance with the Commission's directive in Ordering Paragraph (3) of the June 3, 2013, *Order Granting in Part and Denying in Part Motion for Disclosure* issued in Docket No. E-100, Sub 137 ("2013 Disclosure Order"). The Company has determined that certain information redacted from the 2016 REPS Plan and originally filed confidentially under seal should no longer be withheld from public disclosure. However, information identifying renewable energy credit ("REC") contract counter-parties and REC pricing for active REC contracts remains commercially sensitive. Public disclosure of this information could potentially harm the Company's ability to negotiate and procure cost-effective RECs for future REPS compliance. Accordingly, the Company continues to designate this information as confidential trade secret information pursuant to N.C. Gen. Stat. § 132-1.2. The Company will make this information available to other parties pursuant to an appropriate nondisclosure agreement.

The Company notes that its determination regarding disclosure of prior trade secret information in its historical 2016 REPS Plan should not be considered a waiver

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of DENC's right to continue its designation of similar information as confidential trade secret information in future REPS Compliance Plans and future historical REPS Compliance Plan confidentiality reviews. *See 2013 Disclosure Order* at 10 (holding that utility's determination that past REPS information is non-confidential information suitable for public disclosure does not constitute waiver of utility's right to claim same category of disclosed REPS information is confidential in future years).

Please do not hesitate to contact me if you have any questions. Thank you for your assistance in this matter.

Very truly yours,

/s/Andrea R. Kells

ARK/sjg

Enclosures

## **DOMINION NORTH CAROLINA POWER 2016 REPS COMPLIANCE PLAN**

Pursuant to N.C.G.S. § 62-133.8 and North Carolina Utilities Commission (“NCUC” or “Commission”) Rule R8-67(b), Virginia Electric & Power Company d/b/a Dominion North Carolina Power (“DNCP” or the “Company”) submits its annual Renewable Energy and Energy Efficiency Portfolio Standard (“REPS”) Compliance Plan. The REPS Compliance Plan covers the current calendar year (2016) and immediately subsequent two calendar years (2017-2018) (the “Planning Period”). The Company also presents REPS compliance information for Town of Windsor during the Planning Period.<sup>1</sup> This North Carolina REPS Compliance Plan is an addendum to the Company’s 2016 Integrated Resource Plan (“2016 Plan”).

The Company’s 2016 REPS Compliance Report, to be filed in August 2016, will indicate that the Company and Town of Windsor have satisfied all 2015 REPS compliance obligations.

### **1.1 RENEWABLE ENERGY REQUIREMENTS**

An overview of North Carolina’s REPS requirements and Virginia’s Renewable Energy Portfolio Standard (“RPS”) goals are provided in Chapter 4, Sections 4.3.1 and 4.3.2 of the Company’s 2016 Plan.

### **1.2 COMPLIANCE PLAN**

*In accordance with Rule R8-67(b)(i), the Company describes its planned actions to comply with N.C.G.S. 62-133.8 (b),(c),(d),(e), and (f) for each year.*

#### The Company

During the Planning Period, DNCP plans to meet its statutory annual REPS obligations, as modified by the Commission<sup>2</sup>, through the use of renewable energy certificates (“RECs”) <sup>3</sup>, energy efficiency (“EE”) savings and new company-generated renewable energy where economically feasible.

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<sup>1</sup>Town of Windsor is a wholesale customer of the Company, for which DNCP provides REPS compliance services.

<sup>2</sup> On December 1, 2015, the Commission issued an Order delaying the initial Swine Waste Set-Aside requirement until 2016 and delaying the scheduled increase in the poultry requirement by one year. *Order Modifying the Swine and Poultry Waste Set-Aside Requirement and Providing Other Relief*, Docket No. E-100, Sub 113 (December 1, 2015) (“2015 Delay Order”).

<sup>3</sup> For planning purposes, Dominion notes that the Company has unique flexibility to use out-of-state RECs for REPS compliance. *Order on Dominion’s Motion for Further Clarification*, Docket No. E-100, Sub 113 (Sept. 22, 2009) (holding that the meaning of N.C.G.S. § 62-133.8(b)(2)(e) is to allow DNCP to achieve up to 100% REPS general obligation and set-aside compliance using out-of-state RECs).

Figure 1.2.1 summarizes DNCP's REPS compliance requirements and strategy for the Planning Period.

**Figure 1.2.1 2016-2018 COMPANY'S REPS COMPLIANCE PLAN SUMMARY**

|  | <b>2016</b> | <b>2017</b> | <b>2018</b> |
|--|-------------|-------------|-------------|
| Baseline Sales Forecast (MWh)                                    | 4,280,268   | 4,314,511   | 4,349,028   |
| NC Total REPs Requirement %                                      | 6%          | 6%          | 10%         |
| Total REPS Target (MWh) <sup>1</sup>                             | 259,612     | 256,817     | 431,452     |
| NC Total Solar Target %  | 0.14%       | 0.14%       | 0.20%       |
| Total Solar Target (MWh) <sup>1</sup>                            | 6,058       | 5,993       | 8,630       |
| NC Total Swine Target %  | 0.07%       | 0.07%       | 0.14%       |
| Total Swine Target (MWh) <sup>1</sup>                            | 3,029       | 2,997       | 6,041       |
| Projected NC Total Poultry Target %                              | 3.00%       | 3.00%       | 3.00%       |
| Total Poultry Target (MWh) <sup>2</sup>                          | 21,000      | 27,000      | 27,000      |
| General REPS Requirement (net of Solar, Swine and Poultry) (MWh) | 229,525     | 220,827     | 389,781     |
| Projected Energy Efficiency (MWh) <sup>3</sup>                   | 9,409       | 9,409       | 9,409       |
| Projected Company Generated Renewables (MWh) <sup>4</sup>        | 61,821      | 72,418      | 163,062     |

Notes: (1) 2016 target is based on actual 2015 retail sales of 4,326,857 MWh. 2017-2018 targets are based on baseline retail sales forecasts. The total target is the product of the previous year's baseline load and the current year target percentage. (2) 2016 target is based on the average of 2013-2015 retail sales. (3) For REPS reporting and compliance purpose, DNCP will rely upon EE savings achieved by North Carolina customers. (4) Company Generated Renewables (MWh) are the North Carolina jurisdictional allocation of the Company's solar and biomass generation.

