COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

**Reports to the Governor of the Commonwealth of Virginia,
the Chairman of the Senate Committee on Commerce and Labor,
the Chairman of the House Committee on Commerce and Labor,
and the Commission on Electric Utility Regulation
of the Virginia General Assembly**

COMBINED REPORTS

INCLUDING:

Status Report: Implementation of the Virginia Electric Utility Regulation Act
Pursuant to § 56-596 B of the Code of Virginia

Report on Distributed Solar Generation
**Pursuant to Chapter 771 of the 2011 Virginia Acts of Assembly
and Chapter 382 of the 2013 Virginia Acts of Assembly**

**Report Assessing the Updated Integrated Resource Plans of
Investor-owned Incumbent Electric Utilities**
Pursuant to Chapter 6 of the 2015 Virginia Acts of Assembly

September 1, 2017

MARK C. CHRISTIE
COMMISSIONER

JAMES C. DIMITRI
COMMISSIONER

JUDITH WILLIAMS JAGDMANN
COMMISSIONER

COMMONWEALTH OF VIRGINIA

JOEL H. PECK
CLERK OF THE COMMISSION
P.O. BOX 1197
RICHMOND, VIRGINIA 23218-1197

STATE CORPORATION COMMISSION

September 1, 2017

The Honorable Terence R. McAuliffe
Governor, Commonwealth of Virginia

The Honorable Frank W. Wagner
Chairman, Senate Committee on Commerce and Labor

The Honorable Terry G. Kilgore
Chairman, House Committee on Commerce and Labor

The Honorable Thomas K. Norment, Jr.
Member, Senate of Virginia
Chairman, Commission on Electric Utility Regulation

Members of the Commission on Electric Utility Regulation

Madam and Sirs:

Please find enclosed the Combined Reports of the State Corporation Commission, including the following:

- The Report on the Status of the Implementation of the Virginia Electric Utility Regulation Act, Chapter 23 of Title 56 of the Code of Virginia ("Code"), as required by § 56-596 B of the Code.

- The Report on Distributed Solar Generation as directed by Chapter 771 of the 2011 Virginia Acts of Assembly and Chapter 382 of the 2013 Virginia Acts of Assembly, and

- The Report Assessing the Updated Integrated Resource Plans of Investor-owned Incumbent Electric Utilities pursuant to Chapter 6 of the 2015 Virginia Acts of Assembly.

Please let us know if we may be of further assistance.

Respectfully submitted,

Judith Williams Jagdmann
Chairman

Mark C. Christie
Commissioner

James C. Dimitri
Commissioner

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GLOSSARY OF TERMS

APCo	Appalachian Power Company
Chapter 6	Chapter 6 of the 2015 Virginia Acts of Assembly
Chapter 382	Chapter 382 of the 2013 Virginia Acts of Assembly
Chapter 771	Chapter 771 of the 2011 Virginia Acts of Assembly
Chapter 803	Chapter 803 of the 2017 Virginia Acts of Assembly
Code	Code of Virginia
COL	Combined Operating License
Commission	State Corporation Commission
CPCN	Certificate of Public Convenience and Necessity
CPP	Final Rule under § 111(d) of the Federal Clean Air Act or Clean Power Plan
CSP	Competitive Service Provider
D.C. Circuit	U.S. Circuit Court of Appeals for the District of Columbia
DEV	Virginia Electric and Power Company d/b/a Dominion Energy Virginia[1]
DG	Distributed Generation
DOE	U.S. Department of Energy
Dominion Energy Virginia	Virginia Electric and Power Company d/b/a Dominion Energy Virginia
DSM	Demand Side Management
EEI	Edison Electric Institute
EIPC	Eastern Interconnection Planning Collaborative
EISPC	Eastern Interconnection States Planning Council
EM&V	Evaluation, Measurement and Verification
EPA	U.S. Environmental Protection Agency
FERC	Federal Energy Regulatory Commission
Final Rule	Final Rule under § 111(d) of the Federal Clean Air Act
General Assembly	Virginia General Assembly
HVAC	Heating, Ventilation and Air Conditioning
IOU	Investor-owned Electric 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
LMP	Locational Marginal Prices
MW	Megawatt
MWh	Megawatt-hour
NARUC	National Association of Regulatory Utility Commissioners
NEM Rules	Commission Regulations Governing Net Energy Metering, 20 VAC 5-315-10 *et seq*.
NOVEC	Northern Virginia Electric Cooperative
NRC	U.S. Nuclear Regulatory Commission
ODEC	Old Dominion Electric Cooperative
Partnership Program	Solar Partnership Program
PJM	PJM Interconnection, LLC
PPA	Purchased Power Agreement
PSA	Public Service Announcement
Purchase Program	Solar Purchase Program
RAC	Rate Adjustment Clause
REC	Rappahannock Electric Cooperative
RE Credits	Renewable Energy Credits
Regulation Act	Virginia Electric Utility Regulation Act, codified at Code §§ 56-576 through 56-596
Restructuring Act	Virginia Electric Utility Restructuring Act, 1999 Va. Acts ch. 411

[1] Effective May 12, 2017, Virginia Electric and Power Company changed its "doing business as" name from "Dominion Virginia Power" to "Dominion Energy Virginia."

RG Pilot	Renewable Generation Pilot Program
ROE	Return on Equity
RPM	Reliability Pricing Model
RPS	Renewable Energy Portfolio Standard
RTE	Regional Transmission Entity
RTEP	Regional Transmission Expansion Plan
Staff	State Corporation Commission Staff
SUP	DEV Strategic distribution line Undergrounding Program
Supreme Court	U.S. Supreme Court
Third Enactment Clause	Third Enactment Clause of Chapters 888 and 933 of the 2007 Virginia Acts of Assembly
VES	Virginia Energy Sense, a State Corporation Commission consumer education program

EXECUTIVE SUMMARY

This document contains the combined reports of the Virginia State Corporation Commission pursuant to the following legislative directives:

- Section 56-596 B of the Code of Virginia directs the State Corporation Commission ("Commission") to provide an update, on or before September 1 of each year, concerning 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.

- Chapter 771 of the 2011 Virginia Acts of Assembly directs the Commission to consider for approval petitions filed by a utility to construct and operate distributed solar generation facilities and to offer special tariffs to facilitate customer-owned distributed solar generation. It also requires the Commission to report annually on any demonstration programs approved pursuant thereto.

- Pursuant to Chapter 382 of the 2013 Virginia Acts of Assembly and Chapter 803 of the 2017 Virginia Acts of Assembly, the Commission currently conducts renewable energy pilot programs for third-party power purchase agreements within the certificated service territories of Virginia Electric and Power Company d/b/a Dominion Energy Virginia ("Dominion Energy Virginia") and Appalachian Power Company.[2] Under the pilot programs, a person who owns or operates a solar-powered or wind-powered electric generation facility that is located on premises owned or leased by an eligible customer-generator may sell the electricity generated from such facility exclusively to such eligible customer-generator under a third-party power purchase agreement.

- In accordance with Chapter 6 of the 2015 Virginia Acts of Assembly, on or before December 1 of each year the Commission is to report on its assessments of integrated resource plans filed annually by investor-owned electric utilities and the impact upon electric rates in Virginia of the U.S. Environmental Protection Agency's Final Rule under § 111(d) of the Federal Clean Air Act.

For reference, information concerning distributed solar generation and third-party power purchase agreements for renewable solar and wind generation may be found on pages 39-46 of this annual report. The Commission's assessment of investor-owned electric utility integrated resource plans is located on pages 47-54 of this report. The remainder of the report is devoted to a discussion of the implementation of the Virginia Electric Utility Regulation Act.

[2] The Commission's guidelines for implementing these pilot programs may be found at: http://www.scc.virginia.gov/pur/ppa/guide_clean.pdf.

Highlights of these updates since September 1, 2016, include the following:

- On May 1 and June 30, 2017, Dominion Energy Virginia provided analyses of its combined generation and distribution base rate financial results for calendar year 2016 reflecting an earned return on common equity for calendar year 2016 of 12.87%. The earned return on equity of 12.87% exceeds the 9.60% return on equity approved by the Commission for Dominion Energy Virginia's rate adjustment clauses during 2016 by 3.27 percentage points, or approximately $251.9 million in revenues. The earned return on equity of 12.87% also exceeds the 10.00% return on equity approved by the Commission in Dominion Energy Virginia's last biennial review in 2013 by 2.87 percentage points, or approximately $221.1 million in revenues.

- On May 31, 2017, Appalachian Power Company provided an analysis of its base rate financial results for calendar year 2016 reflecting an earned return on common equity for calendar year 2016 of 11.09%. The earned return on equity of 11.09% exceeds the 9.40% return on equity most recently approved by the Commission for Appalachian Power Company's rate adjustment clauses by 1.69 percentage points, or approximately $27.98 million of revenues. The earned return on equity of 11.09% also exceeds the 9.70% return on equity approved by the Commission in Appalachian Power Company's most recent biennial review in 2014 by 1.39 percentage points, or approximately $22.66 million of revenues.

- In 2016 Appalachian Power Company filed its application pursuant to § 56-585.1:1 of the Code of Virginia for a Commission determination of a fair return on equity to be applied to rate adjustment clauses approved under §§ 56-585.1 A 5 and A 6 of the Code of Virginia. The Commission awarded a return on equity of 9.40%.

- Dominion Energy Virginia filed its application pursuant to § 56-585.1:1 of the Code of Virginia for a Commission determination of a fair return on equity to be applied to rate adjustment clauses approved under §§ 56-585.1 A 5 and A 6 of the Code of Virginia. A hearing is scheduled for September 2017.

- Rappahannock Electric Cooperative filed an application to increase its electric rates and charges by approximately $22 million for bills rendered on and after January 1, 2018, representing an overall increase of 6.2%. The case is pending before the Commission.

- The Commission approved certificates of public convenience and necessity for several new generating facilities, including Dominion Energy Virginia's 20 megawatt Remington Solar Facility in Fauquier County, Dominion Energy Virginia's 17.6 megawatt solar facility on the Naval Air Station Oceana in Virginia Beach, and C4GT, LLC's 1,060 megawatt natural gas combined cycle electric generating facility in Charles City County.

- The Commission approved interim or final fuel factor increases for customers of Dominion Energy Virginia and Kentucky Utilities Company d/b/a Old Dominion Power Company.

- The Commission continues to follow developments 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 Dominion Energy Virginia, Appalachian Power Company, and Kentucky Utilities Company d/b/a Old Dominion Power Company, all of which are currently under review. These plans generally indicate that the companies believe compliance with the Final Rule under § 111 (d) of the federal Clean Air Act can be achieved and that the impacts on generating unit operations and customer rates will vary significantly depending on how the Final Rule is implemented in Virginia and surrounding regions.

- Dominion Energy Virginia, Appalachian Power Company, and some Virginia electric cooperatives continue to offer demand-side management and energy efficiency programs.

- Dominion Energy Virginia 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's consumer education program, *Virginia Energy Sense*, continues to enhance program features to stress the value of energy conservation and efficiency. *Virginia Energy Sense* received the U.S. Environmental Protection Agency's ENERGY STAR® Excellence Award in ENERGY STAR Promotion for its outstanding efforts to promote energy efficiency in April 2017.

- Dominion Energy Virginia's and Appalachian Power Company's electricity rates for 2016-2017 appear to be competitive with their peer utilities, though pending rate requests could impact the competitiveness of electric rates in the future.

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"). Virginia's electric industry, for which the Commission regulates the rates and services to customers, is comprised of three investor-owned utilities ("IOU") and 13 member-owned electric cooperatives.[3] The IOUs include:

- Virginia Electric and Power Company d/b/a Dominion Energy Virginia ("DEV" or "Dominion Energy Virginia"), a subsidiary of Dominion Energy, 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 electric cooperatives are:

- Central Virginia Electric Cooperative;
- Craig-Botetourt Electric Cooperative;
- Northern Virginia Electric Cooperative ("NOVEC");
- 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 ("REC")
- Shenandoah Valley Electric Cooperative; and
- Southside Electric Cooperative

[3] Non-jurisdictional utilities, such as municipal electric utilities, also provide service in Virginia.

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

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

- approximately 66.9% are served by DEV;
- approximately 14.5% are served by APCo;
- approximately 0.8% are served by KU/ODP; and
- approximately 17.8% are served by the distribution cooperatives.

DEV, 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 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"). Generally, under Chapter 10 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 ("Restructuring Act")[4] which, among other things, established a schedule for a 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 the Restructuring Act.[5]

In 2007, the General Assembly enacted broad changes to the Restructuring Act. These changes became known as the Virginia Electric Utility Regulation Act ("Regulation Act").[6] Among other things, this law set up a process by which the rates of DEV and APCo would be subject to biennial reviews and provided for recovery from customers of certain costs plus an applicable profit margin, or return on equity ("ROE"), via rate adjustment clauses ("RAC").[7] 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 consumer education program. Presently, electric companies in Virginia generally

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[4] 1999 Va. Acts ch. 411.
[5] 2003 Va. Acts. ch. 719.
[6] 2007 Va. Acts ch. 933. This law amended and reenacted §§ 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; amended the Code by adding sections numbered 56-585.1, 56-585.2, and 56-585.3; and repealed §§ 56-581.1 and 56-583 of the Code relating to the regulation of electric utility service.
[7] 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."

recover the cost of providing service, plus a reasonable return, through base rates, fuel charges and RACs.[8]

Reporting Requirements

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

Chapter 771 of the 2011 Virginia Acts of Assembly ("Chapter 771") directs the Commission to consider for approval and report on petitions filed by a utility to construct and operate distributed solar generation facilities and to offer special tariffs to facilitate customer-owned distributed solar generation.

Additionally, this report discusses the Third-Party Power Purchase Agreement ("PPA") Pilot Programs that the Commission conducts pursuant to Chapter 382 of the 2013 Virginia Acts of Assembly ("Chapter 382")[9] and Chapter 803 of the 2017 Virginia Acts of Assembly ("Chapter 803").[10]

Further, in accordance with Chapter 6 of the 2015 Virginia Acts of Assembly ("Chapter 6") the Commission outlines its assessments of integrated resource plans ("IRP") filed annually by IOUs and the impact of the U.S. Environmental Protection Agency's ("EPA") Final Rule under § 111 (d) of the Federal Clean Air Act ("Final Rule").

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[8] Subsequent amendments to the Regulation Act have suspended the biennial reviews for DEV and APCo. *See* 2015 Va. Acts ch. 6.

[9] *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. 405, Order Establishing Guidelines (Nov. 14, 2013).

[10] *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, Doc. Con. Cen. No. 170640178, Order Updating Guidelines (June 29, 2017).

DEV, APCo, and ODP/KU filed IRPs on May 1, 2017. The IRPs indicate that the companies believe compliance with the Final Rule can be achieved and that the impacts on generating unit operations and customer rates will vary significantly depending on how the Final Rule is implemented in Virginia and the surrounding region.

This report also 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 pursuant to § 56-592 of the Code. The report also includes information regarding activities at PJM and an analysis of the competitiveness of electric energy prices of Virginia utilities.

II.
FINANCIAL REVIEWS AND RELATED CASES

In 2015, the General Assembly passed amendments to the Regulation Act. These amendments, among other things, created a Transitional Rate Period during which base rate reviews, known as biennial reviews, are suspended for APCo (until 2020) and DEV (until 2022).[11] During the interim in which biennial reviews are suspended, the Commission is required to hold company-specific proceedings periodically to determine the fair ROE to be applied to that Company's RACs approved pursuant to Code §§ 56-585.1 A 5 and A 6.

Financial Review of DEV

DEV 2016 Base Rate Financial Results

On May 1 and June 30, 2017, DEV responded to requests from Commission Staff pursuant to § 56-36 of the Code and provided certain analyses of its combined generation and

[11] 2015 Va. Acts ch. 6.

distribution base rate financial results for calendar year 2016 on a regulatory accounting basis. Calendar year 2016 represents the second year of DEV's Transitional Rate Period, which extends from January 1, 2015, through December 31, 2019, pursuant to § 56-585.1:1 A of the Code.[12]

DEV's analysis reflects a combined base rate generation and distribution earned ROE for calendar year 2016 of 12.87%[13] on a regulatory accounting basis. Separately, the 2016 generation and distribution earned ROEs were 15.89% and 9.23%, respectively. The combined generation and distribution earned ROE of 12.87% exceeds the 9.60% ROE approved by the Commission for DEV's RACs during 2016[14] by 3.27 percentage points, or approximately $251.9 million in revenues, and exceeds the10.00% ROE approved by the Commission in DEV's last biennial review[15] by 2.87%, or approximately $221.1 million in revenues.[16]

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[12] On July 5, 2016, DEV provided similar information for calendar year 2015, the first year of the Transitional Rate Period.

[13] A 0.01 percentage point of ROE is worth approximately $771,000 in combined generation and distribution revenues annually.

[14] The Commission approved this ROE for multiple DEV RACs. *See Application of Virginia Electric and Power Company, For revision of 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); *Application of Virginia Electric and Power Company, For revision of rate adjustment clause: Rider R, Bear Garden Generating Station For the rate year commencing April 1, 2016,* Case No. PUE-2016-00059, 2016 S.C.C. Ann. Rept. 245, Final Order (Feb. 29, 2016); *Application of Virginia Electric and Power Company, For revision of rate adjustment clause: Rider S, Virginia City Hybrid Energy Center*, Case No. PUE-2016-00060, 2016 S.C.C. Ann. Rept. 250 (Feb. 29, 2016); *Application of Virginia Electric and Power Company, For revision of rate adjustment clause: Rider W, Warren County Power Station*, Case No. PUE-2016-00061, 2016 S.C.C. Ann. Rept. 255, Final Order (Feb. 29, 2016); *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, 2016 S.C.C. Ann. Rept. 264, Final Order (Mar. 29, 2016); and *Application of Virginia Electric and Power Company, For approval and certification of 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-2016-00104, 2016 S.C.C. Ann. Rept. 295, Final Order (June 30, 2016).

