

March 5, 2019

VIA ELECTRONIC FILING

Mr. Joel H. Peck, Clerk
c/o Document Control Center
State Corporation Commission
Tyler Building – First Floor
1300 East Main Street
Richmond, Virginia 23219

RE: Application of Virginia Electric and Power Company for approval to implement new, 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. PUR-2018-00168

Dear Mr. Peck:

Enclosed for filing in the above-captioned proceeding is the **Unsealed and Corrected Version of the Direct Testimony of Rachel Gold**, along with a **Notice of Filing** detailing specific corrections to Ms. Gold's testimony.

This filing is being made on behalf of Respondent, the Virginia Energy Efficiency Council, and is being made electronically on the Commission's Electronic Document Filing system. If you should have any questions regarding this filing, please contact me at (434) 924-4776, or via email at cjaffe@law.virginia.edu.

Regards,



Cale Jaffe
Assistant Professor of Law, General Faculty
Director, Environmental and Regulatory Law Clinic
University of Virginia School of Law

cc: Parties on Service List
Commission Staff

CERTIFICATE OF SERVICE

I hereby certify that the following have been served with a true and accurate copy of the attached filing by U.S. mail, postage prepaid, and by electronic mail.

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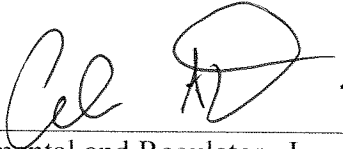
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DATED: March 5, 2019



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COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

APPLICATION OF)
)
VIRGINIA ELECTRIC AND POWER)
COMPANY)
) Case No. PUR-2018-00168
For approval to implement new)
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)

NOTICE OF FILING OF THE UNSEALED AND CORRECTED VERSION OF
THE DIRECT TESTIMONY OF RACHEL GOLD

Pursuant to the Commission’s Order Granting Motion to Unseal (dated March 1, 2019), and pursuant to 5 VAC 5-20-130 (“Amendment of pleadings”), the Virginia Energy Efficiency Council (“VAEEC”), by counsel, respectfully files the attached **Unsealed and Corrected Version of the Direct Testimony of Rachel Gold**. The VAEEC further states as follows:

1. The Commission has directed that the VAEEC “shall file one original and one copy of Ms. Gold’s testimony reflecting the finding herein that it is not necessary to designate any information in Ms. Gold’s testimony as Extraordinarily Sensitive.” Accordingly, the attached copy of Ms. Gold’s testimony removes the Extraordinarily Sensitive designation that had been included with Ms. Gold’s testimony filed on February 6, 2019.
2. In addition, Ms. Gold seeks to correct certain calculations used in her Direct Testimony, along with the statements based on those calculations. Those corrections are included in the attached testimony, and are as follows:

- a. Page 11, line 6: strike “0.50%” and insert “0.38%”; strike “six” and insert “four”;
- b. Page 11, lines 20-21: strike “only South Carolina Electric & Gas Company and Appalachian Power Company (VA) spent less on energy efficiency as a percentage of revenue than”;
- c. Page 12, line 1: insert “spent the least on energy efficiency as a percentage of revenue”;
- d. Page 21, n.41: strike “Southeastern”;
- e. Exhibit RG-3, page 1 of 2, line 15: strike “Dominion’s 2018 spending is assumed to be the same as 2017 spending”, and insert “Dominion’s 2017 spending is from ES Attachment to Staff Set 1-02 (JEB).”;

f. Exhibit RG-3, page 2 of 2: strike:

Dominion Virginia (2017)	6,842,220	\$ 34,008	0.50%
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and insert:

Dominion Virginia (2017)	6,842,220	\$ 25,961	0.38%
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g. Exhibit RG-3, page 2 of 2: strike:

Average	3,693,307	\$ 55,829	2.53%
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and insert:

Average	3,870,987	\$ 35,210	1.18%
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h. Exhibit RG-4, page 3 of 4: strike:

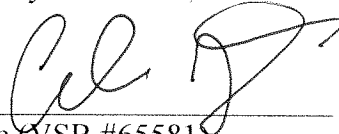
Dominion Virginia	6,842,220	\$34,008	0.50%
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and insert:

Dominion Virginia (2017)	6,842,220	\$25,961	0.38%
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i. Exhibit RG-4, page 4 of 4, in the row labeled "Average":
strike "\$82,311" and insert "\$82,303".

Respectfully Submitted,



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DATED: March 5, 2019

**COMMONWEALTH OF VIRGINIA
BEFORE THE STATE CORPORATION COMMISSION**

RE:

Application of Virginia Electric and Power Company for approval to implement 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. PUR-2018-00168

**Direct Testimony of
Rachel Gold**

on Behalf of the Virginia Energy Efficiency Council

February 6, 2019

UNSEALED AND CORRECTED VERSION (March 5, 2019)

Witness Direct Testimony Summary

Witness: Rachel Gold

Title: Senior Manager, American Council for an Energy-Efficient Economy

Summary:

The Virginia Energy Efficiency Council (“VAEEC”) presents the testimony of expert witness Rachel Gold, who provides an overview of an analysis conducted by the American Council for an Energy-Efficient Economy (“ACEEE”) of Dominion Energy’s proposed demand-side management programs. Ms. Gold’s testimony is from the perspective of one of the leading groups working on energy efficiency issues in the United States at the national, state, and local levels. For more than three decades, ACEEE has conducted research and analysis on demand-side management, and has collected extensive best-practice information on topics including energy efficiency programs and utility business model design.

First, Ms. Gold reviews the Phase VII portfolio proposed by Dominion Energy and recommends approval of new energy efficiency programs as a part of that portfolio.

Second, Ms. Gold recommends strategies to improve the portfolio of programs and maximize the effectiveness of the stakeholder process.

Third, Ms. Gold provides analysis of proposed spending in the Phase VII portfolio as well as existing spending from Phases I-VI, and compares Dominion’s spending to investments from other utilities, including utilities in its ROE peer group.

Finally, Ms. Gold analyzes Dominion’s progress toward compliance with the requirements in the Grid Transformation and Security Act (“GTSA”). Ms. Gold further explains why it is inappropriate to include lost revenue in any proposed spending cap or in an analysis of progress towards the GTSA requirements on energy efficiency.

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1 **I. INTRODUCTION AND QUALIFICATIONS.**

2 **Q1. Please state your name, title, and employer.**

3 A. My name is Rachel Gold. I am Senior Manager of the Utilities Program at the American
4 Council for an Energy-Efficient Economy (“ACEEE”), located at 529 14th St NW, Suite
5 600, Washington, DC 20045.

6 **Q2. What is the American Council for an Energy-Efficient Economy?**

7 A. ACEEE is a non-profit, 501(c)3 research organization founded in 1980 that conducts
8 research and analysis on energy efficiency and is one of the leading groups working on
9 energy efficiency issues in the United States at the national, state, and local levels. We
10 have been active on energy efficiency issues for more than three decades, collecting
11 extensive best-practice information on topics covering energy efficiency programs and
12 utility business model design.

13 In Virginia, ACEEE recently submitted comments to the Virginia Department of Mines,
14 Minerals and Energy (“DMME”) on the development of a 2018 Virginia Energy Plan.¹
15 ACEEE has participated in the initial meetings of the Dominion and Appalachian Power
16 Company stakeholder groups. In addition, ACEEE submitted comments to the
17 Department of Environmental Quality on the role of energy efficiency in carbon
18 regulation.² We also developed an energy efficiency potential study for the
19 Commonwealth of Virginia in 2008, which covered electricity savings opportunities.³

20 **Q3. Please summarize your professional and educational experience.**

21 A. I have worked in the energy efficiency industry for the past decade in a wide variety of
22 roles. Prior to joining ACEEE, I served as a Manager at Rocky Mountain Institute in the
23 organization’s Electricity Practice, where I advised public utility commissions and
24 utilities on power sector transformation issues, including distributed energy resources,

¹ Am. Council for an Energy-Efficient Econ., Comment Letter on the 2018 Virginia Energy Plan to the Virginia Department of Mines, Minerals, and Energy (Aug. 24, 2018), <https://aceee.org/sites/default/files/va-2018-energy-plan.pdf>.

² Am. Council for an Energy-Efficient Econ., Comment Letter on the Proposed Action to Develop Regulations to Reduce and Cap Carbon Dioxide from Fossil Fuel Fired Electric Power Generating Facilities (Rev. C17), 9VAC5 Chapter 140 to the Virginia Department of Environmental Quality (Apr. 9, 2018), <https://aceee.org/sites/default/files/va-rev-17-9VAC5-140.pdf>.

³ AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., ACEEE REP. NO. E085, ENERGIZING VIRGINIA: EFFICIENCY FIRST (2008), <https://aceee.org/sites/default/files/publications/researchreports/E085.pdf>.

1 program design, utility business models, and rate design. I also facilitated and designed
2 multi-stakeholder collaborations for the NREL Solar Energy Innovation Network and the
3 Oregon Public Utilities Commission, and to support post-Maria hurricane recovery in
4 Puerto Rico on behalf of Rocky Mountain Institute. Earlier in my career, I was a Senior
5 Regulatory Analyst at Opower (now Oracle Utilities), with a focus on California and
6 western states, and interned in the Energy Division of the California Public Utilities
7 Commission.

8 In my current role as Senior Manager of the Utilities Program at ACEEE, I manage our
9 research into energy efficiency program design, utility business model incentives for
10 energy efficiency, energy efficiency target design, and the use of energy efficiency as a
11 resource. Our team advises public utility commissions and other regulators; utilities and
12 other energy efficiency program administrators; and environmental advocates in
13 numerous states. I received an M.P.P. from University of California, Berkeley and a B.S.
14 from Brandeis University. A copy of my C.V. is attached as Exhibit RG-1.

