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COMMONWEALTH of VIRGINIA

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April 18, 2022

BY ELECTRONIC FILING

Mr. Bernard Logan, Clerk
c/o Document Control Center
State Corporation Commission
P.O. Box 2118
Richmond, Virginia 23218

RE: ***Petition of Appalachian Power Company, For approval of its 2021 RPS Plan under § 56-585.5 of the Code of Virginia and related requests***
Case No. PUR-2021-00206

Dear Mr. Logan:

Pursuant to Rule 170 of the Commission's Rules of Practice and Procedure and Paragraph 7 of the Hearing Examiner's Protective Ruling on February 11, 2022, in this matter, please accept the following Reply of the Office of the Attorney General's Division of Consumer Counsel.

Thank you for your assistance in this matter.

Yours truly,

/s/ C. Mitch Burton Jr.

C. Mitch Burton, Jr.
Assistant Attorney General

cc: Service List

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

PETITION OF

APPALACHIAN POWER COMPANY **CASE NO. PUR-2021-00206**

For approval of its 2021 RPS Plan under § 56-585.5 of the Code of Virginia and related requests

REPLY OF
OFFICE OF THE ATTORNEY GENERAL,
DIVISION OF CONSUMER COUNSEL

On April 6, 2022, the Office of Attorney General's Division of Consumer Counsel ("Consumer Counsel") filed a motion ("Motion") challenging Appalachian Power Company's ("APCo" or "Company") election to designate certain schedules to its Petition as extraordinarily sensitive ("Challenged Schedules"). The schedules subject to Consumer Counsel's Motion include:

- APCo EXTRAORDINARILY SENSITIVE Exhibit No. (WKC) Schedule 1 Project LCOE Summary
- APCo EXTRAORDINARILY SENSITIVE Exhibit No. (WKC) Schedule 6 Economic Impact Study Summary- Firefly
- APCo EXTRAORDINARILY SENSITIVE Exhibit No. (AEJ) Schedule 15 - Owned Renewable Facilities Total Installed Capital Cost
- APCo EXTRAORDINARILY SENSITIVE Exhibit No. (AEJ) Schedule 16 - Amherst Capital and O&M Forecast
- APCo EXTRAORDINARILY SENSITIVE Exhibit No. (AEJ) Schedule 17 - Bedington Capital and O&M Forecast
- APCo EXTRAORDINARILY SENSITIVE Exhibit No. (AEJ) Schedule 18 - Firefly Capital and O&M Forecast
- APCo EXTRAORDINARILY SENSITIVE Exhibit No. (AEJ) Schedule 19 - Top Hat Capital and O&M Forecast

- APCo Exhibit No. (MMS) Extraordinarily Sensitive Schedule 1 – Resource Recovery Percentage
- APCo Exhibit No. (MMS) Extraordinarily Sensitive Schedule 2 – Amherst Cost of Service
- APCo Exhibit No. (MMS) Extraordinarily Sensitive Schedule 3 – Top Hat Cost of Service
- APCo Exhibit No. (MMS) Extraordinarily Sensitive Schedule 4 – Firefly Cost of Service
- APCo Exhibit No. (MMS) Extraordinarily Sensitive Schedule 5 – Bedington Cost of Service

Notwithstanding these designations, both Virginia law and the Commission's Rules support a presumption that Commission proceedings be conducted in full view of the public. Virginia Code § 12.1-26 provides that "[t]he sessions of the Commission for the hearing of any complaint, proceeding, contest, or controversy instituted or pending before it, whether of its own motion or otherwise, shall be public, and its findings, decisions, and judgments shall be made public forthwith."

APCo filed a response on April 13, 2022 ("APCo's Response"). Virginia Electric and Power Company ("VEPCO") filed a response on April 13, 2022. No other party to the case filed a response. Consumer Counsel hereby files its Reply.

REPLY

I. Confidentiality issues are decided on a case-by-case basis, and the Commission has never ruled on the merits of the issue raised in this case.

APCo describes Consumer Counsel's Motion as a "third attempt" to reveal the type of information contained in the Challenged Schedules.[1] And while Consumer Counsel did challenge the confidentiality of certain information in Case No. PUR-2021-00066, no Commission decision addressed that challenge on the merits. Rather, that challenge was denied

[1] APCo's Response at 1.

by the Hearing Examiner based on a "timeliness" standard, which the Commission later rejected.[2]

Consumer Counsel ultimately decided to withdraw its confidentiality challenge in Case No. PUR-2021-00066, as the same information was largely included in the filing for this case, Case No. PUR-2021-00206. APCo benefited from that withdrawal to the extent that it claimed to be harmed by the suspension of the Final Order in PUR-2021-00066.[3] Consumer Counsel's motion to withdraw filed in Case No. PUR-2021-00066 in no manner represents a concession that the underlying information deserved confidential treatment. Consumer Counsel views the Commission's April 5, 2022 Order granting the motion to withdraw as a reasonable result that brought finality to Case No. PUR-2021-00066 while preserving the merits of the important issue surrounding confidentiality now at issue in this case. Indeed, the Commission granted the requested motion to withdraw with the added condition that it be granted "without prejudice."[4]

II. APCo has failed to demonstrate that its extraordinarily sensitive designations are necessary and outweigh the presumption in favor of transparency.