[15] The Commission approved this ROE in Case No. PUE-2013-00020 to be applicable to the Company's base rates during calendar years 2013 and 2014 and to be applicable to DEV's RACs effective November 30, 2013. *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, 2013 S.C.C. Ann. Rept. 371, Final Order (Nov. 26, 2013).

[16] The Commission approved this ROE in Case No. PUE-2013-00020 to be applicable to DEV's base rates during calendar years 2013 and 2014 and to be applicable to DEV's RACs pursuant to § 56-585.1 A 5 and A 6 of the Code effective November 30, 2013.

For regulatory accounting purposes during 2016, DEV expensed as period costs approximately $173.8 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 significantly impacted DEV's 2016 base rate financial results, reducing DEV's Virginia jurisdictional combined generation and distribution base rate earned ROE by approximately 2.26 percentage points. In other words, had these expenses not been recognized as period costs in 2016, the combined generation and distribution earned ROE reported by DEV instead would have been approximately 15.13%, exceeding the 9.60% ROE approved by the Commission during 2016 for DEV's RACs by 5.53 percentage points, or $426.3 million in revenues, and exceeding the 10.00% ROE approved by the Commission in DEV's last biennial review proceeding by 5.13 percentage points, or $395.5 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. DEV stated that it did not record any costs during 2016 related to natural disasters or implementation of § 111 (d) of the Clean Air Act. DEV did record costs during 2016 related to two severe weather events: (1) the Father's Day Storm on June 16, 2016; and (2) Hurricane Matthew on October 8, 2016. DEV incurred $31.3 million of costs for these two storms on a Virginia jurisdictional basis, all of which was included in DEV's base rate cost of service.

DEV's 2015 and 2016 Combined Base Rate Financial Results

As noted above, Commission Staff requested information on DEV's 2015 base rate financial results last year. Over the 2015 and 2016 period, DEV's analysis indicates that it earned a combined base rate generation and distribution ROE of 11.94%, on a regulatory

accounting basis. Below is a chart detailing the ROEs presented by DEV for calendar years 2015 and 2016 as well as the ROE for the combined period.

Dominion Energy Virginia's Return on Equity

Year	Generation %	Distribution %	Total %
2015	10.03	12.20	11.00
2016	15.89	9.23	12.87
Combined	12.96	10.69	11.94

The combined generation and distribution earned ROE of 11.94% is above the 9.60% ROE approved by the Commission for DEV's RACs during 2016 by 2.34 percentage points, or $358.2 million in revenues, and is above the 10.00% ROE approved by the Commission in DEV's last biennial review by 1.94 percentage points, or $297.0 million in revenues.[17]

DEV's 2017 ROE Proceeding

On March 31, 2017, DEV filed an application[18] pursuant to § 56-585.1:1 of the Code requesting that an ROE of 10.50% be applied to its RACs previously approved pursuant to Code § 56-585.1 A 5 and A 6. The ROE would be applied prospectively as of the date of the Commission's final order in the case. This matter is pending before the Commission, and a hearing is scheduled for September 6, 2017. By law, the Commission must enter a final order in this case by November 30, 2017.

[17] 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 DEV's earnings that are more than 70 basis points (0.7 percentage points) above the fair ROE determined by the Commission. Based on an ROE of 9.60%, such credit for the 2015 and 2016 combined period would be approximately $175.9 million. Based on an ROE of 10.00%, such credit for the 2015 and 2016 combined period would be approximately $133.0 million.

[18] *Application of Virginia Electric and Power Company, For the determination of the fair rate of return on common equity to be applied to its rate adjustment clauses*, Case No. PUR-2017-00038, Doc. Con. Cen. No. 170430243, Order for Notice and Hearing (Apr. 21, 2017).

Financial Review of APCo

APCo's 2016 Base Rate Reported Results

On May 31, 2017, APCo, in response to a request from Commission Staff pursuant to § 56-36 of the Code, provided certain analyses of its combined generation and distribution base rate financial results for calendar year 2016 on a regulatory accounting basis. Calendar year 2016 represents the third year of APCo's Transitional Rate Period, which extends from January 1, 2014, through December 31, 2017, pursuant to § 56-585.1:1 A of the Code.

APCo's analysis reflects a combined base rate generation and distribution earned ROE for calendar year 2016 of 11.09%[19], on a regulatory accounting basis. The 2016 separate generation and distribution earned ROEs presented by APCo were 15.75% and 4.89%, respectively.[20] The combined generation and distribution earned ROE of 11.09% is above the ROE most recently approved by the Commission[21] for APCo's RACs of 9.40%[22] by 1.69 percentage points, or approximately $27.98 million of revenues, and is above the 9.70% ROE approved by the Commission in APCo's most recent biennial review by 1.39 percentage points, or approximately $22.66 million of revenues.[23]

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[19] A 0.01 percentage point of ROE is worth approximately $177,000 in revenues.

[20] A two-year combined base rate financial review was included in last year's report for APCo and also will be a part of the next year's report.

[21] APCo's 2016 ROE of 11.09% also exceeds the most recent ROE set by the Commission in a biennial review for APCo of 9.70%. The Commission approved this ROE in Case No. PUE-2014-00026 to be applicable to APCo's base rates during calendar years 2014 and 2015. *See Application of Appalachian Power Company, For a 2014 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-2014-00026, 2014 S.C.C. Ann. Rept. 392, Final Order (Nov. 26, 2014).

[22] The Commission approved this ROE in Case No. PUE-2016-00038. *See 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, 2016 S.C.C. Ann. Rept. 393, Final Order (Oct. 6, 2016).

[23] 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 (0.7 percentage points) above the fair ROE determined by the Commission.

APCo's analysis did not include all of the regulatory accounting adjustments previously approved by the Commission in APCo's 2014 Biennial Review (for calendar years 2012 and 2013). While there is no quantification of the 2016 effect of omitted adjustments on regulatory earnings, the effect of these omitted adjustments in APCo's 2014 biennial review increased regulatory earnings by approximately 0.75 percentage points ($11.7 million) for 2012 and 1.45 percentage points ($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 $4.54 million of expense during 2016 related to severe weather events. Further, APCo stated that it did not record any costs during 2016 related to natural disasters or the implementation of § 111 (d) of the Clean Air Act.

Rappahannock Electric Cooperative's General Rate Case

On May 23, 2017, REC filed an application to increase its electric rates and charges by approximately $22 million for bills rendered on and after January 1, 2018. This represents an overall increase of 6.2%. The case is pending before the Commission.[24]

III.
GENERATION

Sources of Virginia's Electricity

Virginia's electric utilities supply their customers with power from the utilities' facilities, which are located both inside and outside of Virginia, and from energy purchases from other entities. 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

[24] *Application of Rappahannock Electric Cooperative, For general rate relief*, Case No. PUR-2017-00044, Doc. Con. Cen. No. 170620313, Order for Notice and Hearing (June 16, 2017).

those facilities are located outside of Virginia's boundaries. Power from jurisdictional plants that may be located physically 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, DEV's Mt. Storm facility, while physically located in West Virginia, is dispatched as part of DEV's fleet; is part of DEV'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 instance, DEV and APCo purchase energy from the PJM market. Such purchases often are made because it is cheaper for DEV or APCo to purchase the energy at certain times than to produce it at company-owned facilities. Under this scenario, the IOU's ratepayers benefit from these utilities 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 the construction of several new facilities, including:

- DEV's 20 megawatt ("MW") Remington Solar Facility[25] in Fauquier County,
- DEV's 17.6 MW solar facility on the Naval Air Station Oceana[26] in Virginia Beach, and

[25] *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. 170210008, Final Order (Feb. 1, 2017).

[26] *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. 170330094, Final Order (Mar. 27, 2017).

- C4GT, LLC's[27] 1,060 MW natural gas combined cycle electric generating facility in Charles City County.

As of August 1, 2017, the Commission also has one application pending for a CPCN related to a 1,650 MW combined cycle generating facility for Chickahominy Power, LLC[28] in Charles City County.

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, 2016.

DEV and APCo

Since 2009, DEV has sought and received approval to construct, own and operate one coal plant, four natural gas plants, and five utility scale solar facilities and has sought approval to convert three coal plants to operate on biomass fuels.

Since 2013, APCo has sought and received authority to convert one coal plant to run on natural gas and has completed construction on a natural gas plant located in Dresden, Ohio.

The costs associated with DEV's generation facilities and APCo's Dresden plant are recovered through RACs, which are summarized in the following chart:

[27] *Application of C4GT, LLC, For certification of an electric generating facility in Charles City County pursuant to §§ 56-46.1 and 56-580 D of the Code of Virginia*, Case No. PUE-2016-00104, Doc. Con. Cen. No. 170510181, Final Order (May 3, 2017).

[28] *Application of Chickahominy Power, LLC, For a Certificate of Public Convenience and Necessity to construct and operate an electric generating facility in Charles City County pursuant to § 56-580 D of the Code of Virginia*, Case No. PUR-2017-00033, Doc. Con. Cen. No. 170320034, Application (Mar. 31, 2017).

Company	Project	RAC ID	Case Number	Co. Request	Status
DEV	Bear Garden combined cycle facility; Buckingham County, VA	Rider R	PUE-2016-00061	$75,221,000	Final Order issued 2/27/17 approving recovery of $72,058,000
			PUR-2017-00072	$73,742,000	Application filed 6/1/17; hearing scheduled for 11/29/17
DEV	Conversions of AltaVista, Southampton and Hopewell facilities to biomass	Rider B	PUE-2016-00059	$28,483,000	Final Order issued 2/27/17 approving recovery of $27,234,000
			PUR-2017-00070	$38,920,685	Application filed 6/21/17; hearing scheduled for 1/23/18
DEV	Combined cycle power station in Greensville County, VA	Rider GV	PUE-2016-00060	$89,161,000	Final Order issued 2/27/17 approving recovery of $81,798,000
			PUR-2017-00071	$104,009,000	Application filed 6/1/17; hearing scheduled for 1/10/18
DEV	Virginia City Hybrid Energy Center, coal facility in Wise County, VA	Rider S	PUE-2016-00062	$253,921,000	Final Order issued 2/27/17 approving recovery of $242,896,000
			PUR-2017-00073	$244,981,000	Application filed 6/1/17; hearing scheduled for 12/6/17
DEV	Combined cycle power station in Warren County, VA	Rider W	PUE-2016-00063	$126,463,000	Final Order issued 2/27/17 approving recovery of $120,669,000
			PUR-2017-00074	$125,791,000	Application filed 6/1/17; hearing scheduled for 11/8/17
DEV	Combined cycle power station in Brunswick County, VA	Rider BW	PUE-2016-00112	$133,792,000	Final Order issued 6/30/17 approving recovery of $127,120,000; next application due 11/30/17
DEV	Scott solar facility in Powhatan County, VA; Whitehouse solar facility in Louisa County, VA; Woodland solar facility in Isle of Wight County, VA	Rider US-2	PUE-2016-00113	$10,276,000	Final Order issued 6/30/17 approving recovery of $9,580,846; next application due 10/3/17
APCo	Combined cycle power station in Dresden, Ohio	Rider G	PUE-2016-00024	$32,223,538	Final Order issued 12/30/16 approving recovery of $32,223,538; next application due on or after 3/31/18

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 associated with constructing and operating the generation facilities. Ratepayers in Virginia have no set obligations to pay for these facilities, nor are RACs for these facilities available by law.

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.[29]

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.[30] This facility commenced commercial operation on May 18, 2017.

Generation Retirements

APCo and DEV formally announced plans to retire certain aging coal generation facilities 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, DEV

[29] *Application of Doswell Limited Partnership, For Approval and Certification of a 340 MW Electric Generation Facility in Hanover County pursuant to §§ 56-46.1 and 56-580 D of the Code of Virginia*, Case No. PUE-2015-00127, 2016 S.C.C. Ann. Rept. 319, Final Order (June 1, 2016).

[30] *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, 2014 S.C.C. Ann. Rept. 309, Final Order (May 13, 2014).

announced its plan to retire 323 MW of coal capacity at its Yorktown Power Station in April 2017.

An emergency order by the U.S. Department of Energy declared the Yorktown units operational to maintain power during "critical situations" through September 14, 2017. Both DEV and PJM affirmed that such approval is temporary and that the plants only would be used on a limited basis in the event of an impending power shortage in the region. PJM has the option to request that the U.S. Department of Energy renew its order.

APCo converted a 474 MW coal-fueled facility to natural gas use at the Clinch River Power Station during the spring of 2016. APCo officially retired coal-fueled generation facilities at its Glen Lynn, Clinch River, Kanawha River, and Sporn Power Stations on June 1, 2015. APCo no longer has coal-fueled facilities in Virginia.

Nuclear Activity

DEV has been considering adding a third nuclear reactor at its North Anna Power Station. Before DEV 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, DEV filed an application with the NRC for a COL to build and operate a new nuclear reactor at its North Anna Power Station in Central Virginia. DEV's application underwent the certification process and was granted a COL from the NRC on May 31, 2017. DEV has not yet finalized a decision to construct a new nuclear unit at the North Anna Power Station.

DEV notified the NRC of its intent to submit 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. Likewise, DEV plans to follow a similar license renewal request process for North Anna Power Station Units 1 and 2.

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

DEV

On June 27, 2017, the Commission issued an order that established DEV's fuel factor for usage on and after July 1, 2017. The fuel factor was set at 2.383¢/kilowatt-hour ("kWh"), an increase of 0.4120¢/kWh from the prior fuel factor of 1.971¢/kWh.[32]

APCo

On August 19, 2016, APCo filed an application to continue its current fuel factor of 2.301¢/kWh for another year, which was granted by the Commission on November 3, 2016.[33]

KU/ODP

On February 17, 2017, KU/ODP filed an application proposing to increase its levelized fuel factor by 0.182¢/kWh, from 2.286¢/kWh to 2.468¢/kWh, effective for service rendered on and after April 1, 2017. On March 2, 2017, the Commission entered an order that placed the fuel

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[31] *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.").

[32] *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-2017-00058, Doc. Con. Cen. No. 170640081, Order Establishing 2017-2018 Fuel Factor (June 27, 2017).

[33] *Application of Appalachian Power Company, To continue its current fuel factor*, Case No. PUE-2015-00088, 2016 S.C.C. Ann. Rept. 274, Order (Nov. 3, 2016).

factor into effect on an interim basis effective April 1, 2017. On May 12, 2017, the Commission entered a final order in this proceeding, adjusting the interim rate to 2.449¢/kWh, effective for service rendered on or after June 1, 2017.[34]

IV.
TRANSMISSION

Transmission Line Activity

Virginia's electric utilities continue to expand their transmission facilities within the Commonwealth. In the past year, twelve transmission projects were approved and issued CPCNs by the Commission. Six transmission CPCN applications remain pending before the Commission.

One particular transmission line CPCN application that has received media attention is DEV's application for approval of the Surry-Skiffes Creek 500 kilovolt ("kV") transmission line, Skiffes Creek-Whealton 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 transmission line crossing the James River.[35] DEV's target project completion date is 20 months following issuance of a permit by the U.S. Army Corps of Engineers, which granted a provisional permit on June 12, 2017. This permit requires DEV to meet several conditions before the permit is deemed permanent, enabling the project to begin. On June 30, 2017, the Virginia Marine Resources Commission issued a permit for the project, and the Virginia

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[34] *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. PUR-2017-00024, Doc. Con. Cen. No. 170540058, Order Establishing Fuel Factor (May 12, 2017).

[35] *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-Whealton 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).

Department of Environmental Quality waived the requirement for a Section 401 Water Quality Certification for the project. On July 3, 2017, the U.S. Army Corps of Engineers issued DEV a final permit for the project. Since that time, challenges to the final permit have been filed by the National Parks Conservation Association, the National Trust for Historic Preservation, and the Association for the Preservation of Virginia Antiquities. These challenges currently are being considered by the United States District Court for the District of Columbia.[36]

Additionally, on July 11, 2017, the James City County Board of Supervisors voted to approve DEV's request for a Special Use Permit for a switching station needed for the transmission line and approved other Company requests related to the project.[37]

DEV continues to file periodic status updates with the Commission concerning the Surry-Skiffes Creek transmission line. These may be reviewed through the Commission's webpage: http://www.scc.virginia.gov/case/index.aspx, by clicking "Docket Search," then "Search Cases," and entering Case No. PUE-2012-00029 in the appropriate field.

A chart summarizing recent in-state transmission line construction activity as of August 1, 2017, follows:

[36] *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-Whealton 230 kV Transmission Line, and Skiffes Creek 500 kV-230 kV-115 kV Switching Station*, Case No. PUE-2012-00029, Doc. Con. Cen. No. 170820115, Update on Status of Certificated Project at 4-5 (Aug, 8, 2017).
[37] *Id.* at 13.