15 **Q4. On whose behalf are you testifying in this investigation?**

16 A. I am testifying on behalf of the Virginia Energy Efficiency Council (“VAEEC”). VAEEC
17 is a 501(c)3 charitable organization that provides a platform for stakeholder engagement
18 while assessing and supporting cost-effective energy efficiency programs, best practices
19 in the energy efficiency industry, and sound policies that advance energy efficiency in
20 Virginia. VAEEC also provides networking, outreach, and business services for the
21 Commonwealth’s energy efficiency industry and the public at large.

22 **Q5. Have you previously testified before the Virginia State Corporation Commission**
23 **(“Commission”)?**

24 A. No.

25 **Q6. Aside from your C.V., do you have any others exhibits that you are sponsoring with**
26 **your testimony?**

27 A. Yes. We have compared Dominion’s proposed portfolio to 2017 Demand-Side
28 Management (“DSM”) spending data from utilities in EIA Form 861 to better understand
29 how Dominion’s spending compares to those other utilities. Dominion’s proposed
30 spending is summarized in Exhibit RG-2, and the comparison is discussed later in this
31 testimony and is summarized in Exhibit RG-4. Exhibit RG-3 also compares Dominion’s

1 spending to utilities in its return on equity (“ROE”) peer group. In addition, we compared
2 Dominion’s past savings achievement in Exhibit RG-5, which compares Dominion’s
3 2017 savings (MWh) as a percentage of electric sales to the filings of ten U.S. electric
4 utilities, chosen for similarity based on size or region.

5 **II. OVERVIEW AND SUMMARY OF CONCLUSIONS AND**
6 **RECOMMENDATIONS.**

7 **Q7. What is the purpose of your testimony?**

8 Virginia Electric and Power Company (“the Company” or “Dominion”) filed this
9 application for approval of eleven new DSM programs (“Phase VII” programs) and
10 approval of cost recovery related to those new programs as well as ongoing Phase I-VI
11 programs. The purpose of my testimony is to provide information for the Commission’s
12 consideration as it seeks to understand the benefits of these proposed programs. I provide
13 an analysis of the Company’s proposed DSM portfolio and implementation approach,
14 which our team at ACEEE reviewed in the context of our research on best practices in the
15 industry nationally and our experience examining similar proposals in other states. We
16 also assessed the strength of the application with respect to the current policy
17 environment in Virginia.

18 **Q8. Why did VAEEC elect to intervene, and why is ACEEE serving as a witness in this**
19 **docket?**

20 A. The VAEEC’s members include energy efficiency businesses, universities, nonprofits,
21 local governments, and electric utilities. These members recognize the value that cost-
22 effective energy efficiency programs can provide to all utility customers, including
23 participants and non-participants alike. Their goal is to ensure that energy efficiency is
24 properly recognized as an integral part of Virginia’s economy and clean energy future.

25 For ACEEE, providing testimony in this case is an opportunity to help improve the
26 performance of energy efficiency in a state that is important both regionally and
27 nationally. Virginia ranked 26th in the most recent *ACEEE State Energy Efficiency*
28 *Scorecard*. In the past ten years, Virginia has tied for last in all but one year on one
29 specific metric - spending on electric energy efficiency programs as a percentage of
30 electric utility revenue. In that time, the Commonwealth has not ranked higher than 43rd

1 in another important metric - electricity savings as a percentage of retail sales. We are
2 eager to support efforts to improve energy efficiency performance in Virginia.

3 Both VAEEC and ACEEE support sound policy efforts to grow the role of cost-effective
4 energy efficiency as a resource for Virginian homes and businesses. The recent Grid
5 Transformation and Security Act,⁴ (the “GTSA”), creates an opportunity for the
6 Company, the Commission, and engaged stakeholders to ensure that the required
7 spending proposals for energy efficiency programs (\$870 million by 2028), are designed
8 to be highly cost-effective and deliver the most “bang for the buck.” ACEEE’s research
9 over nearly 40 years documents a wide range of benefits for customers and the system
10 from well-designed, utility-sponsored energy efficiency programs.

11 **Q9. Please describe the purpose of energy efficiency programs for Virginia ratepayers?**

12 A. Our research across the country finds both systemwide and participant benefits from
13 energy efficiency. Energy efficiency continues to be one of the lowest cost system
14 resources.⁵ ACEEE research shows that in the 2015 program year, energy efficiency
15 programs cost utilities, on average, about 3.1 cents per kilowatt-hour nationally,
16 including program costs and performance incentives.⁶ Because investments in energy
17 efficiency reduce total electric load at a low cost, they mitigate reliance on more
18 expensive utility investments in generation, transmission and distribution resources. This
19 reduces costs for all customers in the system by reducing fuel costs and market
20 purchases. Energy efficiency also delivers a host of other benefits, such as improving grid
21 reliability and resilience,⁷ and avoiding capacity costs, line losses, risks, and reducing
22 costs of existing and future environmental regulations.⁸

⁴ 2018 Va. Acts (Ch. 296).

⁵ I. Hoffman, G. Leventis, and C. Goldman, *Trends in the Program Administrator Cost of Saving Electricity for Utility Customer-Funded Energy Efficiency Programs* (Berkeley: LBNL, 2017), <http://eta-publications.lbl.gov/sites/default/files/lbnl-1007009.pdf>; Lazard, *Lazard’s Levelized Cost of Energy Analysis: Version 11.0* (2017), <https://www.lazard.com/media/450337/lazard-levelized-cost-of-energy-version-110.pdf>.

⁶ Maggie Molina & Grace Relf, *Does Efficiency Still Deliver the Biggest Bank for Our Buck? A Review of Cost of Saved Energy for Electric Utilities*, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON. (2018).

⁷ GRACE RELF, DAN YORK, AND MARTIN KUSHLER, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1809, *KEEPING THE LIGHTS ON: ENERGY EFFICIENCY AND ELECTRIC SYSTEM RELIABILITY* (2018), <https://aceee.org/sites/default/files/publications/researchreports/u1809.pdf>.

⁸ Jim Lazar & Ken Colburn, *Recognizing the Full Value of Efficiency*, THE REGULATORY ASSISTANCE PROJECT (Sep. 9, 2013), <https://www.raonline.org/knowledge-center/recognizing-the-full-value-of-energy-efficiency/>.

1 Energy efficiency directly benefits customers; unlike centralized generation resources, it
2 can target savings where and when they're needed the most, directly reducing customer
3 utility bills and making homes and buildings more comfortable, safe, and productive.

4 Energy efficiency also supports economic development, creating jobs that cannot be
5 exported out of state. Research from E4TheFuture, consistent with VAEEC's research in
6 2017, found that Virginia has 76,621 energy efficiency jobs, with energy efficiency jobs
7 comprising 24% of all construction jobs and 42% of all energy sector jobs.⁹ Emission
8 reductions from energy efficiency can also lead to significant gains in public health.
9 ACEEE's research found that reducing annual electricity use by 15% nationwide would
10 save Americans up to \$20 billion through avoided health harms annually. Virginia ranked
11 among the top 15 states that would see the largest avoided health harms – including
12 reductions in heart attacks, respiratory illnesses and symptoms, premature deaths, and
13 emergency room visits to treat asthma – from investments in energy efficiency and
14 subsequent emissions reductions in the electric power sector.¹⁰

15 **Q10. Please describe the elements of the Company's application that you wish to address.**

16 A. In preparing my testimony, I focused on the following portions of the Company's
17 application:

- 18 1. Direct Testimony of Brett A. Crable, specifically the discussion of planned accounting
19 towards the \$870 million proposed spending requirement and the stakeholder process.
- 20 2. Direct Testimony of Michael T. Hubbard, specifically the description of planned
21 programs, including new Phase VII proposed programs and the process used to design
22 those programs.
- 23 3. Direct Testimony of Deanna R. Kesler, specifically the cost-effectiveness screening
24 and description of benefits in Schedules 3 and 10.

⁹ *Energy Efficiency Jobs in America*, E4THEFUTURE & E2 (2018), <https://e4thefuture.org/wp-content/uploads/2018/09/EE-Jobs-in-America-2018.pdf>.

¹⁰ SARA HAYES & CASSANDRA KUBES, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. H1801, SAVING ENERGY, SAVING LIVES: THE HEALTH IMPACTS OF AVOIDING POWER PLANT POLLUTION WITH ENERGY EFFICIENCY (2018), <https://aceee.org/sites/default/files/publications/researchreports/h1801.pdf>.

1 4. Direct Testimony of Jarvis E Bates, specifically the projected costs and lost revenues
2 in Extraordinarily Sensitive Attachment Staff Set 1-02 (JEB).

3 **Q11. Based on your analysis and ACEEE's review of the Company's application, what is**
4 **your recommendation with regard to the Phase VII programs?**

5 A. We recommend approval of all new energy efficiency programs included as a part of that
6 portfolio, and continued approval of existing energy efficiency programs. Our review of
7 the Company's filing finds that the proposed Phase VII filings will result in net benefits
8 for Virginia ratepayers. The proposed programs offer new opportunities for savings from
9 different end uses and customer classes previously underserved by energy efficiency
10 programs.

11 **Q12. Do you have any further recommendations with regard to the Phase VII programs?**

12 A. Yes. While the programs are cost-effective and should be approved as proposed by the
13 Company, there are nevertheless opportunities for improvement. Part III.1 of my
14 testimony includes strategies to improve the portfolio of programs and Part III.4
15 highlights opportunities to maximize the effectiveness of the stakeholder process.

16 Specifically, I recommend consideration of more comprehensive or focused multifamily
17 offerings, new construction programs, strategic energy management programs, and
18 small/medium commercial and industrial programs below the 500kW demand restriction.
19 In addition, I recommend consideration of midstream or upstream program designs to
20 maximize impact and participation potential from Company programs.

21 For the stakeholder process, I recommend that the group set clear objectives in three
22 areas of focus: program design, evaluation, and energy efficiency policy matters. I further
23 recommend that the group define rules and decision making processes, utilize an
24 independent facilitator, and conduct its efforts in a public, transparent, and inclusive
25 fashion. Finally, I recommend that the Company and the Commission establish how the
26 finished product from the stakeholder process will be used in Commission proceedings.

