

**Commonwealth of Virginia**

**State Corporation Commission**

**Report to the Commission on Electric Utility Regulation  
of the Virginia General Assembly**

**and the Governor of the Commonwealth of Virginia**



**Status Report: Implementation of the Virginia  
Electric Utility Regulation Act**

**Pursuant to § 56-596 B of the Code of Virginia**

**September 1, 2016**

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	iv
I. INTRODUCTION .....	1
Composition of the Electric Industry in Virginia .....	1
Background of Electric Utility Rate Regulation in Virginia .....	2
II. COMPANY FINANCIAL REVIEWS AND RELATED CASES .....	4
Financial Review of DVP .....	5
<i>DVP's Biennial Review (January 2013 – December 2014)</i> .....	5
<i>DVP 2015 Base Rate Financial Results</i> .....	5
Financial Review of APCo .....	7
<i>APCo's ROE Proceeding</i> .....	7
<i>APCo 2014 and 2015 Base Rate Reported Results</i> .....	7
KU/ODP's General Rate Case.....	9
III. GENERATION.....	10
Sources of Virginia's Electricity .....	10
Generation Additions and Updates .....	11
<i>DVP</i> .....	11
<i>APCo</i> .....	17
<i>Other Generation Facilities</i> .....	17
Generation Retirements .....	18
Nuclear Activity.....	19
Fuel Cases .....	20
<i>DVP</i> .....	20
<i>APCo</i> .....	21
<i>KU/ODP</i> .....	21
Environmental Protection Agency Regulation of Carbon Dioxide .....	21
Integrated Resource Planning .....	23
IV. TRANSMISSION.....	24
Transmission Line Activity.....	24
Transmission RACs .....	27
V. DISTRIBUTION.....	27
VI. CONSERVATION, ENERGY EFFICIENCY, AND DEMAND RESPONSE.....	28
Statutory Energy Efficiency Goal.....	28
DVP Programs .....	29
<i>DSM and Energy Efficiency Programs</i> .....	29
<i>Electric Vehicle Pilot Program</i> .....	33
<i>DVP A 5 RAC</i> .....	33
APCo Programs .....	33
<i>DSM and Energy Efficiency Programs</i> .....	33
<i>APCo A 5 RAC</i> .....	36
Cooperative Programs.....	36

VII.	RENEWABLE ENERGY.....	37
	Retail Access to Competitive Services .....	37
	100% Renewable Energy Tariffs .....	38
	<i>DVP and APCo Activity</i> .....	38
	<i>Cooperative Activity</i> .....	39
	Other Renewable Energy Activities.....	40
	<i>DVP Renewable Energy Activity</i> .....	40
	<i>APCo Renewable Energy Activity</i> .....	44
	Voluntary Renewable Portfolio Standard Programs.....	44
	<i>APCo RPS Program and RAC</i> .....	45
	<i>DVP RPS Program</i> .....	47
	Net Energy Metering.....	47
VIII.	CONSUMER EDUCATION .....	48
IX.	ELECTRICITY PRICE ANALYSIS.....	52
X.	REGIONAL TRANSMISSION ENTITY PARTICIPATION.....	56
	PJM Background.....	56
	<i>PJM Capacity Market</i> .....	56
	<i>PJM Energy Market</i> .....	58
	<i>Other Participation in PJM Programs</i> .....	58
	Significant RTE-Related Dockets at FERC .....	58
	FERC Approval of PJM Pricing for Transaction.....	58
	Commission Participation Outside of FERC Dockets .....	60
	<i>PJM Market Monitor</i> .....	60
	<i>Eastern Interconnection Planning Collaborative</i> .....	60
XI.	CLOSING .....	62
	Appendix 1	
	Appendix 2	
	Appendix 3	
	Appendix 4	
	Appendix 5	

## GLOSSARY OF TERMS

APCo	Appalachian Power Company
CPCN	Certificate of Public Convenience and Necessity
CSP	Competitive Service Provider
Code	Code of Virginia
Commission	State Corporation Commission
D.C. Circuit	D.C. Circuit Court of Appeals
DG	Distributed Generation
DOE	U.S. Department of Energy
DSM	Demand Side Management
DVP	Virginia Electric and Power Company d/b/a Dominion Virginia Power
Dominion Virginia Power	Virginia Electric and Power Company d/b/a Dominion Virginia Power
EEI	Edison Electric Institute
EIPC	Eastern Interconnection Planning Collaborative
EISPC	Eastern Interconnection States Planning Council
EPA	U.S. Environmental Protection Agency
EV	Electric Vehicle
Third Enactment Clause	Third Enactment Clause of the Regulation Act
FERC	Federal Energy Regulatory Commission
General Assembly	Virginia General Assembly
HVAC	Heating, Ventilation and Air Conditioning
IOU	Investor-owned Public Utility
IRP	Integrated Resource Plan
KU/ODP	Kentucky Utilities Company d/b/a Old Dominion Power Company
kV	Kilovolt
kW	Kilowatt
kWh	Kilowatt-hour
LG&E	Louisville Gas and Electric Company
LMP	Locational Marginal Prices
MW	Megawatt
NARUC	National Association of Regulatory Utility Commissioners
NEM Rules	Commission Regulations Governing Net Energy Metering
NRC	U.S. Nuclear Regulatory Commission
ODEC	Old Dominion Electric Cooperative
Order No. 1000	FERC final rule reforming its transmission planning and cost allocation policy
PJM	PJM Interconnection, LLC
PPA	Purchased Power Agreement
PSA	Public Service Announcement
RAC	Rate Adjustment Clause
REC	Renewable Energy Certificates
ROE	Return on Equity
RPM	Reliability Pricing Model
RPS	Renewable Energy Portfolio Standard
RTE	Regional Transmission Entity
Regulation Act	Virginia Electric Utility Regulation Act
Staff	Commission Staff
VES	Virginia Energy Sense

## EXECUTIVE SUMMARY

Section 56-596 B of the Code of Virginia directs the State Corporation Commission to provide an annual update on the status of the implementation of the Virginia Electric Utility Regulation Act, §§ 56-576 through 56-596 of the Code of Virginia, and to offer recommendations for any actions by the Virginia General Assembly or others that the Commission considers to be in the public interest. This report is responsive to that directive. Highlights of activity pursuant to the Regulation Act since the Commission's September 1, 2015 report include:

- The Commission completed its biennial review for Dominion Virginia Power for the time period January 2013 through December 2014. The Commission found that the company earned a 10.89% return on equity during the biennial review period and that customers were due a refund of \$19.7 million.
- On July 5, 2016, Dominion Virginia Power provided analyses of its base rate financial results for calendar year 2015 reflecting an earned return on common equity for calendar year 2015 of 11.0%, on a regulatory accounting basis. The earned return on equity of 11.0% exceeds the return on equity most recently approved by the Commission for Dominion Virginia Power of 9.6% by 1.4 percentage points, or approximately \$106.7 million in revenues. The earned return on equity of 11.0% also exceeds the most recent return on equity of 10.0% set by the Commission in Dominion Virginia Power's 2013 biennial review; the 10.0% return on equity is applicable to base rates during calendar years 2013 and 2014 and to rate adjustment clauses pursuant to § 56-585.1 A 5 and A 6 of the Code of Virginia effective November 30, 2013.
- On May 5, 2016, Appalachian Power Company provided an analysis of its base rate financial results for calendar years 2014 and 2015 reflecting an earned return on equity of 9.83%, on a regulatory accounting basis. This earned return on equity is 0.13% above the return on equity most recently approved by the Commission for Appalachian Power Company of 9.7%, which equates to approximately \$630,000 of revenues. Appalachian Power Company's analysis did not include all of the regulatory accounting adjustments previously approved by the Commission in Appalachian Power Company's 2014 Biennial Review (for calendar years 2012 and 2013). While there is no quantification of the 2014/2015 effect of omitted adjustments on regulatory earnings, the effect of these omitted adjustments in Appalachian Power Company's 2014 biennial review found that regulatory earnings were increased by approximately 0.75% (\$11.7 million) for 2012 and 1.45% (\$21.2 million) for 2013.

- Appalachian Power Company filed its application pursuant to § 56-585.1:1 of the Code of Virginia for a Commission determination of a proper return on equity for rate adjustment clause riders. A hearing is set for September 2016.
- The Commission authorized a base rate increase of \$5.5 million for customers of Kentucky Utilities/Old Dominion Power Company.
- The Commission approved certificates of public convenience and necessity for several new facilities, including Dominion Virginia Power's Greenville County Power Station and three solar facilities in Powhatan, Louisa, and Isle of Wight Counties, as well as for Doswell Limited Partnership's Hanover Electric Generation Facility.
- The Commission is currently considering two additional applications by Dominion Virginia Power for approval of two solar facilities: (i) the 20 megawatt Remington Solar Facility in Fauquier County, and (ii) the 17.6 megawatt solar facility on the Naval Air Station Oceana in Virginia Beach.
- The Commission approved interim or final fuel factor decreases for customers of all three investor-owned electric utilities in Virginia.
- The Commission continues to follow activity at the federal level concerning the U.S. Environmental Protection Agency's Clean Power Plan, which has been stayed by the U.S. Supreme Court.
- The Commission received integrated resource plan filings from all three investor-owned electric utilities in Virginia. These are currently under review.
- The Commission approved a pilot-type program for Dominion Virginia Power to engage in undergrounding of certain distribution lines.
- Dominion Virginia Power, Appalachian Power Company, and some cooperatives continue to offer demand-side management and energy efficiency programs.
- Dominion Virginia Power and Appalachian Power Company continue to offer opportunities for customers to support renewable energy, and the companies continue to meet voluntary renewable portfolio standard program goals.
- The Commission updated its Net Energy Metering Rules to conform to changes in § 56-594 of the Code of Virginia.
- The Commission's consumer education program, *Virginia Energy Sense*, continues to enhance program features to stress the value of energy conservation and efficiency. Key efforts in the past year have included radio and television announcements, community outreach, digital and social media outreach, public relations, and updated market research.

- The Commission's electricity price analysis shows that Dominion Virginia Power's and Appalachian Power Company's electricity rates for 2015-2016 appear to be fairly competitive with their peer utilities, though pending rate requests could impact the competitiveness of electric rates in the future.
- The Commission continues to participate in Federal Energy Regulatory Commission proceedings related to how PJM Interconnection, L.L.C., spreads costs for transmission lines across the PJM region.

# **I.**

## **INTRODUCTION**

### **Composition of the Electric Industry in Virginia**

The responsibilities of the State Corporation Commission (“Commission”) include the regulation of a diverse electric industry pursuant to the Virginia Constitution and laws enacted by the Virginia General Assembly (“General Assembly”). The electric industry in Virginia for which the Commission regulates the rates charged to customers is comprised of three investor-owned utilities (“IOUs”) and 13 member-owned electric cooperatives.<sup>1</sup> The IOUs include:

- Virginia Electric and Power Company d/b/a Dominion Virginia Power (“DVP”), a subsidiary of Dominion Resources, Inc.;
- Appalachian Power Company (“APCo”), a subsidiary of American Electric Power Company; and
- Kentucky Utilities Company d/b/a Old Dominion Power Company (“KU/ODP”), a subsidiary of PPL Corporation.

The thirteen cooperatives are:

- Central Virginia Electric Cooperative
- Craig-Botetourt Electric Cooperative
- Northern Virginia Electric Cooperative
- Powell Valley Electric Cooperative
- A&N Electric Cooperative
- BARC Electric Cooperative
- Community Electric Cooperative
- Mecklenburg Electric Cooperative
- Northern Neck Electric Cooperative
- Prince George Electric Cooperative
- Rappahannock Electric Cooperative
- Shenandoah Valley Electric Cooperative; and
- Southside Electric Cooperative

---

<sup>1</sup> Non-jurisdictional utilities, such as municipal electric utilities, also provide service in Virginia.



All but the first four cooperatives listed above are distribution cooperatives that are members of the electric generation and transmission cooperative operating as Old Dominion Electric Cooperative, or ODEC ("ODEC").

Virginia consumers are served by these electric companies and cooperatives as follows:

- approximately 66.9% are served by DVP;
- approximately 14.6% are served by APCo;
- approximately 0.8% are served by KU/ODP; and
- approximately 17.8% are served by the distribution cooperatives.

DVP, APCo, and ODEC are members of PJM Interconnection, LLC ("PJM"), a regional transmission entity ("RTE") that coordinates the movement of wholesale electricity across all or parts of the District of Columbia and 13 states: Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, and West Virginia.

#### Background of Electric Utility Rate Regulation in Virginia

The laws governing electric rate regulation have been significantly amended in recent years. The Commission has been required to report to the General Assembly and the Governor regarding the implementation of certain amendments. The brief history of rate regulation below aims to provide context for these amendments and for the items discussed in this report.

Historically, the Commission has set utilities' rates in accordance with Chapter 10 of Title 56 (§ 56-232 *et seq.*) of the Code of Virginia ("Code"). Under this form of regulation, the Commission allows a utility to recoup its prudent operating expenses plus a reasonable return on capital investments. This form of regulation originated at a time when one electric utility was the sole provider of retail electric service in a given area known as its "service territory."

In 1999, the General Assembly passed the Virginia Electric Utility Restructuring Act<sup>2</sup> which, among other things, established a schedule for transition to retail competition (i.e., allowing consumers to select their own provider of electricity), required IOUs to join an RTE, and provided for the licensure of retail electric energy suppliers and aggregators. In 2003, a General Assembly amendment exempted KU/ODP from all but the net metering provisions of this law.<sup>3</sup>

In 2007, the General Assembly enacted broad changes to the 1999 legislation. These changes became known as the Virginia Electric Utility Regulation Act (“Regulation Act”).<sup>4</sup> Among other things, this law set up a process by which the rates of DVP and APCo would be subject to biennial reviews and provided for recovery of certain costs plus an applicable profit margin, or return on equity (“ROE”), via rate adjustment clauses (“RAC”).<sup>5</sup> RACs can be used to recover costs related to: transmission service, demand-side management (“DSM”) programs such as peak-shaving and energy efficiency programs, environmental compliance costs, incremental costs of participating in Virginia’s Renewable Energy Portfolio Standard (“RPS”) program, vegetation management costs, costs for new generation facilities, and costs related to undergrounding of electric distribution lines. The law also established voluntary renewable energy goals and continued the requirement for the Commission to engage in an energy-related

---

<sup>2</sup> 1999 Va. Acts ch. 411.

<sup>3</sup> 2003 Va. Acts. ch. 719.

<sup>4</sup> 2007 Va. Acts ch. 933. This law amends and reenacts §§ 56-233.1, 56-234, 56-235.2, 56-235.6, 56-249, 56-576 through 56-581, 56-582, 56-584, 56-585, 56-587, 56-589, 56-590, and 56-594 of the Code; amends the Code by adding sections numbered 56-585.1, 56-585.2, and 56-585.3; and repeals §§ 56-581.1 and 56-583 of the Code relating to the regulation of electric utility service.

<sup>5</sup> Some RACs also include an “adder” of 100-200 basis points (1% - 2%) to the applicable ROE. *See, e.g.*, § 56-585.1 A 6. Note that throughout this report, the term “RAC” is synonymous with the term “rider.”

consumer education program. Presently, electric companies in Virginia generally recover the cost of providing service, plus a reasonable return, through base rates, fuel charges and RACs.<sup>6</sup>

As part of the amendments in 2007, the Regulation Act also directed this Commission to file a report by September 1 of each year to the Commission on Electric Utility Regulation and to the Governor on the status of the implementation of the Regulation Act, Chapter 23 of Title 56 of the Code (§ 56-576 *et seq.*), including recommendations for actions that may be in the public interest. This report is provided pursuant to that requirement.

This report highlights generation and transmission activities and associated RACs authorized under § 56-585.1 A 4 and A 6 of the Code; energy efficiency and DSM activities and associated RACs authorized under § 56-585.1 A 5 of the Code; activities related to renewable energy under §§ 56-577 and 56-585.2 of the Code; net metering activities authorized by § 56-594 of the Code; and the Commission's consumer education program under § 56-592 of the Code. The report also includes information on the U.S. Environmental Protection Agency's ("EPA") Clean Power Plan and activities at PJM. The report concludes with an analysis of the competitiveness of electric energy prices of Virginia utilities.

## **II.** **COMPANY FINANCIAL REVIEWS AND RELATED CASES**

In 2015 the General Assembly passed amendments to the Regulation Act. These amendments have created a transitional rate period during which base rate reviews, known as biennial reviews, are suspended for APCo (until 2020) and DVP (until 2022). These amendments also provided certain instructions related to DVP's 2015 biennial review.<sup>7</sup>

---

<sup>6</sup> Subsequent amendments to the 2007 law have suspended of the biennial reviews for DVP and APCo. *See* 2015 Va. Acts ch. 6.

<sup>7</sup> 2015 Va. Acts ch. 6.

## Financial Review of DVP

### *DVP's Biennial Review (January 2013 – December 2014)*

In compliance with the recent amendments to the Regulation Act, the Commission completed DVP's 2015 biennial review. This proceeding included a review of DVP's earnings on its rates for generation and distribution services for the two 12-month test periods ending December 31, 2014, and a determination as to whether any credits were due to customers as a result of the Commission's findings. On November 23, 2015, the Commission issued a Final Order in this case. The Commission found, among other things: (i) the fair combined ROE for the 2013-2014 biennial review period was 10.0%, with an earnings band of 9.3% - 10.7%; (ii) DVP actually earned a 10.89% ROE during the biennial review period; and (iii) customers were due a refund of \$19.7 million, in accordance with § 56-585.1 A 8 of the Code.<sup>8</sup>

### *DVP 2015 Base Rate Financial Results*

On July 5, 2016, DVP, in response to a request from the Commission Staff ("Staff") pursuant to § 56-36 of the Code, provided certain analyses of its combined generation and distribution base rate financial results for calendar year 2015 on a regulatory accounting basis. Calendar year 2015 represents the first year of DVP's Transitional Rate Period, which extends from January 1, 2015 through December 31, 2019, pursuant to § 56-585.1:1 A of the Code.

DVP's analysis reflects a combined base rate generation and distribution earned ROE for calendar year 2015 of 11.00%,<sup>9</sup> on a regulatory accounting basis. The 2015 generation and distribution earned ROEs presented by DVP were 10.03% and 12.20%, respectively. The combined generation and distribution earned ROE of 11.00% exceeds the ROE most recently

---

<sup>8</sup> *Application of Virginia Electric and Power Company, For a 2015 biennial review of the rates, terms, and conditions for the provision of generation, distribution, and transmission services pursuant to § 56-585.1 A of the Code of Virginia*, Case No. PUE-2015-00027, 2015 S.C.C. Ann. Rept. 299, Final Order (Nov. 23, 2015).

<sup>9</sup> A 0.01 percentage point is worth approximately \$762,000 in revenues.

approved by the Commission<sup>10</sup> for DVP of 9.60%<sup>11</sup> by 1.4 percentage points, or approximately \$106.7 million in revenues.<sup>12</sup>

For regulatory accounting purposes, during 2015 DVP expensed as period costs approximately \$172.1 million on a Virginia jurisdictional basis related to the anticipated closure of several coal ash ponds and landfills pursuant to the EPA's Coal Combustion Residual Rule. The recognition of these period costs in 2015, as opposed to amortizing them over a longer period, significantly impacted DVP's 2015 base rate financial results, reducing DVP's Virginia jurisdictional combined generation and distribution base rate earned ROE by approximately 2.26 percentage points. Had these expenses not been recognized as period costs in 2015, the combined generation and distribution earned ROE reported by DVP would instead have been approximately 13.26%; this exceeds the 9.6% ROE most recently approved by the Commission by 3.66 percentage points, which is approximately \$278.9 million in revenues.

Pursuant to § 56-585.1:1 E of the Code, electric utilities shall recover, through existing tariff rates for generation and distribution services, certain costs associated with: (1) the implementation of § 111(d) of the Clean Air Act; (2) severe weather events; and (3) natural disasters. DVP stated that it did not record any costs during 2015 related to severe weather events or natural disasters. Further, DVP stated that it did not record any costs during 2015 related to implementation of § 111(d) of the Clean Air Act.

---

<sup>10</sup> DVP's 2015 ROE of 11.00% also exceeds the most recent ROE set by the Commission in a biennial review for DVP of 10.00%. The Commission approved this ROE in Case No. PUE-2013-00020 to be applicable to the DVP's base rates during calendar years 2013 and 2014 and to be applicable to the DVP's RACs pursuant to § 56-585.1 A 5 and A 6 of the Code effective November 30, 2013.

<sup>11</sup> The Commission approved this ROE in Case Nos. PUE-2015-00058, PUE-2015-00059, PUE-2015-00060, PUE-2015-00061, PUE-2015-00075, and PUE-2015-00104.

<sup>12</sup> In a biennial review proceeding, actual earnings are measured on a regulatory accounting basis for two historical combined test periods, pursuant to § 56-585.1 of the Code. Specifically, § 56-585.1 A 8 (b) of the Code requires the Commission, in a biennial review, to order credits to customers' bills equal to 70% of the Company's earnings that are more than 70 basis points (0.7 percentage points) above the fair ROE determined by the Commission.