Summary of Transmission Line Case and Construction Activity in Virginia as of August 1, 2017

COMPANY/FACILITY	SIZE	LOCATION	DOCKET	C.O.D.*	STATUS
DEV Surry-Skiffes Creek-Whealton	500 kV – 7 mi 230 kV – 20 mi	Surry, James City, York, Newport News, Hampton	PUE-2012-00029	20 mths after Army Corps permit	certificate issued
DEV Remington CT- Warrenton	230 kV – 12 mi	Fauquier	PUE-2014-00025	12/2018	certificate issued
Gainesville-Wheeler-Vint Hill	230 kV – 6 mi	Prince William			
DEV Cunningham-Elmont	500 kV – 51 mi	Fluvanna, Goochland, Hanover, Henrico, Louisa	PUE-2014-00047	6/2018	certificate issued
DEV Brambleton-Mosby	500kV – 5.2 mi	Loudoun	PUE-2014-00086	6/2018	certificate issued
DEV Poland Road	230 kV – 4.0 mi	Loudoun	PUE-2015-00053	6/2018	certificate issued
DEV Yardley Ridge	230 kV – 0.4 mi	Loudoun	PUE-2015-00054	6/2018	certificate issued
DEV Greensville Co. Power Station	500 kV – 0.9 mi	Greensville	PUE-2015-00075	12/2017	certificate issued
DEV Haymarket	230 kV – 5.1 mi	Prince William, Loudoun	PUE-2015-00107	5/2018	pending
DEV Remington-Gordonsville	230 kV – 38.2 mi	Fauquier, Culpeper, Orange, Albemarle	PUE-2015-00117	6/2019	pending
DEV Cunningham-Dooms Rebuild	500 kV – 32.7 mi	Fluvanna, Albemarle, Augusta	PUE-2016-00020	6/2019	certificate issued
DEV Norris Bridge Rebuild	115 kV – 2.2 mi	Lancaster, Middlesex	PUE-2016-00021	12/2017	pending
DEV Elklick	230 kV – 0.1 mi	Fairfax County	PUE-2016-00056	12/2017	certificate issued
DEV Graham Quarry	230 kV – 0.5 mi	Fairfax County	PUE-2016-00067	12/2017	certificate issued
DEV Wilcox Wharf-Windmill Point Rebuild	500 kV – 0.99 mi	Charles City, Prince George	PUE-2016-00135	12/2017	certificate issued
DEV Idlywood Substation	230 kV	Fairfax County	PUR-2017-00002	5/2020	pending
DEV Possum Point-Smoketown Rebuild	230 kV – 8.5 mi	Prince William County	PUR-2017-00078	12/2019	pending
APCo Cloverdale Substation Expansion	138-765 kV – 3.3 mi	Botetourt County	PUE-2013-00036	12/2017	certificate issued
APCo South Lynchburg Improvements	138 kV – 9.3 mi	Campbell County	PUE-2013-00126	12/2017	certificate issued
APCo Tazewell-Bearwallow	138 kV – 7.8 mi	Tazewell County	PUE-2015-00021	12/2018	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	12/2018	pending
Delmarva Piney Grove-Wattsville	138 kV – 6.2 mi	Accomack	PUE-2015-00092	6/2018	certificate issued

*Commercial Operation Date

Transmission RACs

Under § 56-585.1 A 4 of the Code, DEV 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. While DEV applied for such a transmission RAC within the past year, APCo last applied for a transmission RAC in 2015.

On May 4, 2017, DEV filed for approval of an adjustment to its transmission RAC, designated as Rider T1, for the recovery of transmission-related costs. Specifically, DEV sought approval of a total net revenue requirement of $625,361,637 for the rate year September 1, 2017, through August 31, 2018, to be recovered through a combination of base rates and a revised Rider Tl. On July 17, 2017, the Commission issued a Final Order approving DEV's requested revenue requirement of $134,891,545 to be recovered through Rider T1.[38]

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.

On August 22, 2016, the Commission approved Phase One of DEV's Strategic Underground Program ("SUP"), designated as Rider U, as a pilot-type project, with several

[38] *Application of Virginia Electric and Power Company, For approval of a rate adjustment clause pursuant to § 56-585.1 A 4 of the Code of Virginia*, Case No. PUR-2017-00057, Doc. Con. Cen. No. 170720253, Final Order (July 17, 2017).

conditions as set forth in a Stipulation entered into between DEV 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.[39]

On December 1, 2016, DEV filed with the Commission an application for approval of a revision to Rider U. Specifically, DEV requested an annual update for cost recovery associated with Phase One and approval to recover costs associated with Phase Two of the SUP through Rider U. DEV proposed to spend up to $110 million under Phase Two of the SUP, which when combined with the Phase One investments would produce a total annual revenue requirement of $30.981 million. The Commission held hearings in this matter in June 2017, and the case is now pending.[40] By law, the Commission must issue its Final Order by September 1, 2017.

VI.
CONSERVATION, ENERGY EFFICIENCY, AND DEMAND RESPONSE

Statutory Energy Efficiency Goal

The third enactment clause of the Regulation Act ("Third Enactment Clause") 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 demand side management, conservation, energy efficiency, and load management programs, including consumer education. . . . The Commonwealth shall have a stated goal of reducing the consumption of

[39] *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, 2016 S.C.C. Ann. Rept. 305, Final Order (Aug. 22, 2016).

[40] *Application of Virginia Electric and Power Company, For revision of a rate adjustment clause: Rider U, new underground distribution facilities, for the rate year commencing September 1, 2017*, Case No. PUE-2016-00136, Doc. Con. Cen. No. 161240079, Order for Notice and Hearing (Dec. 20, 2016),

> 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. . . . [41]

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 it 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 Commission's Staff ("Staff") submitted the required report. This report may be found at the Commission's website: http://www.scc.virginia.gov/pue/conserve.aspx. Among other conclusions, the Staff 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.

DEV Programs

DSM and Energy Efficiency Programs

Since 2010, DEV has established a number of DSM programs for both residential and non-residential customers. The Commission acted on DEV's most recent application related to DSM programs on June 1, 2017, granting DEV's petition in part.[42] The following chart reflects DEV's approved DSM and energy efficiency program activity since 2010.

[41] 2007 Va. Acts ch. 933.

[42] *Petition of Virginia Electric and Power Company, For approval to implement new, and to extend existing, demand-side management programs and for approval of two updated rate adjustment clauses pursuant to § 56-585.1 A 5 of the Code of Virginia*, Case No. PUE-2016-00111, Doc. Con. Cen. No. 170610052, Final Order (June 1, 2017).

DEV DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAMS SINCE 2010

Participating Customers	Program/Measure Name	Program Description	Case/ Year Authorized	Year Ended
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 and PUE-2014-00071	Active
Commercial	Heating/Air Conditioning Upgrade Program	Provides heating, ventilation and air conditioning ("HVAC") system upgrades in exchange for a financial incentive	2010 PUE-2009-00081	2013
Commercial	Lighting Program	Provides an opportunity to retrofit existing lighting in exchange for a financial incentive	2010 PUE-2009-00081	2013
Residential	Air Conditioner Cycling Program	Allows DEV 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 and PUE-2015-00089	Active
Residential	Home Energy Check-up	Provides low-cost energy audits for single-family homes	2012 PUE-2011-00093	2017
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	2017
Residential	Heat Pump Tune-up	Provides a financial incentive to employ a contractor to tune up existing heat pumps every five years	2012 PUE-2011-00093	2017
Residential	Heat Pump Upgrade	Provides a financial incentive to install a high-efficiency heat pump exceeding federal mandates	2012 PUE-2011-00093	2017
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	2017
Non-Residential	Duct Testing and Sealing	Provides financial incentives to employ a contractor to seal ducts using program-approved methods	2012 PUE-2011-00093	2017
Non-Residential	Distributed Generation Program	Allows qualifying customers to receive a financial incentive to curtail load using customer-owned backup generation	2012 PUE-2011-00093	Active
Non-Residential	Heating & Cooling Efficiency Program	Provides incentives to implement new and upgrade existing HVAC technologies	2014 PUE-2013-00072	Active
Non-Residential	Lighting Systems and Controls Program	Provides incentives to implement more efficient lighting technologies	2014 PUE-2013-00072	Active
Non-Residential	Solar Window Film Program	Provides qualifying customers with incentives to install solar reduction window film to lower cooling bills	2014 PUE-2013-00072	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; modified PUE-2016-00111	Active
Non-Residential	Prescriptive Program	Provides incentives for the installation of a variety of energy efficiency measures	2017 PUE-2016-00111	Active

Electric Vehicle Pilot Program

Although not filed under the Regulation Act, on July 11, 2011, the Commission approved DEV's application to establish an electric vehicle pilot program.[43] At the time, DEV anticipated that as many as 86,000 electric vehicles could be in use in its service territory by 2020. DEV's pilot program offers two time-of-day pricing options to encourage off-peak charging of EVs. One tariff option, Rate Schedule EV, applies to charging the electric vehicle only and operates as a companion tariff to a customer's existing standard household service tariff. The second tariff option, Rate Schedule 1EV, applies to the customer's entire service from DEV, including the home and electric vehicle. The program is open to up to 1,500 residential customers with up to 750 participants on each experimental rate class (EV and 1EV). The electric vehicle pilot program closed to new customer enrollment on September 1, 2016, with 152 participants taking Rate Schedule EV and 445 participants taking Rate Schedule 1EV. This program has been extended through November 30, 2018, to compile and evaluate results of the program.

DEV A 5 RACs

Pursuant to § 56-585.1 A 5 of the Code, DEV 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 June 1, 2017. The Commission approved an annual revenue requirement of $27.9 million for Riders C1A and C2A for the rate year July 1, 2017, through June 30, 2018.[44]

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[43] *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).

[44] *Petition of Virginia Electric and Power Company, For approval to implement new, and to extend existing, demand-side management programs and for approval of two updated rate adjustment clauses pursuant to § 56-585.1 A 5 of the Code of Virginia*, Case No. PUE-2016-00111, Doc. Con. Cen. No. 170610052, Final Order (June 1, 2017).

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 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.[45] 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[46]:

[45] *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, 2016 S.C.C. Ann. Rept. 309, Final Order (June 17, 2016).

[46] On July 7, 2017, APCo filed a petition to extend the residential low income weatherization program and the residential direct load control program. Though currently active, these programs are scheduled to expire December 31, 2017. APCo seeks to extend these programs for three years. This case is pending before the Commission; a hearing is scheduled for December 19, 2017. *Petition of Appalachian Power Company, For approval to extend two existing demand-side management programs*, Case No. PUR-2017-00094, Doc. Con. Cen. No. 170730073, Order for Notice and Hearing (July 26, 2017).

APCO DEMAND-SIDE MANAGEMENT AND ENERGY EFFICIENCY PROGRAMS SINCE 2011

Participating Customers	Program/Rider Name	Program Description	Case/ Year Authorized	Year Ended
Non-Residential	Peak Shaving Demand Response	Incents customers to reduce energy use during periods of high demand	2011 PUE-2011-00001	2013
Non-Residential	Peak Shaving and Emergency Demand Response	Incents customers' load to be curtailed during system emergencies	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 to customers 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 to customers for energy efficiency products, such as LED lighting, dehumidifiers, refrigerators, and freezers	2015 PUE-2014-00039	Active
Commercial Industrial	Prescriptive Program	Provides incentives to customers 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 RACs

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, in December 2015 APCo filed a petition for approval of a RAC, its DR-RAC, to recover costs related to its Peak Shaving Demand Response Rider, which terminated in 2013, and its Peak Shaving and Emergency Demand Response Rider, which terminated in May 2017. APCo estimated that costs related to these riders 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.[47]

To continue recovering costs related to its five ongoing energy efficiency programs, on August 31, 2016, APCo filed a petition seeking approval to continue its EE-RAC.[48] On May 11, 2017, the Commission approved an annual revenue requirement of $4.7 million for this RAC, comprising an ongoing component of $5,567,014 and a true-up credit of $881,429 for the rate year July 1, 2017, through June 30, 2018.[49]

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[47] *Petition of Appalachian Power Company, For approval to implement two demand response programs and for approval of a rate adjustment clause pursuant to § 56-585.1 A 5 c of the Code of Virginia*, Case No. PUE-2015-00118, 2016 S.C.C. Ann. Rept. 309, Final Order (June 17, 2016).

[48] *Petition of Appalachian Power Company, For approval to implement a portfolio of energy efficiency programs and for approval of a rate adjustment clause pursuant to § 56-585.1 A 5 c of the Code of Virginia,* Case No. PUE-2014-00039, 2015 S.C.C. Ann. Rept. 215, Final Order (June 24, 2015).

[49] *Application of Appalachian Power Company, For approval to continue a rate adjustment clause, the EE-RAC, pursuant to § 56-585.1 A 5 c of the Code of Virginia,* Case No. PUE-2016-00089, Doc. Con. Cen. No. 170530280, Final Order (May 11, 2017).

Electric Cooperative Programs

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

Northern Neck Electric Cooperative	2012[50]
Prince George Electric Cooperative	2012[51]
Rappahannock Electric Cooperative	2011[52]
Southside Electric Cooperative	2013[53]

Under each such program, the member-consumer allows the electric cooperative to install a load-cycling switch device on the member-consumer's central air conditioning system allowing the electric 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, REC 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, REC 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. On October 21, 2016, the

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[50] *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).

[51] *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).

[52] *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).

[53] *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).

Commission approved a joint stipulation between the electric cooperative and Staff to calculate and file the Demand Response Rider.[54]

Evaluation, Measurement, and Verification Protocols

During the 2016 Session of the Virginia General Assembly, two identical bills, House Bill 1053 and Senate Bill 395, were passed by the General Assembly. Each of these bills requires:

> § 1. That the State Corporation Commission . . . shall evaluate the establishment of uniform protocols for measuring, verifying, validating, and reporting the impacts of energy efficiency measures implemented by investor-owned electric utilities providing retail electric utility service in the Commonwealth and the establishment of a methodology for estimating annual kilowatt savings and a formula to calculate the levelized cost of saved energy for such energy efficiency measures.

The bills instructed the Commission to receive input from interested parties and the Virginia Department of Mines, Minerals and Energy and to report its findings to the Governor and General Assembly by December 1, 2016. The Commission complied with these directives and filed its report. Upon completing its evaluation, the Commission concluded that it is appropriate to promulgate regulations related to the evaluation, measurement, and verification ("EM&V") of electricity and natural gas utility-sponsored energy efficiency programs, with the goal of developing reliable and consistent estimation of energy savings and related impacts at a reasonable cost.

Accordingly, the Commission established a docket for the purpose of considering proposed rules regarding EM&V and has provided opportunities for oral and written comments and input on the proposed rules. The Commission published in the *Virginia Register of*

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[54] *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, 2016 S.C.C. Ann. Rept. 379, Final Order (Oct. 21, 2016).

Regulations and forwarded to all known interested parties an Order for Notice and Hearing and will hold a public hearing on the matter on September 8, 2017.[55]

VII.
RENEWABLE ENERGY

Retail Access to Competitive Services

The Regulation Act, specifically § 56-577 of the Code, generally permits large customers (those whose annual electricity demand exceeds 5 MW) to purchase electric energy from licensed competitive service providers ("CSP"). Non-residential retail customers whose annual electricity demand does not exceed 5 MW may request Commission approval to aggregate their loads up to the 5 MW threshold to become qualified to purchase electric energy from a CSP. Residential retail consumers currently have the statutory right under the Regulation Act to purchase electric generation service from CSPs selling electric energy "provided 100% from renewable energy"[56] 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 CSPs and aggregators interested in participating in the retail access programs in Virginia. Currently, 75 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.

[55] *Commonwealth of Virginia, ex rel., State Corporation Commission, In the matter of adopting new rules governing the evaluation, measurement, and verification of the effects of utility-sponsored demand-side management programs*, Case No. PUR-2017-00047, Doc. Con. Cen. No. 170540139, Order for Notice and Hearing (May 16, 2017).
[56] Va. Code § 56-577 A 5.

100% Renewable Energy Tariffs

DEV 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"[57] if the incumbent electric utility serving these consumers does not offer such a product. APCo and DEV offer residential customers renewable energy tariffed products, but in the past these have not met the definition of energy "provided 100% from renewable energy."

Specifically, in 2008 the Commission approved tariffs that allow customers of DEV 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."[58] Consequently, customers in these IOUs' service territories may purchase 100% renewable energy from CSPs. To the Commission Staff's knowledge, as of August 1, 2017, one CSP is providing competitive supply service to one large customer in DEV's service territory and one 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.

On April 28, 2016, APCo filed a 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

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[57] Va. Code § 56-577 A 5.

[58] *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).

REO to satisfy the requirements of § 56-577 A 5 of the Code. This application is currently pending before the Commission.[59]

On May 9, 2017, DEV filed for approval of six renewable energy tariffs whereby existing or new non-residential customers with peak measured demands of 1,000 kilowatts or greater can voluntarily elect to purchase 100% of their energy needs from renewable energy resources, collectively designated as the CRG Rate Schedules. DEV requested the Commission approve the CRG Rate Schedules as 100% renewable energy tariffs under Code § 56-577 A 5. This case is pending before the Commission.[60]

Electric Cooperative Activity

Unlike § 56-577 A 5 of the Code, applicable to APCo and DEV, § 56-577 A 6 of the Code provides that an electric 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 credits ("RE Credits"). These tariffs originally applied to residential member-consumers

[59] *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).
[60] *Application of Virginia Electric and Power Company, For approval of 100 percent renewable energy tariffs pursuant to §§ 56-577 A 5 and 56-234 of the Code of Virginia*, Case No. PUR-2017-00060, Doc. Con. Cen. No. 170610021, Order for Notice and Hearing (June 1, 2017).

and later were extended to apply to nonresidential member-consumers as well.[61] 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 REC, who currently does not have a 100% renewable energy tariff.