27 **Q13. Have you analyzed the proposal in light of the requirements in the GTSA?**

28 A. Yes. As explained in Part III.3 of my testimony, the Company's proposal would account
29 for 23% of its GTSA proposal requirement, to be met by 2028. As described in Q28
30 below, we project that based on

1 current proposals Dominion will spend under \$325 million on energy efficiency between
2 mid-2018 and late 2027 – under 40% of the \$870 million required to be proposed.

3
4 In addition, we note that on average, Dominion ranked 37th nationwide in terms of its
5 investment in energy efficiency as a proportion of retail sales in 2017, and the new
6 proposals would increase the ranking relative to 2017 spending from other utilities to at
7 best 34th out of 41.¹¹ These data suggest that Virginia has considerable room for
8 expanded effort. The stakeholder process, future Company annual reports, and future
9 Company applications all offer opportunities to better articulate the Company’s pathway
10 to meeting the requirements in the GTSA.

11 III. DISCUSSION.

12 1. Proposed Energy Efficiency Portfolio

13 **Q14. Please describe the benefits of the Company’s programs as outlined in the Direct**
14 **Testimony of Michael T. Hubbard.**

15 **A.** Mr. Hubbard’s testimony describes the Company’s existing efficiency programs that it
16 plans to continue into 2019: the Phase IV Residential Income and Age Qualifying Home
17 Improvement Program, the Phase V Small Business Improvement Program, and the
18 Phase VI Non-Residential Prescriptive Program.

19 His testimony also describes the Company’s proposed Phase VII programs, which our
20 review finds would expand energy efficiency opportunities to new groups of customers,
21 including non-residential offices and small manufacturing customers. We further find that
22 Dominion’s programs will leverage new means of reaching customers through a home
23 energy assessment program, efficiency products marketplace platform (online
24 marketplace), and a customer engagement program. Finally, Phase VII programs will
25 offer savings opportunities for new end-uses, including residential smart thermostats and
26 appliance recycling, and new versions of the non-residential heating and cooling, lighting

¹¹ ACEEE rankings are based on the ratio of revenues to spending, and are not necessarily indicative of any level of specific expenditures on energy efficiency. Although the Company has labeled the breakdown of its expenditures as Extraordinarily Sensitive, aggregated data from the Company and other utilities are publicly available on EIA Form 861 filings. See Exhibit RG-4 for an explanation of assumptions used to produce these rankings.

1 systems and controls, and window film programs from Phase III. These programs are
2 common among utility portfolios. For example, of the 51 largest U.S. electric utilities, 18
3 have a commercial lighting systems/controls program, 28 have a commercial heating and
4 cooling program, and 30 had a residential customer engagement program.¹²

5 **Q15. What is VAEEC's position with respect to the Company's application for approval**
6 **of Phase VII programs?**

7 **A.** As stated above in response to Q11, VAEEC recommends approval of the Phase VII
8 programs. These new programs and ongoing programs will deliver net benefits for
9 customers and ratepayers. Company Witness Deanna R. Kesler's pre-filed direct
10 testimony describes the use of the Strategist model to verify the cost-effectiveness of
11 programs. The Company states that it used the Commission's Cost/Benefit Rules to
12 analyze the net present value of the costs and benefits of programs using four of the
13 standard tests from the California Standard Practice manual. Each of the ongoing
14 programs, detailed in Witness Kesler's Schedule 3, and new proposed Phase VII
15 programs, detailed in her Schedule 10, passes three of the four tests or delivers energy
16 savings to low-income customers or older customers, consistent with the definition of "In
17 the public interest," for purposes of assessing energy efficiency programs, in Va. Code §
18 56-576.

19 Although the Income and Age Qualifying Home Improvement Program has lower cost-
20 effectiveness scores than others in the Phase VII portfolio, we nonetheless recommend its
21 approval. Va. Code § 56-576 provides that "an energy efficiency program may be
22 deemed to be 'in the public interest' if the program provides measurable and verifiable
23 energy savings to low-income customers or elderly customers." Our research finds that
24 low-income households face high energy burdens, meaning that they spend a greater
25 proportion of their income on energy bills than average residential customers.¹³ Further,

¹² GRACE RELF, BRENDON BAATZ, & SETH NOWAK, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1707, 2017 UTILITY ENERGY EFFICIENCY SCORECARD (2017), <https://aceee.org/sites/default/files/publications/researchreports/u1707.pdf>.

¹³ Ariel Dreihobl & Lauren Ross, *Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low-Income and Underserved Communities*, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON. (Apr. 2016), <https://aceee.org/sites/default/files/publications/researchreports/u1602.pdf>; Lauren Ross, Ariel Dreihobl & Brian Stickles, *The High Cost of Energy in Rural America: Household Energy Burdens and*

1 they often have aging homes and lack the upfront capital to make improvements. Energy
2 efficiency programs can help address these barriers, lowering energy bills, and improving
3 home health and safety.¹⁴

4 **Q16. What is VAEEC's position with respect to the Company's request for a five-year**
5 **implementation period?**

6 Company witness Michael T. Hubbard notes on page 9 of his Direct Testimony that the
7 Company requests a five-year implementation period to allow for a program to properly
8 launch and gain acceptance without the potential risk of market disruption. We agree.
9 Longer phases enable program administrators to maintain persistence in program
10 offerings, which provides certainty to the marketplace for customer and the energy
11 efficiency businesses that serve them. Short term approvals may create administrative
12 difficulties and be a less efficient use of resources. The U.S. Environmental Protection
13 Agency recommends providing multi-year, consistent funding for energy efficiency
14 programs as a best practice.¹⁵ More broadly, the Commission and Company may want to
15 consider rules to avoid abrupt starts and stops to programs, by providing approval for
16 programs until new changes are filed. For example, in Arizona, new DSM programs are
17 approved until a new application and order modifying or removing those programs is
18 approved.¹⁶

19 **Q17. What is VAEEC's position with respect to the bundling of programs?**

20 A. VAEEC supports this approach. We are encouraged that the Company plans to offer
21 bundled packages of energy efficiency and other DSM resources to customers for
22 residential and non-residential customers, as described on page 8 of the Company's
23 application. Reducing the number of touchpoints and simplifying the process for a

Opportunities for Energy Efficiency, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON. (July 2018),
<https://aceee.org/sites/default/files/publications/researchreports/u1806.pdf>.

¹⁴ Ariel Dreihobl & Fernando Castro-Alvarez, *Low-Income Energy Efficiency Programs: A Baseline Assessment of Programs Serving the 51 Largest Cities*, (Updated Nov. 2017), <https://aceee.org/sites/default/files/low-income-baseline-1117.pdf>; ANNIE GILLES, SETH NOWAK, & ARIEL DREHOBL, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1713, MAKING A DIFFERENCE: STRATEGIES FOR SUCCESSFUL LOW-INCOME ENERGY EFFICIENCY PROGRAMS (2017), <https://aceee.org/sites/default/files/publications/researchreports/u1713.pdf>.

¹⁵ See Env'tl Prot. Agency, 6: *Energy Efficiency Program Best Practices*,
https://www.epa.gov/sites/production/files/2015-08/documents/napee_chap6.pdf.

¹⁶ In the matter of the notice of proposed rulemaking on electric energy efficiency, Arizona Corporation Commission. Docket No. RE-00000C-9-0427, Decision No. 71819 (Opinion and Order Aug. 10, 2010).

1 particular customer can lower administrative costs and drive increased participation and
2 provide a more comprehensive set of actionable opportunities appropriate for a
3 participant site.¹⁷ Integrated demand-side management strategies enable simultaneous
4 upgrade of equipment with energy efficiency and demand response measures and better
5 operation and scheduling of loads to better serve site needs.¹⁸ In addition, these programs
6 can deliver increased value for customers and the system through programs that serve
7 multiple value streams.

8 **Q18. What is VAEEC's position with respect to the remainder of the Company's**
9 **proposed portfolio of programs?**

10 A. In addition to energy efficiency programs, the Company proposes to continue the existing
11 Non-Residential DG Program (approved through May 31, 2022), the Residential AC
12 Cycling Program (approved through March 31, 2021), and seeks recovery of costs
13 associated with the EV Pilot Program. The Company's proposed Smart Thermostat
14 Management Program also has a demand response component. Although we are
15 supportive of the development of other cost-effective demand-side resources, VAEEC
16 does not take a position on these programs.

17 **Q19. Is the Company's plan achievable as filed?**

18 A. Yes. There are several, relevant metrics for assessing achievability: (1) whether the
19 proposed spending is achievable; (2) whether the rate of change in spending or savings
20 the Company anticipates is realistic; and (3) whether achieving cost-effective savings as a
21 result of that spending is achievable.

22 The Company is proposing an increase in spending from \$25,860,156 in 2018 to
23 \$39,526,890 in 2019, an increase of about 53%.¹⁹

¹⁷ Matthew Socks, Phil Mosenthal, Donna DeCostanzo, & Ashok Gupta. *The Energy Efficiency Extra Value Menu: Streamlining Energy Efficiency Delivery*, OPTIMAL ENERGY, INC. & NATURAL RESOURCES DEFENSE COUNCIL (ACEEE Summer Study on Energy Efficiency in Buildings, 2016), https://aceee.org/files/proceedings/2016/data/papers/7_801.pdf.

¹⁸ Peter Alstone et al., *2025 California Demand Response Potential Study – Charting California's Demand Response Future: Final Report on Phase 2 Results*, LAWRENCE BERKELEY NATIONAL LABORATORY ENERGY TECHNOLOGIES AREA (2017), <https://escholarship.org/content/qt2m68c4xh/qt2m68c4xh.pdf>.

¹⁹ See Exhibit RG-2 for details.

1 We compared Dominion’s proposed portfolio to 2017 DSM spending data from utilities
2 in EIA Form 861 to better understand how Dominion’s spending compares to those other
3 utilities. Exhibits RG-3 and RG-4 documents these findings.