## Financial Review of APCo

### *APCo's ROE Proceeding*

In accordance with the 2015 amendments to the Regulation Act, biennial reviews for APCo currently are suspended. Rather, these amendments provide for periodic proceedings before the Commission to determine a utility's fair ROE, or profit margin, to be used as the general rate of return applicable to that utility's RAC. The first such proceeding for APCo was scheduled for 2016. Accordingly, on March 31, 2016, APCo filed an application pursuant to § 56-585.1:1 of the Code concerning this ROE determination. APCo requested approval of an ROE of 10.43% to be used for its RAC allowed under Code § 56-585.1 A 5 and A 6. This ROE would be applied prospectively as of the date of the Commission's final order in the case. This proceeding is pending before the Commission, and a hearing is set for September 2016.<sup>13</sup>

### *APCo 2014 and 2015 Base Rate Reported Results*

2014 Base Rate Reported Results. Further, on May 5, 2016, APCo, in response to the Commission's February 5, 2016 Order on Rule to Show Cause, provided an analysis of its combined generation and distribution base rate financial results for calendar year 2014 on a regulatory accounting basis. Calendar year 2014 represents the first year of APCo's Transitional Rate Period, which extends from January 1, 2014, through December 31, 2017, pursuant to § 56-585.1:1 of the Code. APCo's analysis reflects a combined base rate generation and distribution earned ROE for calendar year 2014 of 7.86%, on a regulatory accounting basis. The 2014 generation and distribution earned ROEs presented by APCo were 9.82% and 4.96%, respectively. The combined generation and distribution earned ROE of 7.86% is below the ROE

---

<sup>13</sup> *Application of Appalachian Power Company, For the determination of the fair rate of return on common equity to be applied to its rate adjustment clauses*, Case No. PUE-2016-00038, Doc. Con. Cen. No. 160420083, Order for Notice and Hearing (Apr. 14, 2016).

most recently approved by the Commission for APCo of 9.70%<sup>14</sup> by 1.84%, or approximately \$35.22 million of revenues.

2015 Base Rate Reported Results. On July 5, 2016, APCo provided an analysis of its combined generation and distribution base rate financial results for calendar year 2015 on a regulatory accounting basis. Calendar year 2015 represents the second year of APCo's Transitional Rate Period. APCo's analysis reflects a combined base rate generation and distribution earned ROE for calendar year 2015 of 11.84%, on a regulatory accounting basis. The 2015 generation and distribution earned ROEs presented by APCo were 17.02% and 4.83%, respectively. The combined generation and distribution earned ROE of 11.84% is above the ROE most recently approved by the Commission for APCo of 9.70% by 2.14%, or approximately \$35.85 million of revenues.

Combined 2014 and 2015 Base Rate Reported Results. Over the 2014 and 2015 period, APCo's analysis indicates a combined base rate generation and distribution earned ROE of 9.83% on a regulatory accounting basis. Below is a chart detailing the ROE presented by APCo for calendar years 2014 and 2015 earnings as well as the ROE for the combined period:

APCO'S RETURN ON EQUITY

<u>Year</u>	<u>Generation</u>	<u>Distribution</u>	<u>Total</u>
2014	9.82%	4.96%	7.86%
2015	17.02%	4.38%	11.84%
Combined	13.37%	4.67%	9.83%

---

<sup>14</sup> The Commission approved this ROE in Case No. PUE-2014-00026 to be applicable to the APCo's base rates during calendar years 2014 and 2015.

The combined generation and distribution earned ROE of 9.83% is above the ROE most recently approved by the Commission for APCo of 9.70% by .13%, or approximately \$630,000 of revenues.<sup>15</sup> APCo's analysis did not include all of the regulatory accounting adjustments previously approved by the Commission in the Company's 2014 Biennial Review (for calendar years 2012 and 2013). While there is no quantification of the 2014/2015 effect of omitted adjustments on regulatory earnings, the effect of these omitted adjustments in APCo's 2014 biennial review found that regulatory earnings were increased by approximately .75% (\$11.7 million) for 2012 and 1.45% (\$21.2 million) for 2013.

Pursuant to § 56-585.1:1 E of the Code, electric utilities shall recover through existing tariff rates for generation and distribution services certain costs associated with: (1) the implementation of § 111(d) of the Clean Air Act; (2) severe weather events; and (3) natural disasters. APCo stated that it recorded \$1.23 million of expenses during 2014 and \$1.22 million of expenses during 2015 related to severe weather events. Further, APCo stated that it did not record any costs during 2014 or 2015 related to natural disasters or the implementation of § 111(d) of the Clean Air

#### KU/ODP's General Rate Case

As noted above, KU/ODP is exempt from most aspects of the Regulation Act; thus, KU/ODP seeks changes to its base rates through Chapter 10 of Title 56 of the Code. On June 30, 2015, KU/ODP filed an application with the Commission requesting authority to increase its annual base rate revenues by \$7.16 million, a 10.12% increase in total operating revenues, including fuel expenses. On February 2, 2016, the Commission issued its Final Order in this

---

<sup>15</sup> In a biennial review proceeding, actual earnings are measured, on a regulatory accounting basis, for two historical combined test periods pursuant to § 56-585.1 of the Code. Specifically, § 56 585.1 A 8 (b) of the Code requires the Commission, in a biennial review, to order credits to customers' bills equal to 70 percent of the Company's earnings that are more than 70 basis points above the fair ROE determined by the Commission.



case approving a settlement between KU/ODP, the Commission's Staff, and the Office of the Attorney General's Division of Consumer Counsel that recommended an annual base rate increase of \$5.5 million effective for service rendered on and after February 15, 2016.<sup>16</sup>

### **III.** **GENERATION**

#### Sources of Virginia's Electricity

Virginia's electric utilities supply their customers with power from their own facilities, which are located both inside and outside of Virginia, and from energy purchases from other entities. Generally, approximately 90% of the total supply of energy to Virginia's IOU customers is produced from facilities under the Commission's rate setting jurisdiction even though some of those facilities are located outside the boundaries of the Commonwealth. Power from jurisdictional plants that may be physically located in another state is not considered "imported" in any relevant definition because, from legal and regulatory standpoints, Virginia consumers have the same claim on such power as they do on power from jurisdictional plants physically located in Virginia.

For example, DVP's Mt. Storm facility, while physically located in West Virginia, is dispatched as part of DVP's fleet; is part of DVP's rate base; and its costs are included in rates regulated by the Commission. The same is true of APCo's facilities, some of which are physically located in West Virginia and Ohio. Despite these facilities' locations, the Virginia jurisdictional share of these generation assets is included in APCo's Virginia rate base. These facilities also are dispatched as part of APCo's fleet and are subject to Commission regulation.

Virginia's IOUs also procure energy through purchases from other sources. For example, DVP and APCo purchase energy from the PJM market. Such purchases often are made because

---

<sup>16</sup> *Application of Kentucky Utilities Company d/b/a Old Dominion Power Company, For an adjustment of electric base rates*, Case No. PUE-2015-00063, Doc. Con. Cen. No. 160210128, Final Order (Feb. 2, 2016).

it is cheaper for DVP or APCo to purchase the energy than to produce it at company-owned facilities. Under this scenario, the IOU's ratepayers generally benefit from these purchases by paying lower prices for energy.

### Generation Additions and Updates

During the past year, the Commission approved applications for certificates of public convenience and necessity ("CPCN") for several new facilities, including DVP's Greenville County Power Station and three solar facilities in Powhatan, Louisa, and Isle of Wight Counties. The Commission also approved a CPCN for Doswell Limited Partnership's Hanover Electric Generation Facility. As of August 1, 2016, the Commission has pending two applications for CPCNs related to two new solar generation facilities DVP has proposed: (i) the 20 megawatt ("MW") Remington Solar Facility in Fauquier County; and (ii) the 17.6 MW solar facility on the Naval Air Station Oceana in Virginia Beach. Progress also has been made on new generation facilities previously approved by the Commission. Below is a summary, by company, of these generation facilities and any RACs applicable thereto that have been approved since September 1, 2015.

#### *DVP*

Bear Garden Generating Station. DVP charges Rider R to recover costs associated with the Bear Garden Generating Station located in Buckingham County. DVP requested an update to Rider R in 2015 and on February 29, 2016, the Commission accepted a settlement presented by DVP and the Staff which provided for a \$74.3 million annual revenue requirement for the period April 1, 2016, through March 31, 2017. This revenue requirement is based on an ROE of

11% (including a base ROE of 10.0% plus a 100 basis point adder allowed pursuant to § 56-585.1 A 6 of the Code).<sup>17</sup>

On June 1, 2016, DVP filed an application to revise Rider R. In this application DVP requests approval of an annual revenue requirement of \$75.2 million for the rate year April 1, 2017, through March 31, 2018. This proposed revenue requirement is based on an ROE of 11.5% (including a base ROE of 10.5% and a 100 basis point adder allowed pursuant to § 56-585.1 A 6 of the Code). This matter is pending; hearings are scheduled for January 2017 to consider ROE issues and November 2016 to consider all other issues.<sup>18</sup>

Biomass Conversions. DVP charges Rider B to recover costs associated with the biomass conversions at its Altavista, Hopewell, and Southampton Power Stations. DVP requested an update to Rider B in 2015 and on February 29, 2016, the Commission accepted a settlement presented by DVP and the Staff, which provided for a \$29.7 million annual revenue requirement for the period April 1, 2016, through March 31, 2017. This revenue requirement is based on an ROE of 12% (including a base ROE of 10.0% plus a 200 basis point adder allowed pursuant to § 56-585.1 A 6 of the Code).<sup>19</sup>

On June 1, 2016, DVP filed an application to revise Rider B. In this application DVP requests approval of an annual revenue requirement of \$28.5 million for the rate year April 1, 2017, through March 31, 2018. This proposed revenue requirement is based on an ROE of 12.5% (including a base ROE of 10.5% and a 200 basis point adder allowed pursuant to

---

<sup>17</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider R, Bear Garden Generating Station, For the rate year commencing April 1, 2016*, Case No. PUE-2015-00059, Doc. Con. Cen. No. 160250198, Final Order (Feb. 29, 2016).

<sup>18</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider R, Bear Garden Generating Station*, Case No. PUE-2016-00061, Doc. Con. Cen. No. 160630186, Order for Notice and Hearing (June 23, 2016).

<sup>19</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider B, Biomass Conversions of the Altavista, Hopewell, and Southampton power stations for the rate year commencing April 1, 2016*, Case No. PUE-2015-00058, Doc. Con. Cen. No. 160250199, Final Order (Feb. 29, 2016).

§ 56-585.1 A 6 of the Code). This matter is pending; two hearings are scheduled for January 2017, one to consider ROE issues and a second to consider all other issues.<sup>20</sup>

Brunswick County Power Station. DVP completed construction of the Brunswick County natural gas-fired, combined-cycle facility (1358 MW), and this facility began commercial operation on April 25, 2016. DVP charges Rider BW to recover costs associated with the Brunswick County Power Station. DVP requested an update to Rider BW in 2015 and on June 30, 2016, the Commission approved a revenue requirement of \$119.4 million for the period September 1, 2016, through August 31, 2017. This revenue requirement is based on an ROE of 10.6% (including a base ROE of 9.6% and a 100 basis point adder allowed pursuant to § 56-585.1 A 6 of the Code).<sup>21</sup> DVP has not yet filed a 2016 application to revise Rider BW.

Greensville County Power Station. The Commission granted DVP a CPCN for the Greensville County Power Station on March 29, 2016. This facility is now under construction. DVP also charges Rider GV to recover costs associated with the Greensville County Power Station. DVP's initial application for Rider GV also was approved March 29, 2016; the Commission approved a \$40.4 million revenue requirement for the period April 1, 2016, through March 31, 2017. This revenue requirement is based on an ROE of 9.6%.<sup>22</sup>

On June 1, 2016, DVP filed an application to revise Rider GV. In this application DVP requests approval of an annual revenue requirement of \$89.2 million for the rate year April 1,

---

<sup>20</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider B, Biomass Conversions of the Altavista, Hopewell, and Southampton power stations for the rate year commencing April 1, 2017*, Case No. PUE-2016-00059, Doc. Con. Cen. No. 160630186, Order for Notice and Hearing (June 23, 2016).

<sup>21</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider BW, Brunswick County Power Station, for the rate year commencing September 1, 2016*, Case No. PUE-2015-00102, Doc. Con. Cen. No. 160660017, Final Order (June 30, 2016).

<sup>22</sup> *Application of Virginia Electric and Power Company, For approval and certification of the proposed Greensville County Power Station and related transmission facilities pursuant to §§ 56-580 D, 56-265.2, and 56-46.1 of the Code of Virginia, and for approval of a rate adjustment clause, designated Rider GV, pursuant to § 56-585.1 A 6 of the Code of Virginia*, Case No. PUE-2015-00075, Doc. Con. Cen. No. 160340035, Final Order (Mar. 29, 2016). Note that, due to the type of fuel used by this facility and the date of filing of its initial RAC application, the Greensville County Power Station is not eligible for any adder on top of the general ROE pursuant to § 56-585.1 A 6.

2017, through March 31, 2018. This proposed revenue requirement is based on an ROE of 10.5%. This matter is pending; two hearings are scheduled for January 2017 -- one to consider ROE issues and another to consider all other issues.<sup>23</sup>

Remington Solar Facility. On January 20, 2015, DVP filed an application for approval of a CPCN to construct and operate a 20 MW utility-scale solar electric generating facility near the town of Remington in Fauquier County. DVP also requested approval of a RAC, designed to recover costs associated with this facility. On October 20, 2015, the Commission denied this application without prejudice. The Commission found that the case record did not show that DVP had considered and weighed alternative options, as required by statute, and the Commission found that DVP had not established the reasonableness and prudence of costs proposed to be paid by consumers.<sup>24</sup>

On May 4, 2016, DVP filed a new application for approval and a CPCN to construct and operate the 20 MW utility-scale Remington solar facility. DVP's application states that the electrical output of the Remington Solar Facility would be dedicated solely to the Commonwealth of Virginia, a non-jurisdictional customer of DVP, and that the Commonwealth has agreed to purchase this electrical output at a negotiated price for 25 years. DVP states that there would be no impacts to its Virginia jurisdictional cost of service, base rates, fuel rates, or RACs as a result of its ownership and operation of the Remington facility during the 25-year

---

<sup>23</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider GV, Greensville County Power Station, Case No. PUE-2016-00060, Doc. Con. Cen. No. 160630127, Order for Notice and Hearing (June 21, 2016).*

<sup>24</sup> *Application of Virginia Electric and Power Company, For approval and certification for the proposed Remington Solar Facility pursuant to §§ 56-46.1 and 56-580 D of the Code of Virginia, and for approval of a rate adjustment clause pursuant to § 56-585.1 A 6 of the Code of Virginia, Case No. PUE-2015-00006, 2015 S.C.C. Ann. Rept. 270, Final Order (Oct. 20, 2015).*

term of these arrangements. This case is pending before the Commission; a hearing is scheduled for October 2016.<sup>25</sup>

Solar Facilities. On June 30, 2016, the Commission approved CPCNs for three utility-scale solar facilities in Powhatan County (a 17 MW facility), Louisa County (a 20 MW facility), and Isle of Wight County (a 19 MW facility). These facilities are now under construction, with completion expected in December 2016. DVP charges Rider US-2 to recover costs associated with construction and operation of these facilities. On June 30, 2016, the Commission approved a revenue requirement of \$5.6 million for the period September 1, 2016, through August 31, 2017. This revenue requirement is based on an ROE of 9.6%.<sup>26</sup>

Additionally, on August 1, 2016, DVP filed an application for approval and a CPCN to construct and operate a 17.6 MW utility-scale solar electric generating facility on the Naval Air Station Oceana in Virginia Beach, Virginia. In its application DVP states that the electrical output of this facility would be dedicated solely to the Commonwealth of Virginia and that the Commonwealth has agreed to purchase this electrical output at a negotiated price for 25 years. DVP states that there will be no impacts to Virginia jurisdictional cost of service, base rates, fuel rates, or RACs as a result of DVP's ownership and operation of this facility during the 25-year term of these arrangements. A hearing on this application is scheduled for January 2017.<sup>27</sup>

---

<sup>25</sup> *Application of Virginia Electric and Power Company, For approval and certification of the proposed Remington Solar Facility pursuant to §§ 56-46.1 and 56-580 D of the Code of Virginia*, Case No. PUE-2016-00048, Doc. Con. Cen. No. 160550135, Order for Notice and Hearing (May 26, 2016).

<sup>26</sup> *Application of Virginia Electric and Power Company, For approval and certification for the proposed 2016 Solar Projects pursuant to §§ 56-580 D and 56-46.1 of the Code of Virginia, and for approval of a rate adjustment clause, designated Rider US-2, under § 56-585.1 A 6 of the Code of Virginia*, Case No. PUE-2015-00104, Doc. Con. Cen. No. 160650176, Final Order (June 30, 2016). Note that, due to the type of fuel used by this facility and the date of filing of its initial RAC application, these solar projects are not eligible for any adder on top of the general ROE pursuant to § 56-585.1 A 6.

<sup>27</sup> *Application of Virginia Electric and Power Company, For approval and certification of the proposed Oceana Solar Facility pursuant to §§ 56-46.1 and 56-580 D of the Code of Virginia*, Case No. PUE-2016-00079, Doc. Con. Cen. No. 160820313, Order for Notice and Hearing (Aug. 18, 2016).

Virginia City Hybrid Energy Center. DVP charges Rider S to recover costs associated with the Virginia City Hybrid Energy Center located in Wise County. DVP requested an update to Rider S in 2015 and on February 29, 2016, the Commission accepted a settlement presented by DVP and the Staff that provided for a \$251.1 million annual revenue requirement for the period April 1, 2016, through March 31, 2017. This revenue requirement is based on an ROE of 11%.<sup>28</sup>

On June 1, 2016, DVP filed an application to revise Rider S. In this application DVP requests approval of an annual revenue requirement of \$253.9 million for the rate year April 1, 2017, through March 31, 2018. This proposed revenue requirement is based on an ROE of 11.5% (including a base ROE of 10.5% and a 100 basis point adder allowed pursuant to § 56-585.1 A 6 of the Code). This matter is pending; hearings are scheduled for January 2017 to consider ROE issues and December 2016 to consider all other issues.<sup>29</sup>

Warren County Power Station. DVP charges Rider W to recover costs associated with the Warren County Power Station. DVP requested an update to Rider W in 2015 and on February 29, 2016, the Commission accepted a settlement presented by DVP and the Staff, which provided for a \$117.9 million annual revenue requirement for the period April 1, 2016, through March 31, 2017. This revenue requirement is based on an ROE of 11%.<sup>30</sup>

On June 1, 2016, DVP filed an application to revise Rider W. In this application DVP requests approval of an annual revenue requirement of \$126.5 million for the rate year April 1, 2017, through March 31, 2018. This proposed revenue requirement is based on an ROE of

---

<sup>28</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider S, Virginia City Hybrid Energy Center*, Case No. PUE-2015-00060, Doc. Con. Cen. No. 160250197, Final Order (Feb. 29, 2016).

<sup>29</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider S, Virginia City Hybrid Energy Center*, Case No. PUE-2016-00062, Doc. Con. Cen. No. 160630126, Order for Notice and Hearing (June 21, 2016).

<sup>30</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider W, Warren County Power Station*, Case No. PUE-2015-00061, Doc. Con. Cen. No. 160250196, Final Order (Feb. 29, 2016).

11.5% (including a base ROE of 10.5% and a 100 basis point adder allowed pursuant to § 56-585.1 A 6 of the Code). This matter is pending; hearings are scheduled for January 2017 to consider ROE issues and November 2016 to consider all other issues.<sup>31</sup>

#### *APCo*

Clinch River Facility. In late 2013, the Commission approved conversion of APCo's Clinch River Plant Units 1 and 2 from utilizing coal to utilizing natural gas as fuel. These conversions have now been completed, and the converted units began operation on March 21, 2016 (Unit 1) and April 29, 2016 (Unit 2). There is no RAC associated with the Clinch River facility.

Dresden Facility. On March 31, 2016, APCo filed for approval to continue, with modification, a RAC, designated as the G-RAC, to recover the costs of its Dresden Generating Plant, a 580 MW natural gas-fired combined-cycle generating plant located in Dresden, Ohio. APCo requests recovery of approximately \$32.3 million for the period March 1, 2017, through February 28, 2018, an increase of approximately \$3.4 million above the revenues produced by the current G-RAC. A hearing on this petition is scheduled for September 2016.<sup>32</sup>

#### *Other Generation Facilities*

Following are updates on generation facilities that are not owned by a Virginia IOU. These facilities have been approved by the Commission pursuant to §§ 56-46.1 and 56-580 D of the Code. The Commission does not regulate the rates and terms and conditions of service provided by the entities constructing these facilities; instead, these entities bear all business risk

---

<sup>31</sup> *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider W, Warren County Power Station*, Case No. PUE-2016-00063, Doc. Con. Cen. No. 160630060, Order for Notice and Hearing (June 17, 2016).