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:

- RPS Goal I, applicable to 2010: 4% of electric energy sold in the base year;
- RPS Goal II, applicable to 2011-2015: an average of 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: an average of 7% of electric energy sold in the base year;
- RPS Goal III, applicable to 2022: 12% of electric energy sold in the base year;

[61] *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).

- RPS Goal IV, applicable to 2023-2024: an average of 12% of electric energy sold in the base year; and
- RPS Goal IV, applicable to 2025: 15% of electric energy sold in the base year.[62]

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.[63] APCo was granted approval to attribute an additional 120 MW renewable power purchase agreement with Bluff Point Wind Farm LLC to its RPS program in 2016.[64]

On October 28, 2016, APCo reported to the Commission that it had met RPS Goal II for 2015 through a combination of purchased power wind sources and company-owned hydro generation and that it fully expects to meet the voluntary goals for 2016 and each year thereafter.

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 power purchase agreement between APCo and a wind generation project developer. APCo proposed that the

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[62] 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.

[63] *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).

[64] *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. 170210015, Final Order (Feb. 1, 2017).

RPS-RAC be set at zero for the period April 1, 2017, through March 31, 2018. The Commission issued its Final Order on February 1, 2017, adopting a stipulation recommended by the Hearing Examiner.[65]

On June 20, 2017, APCo submitted its latest petition for approval of its RPS-RAC for the period April 1, 2018, through March 31, 2019. This proceeding is pending before the Commission; a hearing is scheduled for November 2017.[66]

DEV RPS Program

On May 18, 2010, the Commission approved DEV's application to participate in a voluntary RPS program, finding that DEV met the necessary statutory requirements.[67] On November 1, 2016, DEV reported to the Commission that it had met RPS Goal II for 2015 through a combination of company-owned hydro and biomass facilities, renewable output from non-utility generators under long-term contract with DEV, and the optimization of RE Credit purchases and sales. DEV also stated that it would meet RPS Goal II for 2016 through the above combination of resources, solar generation, and 54,789 RE Credits deemed issued by the Commission for research and development activities related to renewable or alternative energy resources. DEV has not applied to the Commission for approval of a RAC to recover costs of participation in its RPS program.

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[65] *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. 170210015, Final Order (Feb. 1, 2017).

[66] *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. PUR-2017-00065, Doc. Con. Cen. No. 170630028, Order for Notice and Hearing, (June 20, 2017).

[67] *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).

The RPS reports for APCo and DEV are available at:

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

Other Renewable Energy Activities

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

DEV

DEV-owned Facilities. Several DEV generation facilities in Virginia are now operating, or are planned to operate, as renewable energy facilities. Solar facilities in Powhatan, Louisa, and Isle of Wight Counties are operational; these facilities serve DEV's ratepayers, and their costs are recovered through Rider US-2. DEV's applications for two solar facilities in Fauquier County and Virginia Beach were approved and are under construction; the output of these facilities will be purchased by the Commonwealth of Virginia. Additionally, DEV operates several facilities with biomass fuel. The Pittsylvania, AltaVista, Hopewell, and Southampton Power Stations operate solely on biomass fuel. DEV'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.

Renewable Energy Purchase Program. DEV also provides opportunities for certain customers to purchase renewable energy on a voluntary basis. The Commission approved DEV'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.[68]

[68] *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).

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

On March 28, 2017, DEV made a compliance filing with the Commission to withdraw Rate Schedule RG. Additionally, on May 1, 2017, DEV filed with the Commission its final annual report summarizing enrollment and other activities associated with the RG Pilot and providing an overview of DEV's efforts to market the pilot. The report stated that while several DEV customers showed interest in the RG Pilot, the program concluded with no participants.

APCo

Renewable Energy Purchase Program. On April 17, 2015, APCo filed an application for approval of Experimental Rider R.G.P., which would be part of APCo's Renewable Generation Purchase Program. This voluntary program would allow non-residential customers with an aggregated load between 250 kilowatts ("kW") and 2,000 kW to purchase non-dispatchable energy generated by certain renewable facilities. Under this proposal, participating customers would continue to purchase from APCo all of their energy and capacity requirements pursuant to their standard rate schedules. They also would receive additional charges and credits associated with program participation. Following a hearing at the Commission, APCo filed a motion to withdraw the application. This motion was granted on October 6, 2016.[69]

[69] *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. 161010111 Order Dismissing Case (Oct. 6, 2016).

Electric Cooperatives

As discussed earlier, the majority of the electric distribution cooperatives in Virginia have approved tariffs supporting electric service backed 100% by RE Credits. Additionally, REC has installed a 10 kW solar photovoltaic generation system as a community solar learning project. NOVEC installed its 50 MW Energy Production Halifax County Biomass Plant near South Boston in 2013. NOVEC also distributes all of the renewable energy produced by five generators (for a total of 6.7 MW) at the Prince William County Landfill and distributes 190 MW of solar energy from the Fauquier County Livestock Exchange.

Additionally, ODEC has entered into long-term renewable PPAs to serve its member-owner cooperatives. ODEC is supplied with 30 MW of capacity, energy and RE Credits from two solar facilities in Clarke and Northampton Counties and with 313 MW from four long-term contracts with wind facilities in Pennsylvania and Maryland.

Distributed Solar Generation

As mentioned earlier, Chapter 771 directs the Commission to consider for approval petitions filed by a utility to construct and operate distributed solar generation facilities and to offer special tariffs to facilitate customer-owned distributed solar generation. Pursuant to Chapter 771, the Commission has received and approved two such applications from DEV:

(i) An application to construct and operate distributed solar generation facilities (called the Solar Partnership Program (the "Partnership Program"));[70] and

[70] *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).

(ii) An application for approval of tariffs designed to facilitate customer-owned distributed solar generation as an alternative to net metering (called the Solar Purchase Program (the "Purchase Program")).[71]

DEV Solar Partnership Program

On October 31, 2011, DEV filed an application for approval to construct and operate up to a combined total of 30 MW of company-owned solar distributed generation ("DG") facilities consisting of multiple installations at select commercial, industrial, and community locations dispersed throughout DEV'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.

The Partnership Program is a demonstration program in which DEV is authorized to construct and operate up to 30 MW of company-owned solar DG facilities under a blanket CPCN on leased commercial customer property and in community settings. This program is designed to study the impacts and assess the benefits of distributed solar photovoltaic generation on targeted distribution circuits. DEV currently is partnering with qualifying commercial, industrial, high school, and university customers with suitable facilities located in select target areas for installation of solar projects for demonstration and grid impact study purposes.

Currently, ten projects are operational and one project is under construction with completion expected by year-end 2017. These eleven projects are expected to yield approximately 9,653 kW of direct current, or about 7,653 kW of alternating current, as shown in the following table.

[71] *Application 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).

PARTNERSHIP PROGRAM PROJECT DESCRIPTIONS

Site	DEV Region	Study Type	Size (kW DC)	Size (kW AC)	Status/ In-service Date	Mount System
Canon-Gloucester	Eastern	Heavy Load	521	500	06/14/14	Roof
Old Dominion University	Eastern	Demonstration	151	125	07/03/14	Roof
Capital One	Central	Heavy Load	633	500	12/17/14	Ground
Virginia Union University	Central	Demonstration	69	50	12/31/14	Roof
Prologis Concorde Center	Northern	Heavy Load	859	746	03/31/15	Roof
Randolph-Macon College	Central	Demonstration	69	50	03/31/15	Roof
Philip Morris Park 500	Central	Light Load	2,450	2,000	03/31/16	Ground
Western Branch High School	Eastern	Heavy Load & Customer Education	1,003	806	04/25/16	Roof
Merck	Northern	Heavy Load	2,211	1,512	06/20/17	Ground
University of Virginia	Northern	Demonstration	452	381	03/03/17	Roof
Canon-Newport News	Eastern	Heavy load	1,235	1,000	3Q 2017	Roof
Expected Total			**9,653**	**7,653**		

Also under the Partnership Program, DEV installed battery storage capability under a separately funded study at the Randolph-Macon College solar DG demonstration facility to help understand how energy storage and solar energy intermittency may interact in future energy distribution. The battery study objectives focus on the effects of the battery on the distribution system and the performance metrics of the battery itself.

In addition to site development, DEV established an educational component to coincide with the installation of solar arrays on academic facilities. This initiative is designed to train local educational faculty and staff on the operation of solar powered systems in order to enable secondary and post-secondary school level instruction.

Although the early installations are now providing data, it is still early in the evaluation process. Preliminary results for a few facilities generally indicate a positive impact to circuit voltages, a reduction in energy line losses, more frequent use of voltage/VAR devices, and the need to assure proper wire sizes along with placement and control settings for such devices. Additional data indicate that the facilities have generated over 7,342 megawatt-hours ("MWh")

of energy over the past year, and recorded information appears encouraging. Such operation afforded DEV to sell 4,225 solar RE Credits into the Pennsylvania solar renewable energy credit market for $98,745 to be credited toward Partnership Program expenses. Data reflects that the operational facilities are generally producing near the rated power output and generally above 80% of forecasted energy. Total capital expenditures from inception through May 31, 2017, is approximately $24 million in relation to the $80 million cap authorized by the Commission.[72]

DEV Solar Purchase Program

On March 22, 2013, the Commission approved DEV's application and tariff to implement the Purchase Program, subject to certain requirements.[73] Pursuant to this tariff, DEV purchases up to 3 MW of energy output from customer-owned solar DG installations as an alternative to net energy metering. The 3 MW limit is divided into two categories, with 60% (1.8 MW) allocated to residential participants and the remaining 40% (1.2 MW) to non-residential participants. The Purchase Program is designed to facilitate customer-owned distributed solar generation facilities and to offer an alternative to net energy metering by permitting the purchase of 100% of the energy output, including all environmental attributes associated with RE Credits, from qualifying solar customer generators. Specifically, under this program eligible customers install and own solar DG facilities while continuing to purchase all of their electricity from DEV on their current rate schedule. The customers then sell all of their solar generation back to DEV, with the associated RE Credits, at a rate of 15 cents per kWh.

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[72] The Commission also approved DEV's filing for a pilot and experimental rate, Rider DCS, to enable customer purchases of distributed solar generation from facilities that are part of the Partnership Program. *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, 2015 S.C.C. Ann. Rept. 268, Final Order (Aug. 7, 2015). This pilot and Rider DCS have since been allowed to be withdrawn because of similarities to recent legislation directing the utilities to conduct a community solar pilot program. *See* 2017 Va. Acts ch. 580 (approved Mar. 16, 2017; effective July 1, 2017).

[73] *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).

Since launching the Purchase Program, DEV continues to receive positive customer response. As of May 31, 2017: (i) 141 installations have been completed under the Purchase Program for a combined capacity of 1,746.4 kW; (ii) an additional 17 installations totaling 275.4 kW were under construction; and (iii) 196 installations were in reserve. Approximately 916.2 kW of capacity for residential customers and approximately 337.4 kW for non-residential customers remain available under the 3 MW program. The follow chart provides additional detail concerning program participation:

PURCHASE PROGRAM PARTICIPATION

		Residential	Non-residential	Total
Reservations	Number since inception	1,028	134	1,162
	Total kW AC reserved	11,287	4,245	15,532
	Average system size kW AC	10.9	31.5	13.3
Installations in development	Total number	13	4	17
	kW in development	121.9	153.5	275.4
Meters installed/ installations completed	Total number	111	30	141
	Total kW AC completed	883.8	862.6	1,746.4
	Average size kW AC	7.96	28.75	12.38

The installations in 2016 generated 2,030,165 kWh of electricity and produced about 2,030 solar RE Credits at an average annual price per solar RE Credit of $111.41/MWh. As of May 31, 2017, the installations have generated 921,300 kWh of electricity so far this year and produced 921 RE Credits at an average price per solar RE Credit of $113.82.[74]

The solar marketplace continues to evolve with lower installation prices, new regulations affecting customer-owned solar installations, and announcements of additional solar generation

[74] On August 1, 2017, DEV submitted to Staff its fourth annual report on the Partnership Program and the Purchase Program. DEV's report provides a more detailed review of program implementation, customer interest, the selection and development of project sites, and initial data collected and associated preliminary results. It also includes initial operating information, a data collection plan to support the study objectives, and other information about installation costs as requested by the Commission. This report is available through the Commission's website, www.scc.virginia.gov/case, by clicking on "Docket Search" and searching for either Case No. PUE-2011-00117 or Case No. PUE-2012-00064.

facilities. Customer interest remains steady with growth occurring in both programs. DEV has collected preliminary data and reports that results to date show solar energy systems can produce renewable energy near the point of use to reduce the amount of electricity or electricity capacity from other sources. Further study and additional operating information is required to evaluate any long-term effects on the electric grid.

Third-party Renewable Energy PPA Pilot Programs

Pursuant to Chapter 382, the Commission has been conducting a pilot program in DEV's service territory in which a person that owns or operates a solar-powered or wind-powered electric generation facility, with a capacity between 50 kW and 1 MW that is located on the premises owned or leased by an eligible customer-generator, will be allowed to sell the electricity generated from such facility exclusively to such eligible customer-generator under a PPA. The PPA may provide third-party financing of the costs of the renewable generation facility. The pilot program limitation of 50 MW includes participation among jurisdictional and non-jurisdictional customers, and the minimum size requirement does not apply to certain non-profit entities.

Guidelines governing the pilot program, referred to as the Third-Party PPA Pilot Program, were established by the Commission[75] on November 14, 2013. These guidelines were updated by the Commission on June 29, 2017, to expand pilot participation to APCo's service territory. Specifically, nonprofit private institutions of higher education in APCo's service territory may participate up to an overall limit of 7 MW until July 1, 2022.[76] Pursuant to Chapter

[75] *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). These guidelines and posted information on participating projects are located at: https://www.scc.virginia.gov/pue/pilot.aspx.

[76] *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, Doc. Con. Cen. No. 170640178, Order Updating Guidelines (June 29, 2017).

382, the Commission must review the Third-Party PPA Pilot Program every two years to determine whether certain pilot limitations should be expanded, reduced, or continued.

Review of DEV's Program

To date, the Commission has received notices of intent from twelve facilities, mostly schools, to enter into third-party PPAs for the purchase of solar generating capacity in DEV's service territory. The total expected capacity of the generation facilities related to these facilities is approximately 1,917.06 kW. Currently, nine of these solar facilities are operational and provide 1,201.05 kW AC of power. Two facilities are expected to begin operation the last quarter of this year, and one facility withdrew from the pilot program in early 2016. The following chart provides additional detail concerning program participation:

DEV THIRD-PARTY PPA PILOT PROGRAM PARTICIPATION

Owner-Operator	Notice of Intent Date	Effective Date	Duration of PPA	Solar kW	Available Pilot kW
Richmond Solar	09/10/15	05/26/16	20 years	187.25	
Albemarle Solar	03/18/16	09/15/16	20 years	112.0	
Albemarle Solar	03/18/16	09/15/16	20 years	199.0	
Albemarle Solar	03/18/16	09/15/16	20 years	107.0	
Albemarle Solar	03/18/16	09/15/16	20 years	219.0	
Albemarle Solar	03/18/16	09/15/16	20 years	224.0	
Albemarle Solar	03/18/16	09/15/16	20 years	56.0	
Lylburn Solar	03/18/16	09/21/16	20 years	84.0	
Altenergy, Inc.	03/09/17	06/07/17	7 years	12.8	
Gordonsville Holdings, LLC	05/11/17	10/16/17	20 years	620.0	
Stone Air Solar	05/11/17	08/21/17	6 years	315.4	
TOTAL				**2,136.45**	**47,863.55**

The capacity of the facilities participating in the Third-Party PPA Pilot Program are not yet near the 50 MW limit on participation in DEV's service territory. Note that the Commission has not received any notice of intent regarding wind projects. The Commission will continue to

monitor DEV's demonstration programs and maintain its website regarding participation in the Third-Party PPA Pilot Program.

Review of APCo's Program

In accordance with Chapter 803, APCo's Third-Party PPA Pilot Program has just begun. To date, there is no participation in APCo's territory.

Additional Solar Activity

Several additional large-scale solar facilities have been approved and are operational or under construction. DEV has acquired three operational solar facilities in Powhatan, Louisa and Isle of Wight Counties totaling 56 MW. By adding 80 MW in actual operation and by constructing 37.6 MW of solar facilities in Virginia, DEV is serving large customers like Amazon, Microsoft, the Commonwealth of Virginia, and the United States Navy.

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.

In 2017, the General Assembly amended § 56-594 of the Code to allow for the interconnection of a new class of agricultural generators.[77] Pursuant to Enactment Clause 2 of these amendments, the Commission must conduct a proceeding to implement the changes to Code § 56-594. The Commission's Staff is drafting regulations to conform to the new statutory requirements. A final order in this matter will be entered by June 1, 2018.

VIII.
INTEGRATED RESOURCE PLANNING

In 2015 the General Assembly enacted legislation that, *inter alia*, amended the IRP statutes.[78] Pursuant to these amendments, each IOU must file an IRP with the Commission 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.[79]

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 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.[80]

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[77] 2017 Va. Acts ch. 565 and 581.
[78] 2015 Va. Acts ch. 6.
[79] Va. Code § 56-599.
[80] *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).

The Commission determines whether an IRP is reasonable and in the public interest on a utility-specific basis given current assumptions for possible future outcomes.