4 We found that every year through 2021, Dominion’s program spending proposal, as a
5 percentage of total revenue, would fall in the bottom 10 utilities out of the 41 studied. In
6 2017, Dominion spent ~~0.50%~~ **0.38%** of revenue on its DSM portfolio, with only ~~six~~ **four**
7 utilities ranking lower. Dominion’s highest proposed spending year in 2020 would make
8 up just under 0.6% of 2017 revenues, which is less than a third of the average of all
9 utilities (2.51%). Typically, utilities increase their DSM spending each year, meaning that
10 Dominion would fall even farther behind with its currently proposed future spending
11 levels.²⁰ This fact indicates that Dominion could reasonably increase its spending on cost-
12 effective DSM programs in order to fall in line with peer utilities and provide greater
13 benefits to its customers.

14 **Q20. How does the Company’s plan compare to efforts from peer utilities?**

15 A. Dominion’s Return on Equity Peer Group, as considered by the Commission in Case No.
16 PUR-2017-00038, includes the following companies: Appalachian Power²¹; Entergy
17 Mississippi, Inc.; Louisville Gas & Electric Company; Duke Energy Progress, Inc.; South
18 Carolina Electric & Gas Company; and Duke Energy Carolinas, LLC. Exhibit RG-3
19 includes data on utility spending on energy efficiency from the peer group utilities, and
20 finds that ~~only South Carolina Electric & Gas Company and Appalachian Power~~
21 ~~Company (VA) spent less on energy efficiency as a percentage of revenue than Dominion~~

²⁰ CHARLES A. GOLDMAN ET AL. LAWRENCE BERKELEY NATIONAL LABORATORY, THE FUTURE OF U.S. ELECTRICITY EFFICIENCY PROGRAMS FUNDED BY UTILITY CUSTOMERS (2018), http://eta-publications.lbl.gov/sites/default/files/future_of_ee_final_report_20181205_final.pdf. The report finds aggregate growth in spending across all utility energy efficiency programs in the U.S. from 2010-2015, and projects continued growth to 2030.

²¹ In PUR-2017-00038, the Commission Staff and the Office of the Attorney General included Appalachian Power (“APCo”) in their proposed peer groups for Dominion. Dominion objected. The Commission however, established a Return on Equity about the statutory floor regardless of whether APCo was included. Thus, the Commission did not address whether APCo needed to be included in Dominion’s peer group going forward. See In the matter of *Application of Va. Elec. & Power Co. for the Determination of the Fair Rate of Return on Common Equity to be Applied to its Rate Adjustment Clauses*, Commonwealth of Virginia State Corporation Commission. Case No. PUR-2017-00038, at 9 n.33 (Final Order Nov. 29, 2017).

1 **spent the least on energy efficiency as a percentage of revenue**
2 in 2017.

3 While the data show a strong increase in spending and potential savings, the analysis in
4 RG-3 and RG-4 also demonstrates that Dominion is starting from a relatively low base of
5 spending as a percentage of revenues compared to other utilities, including its peers.

6 Furthermore, there are numerous examples of program administrators who have grown
7 energy efficiency portfolios at such a rate, including Ameren Missouri and Los Angeles
8 Department of Water and Power, which increased spending by 53% from 2016 to 2017.
9 Additionally, Commonwealth Edison increased spending by 48% and Duke Energy
10 Carolinas (SC) increased spending by 36% from 2016-2017. From 2015-2016, Oklahoma
11 Gas and Electric increased spending by 58%, Duke Energy Indiana increased spending
12 by 43% and Duke Energy Carolinas (NC) increased spending by 37%.²²

13 Exhibit RG-5 expands on this analysis by looking at actual filed savings in kWh. We
14 compare Dominion's 2017 savings to ten comparable utilities – including southeastern
15 utilities and other similarly sized utilities from other regions of the country. We found
16 that Dominion saved 0.14% of its sales in 2017 and was the 3rd lowest saving utility in
17 this group. This is far less than the group average of 1.07% and is more than ten times
18 less than high-achieving utilities in the Southeast such as Entergy Arkansas and Duke
19 Energy Progress in North Carolina. This analysis indicates that Dominion could increase
20 its savings relative to its sales, since similar utilities have done so cost-effectively.

21 **Q21. Are there any programs or measures the Company should consider as a part of this**
22 **or future portfolios?**

23 A. Yes. We recommend that the Company offer new construction programs for the
24 residential sector and more comprehensive retrofit programs for the multifamily
25 building sector. We also recommend strategic energy management (“SEM”)
26 programs for the small/medium (e.g., 100kW-500kW) commercial and industrial
27 sectors, and industrial programs that support combined heat and power, efficient

²² *Electric power sales, revenue, and energy efficiency Form EIA-861 detailed data files* U.S. ENERGY INFORMATION ADMINISTRATION (EIA), (Updated January 15, 2019), eia.gov/electricity/data/eia861/.

1 motors, and non-residential lighting.²³ Finally, the Company should consider mid-
2 and upstream program designs that target distributors and manufacturers of energy
3 efficient products, a strategy that can help to scale program impact.

4 The breadth and types of energy efficiency programs are essential determinants of
5 utility energy efficiency capability and performance. ACEEE research into program
6 best practices in the small business, low income, and multifamily sectors
7 demonstrates that when utilities offer programs for specific customer segments and
8 targeted energy end uses, they can most effectively reach these underserved markets
9 and design programs to meet their needs.²⁴ In ACEEE's 2017 Utility Energy
10 Efficiency Scorecard, we scored the 51 largest U.S. electric utilities on program
11 diversity using a checklist of 22 program types, 10 residential and 12 commercial and
12 industrial.²⁵

13 In preparing this testimony, we found that Dominion could explore several new
14 program models in order to meet GTSA proposal requirements and deliver substantial
15 benefits to community members across the Commonwealth. We identified the
16 following program opportunities for Dominion by reviewing their current DSM

²³ These programs would be applicable for customers with less than 500kW of demand from a single meter of delivery. See Va. Code § 56-585.1 A 5 c.

²⁴ SETH NOWAK, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1607, BIG OPPORTUNITIES FOR SMALL BUSINESS: SUCCESSFUL PRACTICES OF UTILITY SMALL COMMERCIAL ENERGY EFFICIENCY PROGRAMS (2016), <https://aceee.org/sites/default/files/publications/researchreports/u1607.pdf>; RACHEL CLUETT, JENNIFER AMANN, & SODAVY OU, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. A1601, BUILDING BETTER ENERGY EFFICIENCY PROGRAMS FOR LOW-INCOME HOUSEHOLDS (2016), <https://aceee.org/sites/default/files/publications/researchreports/a1601.pdf>; and KATE JOHNSON, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. E13N, APARTMENT HUNTERS: PROGRAMS SEARCHING FOR ENERGY SAVINGS IN MULTIFAMILY BUILDINGS (2013), <https://aceee.org/sites/default/files/publications/researchreports/e13n.pdf>.

²⁵ Residential: appliance recycling, behavior, education, home appliances, home retrofit, HVAC, lighting, multifamily, new construction, and water heating. Commercial and industrial: agriculture, combined heat and power, efficient motors, HVAC, industrial custom, kitchens and restaurants, lighting, lighting systems and controls, retro-commissioning, small business, strategic energy management, and whole-building retrofits. See GRACE RELF, BRENDON BAATZ, AND SETH NOWAK, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1707, 2017 UTILITY ENERGY EFFICIENCY SCORECARD (2017), <https://aceee.org/sites/default/files/publications/researchreports/u1707.pdf>.

1 application and comparing their proposed programs (all phases) to the
2 aforementioned checklist.²⁶

3 1. *Multifamily Programs* – Dominion currently offers direct install energy efficiency
4 measures to multifamily households through a broader Income and Age
5 Qualifying Home Improvement Program. Dominion could expand this program to
6 include more comprehensive equipment upgrades and building improvements, or
7 it could create a new multifamily-focused program. 32 of the 51 largest electric
8 utilities offered multifamily programs in 2015. One example Dominion could
9 look to is Georgia Power’s Multifamily Home Energy Improvement Program,
10 which offers rebates or whole house and individual efficiency improvements.²⁷

11 2. *New Construction* – New construction programs that offer extensive technical
12 assistance to building owners and design teams can ensure that efficiency
13 upgrades are considered early in the design/construction process. 37 of the 51
14 largest electric utilities offered new construction programs in 2015. An industry
15 leader on residential new construction is AEP Ohio’s EfficiencyCrafted Homes
16 program, which encourages green new home construction by offering incentives
17 to Ohio builders and education to consumers.²⁸

18 3. *Commercial and Industrial* – Dominion offers multiple non-residential programs
19 but does not offer programs for combined heat and power, agricultural efficiency
20 or efficient motors. While the statute restricts energy efficiency programs to
21 customers with less than 500kW of demand from a single meter of delivery,
22 programs could be offered for small/medium commercial and industrial
23 customers.²⁹ Further, it is worth noting that these can be among the most cost-
24 effective programs in utility program portfolios, and existing law leaves

²⁶ For each opportunity recommended we note how many of the 51 largest electric utilities offered each program in 2015.

²⁷ SETH NOWAK, MARTIN KUSHLER, AND PATTI WITTE, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1901, THE NEW LEADERS OF THE PACK: ACEEE’S FOURTH NATIONAL REVIEW OF EXEMPLARY ENERGY EFFICIENCY PROGRAMS (2019), <https://aceee.org/sites/default/files/publications/researchreports/u1901.pdf>.

²⁸ *The Efficiency Crafted program*, AEP OHIO (last visited Feb. 5, 2019), www.energycraftedhomesaepohio.com/.

²⁹ See Va. Code § 56-585.1 A 5 c.