APCo's Response lacks the specifics and detail necessary to demonstrate that the presumption for public disclosure is outweighed by a cognizable harm.[5] Confidential protection is reserved for those instances in which "[a] person . . . proposes in good faith . . . that information . . . be withheld from public disclosure on the ground that it contains trade secrets,

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[2] *Petition of Appalachian Power Company, For a prudency review, pursuant to § 56-585.1:4 H of the Code of Virginia, with respect to the purchase of the Amherst Solar Facility*, Case No. PUR-2021-00066, Order at 1-2 (Mar. 24, 2022), https://scc.virginia.gov/docketsearch/DOCS/6tk401!.PDF.

[3] APCo's Motion for Clarification at 5, https://scc.virginia.gov/docketsearch/DOCS/6%25gy01!.PDF.

[4] *Petition of Appalachian Power Company, For a prudency review, pursuant to § 56-585.1:4 H of the Code of Virginia, with respect to the purchase of the Amherst Solar Facility*, Case No. PUR-2021-00066, Order at 2 (Apr. 5, 2022), https://scc.virginia.gov/docketsearch/DOCS/6w%23%2501!.PDF.

[5] *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 56-597 et seq. of the Code of Virginia*, Case No. PUE-2013-00088, Hearing Examiner's Ruling at 8 (Apr. 21, 2013) (emphasizing the level of detail required for each and every document"), https://scc.virginia.gov/docketsearch/DOCS/2x8101!.PDF.

privileged, or confidential commercial or financial information."[6] In proposing confidential treatment, it is the responsibility of the producing party to "clearly indicate the specific information requested to be treated as confidential by use of highlighting, underscoring, bracketing or other appropriate marking[]" and "[a]ll remaining materials on each page of the document shall be treated as nonconfidential and available for public use and review."[7] The legal standard for challenged information is if "the risk of harm of publicly disclosing the information outweighs the presumption in favor of public disclosure."[8] "[T]he Commission has recognized that information is not automatically entitled to confidential treatment under Rule 170 merely because a company has articulated some *potential* harm associated with the information's public disclosure."[9]

With respect to WKC Schedules 1 and 6 the Company relies on three sentences to describe the specifics and details of the information.[10] APCo's response does not attempt to explain why a projected levelized cost of energy ("LCOE") of a project needs to be kept confidential, other than making conclusory remarks that LCOE is highly confidential.

With respect to AEJ Schedules 16-19, APCo's Response relies on one paragraph to describe the specifics and details of the information and the harm.[11] The closest that APCo gets

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[6] Rule 170.

[7] *Id.*

[8] *Id.*

[9] *Ex Parte: In the Matter of Investigating the Service Quality of Verizon Virginia Inc. and Verizon South Inc.*, Hearing Examiner's Ruling at 6 (Nov. 23. 2010), https://scc.virginia.gov/docketsearch/DOCS/2%40fx01!.PDF (citing *Application of Delmarva Power & Light Co. and Conectiv Energy Supply, Inc., For approval of transactions under Chapter 4 of Title 56 of the Code of Virginia*, Case No. PUE-2006-00032 (Order dated May 9, 2006) (rejecting Delmarva's argument that the information at issue, in that case the number of bidders to supply Delmarva with electric power, should remain confidential in order to maintain a competitive market in soliciting future power resources), https://scc.virginia.gov/docketsearch/DOCS/1c1701!.PDF) (emphasis added).

[10] APCo's Response at 3.

[11] *Id.* at 4.

to explaining in specifics and detail the anticipated harm of publication is by stating that "[a]lthough some of these discrete items may appear innocuous on their own, collectively they would enable a savvy party to discern the price paid for the facility, which is competitively sensitive."[12] APCo does not attempt to explain how a "savvy party" could discern the price paid for a facility with this information. Such a vague claim to potential harm cannot shoulder the applicable burden.

The Company is making a derivative claim here: if seemingly "innocuous" pieces of information can theoretically be aggregated to speculate as to the "price paid for a facility," that is enough to warrant secrecy. But in this scenario, such a "savvy party" would be left with nothing better than a guess as to "the price paid for the facility," with an uncertain confidence level in the accuracy of that guess. Further, as discussed in more detail below, it is unclear how this type of speculation, *based on stale historical information*, would be helpful in ascertaining how APCo will respond to *future* proposals for new renewable generation.

The argument to seal seemingly "innocuous" information that can be used to make speculative guesses of information claimed to be confidential, if accepted, has serious implications for the public nature of Commission proceedings. Unraveling this derivative logic, the same argument could be applied to rates charged to customers. Rates of course are derived from annual revenue requirements. And annual revenue requirements are necessarily derived from capital expenditures incurred when a utility adds a rate base item, such as a solar generation facility that has little operation and maintenance cost. A "savvy party" could similarly attempt to use an annual revenue requirement "to discern the price paid for the facility." But the Commission does not make rates, or annual revenue requirements, confidential from the public.