Chapter 6 of the 2015 Acts of Assembly, among other things, directs the Commission to submit a report and make recommendations to the Governor and the General Assembly on or before December 1 of each year assessing the updated IRP of the incumbent electric IOUs. Among other things, this report is to include an analysis of the amount, reliability, and type of generation facilities needed to serve Virginia native load compared to what is then available to serve such load and what may be available to serve such load in the future in view of market conditions and current and pending state and federal environmental regulations. As a part of its report, the Commission also must update its estimate of the impact on electric rates in Virginia of the implementation of carbon emission guidelines for existing electric power generation facilities that the EPA has issued pursuant to § 111(d) of the Federal Clean Air Act.[81]

Environmental Protection Agency Regulation of Carbon Dioxide

On August 3, 2015, the EPA 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.

(1) A Final Rule was 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. The EPA assigned to Virginia an average carbon emission rate of 1,047 pounds per MWh for the interim compliance period of 2022-2029 and a final rate of 934 pounds per MWh for compliance beginning in 2030. The 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 was September 2016. States had the opportunity to request an extension until September 2018.

[81] These requirements are codified at Code § 56-585.1:1 F.

(2) A proposed Federal Plan and Model Trading Rules were also issued under Section 111(d) of the Clean Air Act for the regulation of carbon dioxide emissions from certain existing facilities. The EPA would finalize and enforce a federal plan for states that decline to submit a plan to comply with the Final Rule or that have their plan disapproved by the EPA. The Model Trading Rules, which the 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 was issued under Clean Air Act Section 111(b) to establish *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 MWh annually, respectively.

The Final Rule provided states with six potential pathways for developing state implementation plans. The six potential compliance pathways include three mass-based and three rate-based alternative approaches. A rate-based approach gauges compliance on a pounds per MWh basis while a mass-based approach considers compliance on a total tons of carbon dioxide emissions basis.

On October 23, 2015, the EPA published the final Clean Power Plan ("CPP") and the proposed federal implementation plan identified above.[82] After publication, this regulation was appealed to the U.S. Circuit Court of Appeals for the District of Columbia ("D.C. Circuit"). On February 9, 2016, the U.S. Supreme Court ("Supreme Court") granted a stay of the regulation until it has been reviewed by the D.C. Circuit and either reviewed or denied review by the Supreme Court. On September 27, 2016, oral argument was held at the D.C. Circuit and is awaiting an order.

Delays resulting from the Supreme Court's stay order have increased the uncertainty of the CPP. Recent changes in the federal administration have compounded this uncertainty. President Trump issued an Executive Order on March 28, 2017, directing the administrator of the

[82] *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).

EPA to begin reviewing the CPP and to suspend, revise, or rescind those portions of final rules that unduly burden the development of domestic energy resources beyond the degree necessary to protect the public interest and otherwise comply with the law.[83]

Additionally, on May 16, 2017, Governor McAuliffe issued Executive Directive 11 instructing the Virginia Department of Environmental Quality, in coordination with the Secretary of Natural Resources, to begin the process of establishing proposed regulations by December 31, 2017, to abate, control, or limit carbon dioxide emissions from electric power facilities in the Commonwealth.[84]

The broad range of possible compliance pathways associated with the Final Rule in Virginia and other states where generating facilities serving Virginia are located makes it impossible to predict with any degree of certainty the generating unit retirements or utility rate impacts that could potentially result from the Final Rule. Pending legal challenges to the Final Rule and any upcoming changes in the federal or state administrations add even greater uncertainty regarding § 111(d) of the Federal Clean Air Act. As such, at this time the Commission cannot offer any definitive analysis on how the Final Rule will impact "the amount, reliability, and type of generation facilities needed to serve Virginia native load" or the specific impact on the rates paid by Virginia's electricity consumers. The Commission will continue to assess the Final Rule and related developments as part of an ongoing effort to better assess the ultimate implications of the Final Rule.

[83] Exec. Order No. 13783, 82 FR 16093 (2017).
[84] Exec. Directive No. 11 (2017), available at: http://governor.virginia.gov/media/9155/ed-11-reducing-carbon-dioxide-emissions-from-electric-power-facilities-and-growing-virginias-clean-energy-economy.pdf.

2015 Integrated Resource Plans

The 2015 IRPs were filed prior to the EPA's issuance of the Final Rule and reflected requirements associated only with the EPA's then proposed rules. As such, the 2015 resource plans included in those filings were not optimized for compliance with the Final Rule. Accordingly, the Commission was unable to conduct any meaningful analysis of how the Final Rule would impact "the amount, reliability, and type of generation facilities needed to serve Virginia native load" based on the information contained in those filings.

The Commission's Final Orders in the 2015 proceedings generally discussed the uncertainties associated with implementation of the Final Rule and set forth additional requirements for more detailed information regarding various Final Rule implementation options to be included in the 2016 IRP filings.85 For example, the Commission's Final Order in APCo's 2015 IRP required that, in its next IRP, APCo should include

> multiple plans that are each compliant with the Clean Power Plan under both a mass-based approach and an intensity-based approach . . .; provide a detailed analysis of the impact of each plan in terms of all costs, including, but not limited to, capital, programmatic, and financing; provide the impact of each plan on the electricity rates paid by APCo's customers; and identify whether any aspect of any plan would require changes to existing Virginia law.[86]

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[85] *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-2015-00035, 2015 S.C.C. Ann. Rept., Final Order (Dec. 30, 2015)*; Commonwealth of Virginia, ex rel., State Corporation Commission, In re: Appalachian Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597et seq.*, Case No. PUE-2015-00036, 2016 S.C.C. Ann. Rept. 219, Final Order (Feb. 1, 2016) *("APCo 2015 IRP"); Commonwealth of Virginia, ex rel., State Corporation Commission, In re: Kentucky Utilities Company d/b/a Old Dominion Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq.,* Case No. PUE-2015-00037, 2016 S.C.C. Ann. Rept. 219, Final Order (Mar. 14, 2016).

[86] *APCo 2015 IRP* at 217.

2016 Integrated Resource Plans

The 2016 IRP filings[87] included information regarding each utility's respective assessment of compliance under various rate-based and mass-based alternatives for State Implementation Plans that could potentially be developed under the Final Rule. In the 2016 IRP filings, the companies generally indicated that compliance with the Final Rule can be achieved and that the impacts on unit retirements and rates would vary significantly depending on how the Final Rule is implemented in Virginia and the surrounding region.

DEV's 2016 IRP included an analysis of a "no CO2 limit" scenario for purposes of comparison against four possible compliance scenarios, including two rate-based scenarios and two mass-based scenarios. Based on DEV's analysis and assumptions, the expected CPP cost of compliance would range from $5.1 billion to $12.8 billion on a net present value basis depending on the compliance pathway alternative. The monthly bill impacts that residential customers using 1,000 kWh per month would experience would vary greatly, from as little as 14¢ to over $21, depending upon the scenario implemented and the year. In discussing DEV's analysis, Staff noted that DEV had:

> modeled its system as a compliance "island" where all CPP compliance was effectively achieved through in-system actions. This could overstate CPP related compliance costs since it is possible, and perhaps likely, that final CPP implementation would provide for some form of trading where the Company

[87] *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-2016-00049, 2016 S.C.C. Ann. Rept. 405, Final Order (Dec. 14, 2016); *Commonwealth of Virginia, ex rel., State Corporation Commission, In re: Appalachian Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597et seq.,* Case No. PUE-2016-00050, 2016 S.C.C. Ann. Rept. 408, Final Order (Dec. 14, 2016); *Commonwealth of Virginia, ex rel., State Corporation Commission, In re: Kentucky Utilities Company d/b/a Old Dominion Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq.*, Case No. PUE-2016-00053, 2016 S.C.C. Ann. Rept. 410, Final Order (Dec. 19, 2016).

could avail itself of lower cost compliance alternatives that may be available through regional or cross state measures.[88]

APCo's 2016 IRP examined a "no CO2 limit" scenario for purposes of comparison against six possible compliance scenarios, including both mass- and rate-based scenarios. Based on APCo's analysis and assumptions, the expected CPP cost of the compliance would range from $317.6 million to $834.9 million on a net present value basis depending on the alternative compliance pathway. APCo's results produce a range of possible rate impacts depending on the scenario implemented and the year, generally indicating that residential rates would increase by 2.3% to 4.7% after full implementation of the CPP in 2031 and continue to rise thereafter.

Although the compliance scenarios generally include varying levels of increased renewable and/or nuclear resources and decreased fossil-fueled generation compared to the "no CO2 limit" scenario, the range of potential implementation paths and resource mixes is very broad. Identifying possible compliance scenarios in the 2016 Plans was further complicated by the fact that Virginia's IOUs own generating facilities that are located in several states, and each state potentially could adopt differing compliance pathways. As such, in analyzing the 2016 Plans, neither the IOUs nor the Commission was able to predict accurately generating unit retirements or utility rate impacts that could potentially result from the Final Rule. Accordingly, in the 2016 IRP proceedings, Staff recommended that actual utility commitments for resources or actions necessary for compliance should be delayed as long as possible to allow for further developments.[89]

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[88] *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-2016-00049, Ex. 30 (Walker Direct) at 9 (Aug. 31, 2016).

[89] *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-2016-00049, Transcript (Walker) at 395 (Oct. 6, 2016).

Following the 2016 hearings, the Commission found the IOUs' 2016 IRPs to be reasonable and in the public interest for the specific and limited purpose of the mandatory filing requirement of § 56-597 *et seq*. of the Code, and also found that additional analysis would be required in future IRP filings. The electric utilities were directed to consider and update various options for complying with the CPP because of its significance to electric utility resource planning, recognizing that such modeling for compliance would require some degree of speculation until all stages of the regulatory, legal, and legislative processes are complete.[90]

2017 Integrated Resource Plans

On May 1, 2017, the IOUs filed their most recent IRPs.91 A Staff report is due to be filed on or before August 24, 2017, concerning KU/ODP's IRP, and hearings are scheduled in late September 2017 for DEV's IRP and APCo's IRP. Continued uncertainties regarding the Final Rule and federal and state administrative implications surrounding carbon restrictions remain the premise for the 2017 IRPs.

Though still under review, the 2017 IRPs, like those from 2016, generally indicate that compliance with the Final Rule can be achieved and that the impacts on unit retirements and rates will vary significantly depending on how the Final Rule is implemented in Virginia and the surrounding region.

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[90] *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-2016-00049, 2016 S.C.C. Ann. Rept. 405, Final Order (Dec. 14, 2016). Therein, the Commission required DEV to model and present scenarios in its next IRP similar to those presented in the 2016 IRP including, at a minimum, a least-cost plan (non-compliant with the Clean Power Plan), a least-cost compliant intensity-based plan and a least-cost compliant mass-based plan (including both regional and "island" approaches), a federal implementation plan, and a company-preferred plan, if there was one. Id. at 406-407.

[91] *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. PUR-2017-00051, Doc. Con. Cen. No. 170540063, Order for Notice and Hearing (May 12, 2017); *Commonwealth of Virginia, ex rel., State Corporation Commission, In re: Appalachian Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597et seq.*, Case No. PUR-2017-00045, Doc. Con. Cen. No. 170530282, Order for Notice and Hearing (May 11, 2017); *Commonwealth of Virginia, ex rel., State Corporation Commission, In re: Kentucky Utilities Company d/b/a Old Dominion Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq.*, Case No. PUR-2017-00056, Doc. Con. Cen. No. 170540062, Order for Notice and Comment (May 12, 2017).

IX.
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 Commission's Virginia Energy Sense ("VES") consumer education program is in its eighth year of building awareness of the value of energy efficiency.

VES received the EPA's ENERGY STAR Excellence Award in ENERGY STAR Promotion for its outstanding efforts to promote energy efficiency in April 2017. An ENERGY STAR partner since 2010, VES was honored for its innovative outreach efforts to Virginia consumers, businesses, non-profits and educational institutions. The EPA stated that VES distinguished itself as a promotional leader through effective collaboration with the EPA and use of ENERGY STAR tools and content to promote energy conservation.

During the past year, VES reached a record number of Virginians across key regions of the Commonwealth with a strategy that incorporated traditional communications tactics as well as a series of innovative digital outreach programs. The strong growth and increased awareness of VES was affirmed by a follow-up market research survey in the third quarter of 2016 that also tested the effectiveness of its campaign messages. The information collected in the survey helped VES adjust messaging and target audiences through an integrated communications program that includes public service announcements ("PSA"), digital engagement, community outreach, partnership outreach, public relations, and updated informational materials.

To check on the progress of the VES campaign and to ensure messaging continues to resonate and align with key audiences, a follow-up survey was conducted in August 2016 of 1,250 Virginians from six geographic regions to ensure a representative sample of respondents

from across the Commonwealth. The poll findings showed a large majority (84%) of Virginians were interested in learning more about saving energy. One in four Virginians indicated that they are likely to take steps to make their homes more energy efficient in the next few months. Saving money is the strongest motivator for people to take steps to reduce their energy usage. However, concern for the environment is a growing motivator for saving energy. Most Virginians report that they are already taking low-cost/no-cost steps to save energy, with a small percentage investing in larger energy conservation steps such as upgrading home insulation or conducting a home energy audit. Upon hearing VES messages, Virginians are 40% more likely to take steps to make their homes more energy efficient.

In looking for new opportunities to reach audiences, VES was able to utilize a previously created television PSA in 2016 during Olympic programming throughout the Commonwealth. The PSA theme encourages Virginians to "spend their energy elsewhere" and to take easy steps to engage in fun activities across the state, such as visiting a state park or learning to surf at the beach. During the time the PSA aired, VES saw a significant spike in social media engagement as well as website traffic. The PSA ran a total of 586 times on cable systems in Central Virginia, Southwestern Virginia, and the Shenandoah Valley.

Over the past year, seven new and short online videos were released featuring "Jack," an animated electrical outlet. Each targeted a different audience, such as children or office workers, or a specific topic or season of the year. The popular videos had been viewed over 600,000 times on the social media channels Facebook (www.facebook.com/virginiaenergysense/) and YouTube (www.youtube.com/user/VAEnergySense) by June 30, 2017. The videos have an exceptional 80% view rate, meaning that viewers watched nearly all of the video.

The new videos and expanded content helped to increase significantly audience engagement with VES's social media channels. Knowing that Virginians had a continued interest in home improvement projects that would save them energy and money, VES designed a series of social media posts that helped demonstrate the monetary value of simple home improvement projects. Content was adjusted throughout the year to fit the current seasonal conditions. In addition to home improvement, VES encouraged its audiences to think about saving energy in the context of their daily habits. In addition to video promotions, by June 30, 2017, the number of Twitter followers had reached 4,624. On Facebook, the total number of "likes" had reached 2,708. Using digital marketing tools, VES is able to ensure that it is reaching Virginians who are more likely to take steps to save energy.

Much of the VES social media content, television advertising, and public relations activity has been designed to direct consumers to the VES website (www.virginiaenergysense.org) for additional information on how to save energy. The website was redesigned and upgraded in 2016 to better utilize the Jack videos and to make the site easier to navigate on mobile devices. The outcome was a sizeable increase in traffic in 2016. The site received a total of 102,522 visits, a 33% increase from 2015. Eighty-seven percent of the visitors were new to the site.

Throughout the past year, VES representatives also attended numerous community events across Virginia. The focus was to make progress in key areas of the state such as Northern Virginia and Hampton Roads as well as reconnecting with Virginians in the Richmond, Roanoke and Charlottesville areas. In 2016, VES participated in 15 events that were attended by approximately 266,000 people. An estimated 88,000 people visited the VES booth and spoke to

representatives about the importance of reducing energy consumption. VES representatives distributed over 5,000 bags of educational materials throughout the year.

VES added 12 new partners from the business, education and government sectors in the past year, bringing the total number of partners to over 115 organizations that share interests in energy efficiency and sustainability. VES provides informational resources for partners to distribute to their employees or members through periodic emails, newsletters, and other forms of communication. For instance, the Hampton Roads Planning District Commission, a new partner, agreed to distribute VES informational materials at community events attended by the planning district commission's AskHRGreen environmental education program. In another case, VES developed content in newsletters of several local chambers of commerce.

Reaching Virginians through trusted news sources has continued to be a focus of the VES communications strategy throughout the past year. Live interviews about winter energy saving tips were conducted by two Norfolk television stations. Radio interviews were conducted with stations in Charlottesville, Harrisonburg, and Tappahannock.

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

X.
ELECTRICITY PRICE ANALYSIS

The Commission continues to monitor electricity 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 change 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 Regulation Act[92], the Commission is to report by November 1, 2017, 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.[93]

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 DEV's and APCo's rates as compared to those of the statutorily defined peer groups.[94] In examining rate competitiveness, this analysis focused on the 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 information was used in several ways to rank the rates of APCo, DEV, and their regional peer utilities from lowest to highest.[95] First, the EEI data was used to compare average

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[92] Chapter 933 of the 2007 Acts of Assembly.

[93] An investor-owned electric utility is eligible to be considered part of the peer group if: (i) it has principal operations in the Southeastern United States east of the Mississippi River in West Virginia or Kentucky or in a state south of Virginia (but not Tennessee); (ii) it is a vertically integrated electric utility whose facilities and operations are subject to state public utility regulation; (iii) it meets certain investor rating criteria; and (iv) it is not an affiliate of a utility subject to a biennial review under the Regulation Act.

[94] In the Final Order in DEV'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 a 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, 2013 S.C.C. Ann. Rept. 371, Final Order (Nov. 26, 2013). Data for Old Dominion Power Company, a unit of KU which is located in Virginia, also has been included.