<sup>32</sup> *Petition of Appalachian Power Company, For revision of a rate adjustment clause pursuant to § 56-585.1 A 6 of the Code of Virginia with respect to the Dresden Generating Plant*, Case No. PUE-2016-00024, Doc. Con. Cen. No. 160420156, Order for Notice and Hearing (Apr. 18, 2016).



associated with constructing and operating the generation facilities. Ratepayers in Virginia have no set obligations to pay for these facilities, nor does the Commission approve RACs for such facilities.

Doswell Limited Partnership. In June 2016, the Commission approved and issued a CPCN for Doswell Limited Partnership's Hanover Electric Generation Facility (340 MW), which includes two combustion turbines with dual-fuel capability. Construction is expected to be completed in March 2018.<sup>33</sup>

Green Energy Partners/Stonewall LLC. In 2014, the Commission approved and issued a CPCN for Green Energy Partners/Stonewall LLC's natural gas-fired, combined-cycle merchant generator facility (778 MW) in Loudoun County.<sup>34</sup> This facility is under construction and is expected to be in operation during the autumn of 2017.

#### Generation Retirements

APCo and DVP also have formally announced plans to retire certain aging coal generation facilities during the 2015-2017 timeframe due in part to current and anticipated federal environmental regulations. In addition to the 578 MW of coal capacity retired at its Chesapeake Energy Center in December 2014, DVP plans to retire 323 MW of coal capacity at its Yorktown Power Station in April 2017.

As noted above, APCo converted a 474 MW coal-fueled facility to natural gas use at the Clinch River Power Station during the spring of 2016. APCo also officially retired a 1,245 MW

---

<sup>33</sup> *Application of Doswell Limited Partnership, For Approval and Certification of a 340 MW Electric Generation Facility in Hanover County, Virginia pursuant to §§ 56-46.1 and 56-580 D of the Code of Virginia, Case No. PUE-2015-00127, Doc. Con. Cen. No. 160610032, Final Order (June 1, 2016).*

<sup>34</sup> *Application of Green Energy Partners/Stonewall LLC, For a certificate of public convenience and necessity for a 750 MW electric generating facility in Loudoun County, Case No. PUE-2013-00104, Doc. Con. Cen. No. 140520190, Final Order (May 13, 2014).*

coal-fueled generation facility at its Glen Lynn, Clinch River, Kanawha River, and Sporn Power Stations on June 1, 2015. APCo has no more coal-fueled facilities in Virginia.

### Nuclear Activity

DVP has been considering adding a third nuclear reactor at its North Anna Power Station. Before DVP builds such a unit, it must, among other approvals, receive a Combined Operating License (“COL”) from the U.S. Nuclear Regulatory Commission (“NRC”) to construct and operate the new nuclear reactor. Accordingly, on November 27, 2007, DVP filed an application with the NRC for a Combined Operating License to build and operate a new nuclear reactor at its North Anna Power Station in Central Virginia.

Additionally, in April 2013 DVP announced a decision to return to its original plan to use GE Hitachi’s Economic Simplified Boiling Water Reactor for the new nuclear reactor at the North Anna Power Station. DVP’s application is currently undergoing the NRC certification process; DVP expects to receive approval from the NRC in 2017. DVP has not yet finalized a decision to construct a new nuclear unit at the North Anna Power Station but, along with pursuit of the Combined Operating License, continues related development activities prerequisite to constructing any new nuclear reactor.

DVP also notified the NRC of its intent to submit to the NRC a second license renewal application for Surry Power Station Units 1 and 2 in the first quarter of 2019. These units were originally licensed to run for 40 years and their licenses already have been renewed for one 20-year period. If the NRC approves the application as filed, the units would continue to run for an additional 20 years.

## Fuel Cases

Section 56-249.6 of the Code allows Virginia's IOUs to recover, on a dollar-for-dollar basis, costs associated with purchased power and costs for fuel to run generating plants.<sup>35</sup>

Following is an update on the fuel cases filed since the Commission's last report.

### *DVP*

On August 21, 2015, the Commission issued an order that established DVP's fuel factor for usage on and after July 1, 2015. The fuel factor was set at 2.406¢/kilowatt-hour ("kWh"), a decrease of 0.6120¢/kWh from the prior fuel factor of 3.018¢/kWh.<sup>36</sup>

On May 4, 2016, DVP filed for another decrease in its fuel factor, from 2.406¢/kWh to 1.971¢/kWh, a 0.435¢/kWh decrease, for service rendered on and after July 1, 2016. The Commission issued an order placing the lower fuel factor into effect on an interim basis. This case remains pending; a hearing is scheduled for September 2016.<sup>37</sup>

---

<sup>35</sup> See also *Commonwealth of Virginia, ex rel. State Corporation Commission, Ex Parte: In the matter of establishing Commission policy regarding rate treatment of purchased power capacity charges by electric utilities and cooperatives*, Case No. PUE-1988-00052, 1988 S.C.C. Ann. Rept. 346, 347 (Nov. 10, 1988) (describing the "fuel factor" as a statutory adjustment mechanism through which all prudently incurred energy costs are recovered dollar for dollar"); *Application of Kentucky Utilities Company d/b/a Old Dominion Power Company, To revise its fuel factor pursuant to Virginia Code § 56-249.6*, Case No. PUE-1994-00043, 1995 S.C.C. Ann. Rept. 309, 310 (Jan. 6, 1995) (explaining that the "fuel factor mechanism . . . gives the Company dollar for dollar recovery for allowable fuel expenses.").

<sup>36</sup> *Application of Virginia Electric and Power Company, To revise its fuel factor pursuant to § 56-249.6 of the Code of Virginia*, Case No. PUE-2015-00022, S.C.C. Ann. Rept. 296, Final Order (Aug. 21, 2015).

<sup>37</sup> *Application of Virginia Electric and Power Company, To revise its fuel factor pursuant to § 56-249.6 of the Code of Virginia*, Case No. PUE-2016-00047, Doc. Con. Cen. No. 160540251, Order Establishing 2016-2017 Fuel Factor Proceeding ( May 17, 2016).

*APCo*

On January 6, 2016, the Commission approved a two-phase decrease of APCo's fuel factor, from 2.953¢/kWh to 2.586¢/kWh, effective for service rendered on and after October 1, 2015,<sup>38</sup> and a further reduction to 2.301¢/kWh effective for service rendered on and after February 1, 2016. On August 19, 2016, APCo filed an application to continue its current fuel factor of 2.301¢/kWh for another year; this application is pending before the Commission.<sup>39</sup>

*KU/ODP*

On February 16, 2016, KU/ODP filed an application proposing to decrease its levelized fuel factor by 0.577¢/kWh, from 2.863¢/kWh to 2.286¢/kWh, effective for service rendered on and after April 1, 2016. On March 3, 2016, the Commission placed the fuel factor into effect on an interim basis as of April 1, 2016. On August 11, 2016, the Commission entered a final order in this proceeding, allowing the interim rate to remain in effect until KU/ODP requests a further change to this rate.<sup>40</sup>

Environmental Protection Agency Regulation of Carbon Dioxide

The EPA recently released new rules relating to carbon dioxide emissions from new, existing, and modified fossil fuel electric generating facilities. The effect of these changes on generating facilities in Virginia is yet to be determined. A brief review of these recent changes and their status is provided below.

---

<sup>38</sup> The Commission placed the decrease to 2.5886¢/kWh into effect on an interim basis for service rendered on and after October 1, 2016. *Application of Appalachian Power Company, To revise its fuel factor*, Case No. PUE-2015-00088, 2015 S.C.C. Ann. Rept. 371, Order Establishing 2015-2016 Fuel Factor Proceeding (Sept. 2, 2015).

<sup>39</sup> *Application of Appalachian Power Company, To continue its current fuel factor*, Case No. PUE-2015-00088, Doc. Con. Cen. No. 160820360, Application (Aug. 19, 2016). APCo also requests that it be permitted to shift by one month the time period in which subsequent fuel factors will be in effect, from the current rate year period of October through September, to a rate year period of November through October.

<sup>40</sup> *Application of Kentucky Utilities Company d/b/a Old Dominion Power Company, To revise its fuel factor pursuant to § 56-249.6 of the Code of Virginia*, Case No. PUE-2016-00017, Doc. Con. Cen. No. 160820019, Order Establishing Fuel Factor (Aug. 11, 2016).

On August 3, 2015, the EPA released three final rules relating to carbon dioxide emissions:

- 1) A final Rule, issued under Section 111 (d) of the Clean Air Act, for the regulation of carbon dioxide emissions from certain existing coal, natural gas, and oil facilities. EPA assigned to Virginia an average carbon emission rate of 1,047 pounds per megawatt-hour for the interim compliance period of 2022-2029; and a final rate of 934 pounds per megawatt-hour for compliance beginning in 2030. EPA also established, as compliance alternatives, state-specific tonnage limits and technology-specific emission rate limits. The deadline established by the rule for states to submit compliance plans is September 2016, with the opportunity to request an extension to September 2018.
- 2) A proposed Federal Plan and Model Trading Rules, also issued under Section 111(d) of the Clean Air Act, for the regulation of carbon dioxide emissions from certain existing facilities. EPA would finalize and enforce a federal plan for states that decline to submit a plan to comply with the Final 111(d) Rule or that have their plan disapproved by EPA. The Model Trading Rules, which EPA initially planned to finalize in the summer of 2016, are intended to facilitate interstate trading of carbon allowances or credits.
- 3) A Final Rule, issued under Clean Air Act Section 111(b), establishing *new source* performance standards for carbon emissions from certain new or modified facilities. New coal and natural gas combined cycle units are limited to carbon emission rates of 1,400 pounds and 1,000 pounds per megawatt-hour, respectively.

On October 23, 2015, the EPA published the final Clean Power Plan and the proposed federal implementation plan identified above.<sup>41</sup> After publication, this regulation was appealed to the D.C. Circuit Court of Appeals (“D.C. Circuit”). On February 9, 2016, the United States Supreme Court granted a stay of the regulation until it had been reviewed by the D.C. Circuit and then subsequently either reviewed or denied review by the Supreme Court. Oral argument at the D.C. Circuit is scheduled for September 27, 2016. Accordingly, the full impact of any final rule on Virginia cannot be determined.

---

<sup>41</sup> *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 80 Fed. Reg. 64,662, Final Rule (Oct. 23, 2015); *Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed On or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations*, 80 Fed. Reg. 64,966, Proposed Rule (Oct. 23, 2015).

## Integrated Resource Planning

Section 56-597 *et seq.* of the Code mandates the regular filing of IRPs by IOUs that provide retail electric service in Virginia. A separate integrated resource plan ("IRP") report on these filings will be submitted to the General Assembly on December 1, 2016. Thus, this section will be limited to a general description of these filings and current procedural schedules.

As originally enacted, each IOU was required to file an IRP with the Commission by September 1 on a biennial basis. By September 1 of each year in which an IRP was not required to be filed, each IOU was required to file a narrative summary describing any significant event necessitating a major revision to the most recently filed IRP. The Commission determines whether an IRP is reasonable and in the public interest.

In 2015 the General Assembly enacted legislation that, *inter alia*, amended the IRP statutes; this legislation was signed into law by the Governor on February 24, 2015.<sup>42</sup> Pursuant to these amendments, each IOU must file an IRP by May 1 of each year. As part of the IRP, each utility must evaluate and report on the effect of current and pending environmental regulations on the continued operation of existing electric generation facilities, or options for construction of new generation facilities, and the most cost-effective means of complying with the environmental regulations. Each utility also must address options for maintaining and enhancing rate stability, energy independence, and economic development, including retention and expansion of energy-intensive industries and service reliability.

In reviewing prior IRPs, the Commission has emphasized that the IRP, as a planning document, does not control future resource-specific decisions by the Commission; does not

---

<sup>42</sup> 2015 Va. Acts ch. 6.

preclude the Commission from approving or rejecting any individual supply-side or demand-side resource in the future; and does not create any presumption for or against a particular resource.<sup>43</sup>

On April 29, 2016, Virginia's three IOUs filed their most recent IRPs. Hearings are scheduled in October 2016 for DVP's IRP and in November 2016 for APCo's IRP. A Staff report is due to be submitted on or before August 24, 2016, concerning KU/ODP's IRP.

#### **IV. TRANSMISSION**

##### Transmission Line Activity

Virginia's electric utilities continue to expand their transmission facilities within the Commonwealth. In 2015, three transmission projects were approved and issued CPCNs by the Commission; ten transmission CPCN applications remain pending before the Commission. Additionally, 14 transmission projects that have been issued CPCNs are not yet constructed.

One particular transmission line CPCN application that has received media attention is DVP's application for approval of the Surry-Skiffes Creek 500 kilovolt ("kV") transmission line, Skiffes Creek-Wheaton 230 kV transmission line, and Skiffes Creek 500 kv-230 kV-115 kV switching station. This project, as approved by the Commission, would involve an overhead line crossing of the James River.<sup>44</sup> DVP's target project completion date is 20 months following issuance of a permit by the U.S. Army Corps of Engineers; the project remains under review by that agency at the present time. DVP continues to file periodic status updates with the

---

<sup>43</sup> See, e.g., *Commonwealth of Virginia, ex rel., State Corporation Commission, In re: Virginia Electric and Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq.*, Case No. PUE-2009-00096, 2010 S.C.C. Ann. Rept. 385, Final Order (Aug. 6, 2010).

<sup>44</sup> *Application of Virginia Electric and Power Company d/b/a Dominion Virginia Power, For approval and certification of electric facilities: Surry-Skiffes Creek 500 kV Transmission Line, Skiffes Creek-Wheaton 230 kV Transmission Line, and Skiffes Creek 500 kV-230 kV-115 kV Switching Station*, Case No. PUE-2012-00029, 2013 S.C.C. Ann. Rept. 240, Order (Nov. 26, 3013), *reh'g denied*, 2014 S.C.C. Ann. Rept. 253, Order Denying Petition (Apr. 10, 2014), *aff'd in part, BASF Corp. v. State Corp. Comm'n*, 289 Va. 375, 770 S.E.2d 458 (2015) (upholding Commission's decision as to minimizing adverse impact on scenic assets, historic districts, and environment but finding the Commission erred in concluding that a switching station is a transmission line under Code § 56-46.1 F).

Commission. These may be reviewed through the Commission's webpage:

<http://www.scc.virginia.gov/case/index.aspx>, clicking "Docket Search," then "Search Cases,"

and entering Case No. PUE-2012-00029.

A chart summarizing recent in-state transmission line construction activity as of August 1, 2016, follows:



**Summary of Transmission Line Case and Construction Activity in Virginia  
as of August 1, 2016**

<b>COMPANY/FACILITY</b>	<b>SIZE</b>	<b>LOCATION</b>	<b>DOCKET</b>	<b>C.O.D.*</b>	<b>STATUS</b>
DVP Surry-Skiffes Creek-Whealton	500 kV – 7 mi 230 kV – 20 mi	Surry, James City, York, Newport News, Hampton	PUE-2012-00029 (20 months after Army Corps permit issuance)	2017	certificate issued
DVP Dooms-Lexington	500/230 kV – 39.1 mi	Rockbridge, Augusta	PUE-2013-00118	12/2016	certificate issued
DVP Remington CT- Warrenton	230 kV – 12 mi	Fauquier	PUE-2014-00025	6/2018	certificate issued
Gainesville-Wheeler-Vint Hill	230 kV – 6 mi	Prince William		6/2017	
DVP Cunningham-Elmont	500 kV – 51 mi	Fluvanna, Goochland, Hanover, Henrico, Louisa	PUE-2014-00047	6/2018	certificate issued
DVP Brambleton-Mosby	500kV – 5.2 mi	Loudoun	PUE-2014-00086	6/2018	certificate issued
DVP Pacific	230 kV – 1.8 mi	Loudoun	PUE-2014-00115	6/2017	certificate issued
DVP Poland Road	230 kV – 4.0 mi	Loudoun	PUE-2015-00053	6/2018	certificate issued
DVP Yardley Ridge	230 kV – 0.4 mi	Loudoun	PUE-2015-00054	6/2018	certificate issued
DVP Greenville Co. Power Station	500 kV – 0.9 mi	Greensville		PUE-2015-00075	12/2017 certificate issued
DVP Haymarket	230 kV – 5.1 mi	Prince William, Loudoun	PUE-2015-00107	5/2018	pending
DVP Remington-Gordonsville	230 kV – 38.2 mi	Fauquier, Culpeper, Orange, Albemarle	PUE-2015-00117	6/2019	pending
DVP Belvoir-Gum Springs Rebuild	230 kV – 2.6 mi	Fairfax County	PUE-2015-00133	12/2016	pending
DVP Nansemond River Crossing	230 kV – 1.3 mi	Nansemond, Suffolk	PUE-2016-00003	Early 2017	certificate issued
DVP Cunningham-Dooms Rebuild	500 kV – 32.7 mi	Fluvanna, Albemarle, Augusta	PUE-2016-00020	6/2019	pending
DVP Norris Bridge Rebuild	115 kV – 2.2 mi	Lancaster, Middlesex	PUE-2016-00021	12/2017	pending
DVP Elklick	230 kV – 0.1 mi	Fairfax County	PUE-2016-00056	12/2017	pending
DVP Graham Quarry	230 kV – 0.5 mi	Fairfax County	PUE-2016-00067	Early 2017	pending
APCo Wythe Area Improvements	138 kV – 17.6 mi	Wythe County	PUE-2012-00132	12/2016	certificate issued
APCo Cloverdale Substation Expansion	138-765 kV – 3.3 mi	Botetourt County	PUE-2013-00036	1/2017	certificate issued
APCo South Lynchburg Improvements	138 kV – 9.3 mi	Campbell County	PUE-2013-00126	6/2017	certificate issued
APCo Richlands-Whitewood	138 kV – 8.4 mi	Buchanan, Tazewell	PUE-2014-00040	6/2017	certificate issued
APCo Tazewell-Bearwallow	138 kV – 7.8 mi	Tazewell County	PUE-2015-00021	6/2017	certificate issued
APCo Bland Area Improvements	138 kV – 25.2 mi	Bland County	PUE-2015-00090	12/2018	certificate issued
APCo South Abingdon Extension	138 kV – 3.8 mi	Washington County	PUE-2016-00011	12/2017	pending
Delmarva Piney Grove-Wattsville	138 kV – 6.2 mi	Accomack	PUE-2015-00092	6/2018	certificate issued

### Transmission RACs

Under § 56-585.1 A 4 of the Code, DVP and APCo may petition the Commission once every 12 months to receive approval of a RAC to recover costs for transmission service, transmission facilities, and associated administrative and ancillary charges. Under this statute, certain PJM-related transmission costs, and costs associated with demand response programs approved by the Federal Energy Regulatory Commission (“FERC”) and administered by PJM, are deemed reasonable and prudent. APCo and DVP have applied for such transmission RACs within the past year.

On November 4, 2015, the Commission approved a stipulation and recommendation between APCo and the Staff and opposed by no other party in the case, which established a revenue requirement of \$213.4 million to provide recovery of APCo’s transmission-related costs for the period February 1, 2016, through January 31, 2017.

Similarly, on July 20, 2016, the Commission approved a stipulation and recommendation signed by DVP and the Staff and not opposed by other case participants, which set the total net jurisdictional transmission revenue requirement at \$638.8 million for the rate year September 1, 2016, through August 31, 2017. These revenue requirements for DVP and APCo are collected partially through the RAC allowed by Code § 56-585.1 A 4 and partially through each utility’s current base rates.

### **V.** **DISTRIBUTION**

Section § 56-585.1 A 6 of the Code provides that a utility may seek recovery, through a RAC, of costs related to “one or more new underground facilities to replace one or more existing overhead distribution facilities of 69 kV or less located within the Commonwealth,” including costs related to assessing the feasibility of potential sites to install new underground facilities.

Accordingly, on December 1, 2015, DVP filed an application for approval of a RAC, Rider U, designed to recover costs associated with new underground distribution facilities. Specifically, DVP requests approval of Phase One of its Strategic Underground Program, which includes projects begun since the program's inception in April 2014 and that will be completed by September 1, 2016. DVP's application states that Phase One expenditures are limited to \$140 million, which equates to an annual revenue requirement of \$24.3 million for the rate year September 1, 2016, through August 31, 2017.<sup>45</sup> On August 22, 2016, the Commission approved Rider U as a pilot-type project, with several conditions as set forth in a Stipulation entered into between DVP and the Office of the Attorney General. These include: (i) a \$140 million total investment, limited for cost recovery through Rider U to \$122.5 million; (ii) a revenue requirement of \$21.3 million for the rate year September 1, 2016, through August 31, 2017; (iii) a \$1.8 million credit against the \$21.3 million revenue requirement; and (iv) a \$1.8 million credit for the following two rate years as well. The Commission also authorized an ROE of 9.6% for use in the Rider U calculation.<sup>46</sup>

## **VI.** **CONSERVATION, ENERGY EFFICIENCY, AND DEMAND RESPONSE**

### Statutory Energy Efficiency Goal

The third enactment clause ("Third Enactment Clause") of the Regulation Act provides as follows:

That it is in the public interest, and is consistent with the energy policy goals in § 67-102 of the Code of Virginia, to promote cost-effective conservation of energy through fair and effective DSM, conservation, energy efficiency, and load

---

<sup>45</sup> *Application of Virginia Electric and Power Company, For establishment of a rate adjustment clause: Rider U, new underground distribution facilities, for the rate year commencing September 1, 2016*, Doc. Con. Cen. No. 151240183, Case No. PUE-2015-00114, Order for Notice and Hearing (Dec. 23, 2015).