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[12] *Id.*

Indeed, such a claim to a need for confidential revenue requirements would be absurd and suspect under legally required public notice requirements.[13]

With respect to MMS Schedules 1-5, APCo's Response relies on a single paragraph to describe the specifics and details of the information.[14] Beyond making conclusory assertions that the information is "extraordinarily sensitive and must remain out of the public eye[,]"[15] the paragraph is deficient on details of harm. Although APCo's Response states that "MMS Schedule 1 shows for each resource included in Appalachian's Application the energy, capacity, and renewable energy certificate ("REC") value percentage used to allocate costs to be accumulated in the corresponding rate adjustment clauses ("RACs") proposed[,]" it does not piece together how revealing this information would create significant harm. APCo's Response does not explain how revealing this information would allow for "competitors" (notwithstanding the fact that APCo is a monopoly utility) or "other parties" to use "production curves to gain intelligence into Appalachian's highly confidential Levelized Cost of Energy."[16]

The only harm described in APCo's Response is in the scenario where bidders "know the *specific* prices that Appalachian and developers are willing to pay and could use this information to formulate bidding strategies that are not in customers' interests."[17] First, Consumer Counsel does not intend to make public "direct" or "specific" contract terms or bid prices for a facility. And the Challenged Schedules do not reveal the contract terms which have a significant impact on any contract price. It is impossible to know what "specific prices" APCo would be willing to

[13] Va. Code § 56-237.

[14] APCo's Response at 4.

[15] *Id.* at 4.

[16] *Id.* at 5.

[17] *Id.* It is not clear from APCo's Response what is intended by pointing to what "developers are willing to pay" in describing the harm. In this situation developers are selling; not purchasing the end-product.

accept without also understanding the full context of the terms of an agreement. Consumer Counsel has not challenged the confidentiality of the various contractual agreements.

There is a temporal unsoundness to APCo's derivative claim to harm as well. APCo conflates what it may have been "willing to pay" in the past as information regarding "specific prices that" the Company would be willing to pay in the future. But APCo does not connect the dots. Even if the specific bid prices accepted by APCo during previous RFP process were revealed as public, which Consumer Counsel is not asking, this would not be a guarantee to future bidders of what APCo would again accept in a future RFP. Future RFPs will not be identical to prior RFPs – there will be different bidders, different projects, different needs, different commodity prices, and updated cost curves, among other variations. Information from prior RFPs will be stale.

A. APCo need not accept bad deals on behalf of customers.

It needs to be understood that APCo does not have to accept project bids that are not in its customers' interests. If APCo feels that it is necessary to bring a bad deal to the Commission for approval, the Commission remains free to reject such deals as being imprudent and unreasonable.

In this one case, APCo is proposing approval of nearly 550 MWs of new renewable generation. Section 56-585.5 D requires the Company to petition for approval of new renewable generation of only 200 MWs of new in-state generation by year 2023 and 600 MWs by year 2035. Almost 500 MWs of the new generation has gone unchallenged up to this point in the procedural schedule. If the Company receives an unreasonably costly bid for additional MWs of renewable generation in a future RFP, the Company should not accept the unreasonably priced bid.

III. The information included in the Challenged Schedules is typically treated as public.

Consumer Counsel has included an Appendix A to its Reply. Appendix A provides examples of information included in the Challenged Schedules being provided by either APCo or VEPCO in public format. The appendix is not intended to be exhaustive of all scenarios where either APCo or VEPCO has presented, as public, the type of information that APCo now claims should be confidential. The appendix does, however, provide at least one example for each Challenged Schedule of such information being treated as public in Commission proceedings.

"Although not a determinative standard, weight will be given to whether other utilities publicly disclose specific types of information. Such disclosures indicate that the information may pose less risk of harm."[18] Appendix A constitutes evidence in favor of making public information contained in the Challenged Schedules. Appendix A further constitutes evidence demonstrating that revealing the information will not result in the "immense" harm claimed by APCo.

Description of Appendix A, Attachment 1:

The proposed Protective Ruling in this case was represented by APCo to be based on the Protective Ruling issued in Case No. PUR-2021-00066. The proposed Protective Ruling in Case No. PUR-2021-00066 was based on the Protective Ruling issued in Case No. PUR-2021-00127.[19] Attachment 1 includes publicly available cost of service information, including long-term revenue requirements and capital and O&M forecasts, that was filed by VEPCO in Case No. PUR-2021-00127. This is contrary to APCo's claim that MMS Schedules 2-4, which

[18] *Commonwealth of Virginia, ex rel. State Corporation Commission, In re: Virginia Electric and Power Company's Integrated Resource Plan filing pursuant to 56-597 et seq. of the Code of Virginia*, Case No. PUE-2013-00088, Hearing Examiner's Ruling at 8 (Apr. 21, 2013).

[19] APCo's Motion for Protective Ruling and Additional Protective Treatment for Extraordinarily Sensitive Information at 2, https://scc.virginia.gov/docketsearch/DOCS/6w%23%2501!.PDF.

develops annual revenue requirements, warrant confidential treatment. This is also contrary to APCo's claim that AEJ Schedules 16-19 warrant confidential treatment.

Description of Appendix A, Attachment 2:

VEPCO is the only other electric utility subject to the requirements of § 56-585.5. In VEPCO's first RPS filing, filed under the same statute, it included Schedule 46C statements 2 and 3, which developed annual revenue requirements for costs proposed for approval in that case. Attachment 2 is VEPCO's publicly filed Schedule 46C statements 2 and 3. The only portion of VEPCO's Schedule 46C statements 2 and 3 that was treated as confidential was annual expenses related to "contractor/outside services," "land lease expense," "insurance expense," and "other expense." This is contrary to APCo's claim that MMS Schedules 2-4, which similarly develops annual revenue requirements, warrant confidential treatment. APCo's Response does not provide any detail as to why individual line items included in Schedules 2-4 need to be confidential. Consumer Counsel does not take a position on whether annual insurance expense or land lease expense, which does appear on MMS Schedules 2-4, warrants confidential treatment.