As shown in Figure 1.2.1, the Company's REPS requirements in the Planning Period include the solar energy resource requirement ("Solar Set-Aside"), swine waste resource requirement ("Swine Set-Aside"), and poultry waste resource requirement ("Poultry Set-Aside"). In addition, the Company must also ensure that, in total, the RECs that it produces or procures, combined with energy efficiency savings, is an amount equivalent to six percent (6%) of its prior year retail sales in compliance years 2016 and 2017 and ten percent (10%) in compliance year 2018 ("Total Obligation").<sup>4</sup>

<sup>4</sup> DNCP refers to its Total Obligation, net of the Solar, Swine, and Poultry Set-Aside requirements, as its General Requirement ("General Requirement").

The Town of Windsor

Planned REPS compliance for Town of Windsor during the Planning Period is outlined in Figure 1.2.2

**Figure 1.2.2 2015-2017 TOWN OF WINDSOR REPS COMPLIANCE PLAN SUMMARY**

|  | <b>2016</b> | <b>2017</b> | <b>2018</b> |
|--|-------------|-------------|-------------|
| Baseline Sales Forecast (MWh)                                    | 51,500      | 52,000      | 53,000      |
| NC Total REPs Requirement %                                      | 6%          | 6%          | 10%         |
| Total REPS Target (MWh) <sup>1</sup>                             | 3,043       | 3,090       | 5,200       |
| NC Total Solar Target %  | 0.14%       | 0.14%       | 0.20%       |
| Total Solar Target (MWh) <sup>1</sup>                            | 71          | 73          | 104         |
| NC Total Swine Target %  | 0.07%       | 0.07%       | 0.14%       |
| Total Swine Target (MWh)   | 36          | 37          | 73          |
| NC Total Poultry Target % <sup>2</sup>                           | 0.04%       | 0.04%       | 0.04%       |
| Total Poultry Target (MWh) <sup>1</sup>                          | 280         | 360         | 360         |
| General REPS Requirement (net of Solar, Swine and Poultry) (MWh) | 2,656       | 2,620       | 4,663       |

Notes: (1) 2016 target is based on actual 2015 retail sales of 50,704 MWh reported by the Town of Windsor to DNCP. 2016-2017 targets are based on forecasts reported by the Town of Windsor to DNCP. The total target is a product of the previous year's baseline retail sales and the current year target percentage. (2) 2016 target is based on the average of 2013-2015 retail sales reported by the Town of Windsor to DNCP.

Solar Set-Aside

Pursuant to N.C.G.S. § 62-133.8(d), the Company must produce or procure solar RECs equal to a minimum of fourteen hundredths of one percent (0.14%) of the prior year's total electric power in megawatt-hours ("MWh") sold to retail customers in North Carolina in 2016 and 2017 and a minimum of twenty hundredths of one percent (0.20%) in 2018.

Based on the Company's actual retail sales in 2015, the Solar Set-Aside is approximately 6,058 RECs in 2016. Based on forecasted retail sales, the Solar Set-Aside is projected to be approximately 5,993 RECs and 8,630 RECs in 2017 and 2018, respectively.

The Company's Solar Set-Aside compliance strategy is consistent with DNCP's plan from the previous years, as described herein. Specifically, DNCP plans to buy unbundled solar RECs. The Company has purchased, or entered into contracts to purchase, solar RECs for DNCP's compliance with N.C.G.S. § 62-133.8(d). These contracts will provide enough solar RECs to

satisfy DNCP's compliance for 2015 and 2016, and approximately 25% of DNCP's requirements for 2017. The Company has also executed contracts with solar facilities located in North Carolina that will satisfy the in-state portion of the Town of Windsor's compliance requirements for 2016 through 2018. DNCP continues to evaluate opportunities to purchase both in-state and out-of-state solar RECs, and will continue to make all reasonable efforts to satisfy DNCP's and Town of Windsor's solar set-aside requirements during the Planning Period.

#### Swine Waste Set-Aside

Pursuant to N.C.G.S. § 62-133.8(e), for calendar years 2016 and 2017, at least seven hundredths of one percent (0.07%) and for calendar year 2018, fourteen hundredths of one percent (0.14%) of prior year total retail electric power sold in aggregate by electric power suppliers in North Carolina must be supplied by energy derived from swine waste. As the Company's share of the State's total retail megawatt-hour sales is approximately 3.0 percent, the Company's Swine Set-Aside is estimated to be 3,029 RECs in 2016, 2,997 RECs in 2017 and 6,041 RECs in 2018.

DNCP has spent considerable time and effort attempting to locate operational swine waste digesters in the continental United States. This exhaustive search has identified only two small and three large potential suppliers. The Company has executed a contract with two suppliers and presented a draft contracts to two additional suppliers. As a result of these efforts, Town of Windsor has sufficient RECs in NC-RETs to meet the 2016-2018 requirements. DNCP also has sufficient RECs under contract to meet compliance during the planning period. However, the Company notes that DNCP's compliance is dependent on a single supply source that is under construction and has not yet reached commercial operation.