1 significant low hanging fruit to wither on the vine. Of the 51 largest electric
2 utilities in the U.S., 11 offered agriculture programs, 15 offered combined heat
3 and power programs, and 19 offered efficient motor programs in 2015. An
4 example of such a program is Entergy Arkansas' Agricultural Energy Solutions
5 Program, which helps farmers and their agribusinesses make their current
6 facilities and new construction more energy-efficient.³⁰

7 4. *Strategic Energy Management ("SEM")* – These programs provide industrial,
8 commercial, and institutional customers with a structure and methodology for
9 saving energy through continual improvement and a systematic approach to
10 energy performance. SEM drives energy savings through operations and
11 maintenance ("O&M") actions, increased capital project activity, and increases in
12 participation in other utility programs.³¹ There are currently 27 utilities and third-
13 party administrators in North America that offer these programs, and these
14 programs can achieve 6-10% energy savings in the first year of program
15 engagement. SEM programs can work for companies of most sizes (typically
16 over 100 kW). Dominion can offer such a program to small and medium
17 commercial and industrial customers with average demands up to 500kW,
18 particularly targeting customers with demands of over 100 kW.³² As an example,
19 AEP Ohio's Continuous Energy Improvement program helps industrial
20 customers, hospitals, and universities save energy through changes to operations
21 and maintenance.³³

22 5. *Midstream EE Programs* – Leading upstream- and midstream-focused programs
23 leverage rebates in product manufacturer or distribution channels for greater
24 market impact. These programs are often used for lighting, and increasingly used

³⁰ NOWAK ET AL., *supra* note 27.

³¹ ETHAN ROGERS, ANDREW WHITLOCK, & KELLY ROHRER, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. IE1901, FEATURES AND PERFORMANCE OF ENERGY MANAGEMENT PROGRAMS (2019), <https://aceee.org/research-report/ie1901>.

³² Dominion could initially partner with the U.S. Department of Energy (DOE) 50001 Ready Program, which provides organizations a self-guided approach to establishing an energy management system that adheres to ISO 50001. Several SEM programs have integrated the 50001 Ready Program into their offerings.

³³ NOWAK ET AL., *supra* note 27; see *Continuous Energy Improvement*, AEP OHIO, <https://acpohio.com/save/business/programs/ContinuousEnergyImprovement.aspx>

1 for HVAC, pumps, and building and vehicle electrification efforts. For example,
2 Efficiency Vermont's Heat Pump Water Heaters program provides rebates at
3 retail, online, wholesale, and distributor levels, achieving market penetration of
4 more than 29 times the national average on electric-to-electric conversions.³⁴

5 **2. Proposed Cost Recovery Structure**

6 **Q22. Does VAEEC take any position with respect to the Company's proposed cost**
7 **recovery structure?**

8 A. VAEEC supports the principle that Dominion should be able to recover the legitimate
9 costs of delivering approved energy efficiency programs to customers. Program cost
10 recovery is a minimum threshold for utilities to offer customer energy efficiency
11 programs, without which, money spent on such programs constitutes financial losses to
12 utility shareholders, despite its clear benefits.

13 Dominion includes a 9.2% ROE on their operating expenses and capital expenditures.
14 The Company notes that this is consistent with previous DSM cases. In Enactment Clause
15 15 to Chapter 296 of the Virginia Acts of Assembly, the GTSA explicitly allows for
16 recovery of "projected and actual costs for the utility to design, implement, and operate
17 energy efficiency programs, including a margin to be recovered on operating expenses."

18 While we can see merit in an approach that provides an ROE on capital expenditures,
19 ACEEE has generally not supported a return on operational and administrative expenses.
20 Capital expenses that support tangible items like rebates for equipment are somewhat
21 analogous to capital investment in a power plant. In traditional utility regulation,
22 regulators treat expenses like personnel, rent and fees, and fuel costs as recoverable costs
23 that do not receive a rate of return. As a result, energy efficiency operational and
24 administrative costs are annually recovered and trued up rather than amortized over time.

25 As for utility shareholder incentives to encourage investment in energy efficiency, most
26 states structure such incentives on a performance basis. That would generally be our
27 preferred approach, as it provides the best protection for ratepayers by incentivizing

³⁴ NOWAK ET AL., *supra* note 27; see *Heat Pump Water Heaters*, EFFICIENCY VERMONT (2019),
<https://www.encyvermont.com/rebates/list/heat-pump-water-heaters>.

1 performance rather than just spending. However, ACEEE understands that the provision
2 of an ROE on operating expenses comes from Va. Code § 56-585.1 A.5 c, and that the
3 intent of this statute is to place demand-side management on a more level playing field
4 with supply-side generation. There are a few states that allow utilities to amortize the
5 costs of energy efficiency programs over time, and Virginia’s statute and the Company’s
6 proposal is in line with similar structures in Maryland, New York, and Illinois.

7 **Q23. Does VAEEC support the proposed rate of return?**

8 A. We have no comment on the proposed ROE itself but agree that the ROE offered for EE
9 programs should be comparable to other resources in order to provide a signal to the
10 Company to adequately value energy efficiency as a resource.

11 **Q24. Are there modifications that would better align Company incentives with ratepayer
12 interests?**

13 A. Yes. We recommend that any shareholder incentives or margin earnings be tied to
14 performance – meeting or exceeding goals for savings, or less ideally, spending. We
15 recognize that statutory law in Virginia might constrict the Commission’s ability to make
16 changes to what is included for calculating the Company’s profit on DSM expenditures.
17 That said, most states, including Michigan, Hawaii, Massachusetts, and others, base
18 utility incentive mechanisms on energy efficiency performance (such as achieved energy
19 savings) rather than on spending, to help encourage specific desired outcomes.³⁵ Options
20 for creating performance-based incentives include increasing the level of incentive earned
21 as savings surpass different thresholds (typically with a cap in place), allocating
22 incentives from a pool for achievement on multiple metrics such as energy savings,
23 demand savings, participants, or others, and allowing utilities to earn a rate of return for
24 achieving or exceeding their targets. For example, Illinois provides performance

³⁵ SETH NOWAK, BRENDON BAATZ, ANNIE GILLES, MARTIN KUSHLER, MAGGIE MOLINA, & DAN YORK, AM.
COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1504, BEYOND CARROTS FOR UTILITIES: A NATIONAL
REVIEW OF PERFORMANCE INCENTIVES FOR ENERGY EFFICIENCY (2015),
<https://aceee.org/sites/default/files/publications/researchreports/u1504.pdf>.

1 incentives and penalties in the form of differing levels of basis points for utilities that
2 meet, exceed, or fail to meet their energy savings targets.³⁶

3 **Q25. How does the Company account for lost revenue in the spending cap?**

4 A. The Company proposes a five-year spending cap for the Phase VII Programs of \$225.8
5 million, including lost revenue. The company states on page 8 of the application that the
6 proposed five-year spending cap is inclusive of “estimated revenue reductions related to
7 energy efficiency programs” or lost revenues, consistent with prior DSM proceedings and
8 Commission Orders. Extraordinarily Sensitive Attachment Staff Set 1-02 (JEB) lays out
9 the cost projections for the coming years broken out in detail, including estimated lost
10 revenues. Based on this attachment,
11 lost revenues make up 10.81% of the proposed Phase VII spending cap in 2019, 23.9% in
12 2020, 40.12% in 2021, 50.4% in 2022, and 57.75% in 2023. Over the 5 years, lost
13 revenues make up 42.9% of the proposed spending cap. The Company’s proportion of
14 lost revenues relative to program costs is high compared to other utilities.

15 A review of lost revenue adjustment mechanisms from other utilities that ACEEE
16 published in 2015 compared lost revenue dollars eligible for recovery as a percentage of
17 electric efficiency program expenditures. At the low end of the range, dollars collected
18 for lost revenue were equivalent to only about 1% of electricity efficiency program costs
19 in a given year, but most were clustered between 15 and 35% of program expenditures,
20 with very few examples above 50%.³⁷

21 **Q26. Does VAEEC support the inclusion of lost revenue in the spending cap?**

22 A. No, VAEEC does not support the inclusion of lost revenue in the spending cap. First, as a
23 threshold issue, lost revenues are not program costs. Enactment Clause 15 of the GTSA
24 describes the costs to be included in the proposed spending requirement as “[t]he
25 projected costs for the utility to design, implement, and operate such energy efficiency
26 programs, including a margin to be recovered on operating expenses.”³⁸ Lost revenue, the

³⁶ See ACEEE’s December 2018 issue brief for more information and examples. *Snapshot of Energy Efficiency Performance Incentives for Electric Utilities*, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON. (December 2018), <https://aceee.org/sites/default/files/pims-121118.pdf>.

³⁷ ANNIE GILLES, MARTY KUSHLER, MAGGIE MOLINA, AND DAN YORK, AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1503, VALUING EFFICIENCY: A REVIEW OF LOST REVENUE ADJUSTMENT MECHANISMS (2015), <https://aceee.org/sites/default/files/publications/researchreports/u1503.pdf>.

³⁸ 2018 Va. Acts (Ch. 296) (Enactment Clause 15).

1 estimated revenue reductions resulting from reduced electricity sales, is an issue relating
2 to the allocation and collection of already sunk costs in the utility system. These are not
3 the costs of “designing, implementing and operating” an energy efficiency program.

4 Analysts should not regard lost revenue as a cost of energy efficiency, and they should
5 not include it in cost calculations, for example when they compare the cost of energy
6 efficiency with that of other resources. It would be a bookkeeping error to include lost
7 revenues as a cost of the programs. Lost revenue is not a cost of energy efficiency for the
8 simple reason that these revenues still exist and are recovered by the utility from
9 customers, even without any efficiency programs at all. Without efficiency programs,
10 lost revenues are simply the calculated revenues that the utility collects through sales of
11 electricity. Virginia’s approach is unusual. Five states have cost caps a part of their
12 energy efficiency savings targets;³⁹ of those, no state includes lost revenue as a part of the
13 accounting towards those savings caps.

14 Second, we are strongly concerned that including lost revenues in the spending cap would
15 greatly reduce the amount of spending on actual energy efficiency programs, as our
16 answer to Q28 describes.