Notwithstanding APCo's lack of explanation as to why these line items should be confidential, Consumer Counsel would not object to the following line items being redacted where they appear in MMS Schedules 2-4: Initial CapEx, AEPSC PMEC Cost, Insurance – Account 924, and Land Lease – Account 924.

Description of Appendix A, Attachment 3:

Both APCo and VEPCO routinely file net present value analyses to demonstrate the prudence of proposed investments in new generation facilities. Attachment 3 provides recent examples of public net present value analyses. This is contrary to APCo's claim that MMS

Schedule 1, which develops and presents net present value analyses for the generation facilities proposed in this case, warrants confidential treatment.

Description of Appendix A, Attachment 4:

The total installed cost of new generating facilities is routinely treated as public information in Commission proceedings. Consumer Counsel is unaware of any other Commission proceeding in the last decade where an electric utility has proposed cost recovery of a new utility-owned generating asset and kept the total cost of the facility secret. Attachment 4 provides examples of total installed costs of new generating facilities being treated as public information. This is contrary to APCo's claim that AEJ Schedule 15, which states the total installed capital cost of owned renewable facilities, warrants confidential treatment in entirety.

Consumer Counsel does not oppose AEJ Schedule 15 retaining redactions for the project-specific line items for PSA Purchase Price, Owner's Costs & Overheads, Contingency, and Owner's Cost subtotal.

Description of Appendix A, Attachment 5:

In VEPCO's most recent RPS Plan case, information regarding the economic impact of individual generation resources was provided publicly. Attachment 5 is an example of this public information. This is contrary to APCo's claim that WKC Schedule 6, the economic impact study summary for Firefly, warrants confidential treatment.

Description of Appendix A, Attachment 6:

Consumer Counsel is aware that levelized cost of energy information has been treated as both public and extraordinarily sensitive in previous RPS Plan cases and in VEPCO's pending offshore wind case. The fact that such information has been treated as public, without any evidence of resulting harm, would tend to demonstrate that LCOE information should be treated

as public. Consumer Counsel would offer that a distinction may reasonably exist for LCOE's of utility-owned facilities with cost of service-based cost recovery vs third-party power purchase agreements that are treated as a pass-through for cost recovery. For a third-party power purchase agreement, the LCOE may be directly linked to actual pricing terms of the agreement.

APCo's Response does not satisfy its burden of showing why revealing WKC Schedule 1, which presents an LCOE summary for the new generating facilities, would result in harm outweighing the presumption in favor of public disclosure. APCo's response does not link the LCOE summary amounts on WKC Schedule 1 to specific contract prices. Notwithstanding, Consumer Counsel would not object to the LCOE's of third-party PPAs being redacted where they appear on WKC Schedule 1.

IV. Consumer Counsel generally agrees with the Response filed by Virginia Electric and Power Company.

VEPCO filed a response to Consumer Counsel's Motion. Consumer Counsel agrees with VEPCO's statement that the "Commission's Rules of Practice and Procedure contain explicit procedures for protecting information containing 'trade secrets, privileged, or confidential commercial financial information,' and through its Protective Rulings"[20] the Commission has recognized a need for protective treatment for certain information. Consumer Counsel is not aware that the Commission independently verifies every instance in which a utility identifies a piece of information as posing a risk of harm to the utility and its customers that outweighs the presumption in favor of public disclosure.

Consumer Counsel agrees that certain information concerning competitively negotiated contract prices and terms, RFP results, and other competitively sensitive or proprietary

[20] VEPCO's Response at 1.

information can warrant heightened protection. This does not mean that all information bearing on an RFP or competitive negotiation processes are categorically hidden from the public. Seemingly recognizing there is not a categorical approach to designating confidential information, VEPCO acknowledged that protection should be in accord with the "reasonable procedures set forth in Rule 170 and the Commission's Protective Rulings."[21] And VEPCO could not be in a position to opine on the case-specific nature of the issue at hand as it had "not accessed any of the extraordinarily sensitive materials in this proceeding and therefore cannot address the specific information at issue in the Motion."[22]

Consumer Counsel further agrees that confidentiality challenges should "be considered on a case-by-case basis upon consideration of the specific documents, material, and information designated as confidential or extraordinarily sensitive by a party in a particular proceeding."[23] This is not to say that there is no role for applying precedent to how the Commission weighs the burden applicable to Rule 170 and protective rulings, but cases can carry idiosyncratic considerations. No other party to this proceeding (of which there is a broad and diverse group) has supported the idea of a "rulemaking proceeding" for adjudication of the issue presented in this case. Rather, Consumer Counsel agrees with VEPCO's assessment that these issues are best suited for case-by-case adjudication, which a rulemaking proceeding would be ill-equipped to resolve.

V. The purpose of a public evidentiary hearing is to have an evidentiary hearing on the Petition that is open to the public.

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[21] *Id.* at 2.

[22] *Id.* at 2 n.1.

[23] *Id.* at 2.

By the plain terms of the Protective Agreement, *the terms of which APCo requested*, the Company's opportunity to respond to the Motion was through its April 13, 2022 response. But now APCo seeks to evade the terms of that very Protective Agreement by requesting an unnecessary "separate hearing on the Motion with evidence and witness testimony"[24] sometime "after the substantive evidentiary hearing concludes."[25] The effect of this request is that information that should be public will remain secret during the public evidentiary hearing scheduled for April 21, 2022. Such a delay is unreasonable.