<sup>46</sup> *Application of Virginia Electric and Power Company, For establishment of a rate adjustment clause: Rider U, new underground distribution facilities, for the rate year commencing September 1, 2016*, Case No. PUE-2015-00114, Doc. Con. Cen. No. 160830063, Final Order (Aug. 22, 2016).

management programs, including consumer education. . . . The Commonwealth shall have a stated goal of reducing the consumption of electric energy by retail customers through the implementation of such programs by the year 2022 by an amount equal to ten percent of the amount of electric energy consumed by retail customers in 2006 . . . .<sup>47</sup>

The Third Enactment Clause directed the Commission to conduct a proceeding and submit its findings and recommendations concerning feasibility of the energy reduction goal to the Governor and the General Assembly on or before December 15, 2007, and directed the Commission to include recommendations for any additional legislation necessary to implement the plan to meet that goal. The Commission complied with these directives. On November 16, 2007, the Staff submitted the required report. This report may be found at the Commission's website: <http://www.scc.virginia.gov/pue/conserv.aspx>. Among other conclusions, the Staff stated that it believes the 10% electricity consumption reduction goal set forth in the Third Enactment Clause is achievable by 2022 and that the mix of programs to achieve this goal, as set out in the Virginia Energy Plan, merits further exploration, including tests for cost-effectiveness.

### DVP Programs

#### *DSM and Energy Efficiency Programs*

Since 2010, DVP has established a number of DSM programs for both residential and non-residential customers. Some of these programs have terminated while others are ongoing. DVP's latest application related to DSM programs was filed August 28, 2015. On April 19, 2016, the Commission issued an order modifying a proposed Small Business Program and

---

<sup>47</sup> 2007 Va. Acts ch. 933.

approving continuation of the company's Air Conditioner Cycling Program.<sup>48</sup> The following chart reflects DVP's approved DSM and energy efficiency program activity since 2010.

---

<sup>48</sup> *Petition of Virginia Electric and Power Company, For approval to implement new demand-side management programs, for approval to continue a demand-side management program, and for approval of two updated rate adjustment clauses pursuant to § 56-585.1 A 5 of the Code of Virginia*, Case No. PUE-2015-00089, Doc. Con. Cen. No. 160420196, Final Order (Apr. 19, 2016); *modified*, Doc. Con. Cen. No. 160430063, Amending Order (Apr. 26, 2016). The Commission denied a proposed residential programmable thermostat program due to concerns with free-ridership and concerns with the high cost of the program in relation to the number of thermostats proposed to be installed.

## DVP DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAMS SINCE 2010

<u>Participating Customers</u>	<u>Program Name</u>	<u>Program Description</u>	<u>Year/Case Authorized</u>	<u>Year Ended</u>
Residential	Lighting Program	Provides instant rebates on energy efficient lighting	2010 PUE-2009-00081	2013
Residential	Low Income Program	Provides energy audits and improvements for low-income customers	2010; PUE-2009-00081; extended PUE-2012-00100 PUE-2014-00071	Active
Commercial	Heating/Air Conditioning Upgrade Program	Provides heating, ventilation and air conditioning ("HVAC") system upgrades to more efficiency systems in exchange for a financial incentive	2010 PUE-2009-00081	2013
Commercial	Lighting Program	Provides an opportunity to retrofit existing lighting to more energy efficient lighting in exchange for a financial incentive	2010 PUE-2009-00081	2013
Residential	Air Conditioner Cycling Program	Allows DVP to control the central air conditioner or heat pump of participating customers by cycling the unit off and on during peak periods in return for an incentive payment	2010; PUE-2009-00081; extended PUE-2012-00100 PUE-2015-00089	Active
Residential	Home Energy Check-up	Provides low-cost energy audits for single-family homes	2012 PUE-2011-00093	Active
Residential	Duct Testing and Sealing Program	Provides a financial incentive to employ a contractor to test and seal air ducts in homes	2012 PUE-2011-00093	Active
Residential	Heat Pump Tune-up	Provides a financial incentive to employ a contract to tune up existing heat pumps every five years	2012 PUE-2011-00093	Active
Residential	Heat Pump Upgrade	Provides a financial incentive to install a high-efficiency heat pump exceeding federal mandates	2012 PUE-2011-00093	Active
Non-Residential	Energy Audit Program	Provides on-site energy audits at customer facilities; customers receive a rebate of the audit's cost if they implement any identified measures	2012 PUE-2011-00093; modified PUE-2013-00072	Active
Non-Residential	Duct Testing and Sealing	Provides financial incentives to employ a contractor to seal ducts using program-approved methods	2012 PUE-2011-00093	Active
Non-	Distributed Generation	Allows qualifying customers to receive a financial incentive to curtail load	2012	Active

Residential Non-Residential	Program Heating & Cooling Efficiency Program	using customer-owned backup generation Provides incentives to implement new and upgrade existing HVAC technologies.	PUE-2011-00093 2014	Active
Residential Non-Residential	Lighting Systems and Controls Program	Provides incentives to implement more efficient lighting technologies	PUE-2013-00072 2014	Active
Residential Non-Residential	Solar Window Film Program	Provides qualifying customers with incentives to install solar reduction window film to lower cooling bills.	PUE-2013-00072 2014	Active
Residential	Income and Age- Qualifying Home Improvement Program	Provides qualifying customers with energy assessments and direct install measures at no cost.	2015 PUE-2014-00071	Active
Residential	Appliance Recycling Program	Provides incentives to recycle secondary refrigerators and freezers.	2015 PUE-2014-00071	Active
Non-Residential	Small Business Improvement Program	Provides small businesses energy assessments and financial incentives to install specific energy efficiency measures.	2016 PUE-2015-00089	Active

### *Electric Vehicle Pilot Program*

Although not filed under the Regulation Act, on July 11, 2011, the Commission approved DVP's application to establish an electric vehicle ("EV") pilot program.<sup>49</sup> At the time, DVP anticipated that as many as 86,000 EVs could be in use in its service territory by 2020. DVP's pilot program offers two time-of-day pricing options to encourage off-peak charging of EVs. One tariff option applies to charging the EV only and operates as a companion tariff to a customer's existing standard household service tariff. The second tariff option applies to the customer's entire service from DVP, including the home and EV. The program is open to up to 1,500 residential customers with up to 750 participants in each of the two experimental rate classes. This program has been extended through November 30, 2018.

### *DVP A 5 RAC*

Pursuant to § 56-585.1 A 5 of the Code, DVP charges two RACs to recover costs related to its demand response and energy efficiency programs, as well as costs of its EV pilot program. The latest update to this RAC was approved by the Commission on April 19, 2016. The Commission approved an annual revenue requirement of \$45.9 million for Riders C1A and C2A for the rate year May 1, 2016, through April 30, 2017.<sup>50</sup>

### APCo Programs

#### *DSM and Energy Efficiency Programs*

Since 2011, APCo has offered DSM programs to its customers. Some of these programs have terminated while others are ongoing. Specifically, on September 12, 2011, the Commission

---

<sup>49</sup> *Application of Virginia Electric and Power Company, For approval to establish an electric vehicle pilot program pursuant to § 56-234 of the Code of Virginia, Case No. PUE-211-00014, 2011 S.C.C. Ann. Rept. 436, Order Granting Approval (July 11, 2011).*

<sup>50</sup> *Petition of Virginia Electric and Power Company, For approval to implement new demand-side management programs, for approval to continue a demand-side management program, and for approval of two updated rate adjustment clauses pursuant to § 56-585.1 A 5 of the Code of Virginia, Case No. PUE-2015-00089, Doc. Con. Cen. No. 160420196, Final Order (Apr. 19, 2016).* Note that the total revenue requirement of \$45,916,523 encompasses a rate year credit for Rider C1A of \$852,764, and a revenue requirement of \$46,769,287 for Rider C2A.



approved two Demand Response Riders for non-residential customers of APCo. These are: (i) a Peak Shaving Demand Response Rider, designed to reduce peak demand during winter months; and (ii) a Peak Shaving and Emergency Demand Response Rider, which is aligned with the existing PJM Demand Response Program and allows for curtailments of load during system emergencies. These have recently been replaced by APCo's Demand Response Service Rider, designed to save system costs when energy prices are high in the PJM market, and the Demand Response Service RTO Capacity Rider, in which customers experience service interruptions when PJM declares an emergency or pre-emergency event.<sup>51</sup> APCo also conducts other DSM and energy efficiency programs for its residential, commercial, and industrial customers. The following chart reflects APCo's approved DSM and energy efficiency program activity since 2011:

---

<sup>51</sup> *Petition of Appalachian Power Company, For approval to implement two demand response programs and for approval of a rate adjustment clause pursuant to § 56-585.1A 5 c of the Code of Virginia*, Case No. PUE-2015-00118, Doc. Con. Cen. No. 160630050, Final Order (June 17, 2016).

## APCO DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAMS SINCE 2011

<u>Participating Customers</u>	<u>Program Name</u>	<u>Program Description</u>	<u>Year/Case Authorized</u>	<u>Year Ended</u>
Non-Residential	Peak Shaving Demand Response	Incentives customers to reduce energy use during periods of high demand	2011 PUE-2011-00001	2013
Non-Residential	Peak Shaving and Emergency Demand Response	Allows customers' load to be curtailed during system emergencies (in return for a financial incentive?)	2011 PUE-2011-00001	To end in 2017
Residential	Low Income Program	Provides weatherization and energy efficiency services to low-income customers residing in electrically heated single-family homes	2014 PUE-2014-00026	Active
Residential	Direct Load Control Program	Uses direct load controllers attached to air conditioners and heat pumps of participating customers to reduce peak demand	2014 PUE-2014-00026	Active
Residential	Home Performance Program	Offers incentives for energy efficiency measures installed or implemented following an energy audit of a customer's home	2015 PUE-2014-00039	Active
Residential	Appliance Recycling Program	Offers incentives to customers to recycle secondary refrigerators and freezers	2015 PUE-2014-00039	Active
Residential	Manufactured Housing Energy Star Program	Offers incentive to manufacturers to buy down the additional cost of constructing ENERGY STAR® manufactured homes	2015 PUE-2014-00039	Active
Residential	Efficient Products Program	Provides incentives for energy efficiency products, such as LED lighting, dehumidifiers, refrigerators, and freezers	2015 PUE-2014-00039	Active
Commercial Industrial	Prescriptive Program	Provides incentives for the installation of specific energy efficiency measures related to HVAC, lighting, and other measures	2015 PUE-2014-00039	Active
Non-Residential	Demand Response Service Rider	Designed to save system costs when energy prices are high in the PJM market	2016 PUE-2015-00118	Active
Non-Residential	Demand Response Service RTO Capacity Rider	Customers experience service interruptions when PJM declares an emergency or pre-emergency event	2016 PUE-2015-00118	Active

APCo A 5 RAC

Pursuant to § 56-585.1 A 5 of the Code, APCo is permitted to recover the costs of its demand response and energy efficiency programs through a RAC. Accordingly, APCo filed a petition for approval of a RAC, its DR-RAC, to recover costs related to its Peak Shaving Demand Response Rider, which has terminated, and its Peak Shaving and Emergency Demand Response Rider, which is scheduled to terminate in May 2017. APCo estimated that deferred costs related to these riders, combined with ongoing costs of the Peak Shaving and Emergency Demand Response Rider until its termination, would be approximately \$17.5 million. To mitigate impacts on customers, APCo requested approval to recover these costs over four years. On June 17, 2016, the Commission approved APCo’s petition and established an annual revenue requirement of \$4,185,764 for four years.<sup>52</sup>

Cooperative Programs

Between 2011 and 2016, the Commission has approved requests by several cooperatives to implement air conditioner cycling programs as follows:

Northern Neck Electric Cooperative	2012 <sup>53</sup>
Prince George Electric Cooperative	2012 <sup>54</sup>
Rappahannock Electric Cooperative	2011 <sup>55</sup>
Southside Electric Cooperative	2013 <sup>56</sup>

<sup>52</sup> *Application of Appalachian Power Company, For approval to implement two demand response programs and for approval of a rate adjustment clause*, Case No. PUE-2015-00118, Doc. Con. Cen. No. 168630050, Final Order (June 17, 2016).

<sup>53</sup> *Application of Northern Neck Electric Cooperative, For approval of a demand-side management program including promotional allowances*, Case No. PUE-2012-00003, 2012 S.C.C. Ann. Rept. 374, Order Granting Approval (Mar. 5, 2012).

<sup>54</sup> *Application of Prince George Electric Cooperative, For approval of a demand-side management program including promotional allowances*, Case No. PUE-2012-00002, 2012 S.C.C. Ann. Rept. 373, Order Granting Approval (Mar. 5, 2012).

<sup>55</sup> *Application of Rappahannock Electric Cooperative, For approval of a demand-side management program including promotional allowances*, Case No. PUE-2010-00046, 2011 S.C.C. Ann. Rept. 333, Order Granting Petition (Jan. 4, 2011).

<sup>56</sup> *Application of Southside Electric Cooperative, For approval of a demand-side management program including promotional allowances*, Case No. PUE-2013-00066, 2013 S.C.C. Ann. Rept. 419, Order Granting Approval (Sept. 6, 2013).

Under each such program, the member-consumer allows the cooperative to install a load-cycling switch device on the member-consumer's central air conditioning system to allow the cooperative to control the air conditioner compressor during peak load periods. Under the voluntary program, if the device remains operational for a full year, the member-consumer receives a one-time bill credit or written check for \$25.

On February 17, 2016, Rappahannock Electric Cooperative filed with the Commission an application to modify its air conditioner cycling program to provide for a recurring annual credit of \$24 per air conditioner cycling switch in addition to the one-time \$25 credit. The goal of the proposed modification is to increase participation and retention in the program. Pursuant to § 56-585.1 A 5 b, Rappahannock Electric Cooperative also requested a RAC, called a Demand Response Rider, to recover the incremental costs for conducting the air conditioner cycling program, including costs for the recurring credit and capital and operating costs associated with expanding the program. A hearing is scheduled for September 2016 to consider this application.<sup>57</sup>

## **VII.** **RENEWABLE ENERGY**

### **Retail Access to Competitive Services**

The Regulation Act, specifically § 56-577 of the Code, permits large customers (those exceeding 5 MW of electricity demand) to shop among licensed competitive service providers (“CSPs”), and nonresidential customers may request Commission approval to aggregate load up to the 5 MW threshold to receive services from a CSP. Residential retail consumers currently have the statutory right under the Regulation Act to purchase electric generation service from

---

<sup>57</sup> *Application of Rappahannock Electric Cooperative, For approval of a modified incentive for A/C switch demand-side management program; and for approval of a rate adjustment clause to recover the costs of the demand-side program pursuant to § 56-585.3 A 5 of the Code of Virginia*, Case No. PUE-2016-00019, Doc. Con. Cen. No. 160310287, Order for Notice and Hearing (Mar. 10, 2016).

CSPs selling electric energy “provided 100% from renewable energy”<sup>58</sup> if the incumbent electric utility serving these consumers does not offer such a product. Under §§ 56-587 and 56-588 of the Code, the Commission licenses retail electric energy suppliers and aggregators interested in participating in the retail access programs in Virginia. Currently, 67 electric and natural gas CSPs and aggregators are licensed as retail access providers. A current list of licensed suppliers can be found on the Commission’s website at: <http://www.scc.virginia.gov/power/compsup.aspx>.

### 100% Renewable Energy Tariffs

#### *DVP and APCo Activity*

As noted above, residential retail consumers have the statutory right under the Regulation Act to purchase electric generation service from CSPs selling electric energy “provided 100% from renewable energy”<sup>59</sup> if the incumbent electric utility serving these consumers does not offer such a product. APCo and DVP offer residential customers renewable energy tariffed products, but in the past these have not met the definition of energy “provided 100% from renewable energy.” Some cooperatives also have filed, and the Commission has approved, tariffs for 100% renewable energy.

Specifically, in 2008 the Commission approved tariffs that allow customers of DVP and APCo to support renewable energy but determined that neither company’s renewable energy option satisfies Virginia’s statutory provision for “electric energy provided 100% from renewable energy.”<sup>60</sup> Consequently, customers in these IOUs’ service territories may purchase 100% renewable energy from CSPs. To the Staff’s knowledge, as of August 1, 2016, only one

---

<sup>58</sup> Va. Code § 56-577 A 5.

<sup>59</sup> Va. Code § 56-577 A 5.

<sup>60</sup> *Application of Virginia Electric and Power Company d/b/a Dominion Virginia Power, For approval of its Renewable Energy Tariff*, Case No. PUE-2008-00044, 2008 S.C.C. Ann. Rept. 539, Order Approving Tariff (Dec. 3, 2008); and *Application of Appalachian Power Company, For approval of its Renewable Power Rider*, Case No. PUE-2008-00057, 2008 S.C.C. Ann. Rept. 557, Order Approving Tariff (Dec. 3, 2008).

CSP is providing competitive supply service from 100% renewable resources to an industrial customer and to a small number of commercial accounts in APCo's service territory.

More recently, on April 28, 2016, APCo filed a second petition for approval of a 100% renewable energy rider, Rider REO. APCo asserts in its application that Rider REO is a voluntary rider designed to allow participants to purchase energy from renewable generators. To provide such energy, APCo plans to bundle energy output from multiple renewable generators. APCo intends Rider REO to satisfy the requirements of § 56-577 A 5 of the Code. This application is currently pending before the Commission, and a hearing has been scheduled for November 2016.<sup>61</sup>

#### *Cooperative Activity*

Unlike § 56-577 A 5 of the Code, applicable to APCo and DVP, § 56-577 A 6 of the Code provides that a cooperative is “deemed to offer a tariff for electric energy provided 100 percent from renewable energy” if the cooperative “retires a quantity of renewable energy certificates equal to 100 percent of the electric energy provided pursuant to such tariff.” Accordingly, nine electric cooperatives received Commission approval on December 17, 2010, to offer tariffs “for electric energy provided 100% from renewable energy” through renewable energy certificates (“RECs”). These tariffs originally applied to residential member-consumers

---

<sup>61</sup> *Petition of Appalachian Power Company, For approval of a 100% renewable energy rider*, Case No. PUE-2016-00051, Doc. Con. Cen. No. 160540219, Order for Notice and Hearing (May 17, 2016).

and later were extended to apply to nonresidential member-consumers as well.<sup>62</sup> The Commission's approval of these tariffs precludes CSPs from offering competitive electric supply service in these electric cooperatives' service territories. To the Staff's knowledge, there is one CSP providing competitive supply service from 100% renewable resources to a large industrial customer in the service territory of Rappahannock Electric Cooperative, who does not currently have a 100% renewable energy tariff.

### Other Renewable Energy Activities

In addition to renewable energy tariffs and the construction of renewable energy facilities noted above, DVP and APCo have engaged in several other renewable energy activities. This section provides a synopsis of these activities.

#### *DVP Renewable Energy Activity*

DVP-owned Facilities. Several DVP generation facilities in Virginia are now operating, or are planned to operate, as renewable energy facilities. As noted above, DVP is in the process of building three solar facilities in Powhatan, Louisa, and Isle of Wight Counties. DVP also has filed applications, which are pending before the Commission, for two solar facilities in Fauquier

---

<sup>62</sup> *Application of Mecklenburg Electric Cooperative, For amendment of Electric Service Backed 100% by Renewable Energy Certificates Tariff*, Case No. PUE-2012-00087, 2012 S.C.C. Ann. Rept. 493, Order Amending Tariff (July 31, 2012); *Application of BARC Electric Cooperative, For amendment of 100% Renewable Energy Attributes Electric Service Tariff*, Case No. PUE-2012-00079, 2012 S.C.C. Ann. Rept. 482, Order Amending Tariff (July 31, 2012); *Application of Shenandoah Valley Electric Cooperative, For amendment of 100% Renewable Energy Attributes Electric Service Tariff*, Case No. PUE-2012-00080, 2012 S.C.C. Ann. Rept. 483, Order Amending Tariff (July 31, 2012); *Application of Prince George Electric Cooperative, For amendment of Electric Service Backed 100% by Renewable Energy Certificates Tariff*, Case No. PUE-2012-00083, 2012 S.C.C. Ann. Rept. 486, Order Amending Tariff (July 31, 2012); *Application of Southside Electric Cooperative, For amendment of Electric Service Backed 100% by Renewable Energy Certificates Tariff*, Case No. PUE-2012-00082, 2012 S.C.C. Ann. Rept. 485, Order Amending Tariff (July 31, 2012); *Application of Northern Virginia Electric Cooperative, For amendment of Electric Service Backed 100% by Renewable Energy Certificates Tariff*, Case No. PUE-2012-00081, 2012 S.C.C. Ann. Rept. 484, Order Amending Tariff (July 31, 2012); *Application of Central Virginia Electric Cooperative, For amendment of Electric Service Backed 100% by Renewable Energy Certificates Tariff*, Case No. PUE-2012-00092, 2012 S.C.C. Ann. Rept. 497, Order Amending Tariff (Aug. 10, 2012); *Application of Northern Neck Electric Cooperative, For amendment of 100% Renewable Energy Attributes Electric Service Rider Tariff*, Case No. PUE-2012-00093, 2012 S.C.C. Ann. Rept. 498, Order Amending Tariff (Aug. 10, 2012); and *Application of A&N Electric Cooperative, For amendment of Electric Service Backed 100% by Renewable Energy Certificates Tariff*, Case No. PUE-2012-00090, 2012 S.C.C. Ann. Rept. 496, Order Amending Tariff (July 31, 2012).