17 A third, related issue is the apparent extension of lost revenue recovery over the full 5-
18 year time period. Lost revenue recovery from prior years of energy efficiency programs
19 should cease whenever rates are re-set in a rate case. Any such re-setting of rates should
20 be based on new sales forecasts that would incorporate the effects of prior years’ energy
21 efficiency programs. Continuing lost revenue recovery from prior years after a rate case
22 would be a clear situation of double-recovery and should clearly be avoided.

23 As stated on page 13 of the application, the Company has not requested recovery of lost
24 revenue at this time. Clarification in this case that lost revenues are not part of the
25 spending cap would be very helpful in avoiding the negative consequences described
26 above.

³⁹ These states include Illinois, Iowa, Pennsylvania, Texas, and Wisconsin. Note that these are savings rather than spending targets. BERG ET AL., AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U1808, THE 2018 STATE ENERGY EFFICIENCY SCORECARD (2018), <https://aceee.org/sites/default/files/publications/researchreports/u1808.pdf>.

1 **3. Compliance with Virginia Energy Efficiency Statutes**

2 **Q27. Can you summarize the Commonwealth of Virginia’s energy efficiency goals?**

3 A. As Company Witness Brett A. Crable references on page 2 of his testimony, Virginia has
4 a voluntary 10% legislative goal to reduce electricity consumption by 10% from 2006 by
5 2022 (or 10.67 million MWh of annual savings in 2020). However, the target has failed
6 to substantially drive energy efficiency in the Commonwealth. In 2018, the Department
7 of Mines Minerals and Energy (“DMME”) found that Virginia is only on track to achieve
8 36% of this target.⁴⁰

9 In order to drive deeper energy savings from Virginia utilities, the GTSA requires
10 Dominion to develop a proposed program of energy conservation measures with
11 projected costs of no less \$870 million between 2018 and 2028. The GTSA also requires
12 the Company to utilize an independently-facilitated stakeholder process while developing
13 energy efficiency programs. Lastly, the GTSA exempts Dominion’s large general service
14 customers (GS-3 and GS-4 classes) from paying costs associated with energy efficiency
15 programs starting in 2019.

16 **Q28. Is the proposal as filed by the Company sufficient to meet the requirements of**
17 **GTSA?**

18 A No, it is not, but these programs would help move the Company closer to meeting these
19 proposal requirements. While the energy efficiency programs that are proposed are
20 necessary to meet GTSA requirements, they are not sufficient to fulfill the legislative
21 mandate on what the Company must propose. As Company Witness Jarvis E. Bates notes
22 on page 9 of his testimony, Dominion has proposed spending \$262 million, including lost
23 revenue, on energy efficiency programs since the GTSA went into effect in July 2018, or
24 30% of the total proposal requirement. For Phase III-VI programs, this includes \$25.86
25 million for the 2018-2019 rate year and \$20.42 million for the 2019-2020 rate year. For
26 Phase VII programs, this includes a \$215.3 million cost cap for 2019-2024. Not including
27 lost revenue, Dominion has

⁴⁰ See DMME, VIRGINIA ENERGY EFFICIENCY ROADMAP (Dec. 31, 2017) (noting that the report was a “joint effort” between DMME, Respondent VAEEC, ACEEE, and others).

1 proposed spending \$201.2 million on energy efficiency from 2018-2023, or about 23% of
2 the statutory goal in the GTSA.

3 We project that Dominion will spend under \$325 million on energy efficiency between
4 mid-2018 and late 2027 – under 40% of the \$870 million required by the GTSA – based
5 on current proposals.⁴¹

6 However, our analysis shows that Dominion could meet the GTSA mandate with a
7 reasonable expanded effort. We have compared Dominion’s proposed portfolio to 2017
8 DSM spending data from other utilities.

9 A ten-year requirement of \$870 million in proposed expenditures obviously requires an
10 average of \$87 million in efficiency proposals per year, which translates into 1.27% of
11 Dominion’s 2018 publicly reported, total revenues. In 2017, 15 out of 46 of the largest
12 electric utilities spent at least \$87 million on energy efficiency programs, and 32 out of
13 46 of the largest electric utilities spent at least 1.27% of their revenue on energy
14 efficiency. All of these utilities operate under cost-effectiveness requirements determined
15 by state regulators.⁴² While these requirements vary from state to state, state
16 commissioners only approve energy efficiency spending that they deem cost effective.
17 These data offer proven examples of meeting the spending levels called for in the GTSA
18 in a cost-effective manner as defined by each state.

19 **Q29. How can the Commission best support implementation of the statutory requirement**
20 **to propose \$870 million on energy efficiency programs by 2028?**

21 A. In addition to approval of the Phase VII programs filed by the Company in this
22 application, the Commission can provide guidance to the Company to help track progress
23 toward the proposal requirement over time, and can require that Dominion file its plans
24 for meeting the spending goal in future DSM filings. The stakeholder group could
25 support this effort and include progress towards that spending goal as a part of its

⁴¹ Our assumptions on the Company’s investment in future energy efficiency programs are detailed in Exhibit RG-2. To estimate a rate of increased investment from 2024 through 2027 (*i.e.*, beyond the timeframe of the Company’s current application) we applied the average rate of increased growth from other ~~Southeastern~~ utilities (6% per year). This rate does not include lost revenues; as described in Q26, they are not a cost of energy efficiency, and they should not be included in cost calculations.

⁴² KUSHLER, ET AL., AM. COUNCIL FOR AN ENERGY-EFFICIENT ECON., REP. NO. U122, A NATIONAL SURVEY OF STATE POLICIES AND PRACTICES FOR THE EVALUATION OF RATEPAYER-FUNDED ENERGY EFFICIENCY PROGRAMS (2012), <https://aceee.org/sites/default/files/publications/researchreports/u122.pdf>.

1 objectives. In addition, the Commission can require that Dominion’s future EM&V
2 filings and Annual Reports track progress toward the spending minimum, and that this
3 progress be made publicly available.

4 **4. Stakeholder Process and Input**

5 **Q30. Can you summarize Virginia’s process for development of this portfolio?**

6 A. The GTSA (Enactment Clause 15) requires that utilities utilize a “stakeholder process, to
7 be facilitated by an independent monitor” when developing energy efficiency programs.
8 Company Witness Brett Crable notes (on page 6 of his pre-filed Direct Testimony) the
9 Company’s belief that the intent of this clause was to gain stakeholder input prior to
10 bringing a portfolio of DSM programs to the Commission for approval. That process
11 began in January 2019, after the Company submitted this application. In the interim, the
12 Company relied on its existing stakeholder process to help design and develop the Phase
13 VII DSM programs. Company Witness Michael Hubbard describes the Company’s
14 process (page 16), noting that the Company held several smaller stakeholder meetings
15 with energy efficiency proponents, including VAEEC staff and some of its members, in
16 order to incorporate feedback for its 2018 DSM filing and to report on the Company’s
17 progress on the 2018 RFP evaluations. The Company also held a larger energy efficiency
18 stakeholder meeting on September 12, 2018, which included a wider range of
19 organizations. VAEEC and ACEEE were both present at that meeting.

20 **Q31. What is the potential value of the stakeholder process required by Enactment**
21 **Clause 15 of the GTSA?**

22 A. Stakeholder processes offer an important opportunity to build stronger energy efficiency
23 portfolios that better reflect the needs of different customer groups, leverage the
24 knowledge and expertise of DSM business and service providers, and align program
25 development and monitoring with public policy. There are a diversity of approaches to
26 energy efficiency stakeholder processes, from Arkansas Parties Working Collaboratively,
27 which began as short-term exercise focused on quick-start EE, but was continued as a

1 permanent collaborative because of its value,⁴³ to Georgia Power’s utility-specific
2 collaborative created by the Georgia Public Service Commission to manage Georgia
3 Power’s energy efficiency process, to Rhode Island’s Energy Efficiency and Resource
4 Management Council, which oversees National Grid’s energy efficiency programs,
5 guides planning and budgeting, and monitors and evaluates the effectiveness of efficiency
6 programs.⁴⁴

7 **Q32. What should be the objectives of the energy efficiency stakeholder process, and how**
8 **can those purposes inform Commission and Company decision-making?**

9 A. The stakeholder group should have a clear objective or objectives, and that shared
10 purpose should be reflected in its activities and how its recommendations are used. We
11 recommend three areas of focus: program design, evaluation, and energy efficiency
12 policy matters. Some collaboratives focus on reviewing and recommending program
13 changes, ensuring that utility programs address multiple market failures and barriers to
14 energy efficiency, and working with the utility to continually innovate and adopt new
15 technologies. The GTSA implies that this is a key purpose of this collaborative, stating
16 that “each utility shall utilize a stakeholder process ... to provide input and feedback on
17 the development of such energy efficiency programs.”

18 Other stakeholder processes establish or review a technical reference manual that details
19 energy efficiency evaluation measurement and verification procedures. This may be a
20 useful function for this process, because of the recent changes to cost-effectiveness
21 review requirements in the GTSA. The National Standard Practice Manual offers a
22 comprehensive framework for the group to use as it considers how to apply these new
23 requirements.⁴⁵ It describes the principles, concepts, and methodologies for sound
24 assessment of resource cost-effectiveness, and is intended for use by those involved in

⁴³ Katharine Johnson & Matt Klucher, *All Together Now! How Collaboration Works in Arkansas*, JOHNSON CONSULTING GROUP & ARKANSAS PUBLIC SERVICE COMMISSION, <http://www.johnsonconsults.com/presentations/IEPPEC%202014%20All%20Together%20Now%20AR.pdf>.

⁴⁴ Abigail Anthony & William Ferguson, *Putting the Pieces in Place to Make Giant Leaps in Efficiency Investment: The Rhode Island Experience*, ENVIRONMENT NORTHEAST & COUNCIL OF RHODE ISLAND, <https://aceee.org/files/proceedings/2012/data/papers/0193-000255.pdf>.