APCo should have had a known and articulatable reason for designating all of the information included in the Challenge Schedules extraordinarily sensitive when it filed its Petition on December 30, 2021. APCo has been aware of Consumer Counsel's concerns regarding the type of information included in the Challenged Schedules since at least February 1, 2022, when Consumer Counsel filed its challenge in Case No. PUR-2021-00066. APCo has been aware that Consumer Counsel would be filing this challenge since at least April 1, 2022, when Consumer Counsel filed its motion to withdraw which stated "Consumer Counsel has determined that it will be beneficial to all case participants and promote judicial economy for the disputed issues on confidentiality of information to be litigated in Case No. PUR-2021-00206, and for this instant proceeding to be brought to a close in all respects."[26]

APCo continues to delay the disclosure of what should be public information by requesting a "rulemaking proceeding or . . . a separate hearing on the Motion after the substantive evidentiary hearing concludes."[27] APCo could have included in its Response a

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[24] APCo's Response at 6.

[25] *Id.* at 2.

[26] Consumer Counsel's Motion for Leave to Withdraw Motion for Ruling and Response to Appalachian Power Company's Motion for Clarification at 2-3, available at: https://scc.virginia.gov/docketsearch/DOCS/6vhp01!.PDF.

[27] APCo's Response at 2.

thorough explanation (including any evidence) of why all the information included in the Challenged Schedules needs to be kept secret. APCo rather filed a placeholder response that anticipates responding in earnest at some point after the evidentiary hearing. This is inconsistent with how the Commission's Rules and the Protective Agreement imagines the procedure for challenges to confidential designations.

This issue boils down to APCo's belief that its "net cost of compliance" with the VCEA needs to be withheld from the public.[28] APCo claims that if the "cost information" of VCEA-related facilities is not "protect[ed]" from public view, then "customers will pay higher rates."[29] The argument seems to go, we need to charge customers higher rates, but we must keep the underlying "cost information" for the higher rates secret because, if not, we will have to charge customers even higher rates. But it cannot be credibly said that the cost of electric service from a public utility, provided in a manner that complies with the law, can be hidden from public view. Customers and the public have a right to know basic "cost information" related to generation facilities that customers will pay for. And customers and the public have a right to know the details around the economic justification for acquiring new generation facilities that will for decades commit customers' money to pay for those generation facilities.

CONCLUSION

In sum, the substance of APCo's Response succeeds in establishing only a speculative and indirect claim to harm. The type of information that APCo seeks to keep secret is typically revealed in Commission proceedings. Consumer Counsel has provided numerous examples of this type information being treated as public. There has been no claim that release of this type of

[28] APCo's Response at 5.

[29] *Id.*

information has resulted in the type of "immense" harm claimed by the Company. Consumer Counsel is not seeking to reveal the direct or specific terms or actual contract prices of bids that were provided in response to an RFP. The Commission has a duty to hold "public sessions" for the consideration of utility proposals to increase customers' rates. As APCo has failed to meet its burden showing that the information should be treated secret, the information should be made public without delay. With the exceptions discussed in Section III, Consumer Counsel requests that the Challenged Schedules be made public.

Respectfully submitted,

DIVISION OF CONSUMER COUNSEL
OFFICE OF THE ATTORNEY GENERAL

/s/ C. Mitch Burton Jr.

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April 18, 2022

APPENDIX A

APPENDIX A,
ATTACHMENT 1

WITNESS DIRECT TESTIMONY SUMMARY

Witness: Christopher J. Lee

Title: Manager of Regulation – Regulatory Accounting

Summary:

Company Witness Christopher J. Lee discusses cost recovery related to the Company's proposed Grid Transformation Plan. Mr. Lee explains that the relevant statute states that the nature of cost recovery should not be considered in evaluating the prudence of grid transformation plan proceedings. Nevertheless, he provides testimony on how the Company plans to seek recovery for GT Plan costs, to the extent known.

Mr. Lee also provides the estimated long-term revenue requirements for the proposed Phase II investments by project. He explains that these estimated revenue requirements are hypothetical estimations and do not necessarily represent what the revenue requirement impacts would be if the Company includes these projects as part of its cost of service for recovery through base rates, designates any or all of these investments as a CCRO, or seeks recovery of these costs through a RAC.

EXHIBIT# 13

DIRECT TESTIMONY
OF
CHRISTOPHER J. LEE
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00127

Q. Please state your name, business address, and position of employment with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Christopher J. Lee and I am Manager of Regulation in the Regulatory Accounting Department at Dominion Energy Virginia. My business address is 120 Tredegar Street, Richmond, Virginia 23219. A statement of my background and qualifications is attached as Appendix A.

Q. Please describe your areas of responsibility with the Company.

A. I am responsible for analyzing, calculating, and overseeing the development of revenue requirements for Dominion Energy Virginia rate proceedings.

Q. Mr. Lee, what is the purpose of your testimony in this proceeding?

A. I am testifying in support of Phase II (*i.e.*, 2022, 2023) of the Company's plan to transform its electric distribution grid (the "Grid Transformation Plan," "GT Plan," or "Plan"). I will discuss cost recovery for the GT Plan generally, as well as the estimated long-term revenue requirement for Phase II.

Q. During the course of your testimony, will you introduce an exhibit?

A. Yes. Company Exhibit No. __, CJL, consisting of Schedule 1, was prepared under my supervision and direction and is accurate and complete to the best of my knowledge and belief. Additionally, I sponsor Filing Schedule 46I, which provides the estimated annual

revenue requirement over the duration of the projects proposed for Phase II of the GT Plan on a total Company basis, as required by the Commission's Rate Case Rules.