County and Virginia Beach. Additionally, DVP operates several facilities with biomass fuel. The Pittsylvania, Altavista, Hopewell, and Southampton Power Stations operate solely on biomass fuel. DVP's Virginia City Hybrid Energy Center, a coal-fired generating plant in Wise County, has co-firing capability to utilize up to 20% biomass fuel, primarily wood waste.

DVP also has constructed renewable facilities as part of its distributed generation ("DG") program. On October 31, 2011, DVP filed an application for approval to construct and operate up to a combined total of 30 MW of company-owned solar DG facilities consisting of multiple installations at select commercial, industrial, and community locations dispersed throughout DVP's Virginia service territory. On November 28, 2012, the Commission approved the solar DG partnership program subject to a total cost cap of \$80 million.<sup>63</sup>

To date, rooftop solar facilities have been installed at Old Dominion University, Canon Industrial Resource Technologies, Virginia Union University, Prologis Concorde Distribution Center, Randolph-Macon College, and at Western Branch High School in Chesapeake. Additionally, ground-mounted solar panels have been installed at Capital One and at the Philip Morris Park 500 facility. These facilities and two others under construction represent approximately 6.7 MW of solar generating capacity.

Further, on August 7, 2015, the Commission approved DVP's application for an experimental rider.<sup>64</sup> This program, known as the Dominion Community Solar Pilot and experimental rate, or "Rider DCS – Dominion Community Solar (Experimental)" ("Rider DCS"), enables voluntary customer purchases of electric energy output from a company-owned

---

<sup>63</sup> *Application of Virginia Electric and Power Company, For approval of a Community Solar Power Program and for certification of proposed distributed solar generation facilities pursuant to Chapter 771 of the 2011 Virginia Acts of Assembly, and §§ 56-46.1 and 56-580 D of the Code of Virginia, Case No. PUE-2011-00117, 2012 S.C.C. Ann. Rept. 328, Order (Nov. 28, 2012).*

<sup>64</sup> *Application of Virginia Electric and Power Company, For approval of a pilot and experimental rate, designated Rider DCS, to enable customer purchases of distributed solar generation pursuant to § 56-234 B of the Code of Virginia, Case No. PUE-2015-00005, Doc. Con. Cen. No. 150820013, Final Order (Aug. 7, 2015).*



2 MW direct current distributed solar generation facility sited in Virginia. The 2 MW from Rider DCS also are considered part of the solar DG partnership program. Thus, DVP has utilized approximately 8.7 MW of the 30 MW total approved for the solar DG partnership program.

Customer-owned Facilities. In addition to the solar DG partnership program, the Commission approved a special tariff under which DVP would facilitate consumer-owned solar DG installations for up to 3 MW of customer-owned capacity.<sup>65</sup> As of June 30, 2016, there were 123 participants aggregating a little over 1.5 MW of solar capacity pursuant to the tariff.

Renewable Energy Purchase Program. DVP also provides opportunities for certain customers to purchase renewable energy. The Commission approved DVP's application to establish a Renewable Generation Pilot Program ("RG Pilot"), including a new experimental and voluntary tariff, Rate Schedule RG – Renewable Energy Supply Service.<sup>66</sup>

The RG Pilot is available to non-residential customers taking service under DVP's Rate Schedules GS-3 or GS-4. Under the RG Pilot, DVP negotiates agreements to purchase electric generation from renewable energy facilities on behalf of specific participating customers. This energy is authenticated by RECs. The renewable energy is deemed transferred to the participating customer once the REC is transferred from the renewable generation facility to DVP's Generation Attribute Tracking System account at PJM.

On April 29, 2016, DVP filed with the Commission its annual report summarizing enrollment and other activities associated with the RG Pilot and providing an overview of DVP's

---

<sup>65</sup> *Petition of Virginia Electric and Power Company, For approval of a special tariff to facilitate customer-owned distributed solar generation pursuant to Chapter 771 of the 2011 Virginia Acts of Assembly, Case No. PUE-2012-00064, 2013 S.C.C. Ann. Rept. 269, Order (Mar. 22, 2013).*

<sup>66</sup> *Application of Virginia Electric and Power Company, For approval to establish a renewable generation pilot program pursuant to § 56-234 of the Code of Virginia, Case No. PUE-2012-00142, 2013 S.C.C. Ann. Rept. 346, Order Granting Approval (Dec. 16, 2013).*

efforts to market the pilot. The report stated that while several DVP customers have shown interest in the RG Pilot, there are no customers enrolled as of the date of the report.

Third Party Renewable Energy Program in DVP Service Territory. In addition to the RG Pilot, there is currently a renewable energy pilot program in DVP's service territory involving third party purchased power agreements ("PPAs"). This program was instituted through the passage of a law by the General Assembly in 2013.<sup>67</sup> This statute requires the Commission to conduct a pilot program under which a person who owns a solar- or wind-powered electric generating facility located on premises owned or leased by an eligible customer-generator is allowed to sell the energy from that facility to the eligible customer-generator under a third party PPA, subject to certain conditions. One requirement caps at 50 MW the total aggregated capacity of all generation facilities subject to third party PPAs at any time.

Pursuant to this statute, the Commission established guidelines to implement the pilot in 2013.<sup>68</sup> The Commission also must review the pilot every two years (beginning in 2015) to determine whether certain pilot limitations should be expanded, reduced, or continued.

To date, the Commission has received notices of intent from nine schools to enter into a third party PPA for the purchase of solar generating capacity under this pilot program. The capacity of the generation facilities related to these schools is approximately 967.4 kilowatts ("kW"). One of these solar facilities began operation on May 26, 2016, and provides 187.25 kW of solar capacity. Seven solar facilities are expected to be in operation by autumn 2016; one facility has withdrawn from the pilot program.

---

<sup>67</sup> 2013 Va. Acts ch. 382.

<sup>68</sup> *Commonwealth of Virginia, ex rel., State Corporation Commission, Concerning the establishment of a renewable energy pilot program for third party power purchase agreements*, Case No. PUE-2013-00045, 2013 S.C.C. Ann. Rept. 404, Order Establishing Guidelines (Nov. 14, 2013).

### *APCo Renewable Energy Activity*

Renewable Energy Purchase Program. On April 17, 2015, APCo filed an application for approval of Experimental Rider R.G.P., which APCo asserts would be part of its Renewable Generation Purchase Program. APCo's application explains that this voluntary program would allow non-residential customers with an aggregated load between 250 kW and 2,000 kW to purchase non-dispatchable energy generated by certain renewable facilities through an option not currently available to customers.

Under this proposal, participating customers would continue to purchase from APCo all of their energy and capacity requirements pursuant to their standard rate schedules. However, they also would receive additional charges and credits associated with program participation. Such charges would be based on a negotiated PPA, under which APCo would buy the energy and capacity from a participating renewable facility; APCo then would charge the same amount it pays for such energy and capacity to a participating customer. Participating customers also would pay APCo a monthly program charge of \$30, which would offset billing, administrative, and communication costs related to implementation and administration of the program. This case has been heard by a hearing examiner and is currently pending.<sup>69</sup>

### Voluntary Renewable Portfolio Standard Programs

Pursuant to § 56-585.2 of the Code, each IOU may participate in a voluntary RPS program. This statute sets forth voluntary RPS goals for each utility to meet. In particular, the total electric energy sold by an IOU to meet RPS goals must be composed of the following amounts of energy from renewable resources:

---

<sup>69</sup> *Application of Appalachian Power Company, For approval to establish Experimental Rider R.G.P. for the purchase of non-dispatchable renewable generation*, Case No. PUE-2015-00040, Doc. Con. Cen. No. 150520031, Order for Notice and Hearing (May 6, 2015).

- RPS Goal I, applicable to 2010: 4% of electric energy sold in the base year
- RPS Goal II, applicable to 2011-2015: 4% of electric energy sold in the base year
- RPS Goal II, applicable to 2016: 7% of electric energy sold in the base year
- RPS Goal III, applicable to 2017-2021, 7% of electric energy sold in the base year
- RPS Goal III, applicable to 2022, 12% of electric energy sold in the base year
- RPS Goal IV, applicable to 2023-2024, 12% of electric energy sold in the base year
- RPS Goal IV, applicable to 2025, 15% of electric energy sold in the base year<sup>70</sup>

Pursuant to §§ 56-585.1 A 5 d and 56-585.2 E of the Code, any participating IOU is permitted to recover the incremental costs of participation in an RPS program through a RAC. Each participating utility also is required to report to the Commission annually concerning: (i) efforts, if any, to meet the RPS goals, (ii) overall generation of renewable energy, and (iii) advances in renewable generation technology that affect activities described in clauses (i) and (ii).

#### *APCo RPS Program and RAC*

In 2008, the Commission approved APCo's application under § 56-585.2 of the Code for participation in a voluntary RPS program and for approval of two PPAs for wind resources, the Camp Grove project with a capacity of 75 MW and the Fowler Ridge project with a capacity of 100 MW.<sup>71</sup> APCo has not sought approval for additional renewable energy resources during the past year.

On November 3, 2015, APCo reported to the Commission that it has met RPS Goal II for 2014 through a combination of purchased power wind sources and company-owned hydro generation and that it fully expects to meet the voluntary goals for 2015 and each year thereafter.

APCo also charges a RAC to recover costs of its participation in the RPS program. On March 31, 2015, APCo filed its latest application for cost recovery through its RPS-RAC, in

---

<sup>70</sup> Va. Code § 56-585.2 D. According to § 56-585.2 A, "Total electric energy sold in the base year" is defined as the total electric energy sold to Virginia jurisdictional retail customers by the participating IOU in 2007, excluding an amount equal to the average annual percentages of electric energy supplied to such customers by nuclear facilities in 2004-2006.

<sup>71</sup> *Application of Appalachian Power Company, For approval to participate in the Virginia Renewable Energy Portfolio Standard Program*, Case No. PUE-2008-00003, 2008 S.C.C. Ann. Rept. 466, Final Order (Aug. 11, 2008).

which it proposed a revenue requirement surcredit. In this case APCo sought to return funds to customers through its RPS-RAC due to a combination of costs related to wind power PPAs from August 1, 2012, through January 31, 2017, reduced by (i) projected net proceeds from the sale of RECs, and (ii) a projected over-recovery balance of the RPS-RAC as of January 31, 2015. On November 16, 2015, the Commission approved a stipulation among APCo, the parties in the RPS-RAC case, and the Staff which, among other things, established a revenue surcredit of \$7.6 million for the rate year February 1, 2016, through January 31, 2017.<sup>72</sup>

Additionally, on June 1, 2016, APCo filed a petition for approval of an updated RPS-RAC and for approval to add to its portfolio of renewable resources a new renewable energy purchase agreement between APCo and a wind generation project developer. APCo proposed that the RPS-RAC be set at zero for the period April 1, 2017, through March 31, 2018. This request is based upon APCo's calculation of: (i) costs for APCo's wind PPA for the period August 2012 through March 2018; (ii) an actual over-recovery balance through March 31, 2016; (iii) projected net proceeds associated with sales of RECs from April 2016 through March 2018; (iv) projected PJM REC-related fees for the period April 2016 through March 2018; and (v) projected RPS surcredit payments of \$7.6 million, as noted above, for the period April 2016 through March 2017. This proceeding is pending before the Commission; a hearing is scheduled for November 2016.<sup>73</sup>

---

<sup>72</sup> *Petition of Appalachian Power Company, For approval of a rate adjustment clause, RPS-RAC, for the recovery of incremental costs of participation in the Virginia renewable energy portfolio standard program pursuant to Va. Code §§ 56-585.1 A 5 d and 56-585.2 E*, Case No. PUE-2015-00034, 2015 S.C.C. Ann. Rept. 317, Order (Nov. 16, 2015).

<sup>73</sup> *Application of Appalachian Power Company, For approval of a rate adjustment clause, RPS-RAC, to recover the incremental costs of participation in the Virginia renewable energy portfolio standard program pursuant to Va. Code §§ 56-585.1 A 5 d and 56-585.2 E*, Case No. PUE-2016-00042, Doc. Con. Cen. No. 160650122, Order for Notice and Hearing (June 30, 2016), modified, Doc. Con. Cen. No. 160710037, Amending Order (July 1, 2016).

### *DVP RPS Program*

On May 18, 2010, the Commission approved DVP's application to participate in a voluntary RPS program, finding that DVP met the necessary statutory requirements.<sup>74</sup> On October 30, 2015, DVP reported to the Commission that it had met RPS Goal II for 2014 through a combination of company-owned hydro and biomass facilities, renewable output from non-utility generators under long-term contract with DVP, and the optimization of REC purchases and sales. DVP also stated that it would meet RPS Goal II for 2015 through solar generation and 56,314 RECs deemed issued by the Commission for research and development activities related to renewable or alternative energy resources.

The RPS reports for APCo and DVP are available at:

<http://www.scc.virginia.gov/pue/renew.aspx>.

### Net Energy Metering

The Regulation Act, specifically § 56-594 of the Code, sets forth certain conditions under which utility customers may own, operate, or purchase from a third party certain amounts of renewable energy, which may at times be fed back onto the electric grid. The Commission's Regulations Governing Net Energy Metering, 20 VAC 5-315-10 *et seq.* ("NEM Rules"), were adopted by the Commission pursuant to § 56-594 of the Code. As originally written, the NEM Rules established the requirements for participation by an eligible customer-generator in net energy metering in Virginia. The NEM Rules included conditions for interconnection and metering, billing, and contract requirements between net metering customers, electric distribution utilities, and energy service providers.

---

<sup>74</sup> *Application of Virginia Electric and Power Company, For approval to participate in a Renewable Energy Portfolio Standard Program Pursuant to Va. Code § 56-585.2, Case No. PUE-2009-00082, 2010 S.C.C. Ann. Rept. 367, Final Order (May 18, 2010).*

In 2015 the General Assembly amended § 56-594 of the Code<sup>75</sup> and, in June 2015, the Commission convened a proceeding to consider corresponding revisions to the NEM Rules. The Commission issued an Order Adopting Regulations on November 24, 2015.<sup>76</sup> These revisions: (1) increase the capacity limit for participation by nonresidential customers in the net energy metering program from 500 kW to 1 MW; (2) require that new net metering facilities not exceed the customer’s expected annual energy consumption based on twelve months of billing history; (3) require any eligible customer-generator seeking to participate in net energy metering to notify its supplier and receive approval to interconnect prior to installation of an electric generating facility; and (4) clarify requirements regarding the customer-generator’s obligation to bear the costs of equipment requirement for the interconnection to the supplier’s electric distribution system.

## **VIII.** **CONSUMER EDUCATION**

The Regulation Act, specifically § 56-592 of the Code, directs the Commission to establish, implement, and maintain a consumer education program to provide retail customers with information regarding energy conservation and efficiency, DSM, demand response, and renewable energy. The Virginia Energy Sense (“VES”) consumer education program is in its seventh year of building awareness of the value of energy efficiency. The current VES logo is:



The VES consumer education program initiated several successful outreach efforts over the past year to increase public understanding of the value of energy efficiency and awareness of Virginia’s electric energy reduction target as set forth in the Virginia Energy Plan. Through an

---

<sup>75</sup> 2015 Va. Acts ch. 431 and 432.

<sup>76</sup> *Commonwealth of Virginia, ex rel., State Corporation Commission, Ex Parte: In the matter of amending regulations governing net energy metering*, Case No. PUE-2015-00057, 2015 S.C.C. Ann. Rept. 345, Order Adopting Regulations (Nov. 24, 2015).

integrated communications campaign, VES has helped Virginians bridge a significant knowledge gap identified in recent consumer surveys, to find information needed to make smart energy choices for their homes. During the past year, the key methods of delivering information through the consumer education program have included broadcast, print and digital media, public relations, community partnerships, and in-person interaction.

One critical finding from VES message testing was that Virginians responded to cost savings as an incentive to reduce energy use. Based on this finding, VES launched a television public service announcement (“PSA”) in November 2015 that aired through June 2016. The PSA focused on encouraging Virginians to “spend their energy elsewhere” and that by taking easy steps at home to save energy, consumers would have extra resources to engage in fun activities across the state if they choose to do so. The PSA was filmed in locales across Virginia, including Virginia Beach, the York River, and Mountain Lake. The PSA aired on television stations and cable systems in Hampton Roads, Central Virginia, Southwestern Virginia, and the Shenandoah Valley.



Shortly after the PSA was launched, VES released a series of short online videos which featured “Jack,” an animated electrical outlet that provided energy saving tips for the home or workplace. Jack was immediately popular on the social media channels Facebook and YouTube, with over 38,000 views in just four weeks. By June 30, 2016, the series had reached 307,000 views on these two channels.



During the past year VES has continued a strong digital engagement with the VES website ([www.virginiaenergysense.org](http://www.virginiaenergysense.org)) serving as the key resource for Virginians looking for information on how they can save energy. The most visited page within the website was the



“10% Challenge,” an opportunity for consumers to pledge their commitment to help Virginia reach its goal to reduce electric energy consumption levels by 10%. Other frequently visited pages were a listing of residential energy efficiency incentives, homeowner energy saving tips, and information on renewable energy. In the first six months of 2016, the website received 51,032 total visits. In the summer of 2016, the VES website transitioned to a new responsive design that appears more attractively on mobile devices. This is especially important because VES launched a text message program disseminating energy saving tips that often are linked to the website, which users could view on mobile devices.

Audience engagement with VES’s social media channels has dramatically increased over the past year, approximately doubling the number of followers on Twitter and Facebook. Recognizing that Virginians have an interest in home improvement projects that could save them energy and money, VES provided a series of posts and messages on the value of easy home improvement projects. The messages were adjusted to fit the changing weather seasons. In addition to home improvement, VES encouraged consumers to adopt easy energy saving habits in their daily lives at home and at work. In the first six months of 2016, there were 1,973 new Twitter followers for a total of 4,304 followers. On Facebook, VES received 967 new “likes” in the first half of 2016, for a total of 2,005 “likes.”

VES’s community outreach efforts across the Commonwealth continued through participation in fairs, festivals, and other events in key areas of the state. In the autumn of 2015, VES participated in eight community events attended by approximately 48,000 people. In the spring of 2016, VES participated in eight community events attended by over 63,000 people. These included two VES events at elementary schools in Goochland and Arlington counties. The programs, designed primarily for third graders, served as a pilot for a school energy

efficiency program that could be expanded to other regions of the state. The school programs were followed by a series of Earth Day events in Fairfax, Richmond, Farmville, and Virginia Beach.

Over the past year VES has engaged in an effective partnership with the education, business and government sectors. Thirty-nine new partners joined VES, bringing the total to over 100 organizations that share interests in energy efficiency and sustainability. VES provides information resources for partners to distribute to their employees or members through periodic emails, newsletters, or other forms of communication. VES encourages partners to share their efforts to save energy. Through the expanding partnership program, VES has reached over 835,000 Virginians.

Trusted news sources have also played a major role in the VES communications effort. Since the autumn of 2015, news media coverage has included several television interviews on the new VES PSA and “Jack” online videos in Roanoke, Harrisonburg, Richmond, and Charlottesville. Radio interviews have been conducted with personnel at stations in Richmond, Charlottesville, Fredericksburg, Roanoke, Harrisonburg, and Rocky Mount.

To support ongoing outreach activities, VES updated several useful printed informational materials such as the Do-It-Yourself Guide for energy efficiency home improvement projects and a variety of energy information tip sheets. These materials were distributed at community events attended by VES personnel and shared with partners for use at additional events. VES also produced Spanish versions of its most popular informational materials for adults and children.

The Commission will continue to monitor the VES program’s objectives and make adjustments to the VES program as necessary.

## **IX.** **ELECTRICITY PRICE ANALYSIS**

The Commission continues to monitor electric rates in the Commonwealth, with a particular focus on changes in rates since the Regulation Act went into effect on July 1, 2007. Appendix 1 to this report compares the changes in Virginia residential rates since implementation of the Regulation Act.