[95] It should be noted that the number of companies ranked differs for the average revenue per kWh comparisons and typical bill comparisons.

rate per kWh for residential, commercial and industrial rates for 2006 and 2016.[96] The 2016 information was utilized to assess the competitiveness of the then current rates. The 2016 information was then compared to the 2006 data to determine whether there had been any upward or downward trend in DEV's or APCo's rate competitiveness.

Typical bills for DEV, APCo, and their statutorily defined peer groups also were examined for differing customer groups and varying ranges of consumption.[97] This analysis focuses on typical bills for residential, commercial, and industrial customers and examines the competitiveness of DEV's rates and APCo's rates that were in effect on January 1, 2017, 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, 2017, and as such do not reflect any subsequent or pending rate changes. Any pending rate changes could increase or decrease the relative competitiveness of DEV'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 2016 revenue information for DEV, APCo, and their statutorily defined peer groups for residential, commercial, and industrial rates.[98]

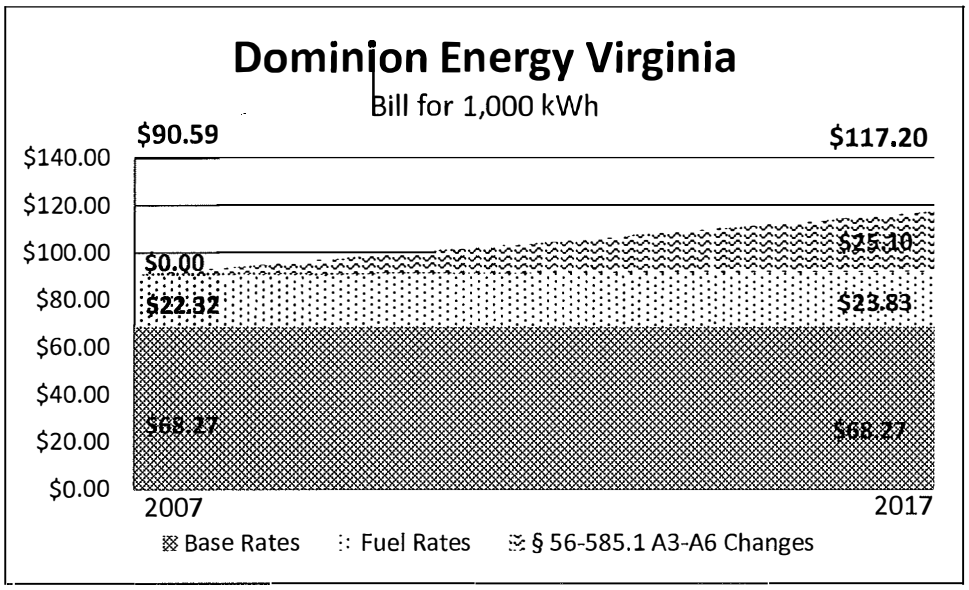
Appendices 3, 4, and 5 to this report present typical bill information for residential, commercial, and industrial customers, respectively, of DEV, APCo, and their statutorily defined peer groups. The typical bills presented in these appendices are annualized so that seasonal rate

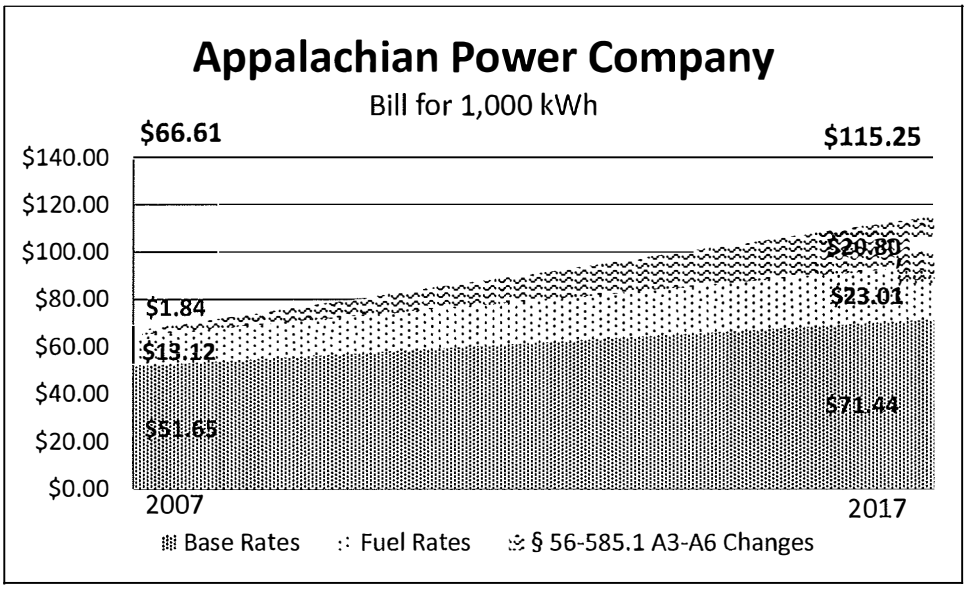
[96] The 2016 information was taken from EEI's "Typical Bills and Average Rates Report Winter 2017." The 2006 information was taken from EEI's "Typical Bills and Average Rates Report Winter 2007" and the Excel files accompanying that report, as well as EEI's "Typical Bills and Average Rates Report Summer 2006."
[97] Typical bills are presented based on the usage and demand levels reported in the EEI reports.
[98] DEV is labeled as Dominion Virginia Power in the Appendices as that was the utility's name at the time of the EEI Report.

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 DEV's 2016-2017 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 DEV'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 $115.25, as of July 1, 2017. APCo's bill increase over this period is attributable to base rate increases, fuel cost increases, rate adjustment clauses, and other rate changes approved pursuant to §§ 56-585.1 A 3 through 56-585.1 A 6.

As of July 1, 2007, DEV's total bill for a residential customer using 1,000 kWh was $90.59. As of July 1, 2017, this amount has increased to $117.20. DEV's bill increase is attributable to RACs and other rate changes approved pursuant to §§ 56-585.1 A 3 through 56-585.1 A 6. Those increases were partially offset by reduced fuel costs. Below are two charts that compare APCo's and DEV's rates from July 2007 to July 2017, broken down by Base Rates, Fuel Rates, and § 56-585.1 A 3-A 6 Changes.


Dominion Energy Virginia
Bill for 1,000 kWh
$90.59
$117.20
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
$0.00
$22.32
$68.27
$25.10
$23.83
$68.27
2007
2017
Base Rates
Fuel Rates
§ 56-585.1 A3-A6 Changes


Appalachian Power Company
Bill for 1,000 kWh
$66.61
$115.25
$140.00
$120.00
$100.00
$80.00
$60.00
$40.00
$20.00
$0.00
$1.84
$13.12
$51.65
$20.80
$23.01
$71.44
2007
2017
Base Rates
Fuel Rates
§ 56-585.1 A3-A6 Changes

XI.
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."[99] This section discusses recent developments in RTE participation and the impacts of RTE operations on the energy market.

PJM Background

As noted earlier, DEV, 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 for that electricity, considering the ability of the transmission system to deliver power as needed.[100] 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.[101]

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 resources; *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

[99] This also is referred to as a regional transmission organization, or RTO.
[100] http://www.pjm.com/~/media/about-pjm/20151016-value-proposition.ashx.
[101] http://www.pjm.com/~/media/about-pjm/20151016-value-proposition.ashx.

current generation resources and encouraging new resource development. The 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 creates a new capacity product known as "capacity performance" and penalties assessed if such resources fail to meet performance targets. PJM maintained that this change would enhance incentives for capacity resources to be available when needed most, help reduce price spikes during system emergencies, and to reduce the chance for forced outages.

On March 21, 2017, FERC staff approved new rules for PJM that permitted seasonal capacity (resources available in one season only) to clear the PJM auction in an aggregated manner to form a year-round resource. For example, wind generators, whose capacity is greater in the winter, could combine through the auction clearing mechanism with demand response and solar resources, whose capacity is greater in the summer.

The 2017 auction was thus the first auction in which all resources had to meet capacity performance requirements, as well as the first to have participation by Price Responsive Demand resources, demand response-like resources that react to market signals.

PJM's latest RPM auction was held in May 2017 to set the price for capacity for delivery in 2020/2021. On May 23, 2017, PJM announced the auction results, revealing that the price per MW decreased compared to the 2016 auction (setting the price for capacity in the 2019/2020 delivery year). The 2017 auction cleared 165,109 MW, compared to 167,306 MW cleared in 2016. Additionally, the 2017 auction set the price for capacity performance resources in

non-constrained areas at $76.53/MW per day. By comparison, the 2016 auction set the price for such resources at $100/MW per day.

DEV 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 2020/2021 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.[102] 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.

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

[102] https://learn.pjm.com/Media/about-pjm/newsroom/fact-sheets/locational-marginal-pricing-fact-sheet.pdf.

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.[103]

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 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.[104] 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.[105] This FERC decision, which applies to projects approved by PJM between 2007 and 2012, has been reversed twice by courts and is now back at FERC on remand. On June 15, 2016, a settlement motion was filed by a number of parties, including DEV, APCo and the Commission. The proposed settlement is contested by a number of parties. If the settlement is

[103] FERC has lacked a quorum for decision making since February 3, 2017, when Commissioner Norman Bay resigned. Two new Commissioners were confirmed by the U.S. Senate in early August 2017. At this time, substantive action by FERC is once again possible.
[104] *PJM Interconnection, L.L.C.*, 119 FERC ¶ 61,063 (2007), *reh'g denied*, 122 FERC ¶ 61,082 (2009).
[105] *Illinois Commerce Comm'n v. F.E.R.C.*, 576 F.3d 470 (7th Cir. 2009).

not approved by FERC, the matter may proceed to hearing. The motion to approve the settlement remains pending before FERC.

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.[106]

On May 22, 2015, FERC again changed the cost allocation methodology for certain transmission facilities, finding that under Order No. 1000[107], transmission projects selected in a regional transmission expansion plan ("RTEP") must be eligible to use the regional cost allocation method.[108] 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 conditions, one of which is that the project is being proposed to address only that transmission owner's local planning criteria.[109] Conversely, any project included in the RTEP 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 participates when necessary in related proceedings.

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[106] The cost allocation for 345 kV projects and other types of projects depends on their specific details.
[107] Order No. 1000 is a FERC final rule reforming its transmission planning and cost allocation policy, 76 Fed. Reg. 49842.
[108] *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,172 (2015).
[109] *PJM Interconnection, L.L.C.*, Order on Rehearing, 154 FERC ¶ 61,096 (2016).

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.[110] 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. 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.[111] 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

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[110] http://www.monitoringanalytics.com/company/about.shtml.

[111] 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.

originally identified in the grant.[112] 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 clean energy zones.[113] The Staff attends NARUC meetings, participates in NARUC conference calls, and follows the latest EISPC developments.

XII.
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.

[112] See http://www.eipconline.com/uploads/20130103_Phase2Report_Part1_Final.pdf.
[113] See http://eispctools.anl.gov/.

Residential Consumer Electric Rates in Virginia
Expressed in $ per 1000 kWh

UTILITIES	$ Jul-07	$ Jul-17	$ Change	% Change
IOU				
Appalachian Power Company	66.61	115.25	48.64	73.02
Dominion Energy Virginia	90.59	117.20	26.61	29.37
Old Dominion/Kentucky Utilities	67.57	103.82	36.25	53.65
Electric Cooperatives				
A&N	122.59	112.02	(10.57)	(8.62)
BARC	123.18	121.36	(1.82)	(1.48)
Central Virginia	83.04	130.22	47.18	56.82
Community	122.37	117.12	(5.26)	(4.29)
Craig Botetourt	114.90	150.94	36.04	31.37
Mecklenburg	121.71	126.77	5.06	4.15
Northern Neck	126.35	129.94	3.59	2.84
Northern Virginia	129.20	121.66	(7.54)	(5.84)
Prince George	118.62	120.48	1.86	1.56
Rappahannock	127.72	114.17	(13.56)	(10.61)
Shenandoah Valley	115.12	111.77	(3.35)	(2.91)
Southside	133.32	128.49	(4.83)	(3.62)

NOTES

1. Rates are exclusive of Local Utility, Consumption and, except for REC, Sales and Use taxes.
2. DEV's rates are annualized rates.

[7] This document is Report Document No. 272, publication year 2016, in Virginia's Legislative Information System.

Appendix 2

CHANGE IN AVERAGE RATES PER CUSTOMER CLASS

[7] This document is Report Document No. 272, publication year 2016, in Virginia's Legislative Information System.

PEER GROUP
Rate Comparison
Average Revenue per kWh

Total Rate:	2006 ¢/kWh	2016 ¢/kWh	Change %	2006 Ranking	2016 Ranking	Rank Change
Alabama Power	7.09	9.82	38.52	8	14	-6
Appalachian Power Company (VA)	5.04	9.25	83.53	1	11	-10
Dominion Virginia Power	6.79	8.76	29.12	7	7	0
DUKE Energy Carolinas (NC)	6.48	8.41	29.67	6	5	1
DUKE Energy Carolinas (SC)	5.54	8.01	44.55	3	3	0
Entergy Mississippi, Inc	9.89	7.48	-24.42	15	1	14
FP&L Company	11.22	9.25	-17.50	18	12	6
Georgia Power	7.29	9.21	26.32	11	10	1
Gulf Power	7.98	11.54	44.58	14	18	-4
Mississippi Power	7.21	8.73	21.07	9	6	3
Duke Energy Progress, Inc. (NC)	7.60	9.05	19.11	12	8	4
Duke Energy Progress, Inc. (SC)	7.27	7.95	9.31	10	2	8
Duke Progress Energy Florida, Inc.	10.55	10.23	-3.05	17	16	1
SCE&G	7.83	11.38	45.37	13	17	-4
Tampa Electric Company	9.96	10.21	2.49	16	15	1
Kentucky Utilities (d/b/a ODP)	5.85	9.72	66.15	5	13	-8
Louisville Gas & Electric	5.79	9.11	57.43	4	9	-5
Kentucky Utilities (KY)	5.32	8.34	56.80	2	4	-2
Average For East South Central	6.85	9.07	32.41			
Average For South Atlantic	8.26	9.48	14.77			
USA Average	8.89	10.61	19.35			

Residential Rate:	2006 ¢/kWh	2016 ¢/kWh	Change %	2006 Ranking	2016 Ranking	Rank Change
Alabama Power	8.93	12.66	41.71	9	15	-6
Appalachian Power Company (VA)	5.95	11.34	90.57	2	12	-10
Dominion Virginia Power	8.43	11.19	32.69	7	10	-3
DUKE Energy Carolinas (NC)	7.93	10.36	30.64	6	6	0
DUKE Energy Carolinas (SC)	7.33	10.93	49.02	5	9	-4
Entergy Mississippi, Inc	10.55	8.16	-22.63	15	1	14
FP&L Company	11.90	10.22	-14.12	18	5	13
Georgia Power	8.82	12.10	37.27	8	14	-6
Gulf Power	9.07	13.36	47.31	12	17	-5
Mississippi Power	10.12	12.70	25.42	14	16	-2
Duke Energy Progress, Inc. (NC)	9.03	10.78	19.40	11	8	3
Duke Energy Progress, Inc. (SC)	9.01	10.01	11.15	10	3	7
Duke Progress Energy Florida, Inc.	11.79	11.91	1.00	17	13	4
SCE&G	9.92	14.70	48.16	13	18	-5
Tampa Electric Company	10.97	11.27	2.74	16	11	5
Kentucky Utilities (d/b/a ODP)	6.03	10.05	66.67	3	4	-1
Louisville Gas & Electric	6.63	10.41	56.95	4	7	-3
Kentucky Utilities (KY)	5.87	9.87	68.18	1	2	-1
Average For East South Central	8.24	11.14	35.19			
Average For South Atlantic	9.79	11.45	16.96			
USA Average	10.62	12.93	21.75			

	2006	2016	Change	2006	2016	Rank

PEER GROUP
Rate Comparison
Average Revenue per kWh

Commercial Rate:	¢/kWh	¢/kWh	%	Ranking	Ranking	Change
Alabama Power	8.17	11.55	41.41	14	18	-4
Appalachian Power Company (VA)	5.09	8.92	75.25	1	9	-8
Dominion Virginia Power	6.08	7.60	25.06	3	1	2
DUKE Energy Carolinas (NC)	6.31	7.81	23.69	7	3	4
DUKE Energy Carolinas (SC)	6.26	8.54	36.32	6	5	1
Entergy Mississippi, Inc	10.20	7.65	-25.03	17	2	15
FP&L Company	10.54	8.19	-22.33	18	4	14
Georgia Power	7.50	9.40	25.23	9	11	-2
Gulf Power	7.59	10.55	39.04	10	16	-6
Mississippi Power	8.05	9.82	21.96	12	15	-3
Duke Energy Progress, Inc. (NC)	7.46	8.80	17.91	8	8	0
Duke Energy Progress, Inc. (SC)	8.05	8.79	9.17	13	6	7
Duke Progress Energy Florida, Inc.	9.62	8.80	-8.51	16	7	9
SCE&G	7.91	11.39	44.09	11	17	-6
Tampa Electric Company	9.48	9.40	-0.77	15	12	3
Kentucky Utilities (d/b/a ODP)	6.26	9.35	49.40	5	10	-5
Louisville Gas & Electric	6.18	9.46	53.01	4	13	-9
Kentucky Utilities (KY)	5.75	9.71	68.82	2	14	-12
Average For East South Central	7.73	10.15	31.31			
Average For South Atlantic	8.33	8.85	6.24			
USA Average	9.33	10.61	13.72			