Q. What mechanisms are available for the Company to recover costs of the Grid Transformation Plan?

A. It is my understanding that recovery of incremental costs of the GT Plan may be recovered through a rate adjustment clause ("RAC"), through the Company's existing rates for generation and distribution services ("base rates"), or as a customer credit reinvestment offset ("CCRO") under Va. Code § 56-585.1 A 8 d.

Q. Is the Company required to elect a cost recovery mechanism prior to seeking a prudence determination for GT Plan projects?

A. No. And in fact, the language of the relevant statute—Va. Code § 56-585.1 A 6—states that the nature of cost recovery should not be considered in evaluating the prudence of grid transformation plan proceedings:

> [A grid transformation plan] petition shall be considered on a stand-alone basis without regard to the other costs, revenues, investments, or earnings of the utility; without regard to whether the costs associated with such projects will be recovered through a rate adjustment clause under this subdivision or through the utility's rates for generation and distribution services; and without regard to whether such costs will be the subject of a customer credit offset, as applicable, pursuant to subdivision 8 d.

The cost recovery mechanism selected will inform the direct impact on customer rates. Recovery of incremental costs through a RAC could directly increase customer rates, whereas recovery of incremental costs through the Company's existing base rates or as a CCRO may not.

Q. The statutory language notwithstanding, has the Company determined how it plans to seek recovery for Grid Transformation Plan costs?

A. To date, the Commission has approved investments related to 11 projects for the years 2019, 2020, and 2021 ("Phase I") in Case No. PUR-2018-00100 and Case No. PUR-2019-00154. The Company committed that Phase I costs related to the new customer information platform ("CIP") would be recovered through the Company's base rates and could be, in whole or in part, the subject of a CCRO. Investments in the CIP in 2019 and 2020 have been included in the Company's base rates, which are currently under review in the Company's triennial review proceeding, Case No. PUR-2021-00058. Investments in the CIP during 2021 will be included in the Company's base rates, and will be reviewed in the next triennial review proceeding in 2024. For the remaining approved Phase I projects, the Company intends to seek cost recovery through a RAC, designated Rider GT. The Company intends to file for approval of Rider GT in the coming months.

As to Phase II of the GT Plan, the Company has committed that costs associated with the deployment of advanced metering infrastructure ("AMI") and the CIP will not be the subject of a RAC petition. Instead, these costs will be recovered through the Company's base rates and could be, in whole or in part, the subject of a future CCRO. For the other proposed Phase II projects, the Company has not yet determined its plans for cost recovery.

The Company also has not yet determined its plans for cost recovery for future phases of the GT Plan.

Q. Has the Company calculated an estimated revenue requirement for the GT Plan Phase II investments?

A. Yes. The Rate Case Rules require the Company to provide the estimated annual revenue requirement over the duration of the proposed projects, by project and by year, on a total company basis. Accordingly, the Company has calculated an estimated annual revenue requirement for Phase II of the GT Plan by project. My Schedule 1 provides a summary of this information. Notably, the Rate Case Rules are agnostic to cost recovery mechanism, so I have provided an estimated annual revenue requirement for both AMI and the CIP, despite the fact that the Company does not propose to recover these costs through a RAC.

Q. What are the key components of the estimated revenue requirements?

A. The estimated revenue requirements are based on the estimated costs of the Plan. In general, these estimated costs consist of capital expenditures, operations and maintenance expenses ("O&M"), and the related financing costs of the components of the Plan for the applicable recovery period. Since the Company is only requesting approval for Phase II in this proceeding, my Schedule 1 only includes estimated annual revenue requirements over the lifetime of the Phase II projects.

The amounts shown in Schedule 1 represent the sum of the estimated annual revenue requirements over the life of the associated investments. Using cost information provided by the Company's witnesses in this proceeding, I developed the estimated lifetime revenue requirements by projecting the following elements for each component of the GT Plan on an annual basis:

- Depreciation expense over the useful lives of the underlying assets;

- O&M expense over the program period; and
- Debt and equity financing costs on average rate base over the useful life of the assets, net of accumulated deferred income taxes ("ADIT").

Q. If the Company were to prepare a revenue requirement for these projects in the future, as might be required in a future rate proceeding, what are some variables that could significantly affect the calculation as compared to the estimated revenue requirements shown in this proceeding?

A. It is important to note that these estimated revenue requirements are hypothetical estimations and do not necessarily represent what the revenue requirement impacts would be if the Company includes these investments as part of its cost of service for recovery through its base rates, designates any or all of these of investments as a CCRO, or seeks recovery of these costs through a RAC.

If the Company were preparing a revenue requirement as part of a specific future filing, some significant differences compared to the estimated revenue requirements contained in this proceeding would include:

- *Nature of cost recovery* – Recovery of costs through a RAC, for example, would generally result in higher financing costs over the assets' useful lives as compared to the accelerated recovery of investments designated as a CCRO. The estimated revenue requirements in this proceeding assume lifetime recovery (similar to a RAC) rather than any accelerated recovery.
- *Updated cost of capital* – Future revenue requirement calculations would be based on future capital structure and costs of debt and equity financing, which will likely differ from those used in the calculations of this proceeding.

- *Updated project costs* – Other refinements could arise for final projects costs, in-service dates, and depreciable lives. Furthermore, additional cash working capital items could also be captured.