⁴⁵ *National Standard Practice Manual for Assessing Cost-Effectiveness of Energy Efficiency Resources*, NATIONAL EFFICIENCY SCREENING PROJECT (1st ed. 2017), https://nationalefficiencyscreening.org/wp-content/uploads/2017/05/NSPM_May-2017_final.pdf.

1 identifying the full range of efficiency resources whose benefits exceed their costs, to
2 inform which resources to acquire to meet a jurisdiction's specific goals, standards,
3 and/or targets.

4 Finally, some stakeholder processes review policy matters, including the design of energy
5 efficiency targets, contracting rules, or performance incentives for program
6 administrators or implementors. The inclusion of policy questions would be valuable
7 here, as stakeholders, Dominion, and the Commission consider how to best implement
8 the processions of the GTSA.

9 **Q33. Are there other elements of successful stakeholder processes you wish to highlight?**

10 There are a few elements of successful energy efficiency stakeholder processes from
11 around the country worth highlighting for the Commission's consideration as it manages
12 that process itself, including its impact on informing future DSM proposals from the
13 Company. These recommendations are highlighted in research conducted by U.S.
14 Department of Energy, State and Local Energy Efficiency Action Network on Energy
15 Efficiency Collaboratives:

- 16 1. The group should have clear rules that define group procedures and decision
17 making processes in addition to determining the mix of participants, means of
18 participation, and roles and expectations for group members.
- 19 2. An independent facilitator should support the design and execution of those
20 procedures and should support the group in meeting its objectives and
21 bringing forth the set of diverse voices required to meet those objectives.
- 22 3. The effort should be public, transparent, and inclusive. Materials should be
23 posted online in a timely fashion, and the rules, procedures, and means of
24 participation should be clear. The facilitator or a subcommittee of the group
25 should provide regular updates to the Commission, Governor and General
26 Assembly.
- 27 4. It is important to establish how the findings of the collaborative will be used
28 by both the Company and Commission in decision making. The DOE report
29 notes that "A virtuous cycle can be created if a collaborative does quality
30 work and the commission gives weight to the findings and conclusions of the

1 collaborative. If, however, the commission finds that it is routinely repeating
2 the work of the collaborative or second-guessing the consensus judgment of
3 the participants, that is evidence that the collaborative may not be meeting its
4 potential as an efficient tool.”⁴⁶

5 **Q34. Does this conclude your direct testimony?**

6 A. Yes, it does.

⁴⁶ *Energy Efficiency Collaboratives*, STATE AND LOCAL ENERGY EFFICIENCY ACTION NETWORK (2015),
<https://www4.eere.energy.gov/seeaction/system/files/documents/EECollaboratives-0925final.pdf>.

1 **IV. EXHIBITS**

2 **Exhibit RG-1**
3 **1 of 2**

4
5 **Rachel Gold** **Senior Manager, Utilities**

6 Phone: 202-507-4005. rgold@aceee.org 529 14th St. NW, #600, Washington DC 20045

7 **Professional Experience**

8 **Senior Manager, Utilities, American Council for an Energy-Efficient Economy, 2018- present**

9 Oversees and coordinates ACEEE's work on utility and program administrator policies and programs.
10 Develops technical resources and assistance for utilities, regulatory bodies, and other stakeholders.
11 Leads research and analysis of policies to encourage energy efficiency in utility sector, best practices in
12 efficiency program delivery, and integration of energy efficiency as a resource.

13 **Manager, Electricity Practice, Rocky Mountain Institute, 2017-2018**

14 **Senior Associate, Electricity and Buildings Practices, 2015-2017**

15 Managed team providing facilitation, coaching, and technical assistance to 9 multi-stakeholder teams
16 addressing non-hardware barriers to solar soft costs in the Solar Energy Innovation Network. Provided
17 convening, facilitation and agenda design expertise to multi-stakeholder engagements in the electricity
18 sector, as the project manager of the first eLab Summit, a facilitator for the Oregon PUC's SB 978
19 process, and a project manager for RMI's engagement with Puerto Rican electricity sector stakeholders
20 on system recovery post-Maria. Authored thought leadership and provided consulting services to
21 utilities and public utilities commissions on utility business model issues.

22 **Senior Regulatory Analyst, Opower, 2012-2013**

23 **Regulatory Analyst, 2011-2012**

24 Provided internal strategic guidance and conducted outreach to regulators in California, western states,
25 and Asia-Pacific countries on behavioral energy efficiency policy and EM&V issues. Developed and led
26 sales executive trainings on regulatory and utility business model issues. Provided management support
27 for new regulatory team members.

28 **Federal Policy Analyst, Assistant to the Directors, American Council for an Energy-Efficient Economy,**
29 **2009-2011**

30 Lead analyst of federal legislation scoring efforts, quantifying jobs, energy, carbon, and economic costs
31 and benefits of energy efficiency measures in energy, climate, and jobs bills. Coordinated and oversaw a
32 variety of program, research and administrative support activities, including Board and Program Director
33 meetings.

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Energy Division Research Intern, California Public Utilities Commission, 2014-2015

Consultant, Business Management Group, National Park Service, 2014-2015

Graduate Student Researcher, Don Vial Center for Employment in the Green Economy, 2014

Education

Master of Public Policy, Goldman School of Public Policy, University of California, Berkeley, 2015

BS, Biology and Environmental Studies, Brandeis University, 2008

Selected Publications

Gold, Rachel and Mike Henchen. *Energy System Transformation: A Case Study of the Opportunity with Green Mountain Power*. 2018. RMI.

Cross-Call, Dan, Rachel Gold, Leia Guccione, Mike Henchen, and Virginia Lacy. *Reimagining the Utility: Evolving the Functions and Business Model of Utilities to Achieve a Low-Carbon Grid*. 2017. RMI.

Gold, Rachel and Jacob Corvidae. *An MPG for Homes: Driving Visible Value for Energy Performance in Real Estate*. 2017. RMI.

Gold, Rachel and Cara Goldenberg, *Driving Integration: Regulatory Responses to Electric Vehicle Growth*. 2016. RMI.

Gold, Rachel. *Penalties in Utility Incentive Mechanisms: A Necessary "Stick" to encourage utility energy efficiency policy?* 2014. Electricity Journal. Vol. 27, Issue 9.

Gold, Rachel and Steven Nadel. *Assessing the Harvest: Implementation of the Energy Efficiency Provisions in the Energy Policy Act of 2005*. 2011. ACEEE.

Nadel, Steve and Rachel Gold. *Utility DSM: Off the Coasts and Into the Heartland*. October 2010. Electricity Journal. Vol. 23, Issue 8.

Gold, Rachel, Laura Furrey, Steven Nadel, John "Skip" Laitner, and R. Neal Elliott. *Energy Efficiency in the American Clean Energy and Security Act of 2009: Impacts of Current Provisions and Opportunities to Improve the Legislation*. 2009. ACEEE.

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Dominion 2018-2021 projected spending

The table below shows Dominion’s projected spending for 2018-2023 for programs in Phases I-VII, including lost revenue and with no variance. Phase I-VI spending for 2018 and 2019 is taken from the ES Attachment to Sierra Club Set 4-13. Phase I-VI spending for 2020 and 2021 has been calculated by subtracting spending for the Small Business Improvement and Non-Residential Prescriptive Programs as of June 30, 2018, as filed from total costs approved as listed in the Final Order from the Commission in Case No. PUE-2016-00111 (dated June 1, 2017). These two programs were approved through 2021 and 2022, respectively. We assumed remaining spending for the Non-Residential Prescriptive Program as even across 2021 and 2022. All other data are from ES Attachment to Staff Set 1-02 (JEB).

	2018	2019	2020	2021	2022	2023	Total
Phase I-VI programs projected spending	\$25,860,156	\$20,424,561	\$14,850,000	\$11,150,000			
Phase VII lost revenues		\$2,314,135	\$8,057,294	\$17,955,027	\$28,592,501	\$39,968,257	\$96,887,214
Phase VII lost revenue as a % of phase VII cost limit		10.81%	23.91%	40.12%	50.43%	57.70%	42.90%
Phase VII total cost limit		\$21,416,464	\$33,694,270	\$44,748,476	\$56,695,467	\$69,272,285	\$225,826,962
Phase VII total cost limit (exclusive of lost revenue)		\$19,102,328	\$25,636,977	\$26,793,449	\$28,102,966	\$29,304,028	\$128,939,748
Total projected spending Phases I-VII (exclusive of lost revenue)	\$25,860,156	\$39,526,890	\$40,486,977	\$37,943,449	\$28,102,966	\$29,304,028	\$201,224,465

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Comparison of Dominion 2017 actual and proposed 2018-2021 and other utility spending as a percentage of revenue, peer group

The table below shows Dominion’s 2017 actual energy efficiency spending as a percentage of 2017 revenue and its proposed 2018-2021 spending as a percentage of its 2017 revenue in comparison with 2017 spending as a percentage of revenue for Dominion’s Return on Equity Peer Group. Dominion’s Return on Equity Peer Group, as considered by the Commission in Case No. PUR-2017-00038, included the following companies: Appalachian Power; Entergy Mississippi, Inc.; Louisville Gas & Electric Company; Duke Energy Progress, Inc.; South Carolina Electric & Gas Company; and Duke Energy Carolinas, LLC.

Dominion’s spending data are from its 2018-2020 DSM application and associated materials. *See* Exhibit RG-2 above for additional calculations and data sources related to Dominion’s projected spending. ~~Dominion’s 2018 spending is assumed to be the same as 2017 spending.~~ **Dominion’s 2017 spending is from ES Attachment to Staff Set 1-02 (JEB).** All other data, including spending and revenue, are from the EIA’s 2017 Form 861. That form can be found online at: <https://www.eia.gov/electricity/data/eia861/>. Dominion’s lines are bolded in the table.