DNCP continues to evaluate all potential opportunities to purchase both in-state and out-of-state swine RECs, and will continue to make all reasonable efforts to satisfy DNCP's Swine Set-Aside requirements during the Planning Period. The Company continues to work with the Swine Waste REC Buyers Group. Due to the high default rate with swine waste to energy contracts, the Company intends to contract for RECs above and beyond the initial requirement to increase the probability of achieving compliance. The Company intends to bank any excess RECs to be used for future compliance.

#### Poultry Waste Set-Aside

Pursuant to N.C.G.S. § 62-133.8(f) and the 2015 Delay Order, for calendar year 2016, at least 700,000 MWhs, and for 2017 and 2018, at least 900,000 MWhs of the prior year's total electric power sold to retail electric customers in the State or an equivalent amount of energy shall be produced or procured each year by poultry waste, as defined per the Statute and additional clarifying Orders. As the Company's retail sales share of the State's total retail megawatt-hour sales is approximately 3.0%, the Company's Poultry Set-Aside is estimated to be 21,000 RECs in 2016, 27,000 RECs in 2017 and 2018.

Initially, the Poultry Waste REC Buyers Group executed two (2) long-term poultry waste contracts and the Company, as a part of this group, has executed two (2) long-term contracts to satisfy the Town of Windsor's in-state Poultry Set-Aside requirements. One (1) of these contracts was terminated by mutual agreement with the supplier in September 2013. In an attempt to locate and purchase additional poultry RECs, the Company joined with the Poultry Waste REC Buyers Group in requesting Commission approval for a RFP in Docket E-100 Sub 113. The RFP was conducted in 2013 and resulted in two (2) additional contracts. Despite executing three (3) contracts that could each, individually, provide sufficient RECs, the Company believes it is likely, but cannot guarantee, it will have enough in-state RECs for Town of Windsor compliance with the Poultry Set-Aside in 2016. At this time, the Company is reasonably confident that Town of Windsor will be in compliance with the Poultry Set-Aside in 2017 and 2018.

The Company has also continued to search for opportunities to purchase poultry waste RECs in North Carolina and throughout the continental United States. These efforts yielded multiple poultry waste REC contracts and sufficient delivered volume to comply with both DNCP's and Town of Windsor's out-of-state requirements for years 2016, 2017 and 2018.

#### General REPS Requirements Net of Solar, Swine and Poultry

Pursuant to N.C.G.S. § 62-133.8(d), DNCP is required to comply with its Total Obligation in the Planning Period by submitting for retirement a total volume of RECs equivalent to six percent (6%) in 2016 and 2017 and ten percent (10%) 2018. This equates to approximately 259,612 RECs in 2016, 256,817 RECs in 2017, and 431,452 RECs in 2018. This General Requirement, net of the Solar, Swine, and Poultry Set-Aside requirements, is estimated to be 229,525 RECs in 2016, 220,827 RECs in 2017, and 389,781 RECs in 2018. The resource options available to the Company to meet the General Requirement are discussed below, as well as the Company's plan to meet the General Requirement with these resources.

The Company plans to comply with the General Requirement using a combination of EE savings generated by the Company's portfolio of approved North Carolina EE programs; purchasing out-of-state RECs; and using company-generated new renewable energy resources. For Town of Windsor, the Company plans to comply with the General Requirement using its Southeastern Power Administration ("SEPA") allocation of hydroelectric RECs, purchasing in-state solar RECs, in-state biomass RECs and out-of-state wind and hydro RECs.

Pursuant to Commission Rule R8-67(b)(1)(iii), the Company has presented in Figure 1.4.1 below these EE measures that it plans to use toward REPS compliance, including projected impacts.

Company-generated new renewable energy includes generation from biomass fuel co-firing at the Company's Virginia City Hybrid Energy Center (VCHEC), which commenced commercial operations in 2012, as well as biomass fuel conversions at the Altavista, Hopewell and Southampton power stations which commenced commercial operations in the second half of 2013.<sup>5</sup> The Company is currently selling the RECs generated at these biomass facilities in PJM Tier 1 markets at a significant premium to the out-of-state general RECs the Company is purchasing for compliance. Company-generated new renewable energy also includes generation from planned and potential Company-owned solar facilities in Virginia and North Carolina.

### **1.3 REC CONTRACTS**

*In accordance with Rule R8-67(b)(ii), the Company provides a list of executed contracts to purchase renewable energy certificates.*

As mentioned in the previous section, the Company has purchased wind, biomass, hydro, poultry waste, swine waste and solar RECS and entered into long-term poultry waste, swine waste and solar REC to comply with N.C.G.S. § 62-133.8(b), (d), (e), and (f). Figures 1.3.1 through 1.3.4 provide summaries of the key terms (volume, term and price) of DNCP's currently-executed REC purchase contracts. The Company may use a portion of out-of-state REC purchases to satisfy 25% of the Town of Windsor's compliance requirements.

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<sup>5</sup> On April 10, 2014, the Commission approved DNCP's Rule R8-66 REPS Facility Registration Statement for VCHEC in Docket No. E-22, Sub 489. The Company will file Rule R8-66 REPS Facility Registration Statements for Altavista, Hopewell and Southampton power stations prior to relying on these facilities for REPS compliance.