Q. Did you provide information to West Monroe Partners, LLC ("West Monroe") for use in the cost-benefit analysis ("CBA")?

A. Yes, I provided West Monroe with revenue requirement calculations for use in the CBA so that it could be presented on a revenue requirement basis. Andrew Trump with West Monroe presents the CBA in his pre-filed direct testimony.

Q. Are the costs and resulting estimated revenue requirements presented in your testimony in this proceeding consistent with those modeled in the CBA presented by Company Witness Trump?

A. Yes, the capital and O&M costs used in the calculation of the estimated revenue requirements presented in my testimony are consistent with those used to prepare the CBA. However, the revenue requirement that I present focuses on Phase II projects for which the Company seeks a prudence determination in this proceeding, consistent with the Rate Case Rules. By contrast, the CBA includes costs (actual and projected) for all ten years of the GT Plan, as well as cost associated with programs for which the Company will seek recovery in other appropriate proceedings, such as time-of-use rates, peak-time rebate programs, and programs related to transportation electrification.

Q. Are the potential benefits associated with the implementation of the GT Plan included in the estimated revenue requirements presented in this proceeding?

A. No, the estimated revenue requirements presented in my Schedule 1 do not directly

incorporate the financial impact of potential benefits to cost of service. By contrast, the CBA presented by West Monroe does include potential benefits associated with the GT Plan. My team worked with West Monroe to convert the potential benefits to a revenue requirement basis. It is my understanding that West Monroe has presented the potential benefits from avoided future capital expenditures and other deferred costs on a revenue requirement basis in the CBA, while the benefits expected from avoided O&M are presented in the CBA as period expenses. This is consistent with how the Company would expect these benefits to impact the components of cost of service in the applicable future proceedings. The benefits of the GT Plan are discussed in more detail by Company Witness Trump.

Q. Does this conclude your pre-filed direct testimony?

A. Yes, it does.

APPENDIX A

BACKGROUND AND QUALIFICATIONS OF CHRISTOPHER J. LEE

Christopher J. Lee received a Bachelor of Science in Accounting from Virginia Commonwealth University in May 2000, and is a certified public accountant. Mr. Lee joined the Company in 2006 as a Senior Accountant in the Financial Reporting Department. He has held numerous accounting positions within the Company prior to joining the Regulatory Accounting Department in December 2018. His current position of Manager of Regulation in the Regulatory Accounting Department includes responsibility for analyzing, calculating, and overseeing the development of revenue requirements for Dominion Energy Virginia rate proceedings.

Mr. Lee has previously provided testimony before the State Corporation Commission of Virginia.

Virginia Electric and Power Company
Grid Transformation Plan Prudence - Phase II
Schedule 1 - Estimated Total Long-term Revenue Requirement Summary (by Project)
(millions)

Phase II

Program	Estimated Recovery Period	Depreciation Expense	O&M Expenses	Financing Costs	Total Revenue Requirement
Advanced Metering Infrastructure (AMI)	2019 - 2044	$ 356.168	$ 32.534	$ 235.519	$ 624.221
Customer Information Platform (CIP)	2022 - 2039	229.025	96.057	110.707	435.789
Grid Infrastructure					
Targeted Corridor Improvement	2022 - 2023	-	16.272	-	16.272
Voltage Island Mitigation	2022 - 2058	11.409	0.973	14.409	26.792
Grid Technologies					
Intelligent Grid Devices and FLISR	2019 - 2068	45.270	3.582	39.483	88.334
Distributed Energy Resources Management System (DERMS)	2022 - 2034	5.187	0.130	1.692	7.009
Enterprise Asset Management System (EAMS)	2021 - 2034	18.767	1.718	6.121	26.606
Voltage Optimization Enablement	2022 - 2055	97.146	7.636	114.474	219.256
Substation Technology Deployment	2022 - 2056	32.140	2.526	37.873	72.540
Physical Security	2021 - 2067	36.916	4.477	60.399	101.793
Telecommunications	2022 - 2042	97.867	8.494	69.019	175.380
Cyber Security	2021 - 2029	5.282	2.998	0.892	9.172
Customer Education	2022 - 2023	-	3.033	-	3.033
Total		**$ 935.177**	**$ 180.430**	**$ 690.588**	**$ 1,806.196**

Company Exhibit No. __
Witness: CJL
Schedule 1
Page 1 of 1

Petition of Virginia Electric and Power Company
For approval of a plan for electric distribution grid transformation projects
pursuant to § 56-585.1 A 6 of the Code of Virginia
Case No. PUR-2021-00127

Filing Schedule 46l, Statement 1
Estimated Long-Term Revenue Requirement

Instructions: Provide the estimated annual revenue requirement over the duration of the proposed project by year on a total company basis, including all supporting calculations and assumptions. The applicant shall provide such information by project if applicable for the specific prudency determination filing. Schedule 46.d.2.ii.

See attached Filing Schedule 46l, Statement 1.