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Utility Name	Total Revenue (thousand \$)	Total Efficiency Spending (thousand \$)	Spending as a % of Revenue
Duke Energy Carolinas, LLC SC	1,613,897	\$ 44,622	2.76%
Duke Energy Carolinas, LLC NC	4,616,184	\$ 120,645	2.61%
Duke Energy Progress - (SC)	537,906	\$ 11,547	2.15%
Duke Energy Progress - (NC)	3,188,785	\$ 66,210	2.08%
Louisville Gas & Electric Co.	1,085,461	\$ 19,361	1.78%
Entergy Mississippi, Inc.	1,124,695	\$ 6,697	0.60%
Dominion Virginia (2020)	6,842,220	\$ 40,487	0.59%
Dominion Virginia (2019)	6,842,220	\$ 39,527	0.58%
Dominion Virginia (2021)	6,842,220	\$ 37,953	0.55%
Dominion Virginia (2017)	6,842,220	\$ 34,008	0.50%
South Carolina Electric & Gas Company	2,578,102	\$ 12,741	0.49%
Appalachian Power Co (VA)	1,336,699	\$ 6,128	0.45%
Dominion Virginia (2017)	6,842,220	\$ 25,961	0.38%
Dominion Virginia (2018)	6,842,220	\$ 25,860	0.38%
Average	3,693,307	\$ 55,829	2.53%
Average	3,870,987	\$ 35,210	1.18%

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4 **Comparison of Dominion 2017 actual and proposed 2018-2021 and other utility spending**
5 **as a percentage of revenue**

6 The table below shows Dominion's 2017 actual energy efficiency spending as a percentage of
7 2017 revenue, and its proposed spending each year 2018-2021 as a percentage of its 2017
8 revenue, in comparison with 2017 spending as a percentage of revenue for 40 other large
9 electric US utilities. We chose the 40 comparative utilities based on the 51 largest utilities by
10 electric sales identified in ACEEE's 2017 Utility Energy Efficiency Scorecard. We removed
11 some utilities from this list where we are aware of data inconsistencies and we did not include
12 those that do not report to the US Energy Information Administration (EIA). Dominion's
13 spending data are from its 2018-2020 DSM application and associated materials. See Exhibit 2
14 above for additional calculations and data sources related to Dominion's projected spending.
15 All other data, including spending and revenue, are from the EIA's 2017 Form 861. That form
16 can be found online at: <https://www.eia.gov/electricity/data/eia861/>. Dominion's lines are
17 bolded in the table.

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Utility Name	Total Revenue (thousand \$)	Total EE Spending (thousand \$)	Spending as a % of Revenue
Massachusetts Electric Co	2,224,995	\$257,379	11.57%
NSTAR Electric Company	2,275,360	\$191,181	8.40%
Commonwealth Edison Co	4,575,314	\$349,207	7.63%
Ameren Illinois Company	1,545,630	\$73,492	4.75%
MidAmerican Energy Co	1,613,586	\$73,177	4.54%
Puget Sound Energy Inc	2,269,211	\$100,561	4.43%
Connecticut Light & Power Co	2,677,870	\$114,860	4.29%
PECO Energy Co	2,136,801	\$91,148	4.27%
Baltimore Gas & Electric Co	2,174,714	\$89,884	4.13%
Los Angeles Department of Water & Power	3,587,660	\$142,497	3.97%
PPL Electric Utilities Corp	1,778,855	\$57,182	3.21%
Northern States Power Co - Minnesota	3,224,654	\$99,230	3.08%
Entergy Arkansas Inc	1,739,539	\$52,240	3.00%
Southern California Edison Co	11,454,656	\$325,657	2.84%
Oklahoma Gas & Electric Co	1,859,866	\$52,080	2.80%
Duke Energy Carolinas, LLC SC	1,613,897	\$44,622	2.76%
Consumers Energy Co	4,245,559	\$113,483	2.67%
Duke Energy Carolinas, LLC NC	4,616,184	\$120,645	2.61%
Pacific Gas & Electric Co.	14,477,752	\$367,335	2.54%
PacifiCorp	2,070,271	\$51,227	2.47%

Long Island Power Authority	3,409,213	\$75,048	2.20%
Duke Energy Progress - (SC)	537,906	\$11,547	2.15%
Duke Energy Progress - (NC)	3,188,785	\$66,210	2.08%
West Penn Power Co	927,912	\$18,316	1.97%
DTE Electric Company	4,847,942	\$93,233	1.92%
Niagara Mohawk Power Corp.	2,154,266	\$41,027	1.90%
Arizona Public Service Co	3,407,017	\$63,224	1.86%
Indianapolis Power & Light Co	1,318,478	\$22,655	1.72%
Union Electric Co - (MO)	2,944,964	\$50,208	1.70%
Consolidated Edison Co-NY Inc	7,682,863	\$112,922	1.47%
Salt River Project	2,826,922	\$37,530	1.33%
Nevada Power Co	2,141,976	\$21,145	0.99%
Public Service Elec & Gas Co	3,610,294	\$32,406	0.90%
Dominion Virginia (2020)	6,842,220	\$40,487	0.59%
Dominion Virginia (2019)	6,842,220	\$39,527	0.58%
Dominion Virginia (2021)	6,842,220	\$37,943	0.55%
Duke Energy Florida, LLC	4,098,422	\$21,882	0.53%
Dominion Virginia	6,842,220	\$34,008	0.50%
South Carolina Electric & Gas Company	2,578,102	\$12,741	0.49%
Georgia Power Co	7,737,463	\$37,904	0.49%
Dominion Virginia (2017)	6,842,220	\$25,961	0.38%

			<u>Exhibit RG-4</u> <u>4 of 4</u>
Dominion Virginia (2018)	6,842,220	\$25,860	0.38%
Florida Power & Light Co	10,969,756	\$35,428	0.32%
Entergy Louisiana LLC	3,731,956	\$7,293	0.20%
Jersey Central Power & Lt Co	1,681,619	\$2,612	0.16%
Alabama Power Co	5,457,826	\$3,445	0.06%
Average	4,036,159	\$82,311 \$82,303	2.51%

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Comparison of Dominion and selected utilities 2017 savings as a percentage of sales

The below table shows Dominion’s 2017 savings (MWh) as a percentage of electric sales compared to ten U.S. electric utilities. These utilities were chosen for comparison because they are in the same region as Dominion or are of similar size based on electric sales. Savings data for other utilities are from their publicly filed 2017 DSM reports. Dominion’s savings data are from its 2017 DSM filing. Savings data are reported gross at the meter in order to be consistent with EIA reporting. Where we were unable to find how a utility reported its savings data, we used assumptions consistent with ACEEE’s 2017 Utility Energy Efficiency Scorecard. Sales data are from the EIA’s 2017 Form 861. Dominion’s line is bolded in the table.

Utility Name	2017 Savings (MWh)	2017 Savings as an % of sales
Commonwealth Edison Co.*	2,283,796	2.64%
Baltimore Gas & Electric Co.	658,404	2.27%
Pacific Gas & Electric Co.	1,486,900	1.80%
Entergy Arkansas Inc.	374,282	1.79%
Duke Energy Progress - NC	530,286	1.43%
Duke Energy Carolinas - NC	522,252	0.93%
Georgia Power Co.	352,853	0.43%
Duke Energy Florida, LLC	85,854	0.23%
Dominion Virginia	106,670	0.14%
Entergy Louisiana LLC	56,189	0.10%
Florida Power & Light Co.	67,287	0.06%
Group average		1.07%

*Draft results

In order of the table, the utilities' 2017 DSM reports can be found online at:

- ComEd Summary Impact Evaluation Report (Nov. 30, 2018), *available at* http://ilsagfiles.org/SAG_files/Evaluation_Documents/Draft%20Reports%20for%20Comment/ComEd_EPY9_Draft_Reports/ComEd_PY9_Summary_Evaluation_Report_Draft_2018-11-30.pdf
- In the Matter of Baltimore Gas and Electric Company's Energy Efficiency, Conservation and Demand Response Programs Pursuant to the Empower Maryland Energy Efficiency Act of 2008, *available at* <https://www.psc.state.md.us/search-results/?keyword=9154&x.x=7&x.y=20&search=all&search=case>
- California Public Utilities Commission, California Energy Efficiency Statistics, *available at* <http://eestats.cpuc.ca.gov/Views/Documents.aspx?annual>
- Arkansas Public Service Commission, Energy Efficiency Annual Reports, *available at* <http://www.apscservices.info/eeAnnualReports.aspx>
- North Carolina Utilities Commission, Docket E-2 Sub 1174, *available at* <https://starw1.ncuc.net/NCUC/page/docket-docs/PSC/DocketDetails.aspx?DocketId=55c98c5a-88dd-4dc8-b96f-1c545bce1c0d>
- North Carolina Utilities Commission, Docket E-7 Sub 1164, *available at* <https://starw1.ncuc.net/NCUC/page/docket-docs/PSC/DocketDetails.aspx?DocketId=8041b0ca-0252-44db-a01c-7f7c6c70e4b5>
- Georgia Power Company, Certified Demand-Side Management Program, Fourth Quarter 2017 Programs Status Report, *available at* <http://www.psc.state.ga.us/factsv2/Document.aspx?documentNumber=171222>
- Florida Public Service Commission, Annual Reports on Demand Side Management Plans, *available at* <http://www.psc.state.fl.us/ElectricNaturalGas/ARDemandSidePlans>
- Virginia Electric and Power Company's May 1, 2018 Evaluation, Measurement & Verification Report prepared by DNV GL, *available at* <http://www.scc.virginia.gov/docketsearch#caseDocs/136465>
- Annual Report of Program Year 3 for Entergy Gulf States Louisiana, LLC (EGSL) and Entergy Louisiana, LLC (ELL) Energy Efficiency Quick Start Portfolio Plans with supporting appendices, *available at* <http://lpscstar.louisiana.gov/star/portal/lpsc/PSC/PSCDocumentDetailsPage.aspx?DocumentId=f2d26066-dbec-46d2-94c4-821aec79a67f&Class=Filing>
- Florida Public Service Commission, Annual Reports on Demand Side Management Plans, *available at* <http://www.psc.state.fl.us/ElectricNaturalGas/ARDemandSidePlans>