**Figure 1.3.1 Solar REC Purchase Contract Summary<sup>1</sup>**

|                                    | <b>Total Volume</b> | <b>Term</b> | <b>Price / REC</b>   | <b>Total Expense</b> |
|------------------------------------|---------------------|-------------|----------------------|----------------------|
| Solar Star California              | 15,000              | 6           | \$9.60               | \$144,000            |
| Tioga Solar                        | 729                 | 1           | \$8.00               | \$5,832              |
| Tioga Solar                        | 392                 | 1           | \$5.00               | \$1,960              |
| ST Silver Bluff <sup>2</sup>       | 4                   | 1           | \$85.00              | \$340                |
| NCMPA I <sup>2</sup>               | 4                   | 1           | \$130.00             | \$520                |
| GE Aviation <sup>2</sup>           | 50                  | 1           | \$85.00              | \$4,250              |
| Constellation Energy               | 2,000               | 2           | \$11.00              | \$22,000             |
| DDM Mortgage <sup>2</sup>          | 40                  | 1           | \$50.00              | \$2,000              |
| Carolina Solar Energy <sup>2</sup> | 24                  | 1           | \$40.00              | \$960                |
| Shoe Show <sup>3</sup>             | 2,000               | 1           | \$4.00               | \$8,000              |
| Aspre Energy                       | 2,000               | 1           | \$5.00               | \$10,000             |
| Ecos Energy                        | 1,544               | 1           | \$3.25               | \$5,018              |
| Solar Star California              | 664                 | 2           | \$2.50               | \$1,660              |
| Solar Star California <sup>2</sup> | 331                 | 1           | \$3.00               | \$993                |
| Duke Energy Renewable Services     | 2,000               | 1           | \$2.75               | \$5,500              |
| Duke Energy Renewable Services     | 2,000               | 1           | \$2.75               | \$5,500              |
| <b>Total Volume</b>                | <b>28,782</b>       |             | <b>Total Expense</b> | <b>\$218,533</b>     |

Notes: Contract counterparties and prices are confidential. (1) The Company plans to bank any surplus RECs from 2010-2015 for future compliance purposes. (2) Contracts for Town of Windsor compliance. (3) Contracts for Town of Windsor solar or general REPS compliance.

**CONFIDENTIAL INFORMATION REDACTED****Figure 1.3.2 Poultry Waste REC Purchase Contract Summary<sup>1</sup>**

|                                    | <b>Total Volume</b> | <b>Term</b> | <b>Price / REC</b>   | <b>Total Expense</b> |
|------------------------------------|---------------------|-------------|----------------------|----------------------|
| Sterling Planet <sup>2</sup>       | 30,000              | 2           | \$19.00              | \$0                  |
| Northern States Power              | 25,000              | 1           | \$23.25              | \$581,250            |
|                                    |                     |             |                      |                      |
| Northern States Power              | 15,000              | 1           | \$23.25              | \$348,750            |
| Duke Energy Carolinas <sup>3</sup> | 55                  | 1           | \$41.00              | \$2,255              |
| Northern States Power <sup>3</sup> | 699                 | 1           | \$23.00              | \$16,077             |
| Northern States Power              | 20,000              | 1           | \$25.00              | \$500,000            |
|                                    |                     |             |                      |                      |
| Northern States Power              | 59,400              | 1           | \$24.00              | \$1,425,600          |
| Gettysburg Energy                  | 1,576               | 3           | \$30.00              | \$47,280             |
|                                    |                     |             |                      |                      |
| Duke Energy Carolinas <sup>3</sup> | 50                  | 1           | \$46.00              | \$2,300              |
| Northern States Power              | 10,000              | 1           | \$24.00              | \$240,000            |
| <b>Total Volume</b>                | <b>302,170</b>      |             | <b>Total Expense</b> | <b>\$8,335,705</b>   |

Notes: Contract counterparties and prices are confidential. (1) The Company plans to bank any surplus RECs from 2010-2015 for future compliance purposes. (2) Seller defaulted on contract 2/16/15. (3) Contract for Town of Windsor compliance.

**Figure 1.3.3 General REC Purchase Contract Summary<sup>1</sup>**

|                                | <b>Total Volume</b> | <b>Term</b> | <b>Price / REC</b>   | <b>Total Expense</b> |
|--------------------------------|---------------------|-------------|----------------------|----------------------|
| 3Degrees Group                 | 30,000              | 1           | \$1.00               | \$30,000             |
| Renewable Choice Energy        | 20,000              | 1           | \$1.00               | \$20,000             |
| Renewable Choice Energy        | 20,000              | 1           | \$0.93               | \$18,600             |
| Capital Power <sup>2</sup>     | 1,000               | 1           | \$5.00               | \$5,000              |
| Aspre Energy                   | 42,400              | 1           | \$0.90               | \$38,160             |
| Aspre Energy                   | 25,600              | 1           | \$0.97               | \$24,832             |
| Aspre Energy                   | 35,000              | 1           | \$1.35               | \$47,250             |
| Aspre Energy                   | 25,000              | 1           | \$0.95               | \$23,750             |
| Aspre Energy                   | 15,000              | 1           | \$1.25               | \$18,750             |
| Northern States Power          | 64,746              | 1           | \$1.25               | \$80,933             |
| Scenic View Dairy <sup>2</sup> | 10,943              | 5           | \$1.70               | \$18,583             |
| Pattern Gulf Wind              | 25,000              | 1           | \$1.15               | \$28,750             |
| EC&R Energy Marketing          | 25,000              | 1           | \$1.10               | \$27,500             |
| Invenergy Renewables           | 25,000              | 1           | \$1.05               | \$26,250             |
| Wyeth Holdings <sup>2</sup>    | 27,587              | 3           | \$0.75               | \$20,690             |
| Aspre Energy                   | 50,000              | 1           | \$0.95               | \$47,500             |
| EC&R Energy Marketing          | 50,000              | 1           | \$0.90               | \$45,000             |
| Midway Power                   | 12,265              | 2           | \$0.70               | \$8,586              |
| EC&R Energy Marketing          | 50,000              | 1           | \$0.83               | \$41,500             |
| Panhandle Wind                 | 30,000              | 1           | \$0.77               | \$23,100             |
| EC&R Energy Marketing          | 54,459              | 1           | \$0.70               | \$38,121             |
| Invenergy Renewables           | 50,000              | 1           | \$0.60               | \$30,000             |
| 3Degrees Group                 | 50,000              | 1           | \$0.50               | \$25,000             |
| NIPSCO                         | 50,000              | 1           | \$0.43               | \$21,500             |
| EC&R Energy Marketing          | 25,000              | 1           | \$0.40               | \$10,000             |
| 3Degrees Group                 | 50,000              | 1           | \$0.37               | \$18,500             |
| 3Degrees Group                 | 50,000              | 1           | \$0.38               | \$19,000             |
| Blue Sky Energy                | 350,000             | 2           | \$0.30               | \$105,000            |
| <b>Total Volume</b>            | <b>1,264,000</b>    |             | <b>Total Expense</b> | <b>\$861,855</b>     |