Industrial Rate:	2006 ¢/kWh	2016 ¢/kWh	Change %	2006 Ranking	2016 Ranking	Rank Change
Alabama Power	4.92	6.35	29.08	7	9	-2
Appalachian Power Company (VA)	3.85	6.78	76.10	1	14	-13
Dominion Virginia Power	4.62	6.00	29.80	5	5	0
DUKE Energy Carolinas (NC)	4.73	6.12	29.55	6	7	-1
DUKE Energy Carolinas (SC)	4.04	5.50	36.02	2	4	-2
Entergy Mississippi, Inc	8.04	5.37	-33.14	16	1	15
FP&L Company	8.87	6.11	-31.10	18	6	12
Georgia Power	5.39	5.46	1.23	11	2	9
Gulf Power	5.85	8.22	40.55	14	16	-2
Mississippi Power	5.10	6.36	24.69	8	10	-2
Duke Energy Progress, Inc. (NC)	5.78	6.44	11.37	13	11	2
Duke Energy Progress, Inc. (SC)	5.64	5.47	-3.09	12	3	9
Duke Progress Energy Florida, Inc.	8.31	6.73	-19.02	17	13	4
SCE&G	5.15	7.07	37.13	9	15	-6
Tampa Electric Company	7.65	8.35	9.11	15	17	-2
Kentucky Utilities (d/b/a ODP)	5.22	9.33	78.72	10	18	-8
Louisville Gas & Electric	4.35	6.69	53.95	3	12	-9
Kentucky Utilities (KY)	4.46	6.13	37.34	4	8	-4
Average For East South Central	4.97	6.29	26.56			
Average For South Atlantic	5.19	6.48	24.86			
USA Average	6.00	6.80	13.33			

Appendix 3

TYPICAL RESIDENTIAL BILLS

PEER GROUP
Typical Bill Comparison
Residential Customers

APPENDIX 3
page 1 of 3

Monthly Usage of 500 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	53.33	74.53	39.75	14	17	-3
Appalachian Power Company (VA)	34.58	61.35	77.41	3	13	-10
Appalachian Power Company (WV)	32.48	67.50	107.82	1	16	-15
Dominion North Carolina Power	49.38	58.69	18.85	11	8	3
Dominion Virginia Power	48.00	60.28	25.58	9	10	-1
DUKE Energy Carolinas (NC)	44.09	58.35	32.34	7	5	2
DUKE Energy Carolinas (SC)	39.55	60.15	52.09	6	9	-3
Entergy Mississippi, Inc	60.81	58.22	-4.26	19	4	15
FP&L Company	56.97	51.77	-9.13	16	1	15
Georgia Power	45.28	60.90	34.50	8	12	-4
Gulf Power	51.30	75.26	46.71	13	18	-5
Mississippi Power	64.08	76.13	18.80	20	19	1
Duke Energy Progress, Inc. (NC)	48.69	58.57	20.29	10	7	3
Duke Energy Progress, Inc. (SC)	51.17	61.96	21.09	12	14	-2
Duke Progress Energy Florida, Inc.	58.90	62.32	5.81	17	15	2
SCE&G	53.73	78.85	46.75	15	20	-5
Tampa Electric Company	59.17	60.87	2.87	18	11	7
Kentucky Utilities (d/b/a ODP)	35.03	57.10	63.00	4	3	1
Louisville Gas & Electric	35.18	58.53	66.37	5	6	-1
Kentucky Utilities (KY)	32.49	55.24	70.02	2	2	0
Average For East South Central	43.99	61.56	39.94			
Average For South Atlantic	49.07	65.38	33.24			
USA Average	56.20	71.46	27.15			

PEER GROUP
Typical Bill Comparison
Residential Customers

Monthly Usage of 750 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	74.35	104.34	40.34	14	19	-5
Appalachian Power Company (VA)	48.38	87.82	81.52	3	13	-10
Appalachian Power Company (WV)	43.88	94.21	114.70	1	16	-15
Dominion North Carolina Power	69.30	82.11	18.48	10	8	2
Dominion Virginia Power	68.48	86.91	26.91	9	12	-3
DUKE Energy Carolinas (NC)	63.52	81.17	27.79	7	5	2
DUKE Energy Carolinas (SC)	56.24	85.75	52.47	6	10	-4
Entergy Mississippi, Inc	81.37	75.24	-7.53	16	2	14
FP&L Company	82.79	73.60	-11.10	17	1	16
Georgia Power	67.28	85.96	27.76	8	11	-3
Gulf Power	71.82	103.34	43.89	12	18	-6
Mississippi Power	85.27	100.36	17.70	20	17	3
Duke Energy Progress, Inc. (NC)	69.66	81.63	17.18	11	6	5
Duke Energy Progress, Inc. (SC)	73.50	88.24	20.05	13	14	-1
Duke Progress Energy Florida, Inc.	84.23	88.98	5.64	18	15	3
SCE&G	76.84	113.10	47.19	15	20	-5
Tampa Electric Company	84.39	82.78	-1.91	19	9	10
Kentucky Utilities (d/b/a ODP)	49.86	79.64	59.73	4	4	0
Louisville Gas & Electric	50.30	81.91	62.84	5	7	-2
Kentucky Utilities (KY)	46.20	77.21	67.12	2	3	-1
Average For East South Central	61.01	84.86	39.09			
Average For South Atlantic	70.42	92.89	31.91			
USA Average	81.56	102.94	26.21			

PEER GROUP
Typical Bill Comparison
Residential Customers

Monthly Usage of 1000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	93.40	132.10	41.43	12	19	-7
Appalachian Power Company (VA)	61.39	114.29	86.17	3	14	-11
Appalachian Power Company (WV)	55.28	120.93	118.76	1	16	-15
Dominion North Carolina Power	89.24	105.53	18.25	9	9	0
Dominion Virginia Power	87.18	111.76	28.19	8	11	-3
DUKE Energy Carolinas (NC)	82.95	103.98	25.35	7	5	2
DUKE Energy Carolinas (SC)	72.93	111.34	52.67	6	10	-4
Entergy Mississippi, Inc	101.92	92.28	-9.46	16	1	15
FP&L Company	108.61	95.43	-12.14	18	2	16
Georgia Power	93.91	112.36	19.65	13	12	1
Gulf Power	92.34	131.43	42.33	11	18	-7
Mississippi Power	106.27	124.42	17.08	17	17	0
Duke Energy Progress, Inc. (NC)	90.62	104.70	15.54	10	7	3
Duke Energy Progress, Inc. (SC)	94.50	113.17	19.76	14	13	1
Duke Progress Energy Florida, Inc.	109.56	115.65	5.56	19	15	4
SCE&G	99.95	147.53	47.60	15	20	-5
Tampa Electric Company	109.61	104.68	-4.50	20	6	14
Kentucky Utilities (d/b/a ODP)	64.69	102.19	57.97	4	4	0
Louisville Gas & Electric	65.43	105.28	60.90	5	8	-3
Kentucky Utilities (KY)	59.91	99.18	65.55	2	3	-1
Average For East South Central	77.74	107.87	38.76			
Average For South Atlantic	91.75	120.34	31.16			
USA Average	106.52	133.99	25.79			

Appendix 4

TYPICAL COMMERCIAL BILLS

PEER GROUP
Typical Bill Comparison
Commercial Customers

Usage of 375 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	50.00	88.13	76.26	14	20	-6
Appalachian Power Company (VA)	28.00	46.00	64.29	2	3	-1
Appalachian Power Company (WV)	26.00	45.00	73.08	1	2	-1
Dominion North Carolina Power	45.00	55.95	24.33	8	8	0
Dominion Virginia Power	44.08	50.44	14.43	7	4	3
DUKE Energy Carolinas (NC)	48.00	67.06	39.71	11	16	-5
DUKE Energy Carolinas (SC)	44.00	59.20	34.55	6	10	-4
Entergy Mississippi, Inc	56.00	58.00	3.57	18	9	9
FP&L Company	50.00	44.00	-12.00	15	1	14
Georgia Power	56.00	78.00	39.29	19	18	1
Gulf Power	47.00	65.00	38.30	10	12	-2
Mississippi Power	64.00	78.00	21.88	20	19	1
Duke Energy Progress, Inc. (NC)	48.00	64.00	33.33	12	11	1
Duke Energy Progress, Inc. (SC)	48.00	55.00	14.58	13	6	7
Duke Progress Energy Florida, Inc.	51.00	53.00	3.92	17	5	12
SCE&G	50.00	73.26	46.52	16	17	-1
Tampa Electric Company	46.00	55.74	21.17	9	7	2
Kentucky Utilities (d/b/a ODP)	36.00	65.00	80.56	4	13	-9
Louisville Gas & Electric	37.00	66.00	78.38	5	15	-10
Kentucky Utilities (KY)	34.00	65.00	91.18	3	14	-11
Average For East South Central	44.00	65.00	47.73			
Average For South Atlantic	48.00	59.00	22.92			
USA Average	53.00	65.00	22.64			

PEER GROUP
Typical Bill Comparison
Commercial Customers

Demand of 40 kW and Usage of 10,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	961.00	1,432.02	49.01	15	20	-5
Appalachian Power Company (VA)	580.00	1,042.00	79.66	2	12	-10
Appalachian Power Company (WV)	569.00	1,061.00	86.47	1	16	-15
Dominion North Carolina Power	731.00	834.38	14.14	7	1	6
Dominion Virginia Power	802.00	987.32	23.11	10	8	2
DUKE Energy Carolinas (NC)	723.00	867.62	20.00	6	3	3
DUKE Energy Carolinas (SC)	678.00	887.64	30.92	4	4	0
Entergy Mississippi, Inc	1,078.00	990.00	-8.16	19	9	10
FP&L Company	1,117.00	962.00	-13.88	20	6	14
Georgia Power	1,038.00	1,387.26	33.65	18	19	-1
Gulf Power	811.00	1,085.00	33.79	11	17	-6
Mississippi Power	955.00	1,029.00	7.75	14	11	3
Duke Energy Progress, Inc. (NC)	753.00	866.00	15.01	8	2	6
Duke Energy Progress, Inc. (SC)	824.00	960.00	16.50	12	5	7
Duke Progress Energy Florida, Inc.	982.00	1,053.00	7.23	16	14	2
SCE&G	934.00	1,314.16	40.70	13	18	-5
Tampa Electric Company	1,013.00	1,019.94	0.69	17	10	7
Kentucky Utilities (d/b/a ODP)	692.00	967.00	39.74	5	7	-2
Louisville Gas & Electric	793.00	1,054.00	32.91	9	15	-6
Kentucky Utilities (KY)	664.00	1,042.00	56.93	3	13	-10
Average For East South Central	834.00	1,116.00	33.81			
Average For South Atlantic	930.00	1,101.00	18.39			
USA Average	1,051.00	1,234.00	17.41			

PEER GROUP
Typical Bill Comparison
Commercial Customers

Demand of 40 kW and Usage of 14,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	1,192.00	1,818.57	52.56	14	19	-5
Appalachian Power Company (VA)	731.00	1,260.00	72.37	1	10	-9
Appalachian Power Company (WV)	731.00	1,331.00	82.08	2	13	-11
Dominion North Carolina Power	963.00	1,088.40	13.02	10	3	7
Dominion Virginia Power	951.00	1,181.12	24.20	9	6	3
DUKE Energy Carolinas (NC)	938.00	1,054.74	12.45	8	2	6
DUKE Energy Carolinas (SC)	875.00	1,106.97	26.51	5	4	1
Entergy Mississippi, Inc	1,409.00	1,257.00	-10.79	18	9	9
FP&L Company	1,438.00	1,166.00	-18.92	20	5	15
Georgia Power	1,192.00	1,547.51	29.82	15	18	-3
Gulf Power	1,032.00	1,392.00	34.88	12	15	-3
Mississippi Power	1,189.00	1,265.00	6.39	13	11	2
Duke Energy Progress, Inc. (NC)	913.00	1,054.00	15.44	7	1	6
Duke Energy Progress, Inc. (SC)	1,009.00	1,187.00	17.64	11	7	4
Duke Progress Energy Florida, Inc.	1,314.00	1,311.00	-0.23	17	12	5
SCE&G	1,299.00	1,826.28	40.59	16	20	-4
Tampa Electric Company	1,415.00	1,229.01	-13.14	19	8	11
Kentucky Utilities (d/b/a ODP)	866.00	1,341.00	54.85	4	14	-10
Louisville Gas & Electric	896.00	1,464.00	63.39	6	17	-11
Kentucky Utilities (KY)	794.00	1,448.00	82.37	3	16	-13
Average For East South Central	1,034.00	1,443.00	39.56			
Average For South Atlantic	1,205.00	1,395.00	15.77			
USA Average	1,342.00	1,570.00	16.99			

PEER GROUP
Typical Bill Comparison
Commercial Customers

Demand of 500 kW and Usage of 150,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	13,463.00	19,779.53	46.92	16	20	-4
Appalachian Power Company (VA)	8,017.00	14,534.00	81.29	1	13	-12
Appalachian Power Company (WV)	8,062.00	14,750.00	82.96	2	14	-12
Dominion North Carolina Power	10,726.00	12,179.94	13.56	10	5	5
Dominion Virginia Power	9,860.00	12,991.34	31.76	8	8	0
DUKE Energy Carolinas (NC)	9,799.00	11,463.04	16.98	6	3	3
DUKE Energy Carolinas (SC)	9,029.00	12,381.90	37.13	4	6	-2
Entergy Mississippi, Inc	13,147.00	10,869.00	-17.33	15	2	13
FP&L Company	15,707.00	12,875.00	-18.03	20	7	13
Georgia Power	12,416.16	16,037.30	29.16	13	17	-4
Gulf Power	11,620.00	16,465.00	41.70	12	18	-6
Mississippi Power	12,531.00	14,043.00	12.07	14	11	3
Duke Energy Progress, Inc. (NC)	10,172.00	10,556.00	3.78	9	1	8
Duke Energy Progress, Inc. (SC)	11,225.00	11,656.00	3.84	11	4	7
Duke Progress Energy Florida, Inc.	14,074.00	14,425.00	2.49	18	12	6
SCE&G	13,699.00	19,502.17	42.36	17	19	-2
Tampa Electric Company	14,118.00	13,663.84	-3.22	19	10	9
Kentucky Utilities (d/b/a ODP)	9,503.00	15,335.00	61.37	5	15	-10
Louisville Gas & Electric	9,834.00	15,670.00	59.35	7	16	-9
Kentucky Utilities (KY)	8,448.00	13,408.00	58.71	3	9	-6
Average For East South Central	10,444.00	14,941.00	43.06			
Average For South Atlantic	12,694.00	15,128.00	19.17			
USA Average	14,015.00	16,310.00	16.38			

PEER GROUP
Typical Bill Comparison
Commercial Customers

Demand of 500 kW and Usage of 180,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	15,198.00	22,742.23	49.64	16	20	-4
Appalachian Power Company (VA)	8,722.00	15,871.00	81.97	1	12	-11
Appalachian Power Company (WV)	9,150.00	16,599.00	81.41	2	15	-13
Dominion North Carolina Power	12,129.00	13,967.00	15.15	10	7	3
Dominion Virginia Power	10,533.00	13,697.50	30.04	5	6	-1
DUKE Energy Carolinas (NC)	11,402.00	12,968.18	13.74	9	3	6
DUKE Energy Carolinas (SC)	10,392.00	13,613.96	31.00	4	5	-1
Entergy Mississippi, Inc	15,294.00	12,404.00	-18.90	17	2	15
FP&L Company	18,021.00	14,599.00	-18.99	20	9	11
Georgia Power	13,574.88	17,239.13	26.99	13	17	-4
Gulf Power	13,015.00	18,206.00	39.88	12	18	-6
Mississippi Power	14,124.00	15,609.00	10.51	14	11	3
Duke Energy Progress, Inc. (NC)	11,367.00	11,767.00	3.52	8	1	7
Duke Energy Progress, Inc. (SC)	12,612.00	13,068.00	3.62	11	4	7
Duke Progress Energy Florida, Inc.	16,538.00	16,335.00	-1.23	19	13	6
SCE&G	14,708.00	21,023.77	42.94	15	19	-4
Tampa Electric Company	16,189.00	15,231.84	-5.91	18	10	8
Kentucky Utilities (d/b/a ODP)	10,805.00	16,505.00	52.75	7	14	-7
Louisville Gas & Electric	10,611.00	16,832.00	58.63	6	16	-10
Kentucky Utilities (KY)	9,420.00	14,297.00	51.77	3	8	-5
Average For East South Central	11,832.00	16,691.00	41.07			
Average For South Atlantic	14,447.00	16,937.00	17.24			
USA Average	15,959.00	18,363.00	15.06			