Section 56-585.1 A 2 e of the Code requires that in setting the ROE for an electric IOU, “the Commission shall strive to maintain costs of retail electric energy that are cost competitive with costs of retail electric energy provided by the other peer group investor-owned electric utilities.” To that end, and pursuant to the Seventh Enactment clause of the 2007 Restructuring Act,<sup>77</sup> the Commission is to report periodically on the rates, terms, and conditions of incumbent electric utilities in the Commonwealth. The report is to include analyses of the amount, reliability, and type of generation facilities required to serve Virginia native load compared to that available to serve such load. The report also must compare Virginia incumbent electric utilities to those in their peer groups that meet the criteria of § 56-585.1 A 2 of the Code.

Pursuant to these directives, the Commission, through its Staff, developed several rate comparisons that utilize information from various Edison Electric Institute (“EEI”) publications in an effort to assess the competitiveness of DVP’s and APCo’s rates as compared to those of the statutorily defined peer groups.<sup>78</sup> In examining rate competitiveness, this analysis focused on the

---

<sup>77</sup> 2007 Va. Acts ch. 933.

<sup>78</sup> In the Final Order in DVP’s 2013 Biennial Review, the Commission found that KU/ODP and Louisville Gas and Electric Company satisfied the requirements for inclusion in the peer group. Both KU/ODP and Louisville Gas and Electric Company are part of EEI’s East South Central Region. Therefore, the averages for that region, as well as the data for both utilities, is now included in the Appendices. *See Application of Virginia Electric and Power Company, For a 2013 biennial review of the rates, terms and conditions for the provision of generation, distribution, and transmission services pursuant to § 56-585.1 A of the Code of Virginia*, Case No. PUE-2013-00020, Final Order (Nov. 26, 2013). Data for Old Dominion Power Company, a unit of KY which is located in Virginia, also has been included.

level of rates and did not attempt to focus on other potential measures of competitiveness such as electrical costs as a percent of income or as a percent of production costs.

The EEI data was used in several ways to rank the rates of APCo, DVP, and their peer groups from lowest to highest.<sup>79</sup> First, the EEI data was used to compare average rate per kWh for residential, commercial, and industrial rates for 2006 and 2015.<sup>80</sup> The 2015 information was then compared to the 2006 data to determine whether there had been any upward or downward trend in DVP's or APCo's rate competitiveness.

Typical bills for DVP, APCo, and their statutorily defined peer groups also were examined for differing customer groups and varying ranges of consumption.<sup>81</sup> This analysis focuses on typical bills for residential, commercial, and industrial customers and examines the competitiveness of DVP's rates and APCo's rates that were in effect on January 1, 2016, and any change of such rates in effect in 2006. It should be noted that the typical bill comparisons are based on the annualized rates in effect on January 1, 2016, and as such do not reflect any subsequent or pending rate changes. Any pending changes could increase or decrease the relative competitiveness of DVP's or APCo's rates and potentially their ranking if the rates of the peer group do not change on a comparable basis.

The change in average rates per customer class is summarized in Appendix 2 to this report, which presents the average 2006 and 2015 revenue information for DVP, APCo, and their statutorily defined peer groups for residential, commercial, and industrial rates.

---

<sup>79</sup> The number of companies ranked differ for the average revenue per kWh comparisons and typical bill comparisons.

<sup>80</sup> The 2015 information was taken from EEI's "Typical Bill and Average Rates Report Winter 2016." The 2006 information was taken from EEI's "Typical Bills and Average Rates Report Winter 2007" and the Excel files accompanying that report, as well as EEI's "Typical Bills and Average Rates Report Summer 2006."

<sup>81</sup> Typical bills are presented based on the usage and demand levels reported in the EEI reports.

Appendices 3, 4, and 5 to this report present typical bill information for the residential, commercial, and industrial customers, respectively, of DVP, APCo, and their statutorily defined peer groups. The typical bills presented in these appendices are annualized so that seasonal rate differences (*i.e.*, summer and winter rate differentials) are averaged across the year. Typical bills are presented separately by state for those companies that serve in multiple states.

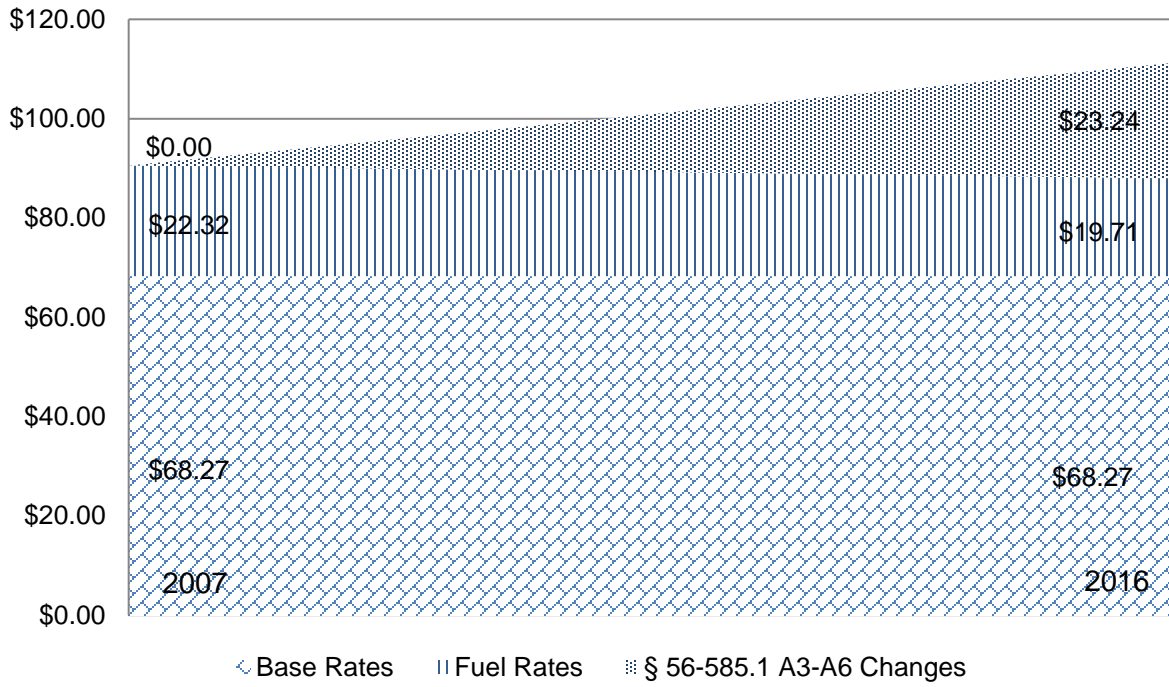
APCo's and DVP's 2015-2016 electricity rates appear to be fairly competitive with their peer utilities, although pending rate requests could impact the competitiveness of electricity rates in the future. Since 2007, both APCo's and DVP's rates have increased for a variety of reasons. Specifically, APCo's total bill for a residential customer using 1,000 kWh has increased from \$66.61 as of July 1, 2007, to \$113.76 as of July 1, 2016. This bill increase is attributable to base rate increases, fuel cost increases, and RACs and other rate changes approved pursuant to §§ 56-585.1 A 3 through 56-585.1 A 6 of the Code. DVP's total bill for a residential customer using 1,000 kWh was \$90.59 as of July 1, 2007, and has increased to \$111.22 as of July 1, 2016. DVP's bill increase is attributable to RACs and other rate changes approved under the Regulation Act. Those increases were partially offset by reduced fuel costs. Below are two charts that compare APCo's and DVP's rates from July 2007 to July 2016, broken down into three categories: Base Rates, Fuel Rates, and "§§ 56-585.1 A 3 – A 6 Changes."<sup>82</sup>

---

<sup>82</sup> The "§§ 56-585.1 A 3-A 6 Changes" category for APCo in 2007 includes the Environmental and Reliability Cost Recovery Surcharge. Additionally, the "Fuel Rates" category for APCo for 2007 includes an Off-System Sales Margin Rider, which is consistent with the inclusion of an off-system credit of off-system sales margins in the 2016 fuel factor.

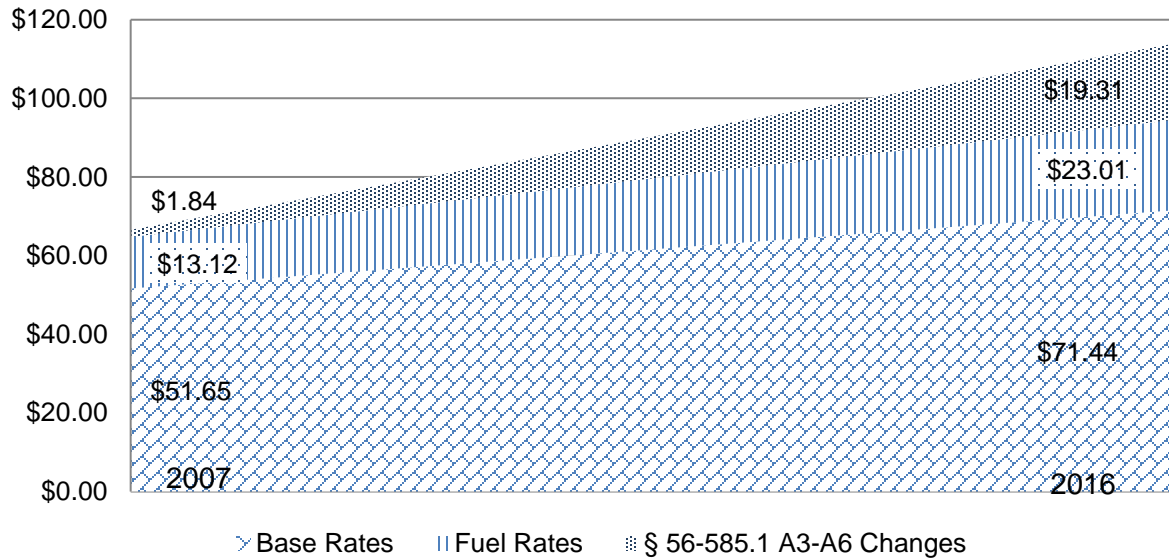
## Dominion Virginia Power

Bill for 1,000 kWh



## Appalachian Power Company

Bill for 1,000 kWh



**X.**  
**REGIONAL TRANSMISSION ENTITY PARTICIPATION**

Section 56-579 G of the Code requires the Commission to report annually “its assessment of the practices and policies of the RTE to which the Commission has approved the transfer of management and control of an incumbent electric utility’s transmission assets.”<sup>83</sup> This section of the report will discuss recent developments in RTE participation and the impacts of RTE operations on the energy market.

**PJM Background**

As noted earlier in this report, DVP, APCo, and ODEC are members of PJM. PJM operates both the high-voltage electric transmission grid and the wholesale electricity market across all or parts of the District of Columbia and thirteen states, including Virginia. Based on forecasts of daily electricity needs, PJM accepts offers of energy from electricity producers and determines the most cost-effective way to meet demand, considering the ability of the transmission system to deliver power as needed.<sup>84</sup> Further, PJM engages in regional planning processes and develops a regional transmission expansion plan to provide for reliability, increase market efficiency, and support public policy goals.<sup>85</sup>

*PJM Capacity Market*

PJM ensures the future availability of resources to meet electricity demand at all times through the capacity market for electricity. This market is designed to ensure the adequate availability of necessary resource, *i.e.*, generating capacity or demand response that can be called on as needed to ensure reliability of the electrical grid. PJM prices capacity using the Reliability Pricing Model (“RPM”). The RPM is intended to stimulate investment in maintaining current

---

<sup>83</sup> This also is referred to as a regional transmission organization, or RTO.

<sup>84</sup> <http://www.pjm.com/~media/about-pjm/20151016-value-proposition.ashx>.

<sup>85</sup> <http://www.pjm.com/~media/about-pjm/20151016-value-proposition.ashx>.

generation resources and encouraging new resource development. RPM is intended to produce capacity prices high enough to spur construction of new generation or transmission where needed to promote reliable service.

PJM sets the price of capacity via a competitive auction held three years prior to the time when the capacity is needed. The RPM auction procedures are approved by FERC. On June 9, 2015, FERC approved changes to PJM's RPM auction procedure that create a new capacity product known as "capacity performance" and penalties assessed if such resources fail to meet performance targets. PJM maintains that this change will enhance incentives for capacity resources to be available when needed most, help reduce price spikes during system emergencies and reduce the chance for forced outages.

PJM's latest RPM auction was held in May 2016 to set the price for capacity for delivery in 2019/2020. In June 2016 PJM announced the auction results, revealing that the price per MW decreased compared to the 2015 auction (setting the price for capacity in the 2018/2019 delivery year). The 2016 auction cleared 167,306 MW, compared to 166,837 MW cleared in 2015. Additionally, the 2016 auction set the price for capacity performance resources in non-constrained areas at \$100/MW per day. By comparison, the 2015 auction set the price for such resources at \$164.77/MW per day.

DVP and ODEC both participate in the RPM. APCo's participation in the capacity market is through a method known as the Fixed Resource Requirement Alternative. Utilities that do not desire to participate in the RPM may instead submit a fixed resource requirement capacity plan and meet a fixed capacity resource requirement. APCo utilizes the Fixed Resource Requirement Alternative and has opted out of the RPM capacity auction through the 2019/2020 delivery year.



### *PJM Energy Market*

In addition to the capacity market, PJM operates the wholesale energy market, allowing for purchases of electricity on a day-ahead and five-minute-ahead (the real-time or spot market) basis. PJM prices energy bought in these markets on a system of locational marginal prices (“LMP”), which is designed to reflect the value of energy at the specific place and time where it is delivered. When energy can flow freely to all locations, the LMP is the same throughout PJM. When there is heavy use of the transmission system and energy cannot flow freely to all locations within PJM, LMP is usually higher in the constrained areas. The LMP may change as often as every five minutes.<sup>86</sup> Virginia’s electric consumers are impacted by the PJM energy market to the extent that their utilities purchase electricity from and sell electricity to the PJM market.

DVP currently purchases a significant portion of its energy needs from PJM-administered wholesale markets. ODEC and APCo also purchase energy from these wholesale markets.

### *Other Participation in PJM Programs*

Virginia’s utilities also participate in PJM demand response programs and are affected by PJM’s transmission system planning, as noted in more detail below.

### Significant RTE-Related Dockets at FERC

Section 56-579 C of the Code directs the Commission to participate “to the fullest extent permitted” in RTE-related dockets at FERC. The following is a discussion of recent developments in significant RTE-related dockets at FERC in which the Commission participated.

### *FERC Approval of PJM Pricing for Transmission*

Regional transmission planning, in particular which entities pay for regional transmission projects, has been the subject of much debate since 2007, when FERC approved a PJM proposal

---

<sup>86</sup> <https://learn.pjm.com/Media/about-pjm/newsroom/fact-sheets/locational-marginal-pricing-fact-sheet.pdf>.

that would socialize costs of transmission projects operating at or above 500 kV across all PJM transmission zones, based on the transmission owners' respective load ratio shares.<sup>87</sup> Projects operating below 500 kV would continue to be financed under PJM's existing methodology, wherein all new facilities in PJM's region have been financed by contributions from the region's electric utilities calculated on the basis of the benefits that each utility receives from the facilities.<sup>88</sup> This FERC decision, which applies to projects approved by PJM between 2007 and 2012, has been reversed twice by higher courts and is now back at FERC on remand. A proposed settlement has been received by the Settlement Judge, but it is contested by a number of parties. If settlement is not reached, the matter may proceed to hearing. DVP, APCo, and the Commission participated in these negotiations.

While costs for older transmission planning projects remain unresolved, in 2013 FERC approved changes to the cost allocation for facilities related to new transmission projects in the PJM region. In accordance with these revisions, as a general matter, projects 345 kV and above are 50% socialized, with the remaining 50% financed by contributions from the region's electric utilities calculated on the basis of the benefits that each utility receives from the facilities. New projects below 345 kV are financed entirely by the utilities that benefit from the facilities.<sup>89</sup>

On May 22, 2015, FERC again changed the cost allocation methodology for certain transmission facilities, finding that under Order No. 1000, transmission projects selected in a regional transmission plan must be eligible to use the regional cost allocation method.<sup>90</sup> On February 12, 2016, FERC granted rehearing of its May 22, 2015 order, clarifying that costs for a project will be allocated entirely to a local transmission owner if that project meets certain

---

<sup>87</sup> *PJM Interconnection, L.L.C.*, 119 FERC ¶ 61,063 (2007), *reh'g denied*, 122 FERC ¶ 61,082 (2009).

<sup>88</sup> *Illinois Commerce Comm'n v. F.E.R.C.*, 576 F.3d 470 (7<sup>th</sup> Cir. 2009).

<sup>89</sup> The cost allocation for 345 kV projects and other types of projects depends on their specific details.

<sup>90</sup> *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,172 (2015).

conditions, one of which is that the project is being proposed to address only that transmission owner's local planning criteria.<sup>91</sup> Conversely, any project included in the regional transmission expansion plan to address both an individual transmission owner's local planning criteria and to address PJM regional criteria or National Energy Regulatory Commission reliability standards will continue to be eligible for regional cost allocation.

The Commission continues to follow changes in transmission cost allocation policy at FERC and to participate where necessary in related proceedings.

#### Commission Participation Outside of FERC Dockets

##### *PJM Market Monitor*

PJM engages an independent market monitor, Monitoring Analytics LLC, which monitors the PJM markets for compliance with rules and procedures, identifies design flaws in market rules and standards, and notes structural problems that may impede competitive markets.<sup>92</sup> The Commission continues to monitor interactions between PJM and its market monitor and communicates with PJM and the market monitor on a regular basis about such issues.

##### *Eastern Interconnection Planning Collaborative*

The Eastern Interconnection Planning Collaborative ("EIPC") is a coalition of 24 regional planning authorities listed on the North American Electric Reliability Corporation compliance registry, and other interested stakeholders, representing the entire Eastern Interconnection (*i.e.*, the eastern portion of the electrical grid in the continental United States). EIPC was awarded a \$16 million grant by the U.S. Department of Energy ("DOE") to integrate existing sub-regional plans and evaluate longer-term resource and policy scenarios.

---

<sup>91</sup> *PJM Interconnection, L.L.C.*, Order on Rehearing, 154 FERC ¶ 61,096 (2016).

<sup>92</sup> <http://www.monitoringanalytics.com/company/about.shtml>.

Subsequently, the Eastern Interconnection States Planning Council (“EISPC”) was awarded a \$14 million grant by the DOE to develop inputs as needed to conduct interconnection level analyses prepared by EIPC and to designate energy zones of special interest for low- or no-carbon electricity scenarios.

The Staff participated in discussions relating to the implementation of these studies.<sup>93</sup> EIPC submitted its final report to the DOE on December 22, 2012, which identifies three planning scenarios suitable for interregional coordination. This report concluded the work originally identified in the grant.<sup>94</sup> Thereafter, the DOE noted rapid changes in the natural gas market since the start of the study, such as the discovery and development of new natural gas resources and increasing reliance on natural gas for power generation. DOE extended EIPC’s funding to preform additional technical analyses to evaluate the interaction between the natural gas and electric systems, including the sufficiency of existing natural gas infrastructure to support anticipated needs for energy production fueled by natural gas in the future.

EISPC’s funding via the DOE ended as of June 30, 2015. The planning activities and research under EISPC’s auspices continue, however, under leadership from the National Association of Regulatory Utility Commissioners (“NARUC”), which continues to focus on research into demand response, energy efficiency, energy storage, customer-owned generation, smart grid studies, probabilistic risk assessment, load forecasting, data mining and incentives and disincentives to nuclear power development. EISPC also has developed a web-based mapping tool that will support EISPC member jurisdictions as they identify areas within the interconnection that are suitable for developing clean energy resources and determining potential

---

<sup>93</sup> The Commission’s participation does not imply that the Commission endorses any specific recommendations or agreements that may result from the EIPC, and the Commission has expressly reserved the right to oppose or decline to endorse any specific proposal or recommendation that the Commission believes conflicts, expressly or implicitly, with Virginia law.

<sup>94</sup> See [http://www.eipconline.com/uploads/20130103\\_Phase2Report\\_Part1\\_Final.pdf](http://www.eipconline.com/uploads/20130103_Phase2Report_Part1_Final.pdf).

clean energy zones.<sup>95</sup> The Staff attends NARUC meetings and conference calls and follows the latest EISPC developments.

## **XI. CLOSING**

The Commission continues to execute its responsibilities under the Regulation Act. The Commission does not offer any legislative recommendations at this time but stands ready to provide additional information or assistance if requested.

---

<sup>95</sup> See <http://eispctools.anl.gov/>.