Notes: Contract counterparties and prices are confidential. (1) The Company plans to bank any surplus RECs from 2010-2015 for future compliance purposes. (2) Contract for Town of Windsor compliance.

**CONFIDENTIAL INFORMATION REDACTED****Figure 1.3.4 Swine Waste REC Purchase Contract**

| <b>Summary<sup>1</sup></b> | <b>Total Volume</b> | <b>Term</b> | <b>Price / REC<sup>2</sup></b> | <b>Total Expense</b> |
|----------------------------|---------------------|-------------|--------------------------------|----------------------|
|                            |                     |             |                                |                      |
| <b>Total Volume</b>        | <b>24,995</b>       |             | <b>Total Expense</b>           | <b>\$11,343,768</b>  |

Notes: Contract counterparties and prices are confidential. (1) The Company plans to bank any surplus RECs from 2010-2015 for future compliance. (2) Reduced volumes in first year of contract. (3) Price escalates annually. Prices given are for initial year. (4) Contract terminated October 30, 2015. (5) Contract for Town of Windsor compliance.

**1.4 ENERGY EFFICIENCY PROGRAMS**

*In accordance with Rule R8-67(b)(iii), the Company provides a list of planned or implemented energy efficiency measures, including a brief description of the measure and projected impacts.*

The Company intends to apply North Carolina EE savings to meet the REPS requirements as permitted by law. Figure 1.4.1 lists energy efficiency programs and resulting potential savings projected to be achieved by North Carolina customers. A brief description of these EE programs can be found in Section 3.2 of the 2016 IRP.

**Figure 1.4.1 PROJECTED SAVINGS (MWh) NORTH CAROLINA ENERGY EFFICIENCY PROGRAMS**

|   | <b>2016</b>  | <b>2017</b>  | <b>2018</b>  |
|---|--------------|--------------|--------------|
| Air Conditioner Cycling Program <sup>1</sup> (closed)                       | 0            | 0            | 0            |
| Commercial HVAC Upgrade Program <sup>1</sup> (closed)                       | 111          | 111          | 111          |
| Commercial Lighting Program <sup>1</sup>                                    | 2,743        | 2,743        | 2,743        |
| Residential Low Income Program <sup>1</sup>                                 | 615          | 615          | 615          |
| Residential Lighting Program <sup>1</sup>                                   | 1,028        | 1,028        | 1,028        |
| Non-residential Energy Audit Program <sup>2</sup>                           | 129          | 129          | 129          |
| Non-residential Duct Testing and Sealing Program <sup>2</sup>               | 2,486        | 2,486        | 2,486        |
| Residential Home Energy Check-Up Program <sup>2</sup>                       | 746          | 746          | 746          |
| Residential Duct Sealing Program <sup>2</sup>                               | 80           | 80           | 80           |
| Residential Heat Pump Tune-Up Program <sup>2</sup>                          | 892          | 892          | 892          |
| Residential Heat Pump Upgrade Program <sup>2</sup>                          | 164          | 164          | 164          |
| Non-residential Heating and Cooling Efficiency Program <sup>3</sup>         | 56           | 56           | 56           |
| Non-residential Lighting Systems and Controls Program <sup>3</sup>          | 359          | 359          | 359          |
| Non-residential Window Film Program <sup>3</sup>                            | 0            | 0            | 0            |
| Residential Income and Age Qualifying Home Improvement Program <sup>4</sup> | 0            | 0            | 0            |
| <b>Energy Efficiency Total<sup>5</sup></b>                                  | <b>9,409</b> | <b>9,409</b> | <b>9,409</b> |

Notes: (1) DSM I programs. (2) DSM II programs. (3) DSM III programs. (4) DSM IV programs. (5) Forecast based on actual 2015 EM&V data. For REPS reporting and compliance purpose, DNCP will rely upon actual EE savings achieved by North Carolina customers.

## **1.5 RETAIL SALES & CUSTOMER ACCOUNTS**

*In accordance with Rule R8-67(b)(iv), the Company states the projected Company's North Carolina retail sales and year-end number of customer accounts by customer class for each year.*

### The Company

Figure 1.5.1 summarizes the Company's North Carolina retail sales and Figure 1.5.2 summarizes the year-end number of customer accounts by customer class for each year of the Planning Period.

**Figure 1.5.1 COMPANY'S NORTH CAROLINA RETAIL SALES<sup>1</sup>**

| <b>Year</b>             | <b>Residential<br/>Sales (MWh)</b> | <b>Commercial<br/>Sales (MWh)<sup>2</sup></b> | <b>Industrial<br/>Sales (MWh)</b> | <b>Total Sales<br/>(MWh)</b> |
|-------------------------|------------------------------------|---|-----------------------------------|------------------------------|
| <b>2016 (projected)</b> | 1,647,527                          | 858,890                                       | 1,773,851                         | 4,280,268                    |
| <b>2017 (projected)</b> | 1,660,708                          | 865,761                                       | 1,788,042                         | 4,314,511                    |
| <b>2018 (projected)</b> | 1,673,993                          | 872,688                                       | 1,802,347                         | 4,349,028                    |

Notes: (1) Excludes the Town of Windsor's wholesale customer load. (2) Forecasts do not include Rate Schedules 1DF, 1W, 7, 26, 30T.