Appendix 5

TYPICAL INDUSTRIAL BILLS

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 75 kW and Usage of 15,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	1,457.00	2,135.73	46.58	14	19	-5
Appalachian Power Company (VA)	912.00	1,623.00	77.96	2	8	-6
Appalachian Power Company (WV)	908.00	1,717.00	89.10	1	12	-11
Dominion North Carolina Power	1,079.00	1,241.00	15.01	6	1	5
Dominion Virginia Power	1,317.00	1,702.33	29.26	11	10	1
DUKE Energy Carolinas (NC)	1,101.00	1,363.28	23.82	7	2	5
DUKE Energy Carolinas (SC)	1,030.00	1,493.87	45.04	5	5	0
Entergy Mississippi, Inc	1,637.00	1,511.00	-7.70	18	6	12
FP&L Company	1,765.00	1,594.00	-9.69	20	7	13
Georgia Power	1,737.00	2,271.00	30.74	19	20	-1
Gulf Power	1,281.00	1,705.00	33.10	10	11	-1
Mississippi Power	1,519.00	1,869.00	23.04	15	15	0
Duke Energy Progress, Inc. (NC)	1,243.00	1,382.00	11.18	9	3	6
Duke Energy Progress, Inc. (SC)	1,331.00	1,466.00	10.14	12	4	8
Duke Progress Energy Florida, Inc.	1,521.00	1,723.00	13.28	16	13	3
SCE&G	1,390.00	1,954.31	40.60	13	16	-3
Tampa Electric Company	1,636.00	1,686.55	3.09	17	9	8
Kentucky Utilities (d/b/a ODP)	1,018.00	1,754.70	72.37	3	14	-11
Louisville Gas & Electric	1,205.00	2,009.17	66.74	8	17	-9
Kentucky Utilities (KY)	1,029.00	2,070.31	101.20	4	18	-14
Average For East South Central	1,299.00	1,860.00	43.19			
Average For South Atlantic	1,422.00	1,748.00	22.93			
USA Average	1,650.00	1,956.00	18.55			

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 75 kW and Usage of 30,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	2,378.00	3,674.32	54.51	14	20	-6
Appalachian Power Company (VA)	1,415.00	2,519.00	78.02	1	12	-11
Appalachian Power Company (WV)	1,469.00	2,597.00	76.79	2	14	-12
Dominion North Carolina Power	1,950.00	2,185.00	12.05	10	3	7
Dominion Virginia Power	1,878.00	2,321.09	23.59	9	5	4
DUKE Energy Carolinas (NC)	1,865.00	2,217.55	18.90	8	4	4
DUKE Energy Carolinas (SC)	1,749.00	2,495.79	42.70	6	10	-4
Entergy Mississippi, Inc	2,834.00	2,455.00	-13.37	19	8	11
FP&L Company	2,968.00	2,356.00	-20.62	20	7	13
Georgia Power	2,320.00	2,867.67	23.61	13	18	-5
Gulf Power	2,110.00	2,856.00	35.36	12	17	-5
Mississippi Power	2,394.00	2,756.00	15.12	15	16	-1
Duke Energy Progress, Inc. (NC)	1,842.00	1,993.00	8.20	7	1	6
Duke Energy Progress, Inc. (SC)	2,047.00	2,184.00	6.69	11	2	9
Duke Progress Energy Florida, Inc.	2,766.00	2,688.00	-2.82	18	15	3
SCE&G	2,437.00	3,565.07	46.29	16	19	-3
Tampa Electric Company	2,672.00	2,470.55	-7.54	17	9	8
Kentucky Utilities (d/b/a ODP)	1,669.00	2,340.90	40.26	5	6	-1
Louisville Gas & Electric	1,538.00	2,585.58	68.11	4	13	-9
Kentucky Utilities (KY)	1,515.00	2,501.99	65.15	3	11	-8
Average For East South Central	2,039.00	2,824.00	38.50			
Average For South Atlantic	2,364.00	2,749.00	16.29			
USA Average	2,668.00	3,090.00	15.82			

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 75 kW and Usage of 50,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	3,507.00	5,625.69	60.41	15	20	-5
Appalachian Power Company (VA)	1,885.00	3,411.00	80.95	1	12	-11
Appalachian Power Company (WV)	2,028.00	3,232.00	59.37	3	9	-6
Dominion North Carolina Power	2,864.00	3,033.08	5.90	10	4	6
Dominion Virginia Power	2,343.00	2,815.41	20.16	6	2	4
DUKE Energy Carolinas (NC)	2,570.00	2,993.86	16.49	8	3	5
DUKE Energy Carolinas (SC)	2,274.00	3,081.41	35.51	5	7	-2
Entergy Mississippi, Inc	4,431.00	3,714.00	-16.18	19	16	3
FP&L Company	4,572.00	3,371.00	-26.27	20	11	9
Georgia Power	3,044.00	3,586.12	17.81	12	14	-2
Gulf Power	3,214.00	4,391.00	36.62	14	18	-4
Mississippi Power	3,560.00	3,652.00	2.58	16	15	1
Duke Energy Progress, Inc. (NC)	2,591.00	2,754.00	6.29	9	1	8
Duke Energy Progress, Inc. (SC)	2,924.00	3,072.00	5.06	11	5	6
Duke Progress Energy Florida, Inc.	4,209.00	3,847.00	-8.60	18	17	1
SCE&G	3,143.00	4,668.67	48.54	13	19	-6
Tampa Electric Company	4,053.00	3,515.89	-13.25	17	13	4
Kentucky Utilities (d/b/a ODP)	2,537.00	3,122.50	23.08	7	8	-1
Louisville Gas & Electric	1,981.00	3,354.11	69.31	2	10	-8
Kentucky Utilities (KY)	2,164.00	3,077.56	42.22	4	6	-2
Average For East South Central	2,998.00	4,040.00	34.76			
Average For South Atlantic	3,496.00	3,898.00	11.50			
USA Average	3,940.00	4,518.00	14.67			

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 1,000 kW and Usage of 200,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	15,200.00	18,123.21	19.23	8	4	4
Appalachian Power Company (VA)	11,157.00	19,865.00	78.05	2	6	-4
Appalachian Power Company (WV)	10,840.00	20,162.00	86.00	1	7	-6
Dominion North Carolina Power	15,841.00	18,161.00	14.65	9	5	4
Dominion Virginia Power	17,350.00	23,501.37	35.45	10	15	-5
DUKE Energy Carolinas (NC)	13,620.00	17,372.02	27.55	5	2	3
DUKE Energy Carolinas (SC)	12,471.00	17,703.17	41.95	3	3	0
Entergy Mississippi, Inc	17,675.00	14,938.00	-15.49	11	1	10
FP&L Company	23,661.00	21,795.00	-7.89	20	11	9
Georgia Power	23,285.00	30,841.51	32.45	19	20	-1
Gulf Power	18,432.00	26,855.00	45.70	12	18	-6
Mississippi Power	18,783.00	21,635.00	15.18	13	10	3
Duke Energy Progress, Inc. (NC)	20,250.00	21,126.00	4.33	17	9	8
Duke Energy Progress, Inc. (SC)	20,171.00	20,947.00	3.85	16	8	8
Duke Progress Energy Florida, Inc.	19,795.00	22,333.00	12.82	15	13	2
SCE&G	19,408.00	26,880.70	38.50	14	19	-5
Tampa Electric Company	21,457.00	22,066.91	2.84	18	12	6
Kentucky Utilities (d/b/a ODP)	13,855.00	23,578.00	70.18	6	16	-10
Louisville Gas & Electric	14,788.00	24,414.00	65.09	7	17	-10
Kentucky Utilities (KY)	13,167.00	22,749.00	72.77	4	14	-10
Average For East South Central	15,430.00	21,646.00	40.29			
Average For South Atlantic	17,968.00	23,078.00	28.44			
USA Average	20,947.00	24,837.00	18.57			

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 1,000 kW and Usage of 400,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	23,852.00	29,476.36	23.58	9	7	2
Appalachian Power Company (VA)	17,076.00	30,959.00	81.30	1	10	-9
Appalachian Power Company (WV)	17,105.00	31,121.00	81.94	2	12	-10
Dominion North Carolina Power	25,581.00	29,086.46	13.70	10	6	4
Dominion Virginia Power	21,834.00	28,209.09	29.20	6	3	3
DUKE Energy Carolinas (NC)	23,159.00	27,826.73	20.16	8	2	6
DUKE Energy Carolinas (SC)	21,271.00	28,739.95	35.11	5	5	0
Entergy Mississippi, Inc	31,759.00	24,919.00	-21.54	17	1	16
FP&L Company	39,089.00	30,961.00	-20.79	20	11	9
Georgia Power	31,381.00	39,339.79	25.36	16	20	-4
Gulf Power	27,731.00	38,465.00	38.71	12	19	-7
Mississippi Power	29,510.00	32,232.00	9.22	15	15	0
Duke Energy Progress, Inc. (NC)	28,750.00	30,104.00	4.71	13	9	4
Duke Energy Progress, Inc. (SC)	29,117.00	29,833.00	2.46	14	8	6
Duke Progress Energy Florida, Inc.	36,224.00	35,066.00	-3.20	19	17	2
SCE&G	26,106.00	38,054.00	45.77	11	18	-7
Tampa Electric Company	35,217.00	32,520.25	-7.66	18	16	2
Kentucky Utilities (d/b/a ODP)	22,538.00	31,376.00	39.21	7	13	-6
Louisville Gas & Electric	19,217.00	31,663.00	64.77	3	14	-11
Kentucky Utilities (KY)	19,651.00	28,475.00	44.90	4	4	0
Average For East South Central	23,303.00	30,165.00	29.45			
Average For South Atlantic	28,633.00	35,158.00	22.79			
USA Average	33,137.00	37,688.00	13.73			

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 1,000 kW and Usage of 650,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	33,196.00	42,156.70	26.99	8	14	-6
Appalachian Power Company (VA)	22,149.00	40,107.00	81.08	2	9	-7
Appalachian Power Company (WV)	21,095.00	39,287.00	86.24	1	7	-6
Dominion North Carolina Power	35,741.00	37,139.84	3.91	11	4	7
Dominion Virginia Power	27,440.00	34,093.74	24.25	5	2	3
DUKE Energy Carolinas (NC)	33,369.00	38,183.75	14.43	9	5	4
DUKE Energy Carolinas (SC)	29,581.00	38,895.32	31.49	6	6	0
Entergy Mississippi, Inc	46,038.00	32,931.00	-28.47	17	1	16
FP&L Company	58,373.00	42,017.00	-28.02	20	13	7
Georgia Power	40,776.00	48,765.30	19.59	15	18	-3
Gulf Power	39,354.00	52,978.00	34.62	13	20	-7
Mississippi Power	41,529.00	43,007.00	3.56	16	15	1
Duke Energy Progress, Inc. (NC)	38,120.00	39,847.00	4.53	12	8	4
Duke Energy Progress, Inc. (SC)	39,721.00	40,747.00	2.58	14	11	3
Duke Progress Energy Florida, Inc.	53,888.00	47,954.00	-11.01	19	17	2
SCE&G	34,479.00	50,444.00	46.30	10	19	-9
Tampa Electric Company	52,417.00	45,586.91	-13.03	18	16	2
Kentucky Utilities (d/b/a ODP)	32,632.00	41,124.00	26.02	7	12	-5
Louisville Gas & Electric	24,753.00	40,724.00	64.52	4	10	-6
Kentucky Utilities (KY)	23,996.00	35,633.00	48.50	3	3	0
Average For East South Central	31,900.00	40,320.00	26.39			
Average For South Atlantic	40,934.00	48,773.00	19.15			
USA Average	47,459.00	52,955.00	11.58			

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 50,000 kW and Usage of 15,000,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	960,686.00	1,173,306.42	22.13	7	6	1
Appalachian Power Company (VA)	649,370.00	1,267,520.00	95.19	2	13	-11
Appalachian Power Company (WV)	643,137.00	1,174,476.00	82.62	1	7	-6
Dominion North Carolina Power	1,072,319.00	1,287,964.67	20.11	9	15	-6
Dominion Virginia Power	962,792.00	1,272,789.35	32.20	8	14	-6
DUKE Energy Carolinas (NC)	824,123.00	1,030,105.16	24.99	6	3	3
DUKE Energy Carolinas (SC)	719,461.00	1,034,906.17	43.84	3	4	-1
Entergy Mississippi, Inc	1,144,786.00	941,255.00	-17.78	13	2	11
FP&L Company	1,555,031.00	789,127.00	-49.25	19	1	18
Georgia Power	1,154,245.00	1,448,319.20	25.48	15	18	-3
Gulf Power	1,146,283.00	1,619,787.00	41.31	14	20	-6
Mississippi Power	1,123,217.00	1,248,338.00	11.14	11	11	0
Duke Energy Progress, Inc. (NC)	1,185,500.00	1,186,638.00	0.10	16	10	6
Duke Energy Progress, Inc. (SC)	1,126,375.00	1,177,511.00	4.54	12	8	4
Duke Progress Energy Florida, Inc.	1,393,733.00	1,427,623.00	2.43	17	17	0
SCE&G	1,079,050.00	1,549,550.00	43.60	10	19	-9
Tampa Electric Company	1,404,056.00	1,363,008.42	-2.92	18	16	2
Kentucky Utilities (d/b/a ODP)	-	1,167,365.00		-	5	
Louisville Gas & Electric	788,933.00	1,255,599.00	59.15	5	12	-7
Kentucky Utilities (KY)	764,603.00	1,183,110.00	54.74	4	9	-5
Average For East South Central	891,018.00	1,150,679.00	29.14			
Average For South Atlantic	1,125,102.00	1,355,019.00	20.44			
USA Average	1,276,726.00	1,447,943.00	13.41			

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 50,000 kW and Usage of 25,000,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	1,328,493.00	1,675,396.23	26.11	8	14	-6
Appalachian Power Company (VA)	851,270.00	1,559,920.00	83.25	2	9	-7
Appalachian Power Company (WV)	822,487.00	1,540,116.00	87.25	1	7	-6
Dominion North Carolina Power	1,478,753.00	1,610,099.67	8.88	10	11	-1
Dominion Virginia Power	1,187,012.00	1,503,285.35	26.64	6	6	0
DUKE Energy Carolinas (NC)	1,275,938.00	1,444,386.04	13.20	7	4	3
DUKE Energy Carolinas (SC)	1,105,786.00	1,443,974.90	30.58	5	3	2
Entergy Mississippi, Inc	1,713,124.00	1,177,642.00	-31.26	16	2	14
FP&L Company	2,321,185.00	1,155,401.00	-50.22	19	1	18
Georgia Power	1,538,454.00	1,848,071.36	20.13	11	16	-5
Gulf Power	1,611,214.00	2,200,310.00	36.56	14	20	-6
Mississippi Power	1,638,836.00	1,744,324.00	6.44	15	15	0
Duke Energy Progress, Inc. (NC)	1,610,500.00	1,635,538.00	1.55	13	13	0
Duke Energy Progress, Inc. (SC)	1,573,675.00	1,621,811.00	3.06	12	12	0
Duke Progress Energy Florida, Inc.	2,104,110.00	1,946,817.00	-7.48	18	18	0
SCE&G	1,413,950.00	2,045,150.00	44.64	9	19	-10
Tampa Electric Company	2,092,056.00	1,885,675.07	-9.86	17	17	0
Kentucky Utilities (d/b/a ODP)	-	1,557,265.00		-	8	
Louisville Gas & Electric	1,010,396.00	1,605,539.00	58.90	3	10	-7
Kentucky Utilities (KY)	1,087,454.00	1,461,614.00	34.41	4	5	-1
Average For East South Central	1,236,657.00	1,526,487.00	23.44			
Average For South Atlantic	1,620,448.00	1,892,884.00	16.81			
USA Average	1,842,062.00	2,036,463.00	10.55			

PEER GROUP
Typical Bill Comparison
Industrial Customers

Demand of 50,000 kW and Usage of 32,500,000 kWh:	2006 $	2017 $	Change %	2006 Rank	2017 Rank	Rank Change
Alabama Power	1,604,349.00	2,051,963.59	27.90	8	15	-7
Appalachian Power Company (VA)	1,002,695.00	1,779,220.00	77.44	2	7	-5
Appalachian Power Company (WV)	928,687.00	1,814,346.00	95.37	1	8	-7
Dominion North Carolina Power	1,783,578.00	1,851,700.92	3.82	11	10	1
Dominion Virginia Power	1,355,177.00	1,676,157.35	23.69	6	4	2
DUKE Energy Carolinas (NC)	1,564,881.00	1,755,096.71	12.16	7	6	1
DUKE Energy Carolinas (SC)	1,303,720.00	1,749,492.28	34.19	4	5	-1
Entergy Mississippi, Inc	2,139,377.00	1,354,931.00	-36.67	16	1	15
FP&L Company	2,895,801.00	1,430,107.00	-50.61	19	2	17
Georgia Power	1,811,356.00	2,124,363.22	17.28	12	16	-4
Gulf Power	1,775,793.00	2,412,551.00	35.86	10	19	-9
Mississippi Power	1,984,609.00	2,036,157.00	2.60	15	14	1
Duke Energy Progress, Inc. (NC)	1,866,475.00	1,898,483.00	1.71	13	12	1
Duke Energy Progress, Inc. (SC)	1,880,233.00	1,944,444.00	3.42	14	13	1
Duke Progress Energy Florida, Inc.	2,687,323.00	2,389,984.00	-11.06	18	18	0
SCE&G	1,665,125.00	2,416,850.00	45.15	9	20	-11
Tampa Electric Company	2,608,056.00	2,277,675.06	-12.67	17	17	0
Kentucky Utilities (d/b/a ODP)	-	1,849,690.00			9	
Louisville Gas & Electric	1,176,493.00	1,867,994.00	58.78	3	11	-8
Kentucky Utilities (KY)	1,329,592.00	1,670,493.00	25.64	5	3	2
Average For East South Central	1,490,768.00	1,798,324.00	20.63			
Average For South Atlantic	1,973,214.00	2,285,199.00	15.81			
USA Average	2,245,855.00	2,467,094.00	9.85			