Residential Consumer Electric Rates in Virginia  
Expressed in \$ per 1,000 kWh

<b>UTILITIES</b>	<b>\$ Jul-07</b>	<b>\$ Jul-16</b>	<b>\$ Change</b>	<b>% Change</b>
<b><u>IOU</u></b>				
Appalachian Power Company	66.61	113.76	47.15	70.79
Dominion Virginia Power	90.59	111.22	20.63	22.77
Old Dominion/Kentucky Utilities	67.57	102.19	34.62	51.24
<b><u>Electric Cooperatives</u></b>				
A&N	122.59	117.49	-5.10	-4.16
BARC	123.18	125.64	2.46	2.00
Central Virginia	83.04	135.05	52.01	62.63
Community	122.37	124.05	1.68	1.37
Craig Botetourt	114.90	140.85	25.95	22.58
Mecklenburg	121.71	130.34	8.63	7.09
Northern Neck	126.35	138.68	12.33	9.76
Northern Virginia	129.20	117.54	-11.66	-9.02
Prince George	118.62	127.04	8.42	7.10
Rappahannock	127.72	121.89	-5.83	-4.56
Shenandoah Valley	115.12	117.02	1.90	1.65
Southside	133.32	133.13	-0.19	-0.14

NOTES

1. Rates are exclusive of Local Utility, Consumption and, except for Rappahannock, Sales and Use taxes.
2. Dominion Virginia Power's rates are annualized rates.
3. Dominion Virginia Power's July 2016 rate does not include the 2015 Biennial Review Credit Rider effective with customer billing on January 19, 2016 and amortized over a period of six months.

## **Appendix 2**

### **CHANGE IN AVERAGE RATES PER CUSTOMER CLASS**

**PEER GROUP**  
**Rate Comparison**  
**Average Revenue per kWh**

**APPENDIX 2**  
**page 1 of 3**

<b>Total Rate:</b>	<b>2006 ¢/kWh</b>	<b>2015 ¢/kWh</b>	<b>Change %</b>	<b>2006 Ranking</b>	<b>2015 Ranking</b>	<b>Rank Change</b>
Alabama Power	7.09	9.39	32.43	8	13	-5
Appalachian Power Company (Va)	5.04	9.28	84.13	1	10	-9
Dominion Virginia Power	6.79	8.92	31.40	7	6	1
DUKE Energy Carolinas (NC)	6.48	8.48	30.72	6	5	1
DUKE Energy Carolinas (SC)	5.54	8.15	47.09	3	4	-1
Entergy Mississippi, Inc	9.89	9.34	-5.60	15	12	3
FP&L Company	11.22	9.81	-12.56	18	14	4
Georgia Power	7.29	9.21	26.41	11	8	3
Gulf Power	7.98	11.94	49.56	14	18	-4
Mississippi Power	7.21	7.90	9.54	9	1	8
Duke Energy Progress, Inc. (NC)	7.60	9.24	21.57	12	9	3
Duke Energy Progress, Inc. (SC)	7.27	8.12	11.60	10	2	8
Duke Progress Energy Florida, Inc.	10.55	11.35	7.58	17	16	1
SCE&G	7.83	11.51	47.06	13	17	-4
Tampa Electric Company	9.96	10.45	4.84	16	15	1
Kentucky Utilities (d/b/a ODP)	5.85	9.31	59.13	5	11	-6
Louisville Gas & Electric	5.79	9.15	58.18	4	7	-3
Kentucky Utilities (KY)	5.32	8.15	53.18	2	3	-1
Average For East South Central	6.85	8.94	30.51			
Average For South Atlantic	8.26	9.67	17.07			
USA Average	8.89	10.71	20.47			

<b>Residential Rate:</b>	<b>2006 ¢/kWh</b>	<b>2015 ¢/kWh</b>	<b>Change %</b>	<b>2006 Ranking</b>	<b>2015 Ranking</b>	<b>Rank Change</b>
Alabama Power	8.93	12.20	36.63	9	15	-6
Appalachian Power Company (Va)	5.95	11.23	88.74	2	11	-9
Dominion Virginia Power	8.43	11.06	31.19	7	9	-2
DUKE Energy Carolinas (NC)	7.93	10.60	33.64	6	6	0
DUKE Energy Carolinas (SC)	7.33	11.07	51.04	5	10	-5
Entergy Mississippi, Inc	10.55	9.99	-5.33	15	3	12
FP&L Company	11.90	10.77	-9.51	18	7	11
Georgia Power	8.82	12.15	37.83	8	14	-6
Gulf Power	9.07	13.69	50.97	12	17	-5
Mississippi Power	10.12	11.59	14.48	14	13	1
Duke Energy Progress, Inc. (NC)	9.03	11.01	21.99	11	8	3
Duke Energy Progress, Inc. (SC)	9.01	10.10	12.17	10	4	6
Duke Progress Energy Florida, Inc.	11.79	13.06	10.74	17	16	1
SCE&G	9.92	14.73	48.45	13	18	-5
Tampa Electric Company	10.97	11.50	4.83	16	12	4
Kentucky Utilities (d/b/a ODP)	6.03	9.56	58.52	3	1	2



**PEER GROUP  
Rate Comparison  
Average Revenue per kWh**

Louisville Gas & Electric	6.63	10.44	57.37	4	5	-1
Kentucky Utilities (KY)	5.87	9.61	63.82	1	2	-1
Average For East South Central	8.24	11.00	33.50			
Average For South Atlantic	9.79	11.62	18.69			
USA Average	10.62	12.95	21.94			

<b>Commercial Rate:</b>	<b>2006 ¢/kWh</b>	<b>2015 ¢/kWh</b>	<b>Change %</b>	<b>2006 Ranking</b>	<b>2015 Ranking</b>	<b>Rank Change</b>
Alabama Power	8.17	11.09	35.77	14	17	-3
Appalachian Power Company (Va)	5.09	8.99	76.62	1	8	-7
Dominion Virginia Power	6.08	7.94	30.61	3	2	1
DUKE Energy Carolinas (NC)	6.31	7.77	23.15	7	1	6
DUKE Energy Carolinas (SC)	6.26	8.57	36.87	6	3	3
Entergy Mississippi, Inc	10.20	9.48	-7.15	17	11	6
FP&L Company	10.54	8.75	-17.03	18	4	14
Georgia Power	7.50	9.45	25.96	9	10	-1
Gulf Power	7.59	11.00	44.99	10	16	-6
Mississippi Power	8.05	8.97	11.39	12	7	5
Duke Energy Progress, Inc. (NC)	7.46	8.90	19.26	8	6	2
Duke Energy Progress, Inc. (SC)	8.05	8.85	9.86	13	5	8
Duke Progress Energy Florida, Inc.	9.62	9.98	3.80	16	15	1
SCE&G	7.91	11.54	46.01	11	18	-7
Tampa Electric Company	9.48	9.65	1.83	15	14	1
Kentucky Utilities (d/b/a ODP)	6.26	9.31	48.73	5	9	-4
Louisville Gas & Electric	6.18	9.58	54.98	4	13	-9
Kentucky Utilities (KY)	5.75	9.52	65.51	2	12	-10
Average For East South Central	7.73	10.10	30.66			
Average For South Atlantic	8.33	9.14	9.72			
USA Average	9.33	10.87	16.51			

<b>Industrial Rate:</b>	<b>2006 ¢/kWh</b>	<b>2015 ¢/kWh</b>	<b>Change %</b>	<b>2006 Ranking</b>	<b>2015 Ranking</b>	<b>Rank Change</b>
Alabama Power	4.92	6.14	24.91	7	7	0
Appalachian Power Company (Va)	3.85	6.94	80.26	1	12	-11
Dominion Virginia Power	4.62	6.24	34.92	5	8	-3
DUKE Energy Carolinas (NC)	4.73	6.13	29.75	6	6	0
DUKE Energy Carolinas (SC)	4.04	5.70	41.15	2	2	0
Entergy Mississippi, Inc	8.04	7.17	-10.79	16	13	3
FP&L Company	8.87	6.69	-24.55	18	10	8
Georgia Power	5.39	5.48	1.59	11	1	10
Gulf Power	5.85	8.64	47.73	14	18	-4

**PEER GROUP  
Rate Comparison  
Average Revenue per kWh**

Mississippi Power	5.10	5.71	11.86	8	3	5
Duke Energy Progress, Inc. (NC)	5.78	6.67	15.32	13	9	4
Duke Energy Progress, Inc. (SC)	5.64	5.82	3.23	12	4	8
Duke Progress Energy Florida, Inc.	8.31	7.71	-7.24	17	15	2
SCE&G	5.15	7.32	41.92	9	14	-5
Tampa Electric Company	7.65	8.57	11.93	15	17	-2
Kentucky Utilities (d/b/a ODP)	5.22	8.51	63.10	10	16	-6
Louisville Gas & Electric	4.35	6.82	56.95	3	11	-8
Kentucky Utilities (KY)	4.46	6.08	36.38	4	5	-1
Average For East South Central	4.97	6.18	24.35			
Average For South Atlantic	5.19	6.59	26.97			
USA Average	6.00	6.97	16.17			

### **Appendix 3**

#### **TYPICAL RESIDENTIAL BILLS**

**PEER GROUP**  
**Typical Bill Comparison**  
**Residential Customers**

**APPENDIX 3**  
**page 1 of 2**

<b>Monthly Usage of 500 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	53.33	71.49	34.06	14	17	-3
Appalachian Power Company (Va)	34.58	61.62	78.20	3	12	-9
Appalachian Power Company (WV)	32.48	61.94	90.70	1	13	-12
Dominion North Carolina Power	49.38	58.52	18.51	11	4	7
Dominion Virginia Power	48.00	61.02	27.13	9	8	1
DUKE Energy Carolinas (NC)	44.09	59.72	35.46	7	5	2
DUKE Energy Carolinas (SC)	39.55	62.64	58.38	6	15	-9
Entergy Mississippi, Inc	60.81	62.13	2.17	19	14	5
FP&L Company	56.97	51.54	-9.53	16	1	15
Georgia Power	45.28	63.17	39.51	8	16	-8
Gulf Power	51.30	77.33	50.74	13	18	-5
Mississippi Power	64.08	83.37	30.10	20	20	0
Duke Energy Progress, Inc. (NC)	48.69	61.17	25.63	10	9	1
Duke Energy Progress, Inc. (SC)	51.17	56.59	10.59	12	2	10
Duke Progress Energy Florida, Inc.	58.90	61.57	4.53	17	11	6
SCE&G	53.73	79.70	48.33	15	19	-4
Tampa Electric Company	59.17	60.81	2.77	18	7	11
Kentucky Utilities (d/b/a ODP)	35.03	59.98	71.22	4	6	-2
Louisville Gas & Electric	35.18	61.50	74.82	5	10	-5
Kentucky Utilities (KY)	32.49	56.94	75.25	2	3	-1
Average For East South Central	43.99	61.39	39.55			
Average For South Atlantic	49.07	66.43	35.38			
USA Average	56.20	71.08	26.48			

<b>Monthly Usage of 750 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	74.35	99.78	34.21	14	17	-3
Appalachian Power Company (Va)	48.38	88.22	82.35	3	14	-11
Appalachian Power Company (WV)	43.88	85.88	95.72	1	10	-9
Dominion North Carolina Power	69.30	82.18	18.59	10	5	5
Dominion Virginia Power	68.48	88.03	28.55	9	13	-4
DUKE Energy Carolinas (NC)	63.52	83.42	31.32	7	6	1
DUKE Energy Carolinas (SC)	56.24	89.61	59.33	6	16	-10
Entergy Mississippi, Inc	81.37	81.01	-0.44	16	3	13
FP&L Company	82.79	73.43	-11.31	17	1	16
Georgia Power	67.28	89.35	32.80	8	15	-7
Gulf Power	71.82	106.46	48.23	12	18	-6

**PEER GROUP**  
**Typical Bill Comparison**  
**Residential Customers**

**APPENDIX 3**  
**page 2 of 2**

Mississippi Power	85.27	111.21	30.42	20	19	1
Duke Energy Progress, Inc. (NC)	69.66	85.60	22.88	11	9	2
Duke Energy Progress, Inc. (SC)	73.50	81.35	10.68	13	4	9
Duke Progress Energy Florida, Inc.	84.23	87.86	4.31	18	12	6
SCE&G	76.84	114.54	49.06	15	20	-5
Tampa Electric Company	84.39	83.52	-1.03	19	7	12
Kentucky Utilities (d/b/a ODP)	49.86	83.97	68.41	4	8	-4
Louisville Gas & Electric	50.30	86.23	71.43	5	11	-6
Kentucky Utilities (KY)	46.20	79.60	72.29	2	2	0
Average For East South Central	61.01	84.84	39.06			
Average For South Atlantic	70.42	94.43	34.10			
USA Average	81.56	102.47	25.64			

<b>Monthly Usage of 1000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	93.40	126.03	34.94	12	17	-5
Appalachian Power Company (Va)	61.39	114.83	87.05	3	14	-11
Appalachian Power Company (WV)	55.28	109.82	98.66	1	9	-8
Dominion North Carolina Power	89.24	105.83	18.59	9	4	5
Dominion Virginia Power	87.18	113.24	29.89	8	12	-4
DUKE Energy Carolinas (NC)	82.95	107.11	29.12	7	7	0
DUKE Energy Carolinas (SC)	72.93	116.57	59.84	6	15	-9
Entergy Mississippi, Inc	101.92	99.89	-1.99	16	2	14
FP&L Company	108.61	95.30	-12.25	18	1	17
Georgia Power	93.91	116.88	24.46	13	16	-3
Gulf Power	92.34	135.58	46.83	11	18	-7
Mississippi Power	106.27	138.89	30.70	17	19	-2
Duke Energy Progress, Inc. (NC)	90.62	110.04	21.43	10	10	0
Duke Energy Progress, Inc. (SC)	94.50	106.10	12.28	14	5	9
Duke Progress Energy Florida, Inc.	109.56	114.15	4.19	19	13	6
SCE&G	99.95	149.58	49.65	15	20	-5
Tampa Electric Company	109.61	106.22	-3.09	20	6	14
Kentucky Utilities (d/b/a ODP)	64.69	107.96	66.89	4	8	-4
Louisville Gas & Electric	65.43	110.96	69.59	5	11	-6
Kentucky Utilities (KY)	59.91	102.27	70.71	2	3	-1
Average For East South Central	77.74	108.02	38.95			
Average For South Atlantic	91.75	122.42	33.43			
USA Average	106.52	133.50	25.33			

**PEER GROUP  
Typical Bill Comparison  
Residential Customers**

**APPENDIX 3  
page 3 of 2**

## **Appendix 4**

### **TYPICAL COMMERCIAL BILLS**

**PEER GROUP**  
**Typical Bill Comparison**  
**Commercial Customers**

**APPENDIX 4**  
**page 1 of 3**

<b>Usage of 375 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	50.00	83.71	67.42	14	20	-6
Appalachian Power Company (Va)	28.00	46.00	64.29	2	3	-1
Appalachian Power Company (WV)	26.00	44.00	69.23	1	2	-1
Dominion North Carolina Power	45.00	54.51	21.14	8	7	1
Dominion Virginia Power	44.08	51.67	17.22	7	4	3
DUKE Energy Carolinas (NC)	48.00	67.44	40.50	11	15	-4
DUKE Energy Carolinas (SC)	44.00	59.36	34.91	6	9	-3
Entergy Mississippi, Inc	56.00	60.00	7.14	18	10	8
FP&L Company	50.00	43.82	-12.36	15	1	14
Georgia Power	56.00	79.70	42.32	19	18	1
Gulf Power	47.00	66.00	40.43	10	12	-2
Mississippi Power	64.00	83.00	29.69	20	19	1
Duke Energy Progress, Inc. (NC)	48.00	63.00	31.25	12	11	1
Duke Energy Progress, Inc. (SC)	48.00	52.00	8.33	13	5	8
Duke Progress Energy Florida, Inc.	51.00	52.66	3.25	17	6	11
SCE&G	50.00	72.50	45.00	16	17	-1
Tampa Electric Company	46.00	54.86	19.26	9	8	1
Kentucky Utilities (d/b/a ODP)	36.00	67.28	86.89	4	14	-10
Louisville Gas & Electric	37.00	69.38	87.51	5	16	-11
Kentucky Utilities (KY)	34.00	67.21	97.68	3	13	-10
Average For East South Central	44.00	65.00	47.73			
Average For South Atlantic	48.00	62.00	29.17			
USA Average	53.00	65.00	22.64			

<b>Demand of 40 kW and Usage of 10,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	961.00	1,364.52	41.99	15	19	-4
Appalachian Power Company (Va)	580.00	1,049.00	80.86	2	12	-10
Appalachian Power Company (WV)	569.00	1,023.00	79.79	1	7	-6
Dominion North Carolina Power	731.00	875.14	19.72	7	1	6
Dominion Virginia Power	802.00	1,024.10	27.69	10	8	2
DUKE Energy Carolinas (NC)	723.00	893.88	23.63	6	2	4
DUKE Energy Carolinas (SC)	678.00	914.34	34.86	4	4	0
Entergy Mississippi, Inc	1,078.00	1,064.00	-1.30	19	13	6
FP&L Company	1,117.00	974.65	-12.74	20	6	14
Georgia Power	1,038.00	1,432.46	38.00	18	20	-2
Gulf Power	811.00	1,120.00	38.10	11	16	-5
Mississippi Power	955.00	1,169.00	22.41	14	17	-3
Duke Energy Progress, Inc. (NC)	753.00	905.00	20.19	8	3	5
Duke Energy Progress, Inc. (SC)	824.00	916.00	11.17	12	5	7
Duke Progress Energy Florida, Inc.	982.00	1,048.81	6.80	16	11	5
SCE&G	934.00	1,338.80	43.34	13	18	-5



**PEER GROUP**  
**Typical Bill Comparison**  
**Commercial Customers**

**APPENDIX 4**  
**page 2 of 3**

Tampa Electric Company	1,013.00	1,042.05	2.87	17	10	7
Kentucky Utilities (d/b/a ODP)	692.00	1,024.20	48.01	5	9	-4
Louisville Gas & Electric	793.00	1,110.02	39.98	9	15	-6
Kentucky Utilities (KY)	664.00	1,085.20	63.43	3	14	-11
Average For East South Central	834.00	1,112.00	33.33			
Average For South Atlantic	930.00	1,133.00	21.83			
USA Average	1,051.00	1,241.00	18.08			

<b>Demand of 40 kW and Usage of 14,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	1,192.00	1,724.05	44.63	14	19	-5
Appalachian Power Company (Va)	731.00	1,266.00	73.19	1	8	-7
Appalachian Power Company (WV)	731.00	1,287.00	76.06	2	10	-8
Dominion North Carolina Power	963.00	1,154.22	19.86	10	5	5
Dominion Virginia Power	951.00	1,232.70	29.62	9	7	2
DUKE Energy Carolinas (NC)	938.00	1,091.90	16.41	8	1	7
DUKE Energy Carolinas (SC)	875.00	1,142.76	30.60	5	4	1
Entergy Mississippi, Inc	1,409.00	1,359.00	-3.55	18	12	6
FP&L Company	1,438.00	1,186.50	-17.49	20	6	14
Georgia Power	1,192.00	1,610.79	35.13	15	18	-3
Gulf Power	1,032.00	1,440.00	39.53	12	14	-2
Mississippi Power	1,189.00	1,462.00	22.96	13	15	-2
Duke Energy Progress, Inc. (NC)	913.00	1,115.00	22.12	7	2	5
Duke Energy Progress, Inc. (SC)	1,009.00	1,132.00	12.19	11	3	8
Duke Progress Energy Florida, Inc.	1,314.00	1,299.81	-1.08	17	11	6
SCE&G	1,299.00	1,861.40	43.29	16	20	-4
Tampa Electric Company	1,415.00	1,275.41	-9.87	19	9	10
Kentucky Utilities (d/b/a ODP)	866.00	1,421.88	64.19	4	13	-9
Louisville Gas & Electric	896.00	1,542.49	72.15	6	17	-11
Kentucky Utilities (KY)	794.00	1,508.36	89.97	3	16	-13
Average For East South Central	1,034.00	1,444.00	39.65			
Average For South Atlantic	1,205.00	1,452.00	20.50			
USA Average	1,342.00	1,585.00	18.11			

<b>Demand of 500 kW and Usage of 150,000 kWh</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	13,463.00	18,766.88	39.40	16	19	-3
Appalachian Power Company (Va)	8,017.00	14,584.00	81.91	1	13	-12
Appalachian Power Company (WV)	8,062.00	14,238.00	76.61	2	11	-9
Dominion North Carolina Power	10,726.00	12,832.70	19.64	10	6	4
Dominion Virginia Power	9,860.00	13,599.19	37.92	8	8	0