**Figure 1.5.2 COMPANY'S NORTH CAROLINA CUSTOMER ACCOUNTS<sup>1,2</sup>**

| <b>Year</b>             | <b>Residential<br/>Customers</b> | <b>Commercial<br/>Customers</b> | <b>Industrial<br/>Customers</b> | <b>Total<br/>Customers</b> |
|-------------------------|----------------------------------|---------------------------------|---------------------------------|----------------------------|
| <b>2016 (projected)</b> | 102,210                          | 17,490                          | 61                              | 119,761                    |
| <b>2017 (projected)</b> | 102,510                          | 17,525                          | 61                              | 120,096                    |
| <b>2018 (projected)</b> | 102,894                          | 17,562                          | 61                              | 120,517                    |

Notes: (1) Customer account totals are year-end forecasts. These differ slightly from Appendix 2F in the 2016 IRP which are average yearly amounts. (2) Forecasts do not include Rate Schedules 1DF, 1W, 7, 26, 30T.

### Town of Windsor

Figure 1.5.3 summarizes the Town of Windsor's retail sales and Figure 1.5.4 summarizes the year-end number of customer accounts by customer class for each year of the Planning Period.

**Figure 1.5.3 TOWN OF WINDSOR'S RETAIL SALES<sup>1</sup>**

| <b>Year</b>             | <b>Residential<br/>Sales (MWh)</b> | <b>Commercial<br/>Sales (MWh)</b> | <b>Industrial<br/>Sales (MWh)</b> | <b>Total Sales<br/>(MWh)</b> |
|-------------------------|------------------------------------|-----------------------------------|-----------------------------------|------------------------------|
| <b>2016 (projected)</b> | 20,000                             | 21,500                            | 10,000                            | 51,500                       |
| <b>2017 (projected)</b> | 20,000                             | 21,500                            | 10,500                            | 52,000                       |
| <b>2018 (projected)</b> | 20,500                             | 22,000                            | 10,500                            | 53,000                       |

Note: (1) Sales are year-end forecasts reported by the Town of Windsor to DNCP.

**Figure 1.5.4 TOWN OF WINDSOR'S CUSTOMER ACCOUNTS<sup>1</sup>**

| Year             | Residential<br>Customers | Commercial<br>Customers | Industrial<br>Customers | Total<br>Customers |
|------------------|--------------------------|-------------------------|-------------------------|--------------------|
| 2016 (projected) | 1,380                    | 410                     | 1                       | 1,791              |
| 2017 (projected) | 1,385                    | 410                     | 1                       | 1,796              |
| 2018 (projected) | 1,390                    | 415                     | 1                       | 1,806              |

Notes: (1) Customer account totals are year-end forecasts reported by the Town of Windsor to DNCP.

## 1.6 AVOIDED COST RATES

*In accordance with Rule R8-67(b)(v), the Company provides the following statement regarding the current and projected avoided cost rates for each year.*

For facilities eligible for DNCP's avoided cost standard offer contract, see Dominion North Carolina Power Schedule 19 for currently available energy and capacity rates. Figure 1.6.1 shows DNCP's projected avoided energy and capacity rates.

**Figure 1.6.1 PROJECTED AVOIDED ENERGY AND CAPACITY COST (from E-100 Sub 140)**

|      | On-Peak (\$/MWh) | Off-Peak (\$/MWh) | Capacity Price (\$/kW-Year) |
|------|------------------|-------------------|-----------------------------|
| 2016 | 38.53            | 31.60             | 55.69                       |
| 2017 | 45.34            | 37.49             | 56.69                       |
| 2018 | 50.76            | 41.94             | 57.70                       |

Notes: (1) These rates were filed on February 2, 2016. Option A hours definition.

## 1.7 TOTAL & PROJECTED COSTS

*In accordance with Rule R8-67(b)(vi), the Company provides the projected total and incremental costs anticipated to implement REPS Compliance plan for each year of the Planning Period*

### The Company

The Company's Planning Period incremental costs to comply with the Solar Set-Aside, Swine Set-Aside, Poultry Set-Aside and General Requirements are presented in Figure 1.7.1 below.

**Figure 1.7.1 COMPANY'S REPS COMPLIANCE COST SUMMARY**

| Type of REC   | 2016               | 2017               | 2018               |
|---|--------------------|--------------------|--------------------|
| <b>Solar</b>  |                    |                    |                    |
| Target (MWh)  | 6,058              | 5,993              | 8,630              |
| REC Cost (\$/MWh) <sup>1</sup>                            | \$6.20             | \$6.00             | \$5.10             |
| Projected Cost  | \$37,560           | \$35,958           | \$44,013           |
| <b>Swine</b>  |                    |                    |                    |
| Target (MWh)  | 3,029              | 2,997              | 6,041              |
| REC Cost (\$/MWh) <sup>1</sup>                            | \$80.00            | \$81.20            | \$82.42            |
| Projected Cost  | \$242,320          | \$243,356          | \$497,899          |
| <b>Poultry</b>  |                    |                    |                    |
| Target (MWh)  | 21,000             | 27,000             | 27,000             |
| REC Cost (\$/MWh) <sup>1</sup>                            | \$23.25            | \$24.00            | \$24.00            |
| Projected Cost  | \$488,250          | \$648,000          | \$648,000          |
| <b>General RECs</b>                                       |                    |                    |                    |
| Target (MWh)  | 229,525            | 220,827            | 389,781            |
| Less Energy Efficiency <sup>2</sup>                       | 9,409              | 9,409              | 9,409              |
| Net Target  | 220,116            | 211,418            | 380,372            |
| REC Cost (\$/MWh) <sup>1</sup>                            | \$1                | \$1                | \$1                |
| Projected Cost  | \$220,116          | \$158,564          | \$228,223          |
| Projected Administrative and Research Cost <sup>3,4</sup> | \$34,987           | \$83,757           | \$95,212           |
| <b>TOTAL PROJECTED COMPLIANCE COST</b>                    | <b>\$1,023,233</b> | <b>\$1,169,635</b> | <b>\$1,513,347</b> |

Notes: (1) 2016-2018 projected REC costs are based on market estimates, signed contracts and/or ongoing negotiations. (2) Projected EE savings represents a projected system allocation. (3) Administrative costs include, but are not limited to: NC-RETs fees, broker fees and miscellaneous expenses. (4) As permitted by NCGS § 62-133.8 (h)(1) and (4), DNCP has developed a North Carolina research and development (R&D) project with a total projected cost of \$9,987 in 2016, \$58,757 in 2017 and \$70,212 in 2018. This figure represents research project costs prior to receiving any offsetting tax credits.



The Town of Windsor

The Town of Windsor's projected Planning Period REPS costs are expected to consist of the sum of the costs required to comply with the Solar Set-Aside, Swine Set-Aside, Poultry Set-Aside and other General Requirements Figure 1.7.2 outlines the Town of Windsor's Compliance Cost Summary from 2016 to 2018.

**Figure 1.7.2 TOWN OF WINDSOR'S COMPLIANCE COST SUMMARY**

| Type of REC                            | 2016            | 2017            | 2018            |
|--|-----------------|-----------------|-----------------|
| <b>Solar</b>                           |                 |                 |                 |
| Target (MWh)                           | 71              | 73              | 104             |
| REC Cost (\$/MWh) <sup>1</sup>         | \$4.00          | \$3.50          | \$3.00          |
| Projected Cost                         | \$284           | \$256           | \$312           |
| <b>Swine</b>                           |                 |                 |                 |
| Target (MWh)                           | 36              | 37              | 73              |
| REC Cost (\$/MWh) <sup>1</sup>         | \$60.00         | \$65.00         | \$70.00         |
| Projected Cost                         | \$2,160         | \$2,405         | \$5,110         |
| <b>Poultry</b>                         |                 |                 |                 |
| Target (MWh)                           | 280             | 360             | 360             |
| REC Cost (\$/MWh) <sup>1</sup>         | \$65.00         | \$70.00         | \$75.00         |
| Projected Cost                         | \$18,200        | \$25,200        | \$27,000        |
| <b>General REPs</b>                    |                 |                 |                 |
| Target (MWh)                           | 2,656           | 2,620           | 4,663           |
| REC Cost (\$/MWh) <sup>1</sup>         | \$3.00          | \$2.00          | \$1.50          |
| Projected Cost                         | \$7,968         | \$5,240         | \$6,995         |
| <b>TOTAL PROJECTED COMPLIANCE COST</b> | <b>\$28,612</b> | <b>\$33,101</b> | <b>\$39,417</b> |

Notes: (1) 2016-2018 projected REC costs are based on market estimates, signed contracts and/or ongoing negotiations.

**1.8 ANNUAL COST CAPS**

*In accordance with Rule R8-67(b)(vii), the Company provides the following comparison of projected costs to the annual cost caps contained in N.C.G.S. § 62-133.8(h)(4).*

Figure 1.8.1 provides a comparison of the Company's projected costs to the annual cost caps for each year of the Planning Period. Compliance costs are allocated to the Customer Classes based on the percentage of each of the Customer Class Cost Caps to the Total Cost Cap.

**Figure 1.8.1 COMPANY'S COMPARISON TO ANNUAL CAPS**

| <b>Compliance Year<br/>2016</b>                 | <b>Residential<br/>Customers</b> | <b>Commercial<br/>Customers</b> | <b>Industrial<br/>Customers</b> | <b>Total<br/>Customers</b> |
|---|----------------------------------|---------------------------------|---------------------------------|----------------------------|
| <b>Actual Year-End Annual Customers (2015)</b>  | 101,802                          | 17,924                          | 51                              | 119,777                    |
| <b>Annual Cost Cap per Customer</b>             | \$34                             | \$150                           | \$1,000                         | -                          |
| <b>Annual Cost Cap, Total</b>                   | <b>\$3,461,268</b>               | <b>\$2,688,600</b>              | <b>\$51,000</b>                 | <b>\$6,200,868</b>         |
| <b>Projected Cost of Compliance<sup>1</sup></b> | <b>\$571,159</b>                 | <b>\$443,658</b>                | <b>\$8,416</b>                  | <b>\$1,023,233</b>         |

| <b>Compliance Year<br/>2017</b>                   | <b>Residential<br/>Customers</b> | <b>Commercial<br/>Customers</b> | <b>Industrial<br/>Customers</b> | <b>Total<br/>Customers</b> |
|---|----------------------------------|---------------------------------|---------------------------------|----------------------------|
| <b>Projected Year-End Annual Customers (2016)</b> | 102,210                          | 17,490                          | 61                              | 119,761                    |
| <b>Annual Cost Cap per Customer</b>               | \$34                             | \$150                           | \$1,000                         | -                          |
| <b>Annual Cost Cap, Total</b>                     | <b>\$3,475,140</b>               | <b>\$2,623,500</b>              | <b>\$61,000</b>                 | <b>\$6,159,640</b>         |
| <b>Projected Cost of Compliance<sup>1</sup></b>   | <b>\$659,884</b>                 | <b>\$498,168</b>                | <b>\$11,583</b>                 | <b>\$1,169,635</b>         |