**PEER GROUP**  
**Typical Bill Comparison**  
**Commercial Customers**

**APPENDIX 4**  
**page 3 of 3**

DUKE Energy Carolinas (NC)	9,799.00	11,865.76	21.09	6	3	3
DUKE Energy Carolinas (SC)	9,029.00	12,773.91	41.48	4	5	-1
Entergy Mississippi, Inc	13,147.00	11,944.00	-8.77	15	4	11
FP&L Company	15,707.00	13,294.88	-15.36	20	7	13
Georgia Power	12,416.16	16,715.08	34.62	13	17	-4
Gulf Power	11,620.00	17,019.00	46.46	12	18	-6
Mississippi Power	12,531.00	16,165.00	29.00	14	14	0
Duke Energy Progress, Inc. (NC)	10,172.00	11,321.00	11.30	9	2	7
Duke Energy Progress, Inc. (SC)	11,225.00	11,204.00	-0.19	11	1	10
Duke Progress Energy Florida, Inc.	14,074.00	14,331.20	1.83	18	12	6
SCE&G	13,699.00	19,932.85	45.51	17	20	-3
Tampa Electric Company	14,118.00	14,130.26	0.09	19	10	9
Kentucky Utilities (d/b/a ODP)	9,503.00	16,200.76	70.48	5	15	-10
Louisville Gas & Electric	9,834.00	16,632.42	69.13	7	16	-9
Kentucky Utilities (KY)	8,448.00	13,956.73	65.21	3	9	-6
Average For East South Central	10,444.00	14,808.00	41.78			
Average For South Atlantic	12,694.00	15,636.00	23.18			
USA Average	14,015.00	16,327.00	16.50			

<b>Demand of 500 kW and Usage of 180,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	15,198.00	21,527.05	41.64	16	19	-3
Appalachian Power Company (Va)	8,722.00	15,939.00	82.74	1	11	-10
Appalachian Power Company (WV)	9,150.00	16,039.00	75.29	2	12	-10
Dominion North Carolina Power	12,129.00	14,160.89	16.75	10	6	4
Dominion Virginia Power	10,533.00	14,432.22	17.02	5	7	-2
DUKE Energy Carolinas (NC)	11,402.00	13,453.43	17.99	9	3	6
DUKE Energy Carolinas (SC)	10,392.00	14,084.55	35.53	4	5	-1
Entergy Mississippi, Inc	15,294.00	13,747.00	-10.12	17	4	13
FP&L Company	18,021.00	14,732.42	-18.25	20	8	12
Georgia Power	13,574.88	18,052.47	32.98	13	16	-3
Gulf Power	13,015.00	18,871.00	44.99	12	18	-6
Mississippi Power	14,124.00	18,156.00	28.55	14	17	-3
Duke Energy Progress, Inc. (NC)	11,367.00	12,717.00	11.88	8	2	6
Duke Energy Progress, Inc. (SC)	12,612.00	12,556.00	-0.44	11	1	10
Duke Progress Energy Florida, Inc.	16,538.00	16,194.72	-2.08	19	13	6
SCE&G	14,708.00	21,584.65	46.75	15	20	-5
Tampa Electric Company	16,189.00	15,880.41	-1.91	18	10	8
Kentucky Utilities (d/b/a ODP)	10,805.00	17,543.56	62.37	7	14	-7
Louisville Gas & Electric	10,611.00	17,905.22	68.74	6	15	-9
Kentucky Utilities (KY)	9,420.00	14,871.81	57.87	3	9	-6
Average For East South Central	11,832.00	16,572.00	40.06			
Average For South Atlantic	14,447.00	17,863.00	23.65			

**PEER GROUP  
Typical Bill Comparison  
Commercial Customers**

USA Average	15,959.00	18,460.00	15.67
-------------	-----------	-----------	-------

## **Appendix 5**

### TYPICAL INDUSTRIAL BILLS

**PEER GROUP**  
**Typical Bill Comparison**  
**Industrial Customers**

**APPENDIX 5**  
**page 1 of 6**

<b>Demand of 75 kW and Usage of 15,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Chang</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>e</b>	<b>Ran</b>	<b>Ran</b>	<b>Chang</b>
			<b>%</b>	<b>k</b>	<b>k</b>	<b>e</b>
Alabama Power	1,457.00	2,034.33	39.62	14	16	-2
Appalachian Power Company (Va)	912.00	1,633.00	79.06	2	9	-7
Appalachian Power Company (WV)	908.00	1,652.00	81.94	1	10	-9
Dominion North Carolina Power	1,079.00	1,284.96	19.09	6	2	4
Dominion Virginia Power	1,317.00	1,756.30	33.36	11	13	-2
DUKE Energy Carolinas (NC)	1,101.00	1,389.54	26.21	7	4	3
DUKE Energy Carolinas (SC)	1,030.00	1,515.43	47.13	5	6	-1
Entergy Mississippi, Inc	1,637.00	1,622.00	-0.92	18	8	10
FP&L Company	1,765.00	1,611.37	-8.70	20	7	13
Georgia Power	1,737.00	2,338.79	34.65	19	20	-1
Gulf Power	1,281.00	1,258.00	-1.80	10	1	9
Mississippi Power	1,519.00	2,079.00	36.87	15	17	-2
Duke Energy Progress, Inc. (NC)	1,243.00	1,428.00	14.88	9	5	4
Duke Energy Progress, Inc. (SC)	1,331.00	1,383.00	3.91	12	3	9
Duke Progress Energy Florida, Inc.	1,521.00	1,720.81	13.14	16	12	4
SCE&G	1,390.00	1,992.05	43.31	13	15	-2
Tampa Electric Company	1,636.00	1,708.15	4.41	17	11	6
Kentucky Utilities (d/b/a ODP)	1,018.00	1,841.25	80.87	3	14	-11
Louisville Gas & Electric	1,205.00	2,105.20	74.71	8	18	-10
Kentucky Utilities (KY)	1,029.00	2,151.43	109.08	4	19	-15
Average For East South Central	1,299.00	1,860.00	43.19			
Average For South Atlantic	1,422.00	1,771.00	24.54			
USA Average	1,650.00	1,961.00	18.85			

<b>Demand of 75 kW and Usage of 30,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Chang</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>e</b>	<b>Ran</b>	<b>Ran</b>	<b>Chang</b>
			<b>%</b>	<b>k</b>	<b>k</b>	<b>e</b>
Alabama Power	2,378.00	3,471.51	45.98	14	19	-5
Appalachian Power Company (Va)	1,415.00	2,530.00	78.80	1	9	-8
Appalachian Power Company (WV)	1,469.00	2,508.00	70.73	2	7	-5
Dominion North Carolina Power	1,950.00	2,318.46	18.90	10	4	6
Dominion Virginia Power	1,878.00	2,435.00	29.66	9	6	3
DUKE Energy Carolinas (NC)	1,865.00	2,273.98	21.93	8	3	5
DUKE Energy Carolinas (SC)	1,749.00	2,560.61	46.40	6	10	-4
Entergy Mississippi, Inc	2,834.00	2,671.00	-5.75	19	14	5
FP&L Company	2,968.00	2,405.83	-18.94	20	5	15
Georgia Power	2,320.00	3,003.25	29.45	13	17	-4
Gulf Power	2,110.00	2,961.00	40.33	12	16	-4
Mississippi Power	2,394.00	3,177.00	32.71	15	18	-3

**PEER GROUP**  
**Typical Bill Comparison**  
**Industrial Customers**

**APPENDIX 5**  
**page 2 of 6**

Duke Energy Progress, Inc. (NC)	1,842.00	2,132.00	15.74	7	2	5
Duke Energy Progress, Inc. (SC)	2,047.00	2,082.00	1.71	11	1	10
Duke Progress Energy Florida, Inc.	2,766.00	2,662.04	-3.76	18	13	5
SCE&G	2,437.00	3,654.90	49.98	16	20	-4
Tampa Electric Company	2,672.00	2,583.23	-3.32	17	11	6
Kentucky Utilities (d/b/a ODP)	1,669.00	2,514.00	50.63	5	8	-3
Louisville Gas & Electric	1,538.00	2,718.24	76.74	4	15	-11
Kentucky Utilities (KY)	1,515.00	2,588.02	70.83	3	12	-9
Average For East South Central	2,039.00	2,834.00	38.99			
Average For South Atlantic	2,364.00	2,878.00	21.74			
USA Average	2,668.00	3,128.00	17.24			

	2006	2016	Change	2006	2016	Rank
	\$	\$	%	Rank	Rank	Change
<b>Demand of 75 kW and Usage of 50,000 kWh:</b>						
Alabama Power	3,507.00	5,287.68	50.77	15	20	-5
Appalachian Power Company (Va)	1,885.00	3,434.00	82.18	1	10	-9
Appalachian Power Company (WV)	2,028.00	3,112.00	53.45	3	5	-2
Dominion North Carolina Power	2,864.00	3,338.91	16.58	10	8	2
Dominion Virginia Power	2,343.00	3,014.00	28.64	6	2	4
DUKE Energy Carolinas (NC)	2,570.00	3,082.20	19.93	8	4	4
DUKE Energy Carolinas (SC)	2,274.00	3,160.07	38.97	5	6	-1
Entergy Mississippi, Inc	4,431.00	4,071.00	-8.12	19	16	3
FP&L Company	4,572.00	3,465.11	-24.21	20	11	9
Georgia Power	3,044.00	3,812.08	25.23	12	15	-3
Gulf Power	3,214.00	4,565.00	42.03	14	18	-4
Mississippi Power	3,560.00	4,353.00	22.28	16	17	-1
Duke Energy Progress, Inc. (NC)	2,591.00	3,015.00	16.36	9	3	6
Duke Energy Progress, Inc. (SC)	2,924.00	2,935.00	0.38	11	1	10
Duke Progress Energy Florida, Inc.	4,209.00	3,783.85	-10.10	18	14	4
SCE&G	3,143.00	4,843.10	54.09	13	19	-6
Tampa Electric Company	4,053.00	3,750.00	-7.48	17	13	4
Kentucky Utilities (d/b/a ODP)	2,537.00	3,411.00	34.45	7	9	-2
Louisville Gas & Electric	1,981.00	3,535.63	78.48	2	12	-10
Kentucky Utilities (KY)	2,164.00	3,170.13	46.49	4	7	-1
Average For East South Central	2,998.00	4,064.00	35.56			
Average For South Atlantic	3,496.00	4,123.00	17.93			
USA Average	3,940.00	4,582.00	16.29			

**PEER GROUP**  
**Typical Bill Comparison**  
**Industrial Customers**

**APPENDIX 5**  
page 3 of 6

<b>Demand of 1,000 kW and Usage of 200,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006 Rank</b>	<b>2016 Rank</b>	<b>Rank Change</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>			
Alabama Power	15,200.00	17,607.92	15.84	8	2	6
Appalachian Power Company (Va)	11,157.00	19,991.00	79.18	2	7	-5
Appalachian Power Company (WV)	10,840.00	19,311.00	78.15	1	6	-5
Dominion North Carolina Power	15,841.00	18,743.75	18.32	9	5	4
Dominion Virginia Power	17,350.00	24,182.17	39.38	10	14	-4
DUKE Energy Carolinas (NC)	13,620.00	17,770.50	30.47	5	3	2
DUKE Energy Carolinas (SC)	12,471.00	18,258.27	46.41	3	4	-1
Entergy Mississippi, Inc	17,675.00	16,473.00	-6.80	11	1	10
FP&L Company	23,661.00	21,736.94	-8.13	20	9	11
Georgia Power	23,285.00	31,745.18	36.33	19	20	-1
Gulf Power	18,432.00	27,597.00	49.72	12	19	-7
Mississippi Power	18,783.00	24,464.00	30.25	13	15	-2
Duke Energy Progress, Inc. (NC)	20,250.00	21,874.00	8.02	17	10	7
Duke Energy Progress, Inc. (SC)	20,171.00	20,292.00	0.60	16	8	8
Duke Progress Energy Florida, Inc.	19,795.00	22,300.35	12.66	15	11	4
SCE&G	19,408.00	27,372.27	41.04	14	18	-4
Tampa Electric Company	21,457.00	22,395.90	4.38	18	12	6
Kentucky Utilities (d/b/a ODP)	13,855.00	24,750.00	78.64	6	16	-10
Louisville Gas & Electric	14,788.00	25,817.10	74.58	7	17	-10
Kentucky Utilities (KY)	13,167.00	23,604.47	79.27	4	13	-9
Average For East South Central	15,430.00	21,582.00	39.87			
Average For South Atlantic	17,96.00	23,318.00	29.78			
USA Average	20,947.00	24,754.00	18.17			

<b>Demand of 1,000 kW and Usage of 400,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006 Rank</b>	<b>2016 Rank</b>	<b>Rank Change</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>			
Alabama Power	23,852.00	28,445.79	19.26	9	2	7
Appalachian Power Company (Va)	17,076.00	31,109.00	82.18	1	10	-9
Appalachian Power Company (WV)	17,105.00	30,353.00	77.45	2	9	-7
Dominion North Carolina Power	25,581.00	29,640.19	15.87	10	7	3
Dominion Virginia Power	21,834.00	29,847.69	36.70	6	8	-2
DUKE Energy Carolinas (NC)	23,159.00	28,560.91	23.33	8	3	5
DUKE Energy Carolinas (SC)	21,271.00	29,521.14	38.79	5	6	-1
Entergy Mississippi, Inc	31,759.00	27,941.00	-12.02	17	1	16

**PEER GROUP**  
**Typical Bill Comparison**  
**Industrial Customers**

**APPENDIX 5**  
**page 4 of 6**

FP&L Company	39,089.00	31,320.52	-19.87	20	11	9
Georgia Power	31,381.00	41,147.30	31.12	16	20	-4
Gulf Power	27,731.00	39,940.00	44.03	12	19	-7
Mississippi Power	29,510.00	37,892.00	28.40	15	17	-2
Duke Energy Progress, Inc. (NC)	28,750.00	31,652.00	10.09	13	12	1
Duke Energy Progress, Inc. (SC)	29,117.00	29,002.00	-0.39	14	4	10
Duke Progress Energy Florida, Inc.	36,224.00	34,723.81	-4.14	19	16	3
SCE&G	26,106.00	39,379.00	50.84	11	18	-7
Tampa Electric Company	35,217.00	34,063.59	-3.28	18	15	3
Kentucky Utilities (d/b/a ODP)	22,538.00	33,720.00	49.61	7	13	-6
Louisville Gas & Electric	19,217.00	33,758.06	75.67	3	14	-11
Kentucky Utilities (KY)	19,651.00	29,395.08	49.59	4	5	=1
Average For East South Central	23,303.00	30,643.00	31.50			
Average For South Atlantic	28,633.00	36,181.00	26.36			
USA Average	33,137.00	37,891.00	14.35			

<b>Demand of 1,000 kW and Usage of 650,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	33,196.00	40,482.03	21.95	8	10	-2
Appalachian Power Company (Va)	22,149.00	40,153.00	81.29	2	8	-6
Appalachian Power Company (WV)	21,095.00	37,734.00	78.88	1	3	-2
Dominion North Carolina Power	35,741.00	39,612.97	10.83	11	7	4
Dominion Virginia Power	27,440.00	36,789.59	34.07	5	2	3
DUKE Energy Carolinas (NC)	33,369.00	39,379.25	18.01	9	6	3
DUKE Energy Carolinas (SC)	29,581.00	40,178.32	35.82	6	9	-3
Entergy Mississippi, Inc	46,038.00	37,814.00	-17.86	17	4	13
FP&L Company	58,373.00	42,671.05	-26.90	20	12	8
Georgia Power	40,776.00	51,702.62	26.80	15	17	-2
Gulf Power	39,354.00	55,369.00	40.69	13	20	-7
Mississippi Power	41,529.00	52,203.00	25.70	16	18	-2
Duke Energy Progress, Inc. (NC)	38,120.00	42,394.00	11.21	12	11	1
Duke Energy Progress, Inc. (SC)	39,721.00	39,311.00	-1.03	14	5	9
Duke Progress Energy Florida, Inc.	53,888.00	47,058.05	-12.67	19	15	4
SCE&G	34,479.00	52,806.50	53.16	10	19	-9
Tampa Electric Company	52,417.00	48,648.20	-7.19	18	16	2
Kentucky Utilities (d/b/a ODP)	32,632.00	44,932.50	37.69	7	14	-7
Louisville Gas & Electric	24,753.00	43,684.25	76.48	4	13	-9
Kentucky Utilities (KY)	23,996.00	36,633.33	52.66	3	1	2
Average For East South Central	31,900.00	40,912.00	28.25			
Average For South Atlantic	40,934.00	50,692.00	23.84			



**PEER GROUP**  
**Typical Bill Comparison**  
**Industrial Customers**

**APPENDIX 5**  
**page 5 of 6**

USA Average 47,459.00 53,539.00 12.81

<b>Demand of 50,000 kW and Usage of 15,000,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Chang</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>e %</b>	<b>Ran</b>	<b>Ran</b>	<b>Chang</b>
				<b>k</b>	<b>k</b>	<b>e</b>
Alabama Power	960,686.00	1,134,593.91	18.10	7	7	0
Appalachian Power Company (Va)	649,370.00	1,264,070.00	94.66	2	11	-9
Appalachian Power Company (WV)	643,137.00	1,118,526.00	73.92	1	6	-5
Dominion North Carolina Power	1,072,319.00	1,278,199.00	19.20	9	12	-3
Dominion Virginia Power	962,792.00	1,335,209.35	38.68	8	13	-5
DUKE Energy Carolinas (NC)	824,123.00	1,057,780.30	28.35	6	3	3
DUKE Energy Carolinas (SC)	719,461.00	1,064,992.90	48.03	3	4	-1
Entergy Mississippi, Inc	1,144,786.00	1,046,823.00	-8.56	13	2	11
FP&L Company	1,555,031.00	773,991.97	-50.23	19	1	18
Georgia Power	1,154,245.00	1,514,931.73	31.25	15	18	-3
Gulf Power	1,146,283.00	1,675,224.00	46.14	14	20	-6
Mississippi Power	1,123,217.00	1,460,573.00	30.03	11	17	-6
Duke Energy Progress, Inc. (NC)	1,185,500.00	1,245,116.00	5.03	16	9	7
Duke Energy Progress, Inc. (SC)	1,126,375.00	1,073,672.00	-4.68	12	5	7
Duke Progress Energy Florida, Inc.	1,393,733.00	1,418,238.40	1.76	17	16	1
SCE&G	1,079,050.00	1,601,175.00	48.39	10	19	-9
Tampa Electric Company	1,404,056.00	1,409,979.45	0.42	18	15	3
Kentucky Utilities (d/b/a ODP)	-	1,253,914.71		-	10	-
Louisville Gas & Electric	788,933.00	1,336,997.55	69.47	5	14	-9
Kentucky Utilities (KY)	764,603.00	1,222,968.15	59.95	4	8	-4

**PEER GROUP**  
**Typical Bill Comparison**  
**Industrial Customers**

		8		
Average For East South Central	891,018.00	1,170,326.00	0	31.35
	1,125,102.00	1,377,665.00		
Average For South Atlantic	0	0		22.45
	1,276,726.00	1,444,868.00		
USA Average	0	0		13.17

<b>Demand of 50,000 kW and Usage of 25,000,000 kWh:</b>	<b>2006</b>	<b>2016</b>	<b>Change</b>	<b>2006</b>	<b>2016</b>	<b>Rank</b>
	<b>\$</b>	<b>\$</b>	<b>%</b>	<b>Rank</b>	<b>Rank</b>	<b>Change</b>
Alabama Power	1,328,493.00	1,610,875.39	21.26	8	10	-2
Appalachian Power Company (Va)	851,270.00	1,557,170.00	82.92	2	8	-6
Appalachian Power Company (WV)	822,487.00	1,463,566.00	77.94	1	3	-2
Dominion North Carolina Power	1,478,753.00	1,677,110.00	13.41	10	11	-1
Dominion Virginia Power	1,187,012.00	1,609,085.35	35.56	6	9	-3
DUKE Energy Carolinas (NC)	1,275,938.00	1,490,513.90	16.82	7	4	3
DUKE Energy Carolinas (SC)	1,105,786.00	1,492,016.91	34.93	5	5	0
Entergy Mississippi, Inc	1,713,124.00	1,369,426.00	-20.06	16	2	14
FP&L Company	2,321,185.00	1,156,448.15	-50.18	19	1	18
Georgia Power	1,538,454.00	1,959,097.11	27.34	13	16	-5
Gulf Power	1,611,214.00	2,292,363.00	42.28	14	20	-6
Mississippi Power	1,638,836.00	2,098,049.00	28.02	15	18	-3
Duke Energy Progress, Inc. (NC)	1,610,500.00	1,734,016.00	7.67	13	14	-1
Duke Energy Progress, Inc. (SC)	1,573,675.00	1,509,172.00	-4.10	12	7	5
Duke Progress Energy Florida, Inc.	2,104,110.00	1,915,534.81	-8.96	18	15	3
SCE&G	1,413,950.00	2,138,275.00	51.23	9	19	-10
Tampa Electric Company	2,092,056.00	1,993,364.05	-4.72	17	17	0

**PEER GROUP  
Typical Bill Comparison  
Industrial Customers**

		1,701,514.7				
Kentucky Utilities (d/b/a ODP)	-	1		-	12	
	1,010,396.0	1,721,012.9				
Louisville Gas & Electric	0	3	70.33	3	13	-10
	1,087,454.0	1,504,313.6				
Kentucky Utilities (KY)	0	3	38.33	4	6	-2
	1,236,657.0	1,563,478.0				
Average For East South Central	0	0	26.43			
	1,620,448.0	1,949,282.0				
Average For South Atlantic	0	0	20.29			
	1,842,062.0	2,038,221.0				
USA Average	0	0	10.65			