| <b>Compliance Year<br/>2018</b>                   | <b>Residential<br/>Customers</b> | <b>Commercial<br/>Customers</b> | <b>Industrial<br/>Customers</b> | <b>Total<br/>Customers</b> |
|---|----------------------------------|---------------------------------|---------------------------------|----------------------------|
| <b>Projected Year-End Annual Customers (2017)</b> | 102,510                          | 17,525                          | 61                              | 120,096                    |
| <b>Annual Cost Cap per Customer</b>               | \$34                             | \$150                           | \$1,000                         | -                          |
| <b>Annual Cost Cap, Total</b>                     | <b>\$3,485,340</b>               | <b>\$2,628,750</b>              | <b>\$61,000</b>                 | <b>\$6,175,090</b>         |
| <b>Projected Cost of Compliance<sup>1</sup></b>   | <b>\$854,162</b>                 | <b>\$644,235</b>                | <b>\$14,949</b>                 | <b>\$1,513,347</b>         |

Notes: (1) Projected costs were allocated to the customer classes based on customer percentage of total cost cap.

Figure 1.8.2 provides a comparison of the Town of Windsor's projected costs to the annual cost caps for each year of the REPS Compliance Plan.

**Figure 1.8.2 TOWN OF WINDSOR'S COMPARISON TO ANNUAL CAPS**

| <b>Compliance Year<br/>2016</b>                 | <b>Residential<br/>Customers</b> | <b>Commercial<br/>Customers</b> | <b>Industrial<br/>Customers</b> | <b>Total<br/>Customers</b> |
|---|----------------------------------|---------------------------------|---------------------------------|----------------------------|
| <b>Actual Year-End Annual Customers (2015)</b>  | 1,376                            | 405                             | 1                               | 1,782                      |
| <b>Annual Cost Cap per Customer</b>             | \$34                             | \$150                           | \$1,000                         | -                          |
| <b>Annual Cost Cap, Total</b>                   | <b>\$46,784</b>                  | <b>\$60,750</b>                 | <b>\$1,000</b>                  | <b>\$108,534</b>           |
| <b>Projected Cost of Compliance<sup>1</sup></b> | <b>\$12,333</b>                  | <b>\$16,015</b>                 | <b>\$264</b>                    | <b>\$28,612</b>            |

| <b>Compliance Year<br/>2017</b>                   | <b>Residential<br/>Customers</b> | <b>Commercial<br/>Customers</b> | <b>Industrial<br/>Customers</b> | <b>Total<br/>Customers</b> |
|---|----------------------------------|---------------------------------|---------------------------------|----------------------------|
| <b>Projected Year-End Annual Customers (2016)</b> | 1,385                            | 410                             | 1                               | 1,796                      |
| <b>Annual Cost Cap per Customer</b>               | \$34                             | \$150                           | \$1,000                         | -                          |
| <b>Annual Cost Cap, Total</b>                     | <b>\$47,090</b>                  | <b>\$61,500</b>                 | <b>\$1,000</b>                  | <b>\$109,590</b>           |
| <b>Projected Cost of Compliance<sup>1</sup></b>   | <b>\$14,223</b>                  | <b>\$18,575</b>                 | <b>\$302</b>                    | <b>\$33,101</b>            |

| <b>Compliance Year<br/>2018</b>                   | <b>Residential<br/>Customers<sup>2</sup></b> | <b>Commercial<br/>Customers</b> | <b>Industrial<br/>Customers</b> | <b>Total<br/>Customers</b> |
|---|--|---------------------------------|---------------------------------|----------------------------|
| <b>Projected Year-End Annual Customers (2017)</b> | 1,390  | 415                             | 1                               | 1,806                      |
| <b>Annual Cost Cap per Customer</b>               | \$34   | \$150                           | \$1,000                         | -                          |
| <b>Annual Cost Cap, Total</b>                     | <b>\$47,260</b>                              | <b>\$62,250</b>                 | <b>\$1,000</b>                  | <b>\$110,510</b>           |
| <b>Projected Cost of Compliance<sup>1</sup></b>   | <b>\$16,857</b>                              | <b>\$22,203</b>                 | <b>\$357</b>                    | <b>\$39,417</b>            |

Notes: (1) The Town of Windsor is to determine the allocation among the different customer classes.

## 1.9 REPS RIDER

*In accordance with Rule R8-67(b)(viii), the Company provides an estimate of the amount of the REPS rider and the impact on the cost of fuel and fuel-related costs rider necessary to fully recover the projected costs.*

**Figure 1.9.1 REPS Rider Costs**

|  | <b>2016</b>        | <b>2017</b>        | <b>2018</b>        |
|--|--------------------|--------------------|--------------------|
| Total Projected REPS Compliance Costs          | \$1,023,233        | \$1,169,635        | \$1,513,347        |
|  |                    |                    |                    |
| Costs recovered through the Fuel Rider         | \$0                | \$0                | \$0                |
|  |                    |                    |                    |
| Total Incremental Cost                         | \$1,023,233        | \$1,169,635        | \$1,513,347        |
| Annual REPS Rider - Residential                | \$873,278          | \$998,362          | \$1,292,053        |
| Annual REPS Rider - Commercial                 | \$149,434          | \$170,679          | \$220,528          |
| Annual REPS Rider - Industrial                 | \$521              | \$594              | \$766              |
|  |                    |                    |                    |
| <b>Projected Annual Cost Caps (REPS Rider)</b> | <b>\$6,200,868</b> | <b>\$6,159,640</b> | <b>\$6,175,090</b> |

**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing *Historical Review of 2016 REPS Plan* filed in Docket No. E-100, Sub 147 and E-100, Sub 165 was served electronically or via U.S. mail, first class postage prepaid, upon all parties of records and the following:

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This 1<sup>st</sup> day of May, 2020.

/s/Andrea R. Kells

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