Virginia Electric and Power Company
Grid Transformation Plan Prudence - Phase II
(millions)

			Grid Infrastructure		Grid Technologies									
Calendar Year	Advanced Metering Infrastructure (AMI)	Customer Information Platform (CIP)	*Targeted Corridor Improvement*	*Voltage Island Mitigation*	*Intelligent Grid Devices / FLISR*	*Distributed Energy Resources Management System (DERMS)*	*Enterprise Asset Management System (EAMS)*	*Voltage Optimization Enablement*	*Substation Technology Deployment*	Physical Security	Tele-communications	Cyber Security	Customer Education	Total
2019	$ 1.982	$ 3.165	$ -	$ -	$ 0.142	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5.289
2020	7.153	4.789	-	-	0.680	-	-	-	-	-	-	-	-	12.622
2021	20.482	21.819	-	-	1.595	-	0.303	-	-	0.010	-	0.142	-	44.351
2022	37.728	45.878	8.224	0.354	3.357	0.334	1.320	1.684	0.165	0.965	4.802	1.550	1.590	107.951
2023	52.191	67.330	8.048	0.996	5.065	0.770	3.401	7.051	1.883	3.008	12.172	2.860	1.443	166.218
2024	50.049	29.130	-	1.272	5.378	0.831	3.016	11.024	3.640	3.911	13.143	1.320	-	122.715
2025	48.304	27.677	-	1.254	4.821	0.782	2.846	10.974	3.657	3.888	12.817	1.234	-	118.254
2026	46.243	26.398	-	1.216	3.980	0.739	2.687	10.631	3.543	3.782	12.282	1.154	-	112.655
2027	44.216	25.301	-	1.179	3.331	0.703	2.551	10.298	3.432	3.679	11.764	0.735	-	107.189
2028	42.218	24.259	-	1.144	3.071	0.667	2.423	9.974	3.324	3.580	11.259	0.177	-	102.096
2029	40.242	23.222	-	1.109	2.973	0.632	2.295	9.659	3.219	3.485	10.762	(0.000)	-	97.598
2030	38.279	22.185	-	1.075	2.877	0.597	2.168	9.351	3.117	3.392	10.267	-	-	93.307
2031	36.321	21.149	-	1.041	2.783	0.562	1.922	9.046	3.016	3.299	9.773	-	-	88.911
2032	34.364	20.112	-	1.007	2.715	0.331	1.273	8.743	2.916	3.208	9.278	-	-	83.946
2033	32.407	19.075	-	0.973	2.651	0.059	0.403	8.439	2.815	3.116	8.784	-	-	78.721
2034	30.023	17.968	-	0.940	2.555	(0.000)	(0.001)	8.135	2.715	3.024	8.289	-	-	73.648
2035	26.127	15.803	-	0.906	2.459	-	-	7.831	2.614	2.932	7.795	-	-	66.468
2036	19.285	12.024	-	0.872	2.365	-	-	7.528	2.514	2.840	7.300	-	-	54.727
2037	10.787	6.710	-	0.838	2.299	-	-	7.224	2.413	2.749	6.820	-	-	39.840
2038	3.860	1.797	-	0.805	2.236	-	-	6.920	2.313	2.657	6.382	-	-	26.969
2039	0.911	(0.002)	-	0.771	2.140	-	-	6.616	2.212	2.565	5.992	-	-	21.204
2040	0.588	-	-	0.737	2.043	-	-	6.313	2.112	2.473	4.303	-	-	18.569
2041	0.312	-	-	0.703	1.947	-	-	6.009	2.011	2.381	1.398	-	-	14.762
2042	0.121	-	-	0.671	1.887	-	-	5.712	1.911	2.294	(0.002)	-	-	12.594
2043	0.028	-	-	0.643	1.838	-	-	5.444	1.819	2.218	-	-	-	11.990
2044	0.002	-	-	0.619	1.763	-	-	5.213	1.741	2.156	-	-	-	11.495
2045	-	-	-	0.596	1.693	-	-	5.002	1.671	2.100	-	-	-	11.061
2046	-	-	-	0.573	1.624	-	-	4.792	1.601	2.044	-	-	-	10.635
2047	-	-	-	0.551	1.591	-	-	4.582	1.532	1.989	-	-	-	10.244
2048	-	-	-	0.528	1.560	-	-	4.372	1.463	1.933	-	-	-	9.856
2049	-	-	-	0.505	1.490	-	-	4.163	1.393	1.877	-	-	-	9.428
2050	-	-	-	0.482	1.419	-	-	3.953	1.324	1.821	-	-	-	9.000
2051	-	-	-	0.460	1.350	-	-	3.743	1.254	1.766	-	-	-	8.573
2052	-	-	-	0.437	1.318	-	-	3.533	1.185	1.710	-	-	-	8.183
2053	-	-	-	0.414	1.291	-	-	3.271	1.110	1.654	-	-	-	7.740
2054	-	-	-	0.392	1.219	-	-	2.027	0.902	1.598	-	-	-	6.139
2055	-	-	-	0.369	1.133	-	-	(0.003)	(0.001)	1.543	-	-	-	3.041
2056	-	-	-	0.274	0.929	-	-	-	-	1.487	-	-	-	2.690
2057	-	-	-	0.086	0.543	-	-	-	-	1.431	-	-	-	2.060
2058	-	-	-	(0.000)	0.247	-	-	-	-	1.375	-	-	-	1.622
2059	-	-	-	-	0.232	-	-	-	-	1.320	-	-	-	1.552
2060	-	-	-	-	0.217	-	-	-	-	1.264	-	-	-	1.481
2061	-	-	-	-	0.203	-	-	-	-	1.208	-	-	-	1.411
2062	-	-	-	-	0.235	-	-	-	-	1.152	-	-	-	1.387
2063	-	-	-	-	0.271	-	-	-	-	1.097	-	-	-	1.368
2064	-	-	-	-	0.255	-	-	-	-	1.041	-	-	-	1.296
2065	-	-	-	-	0.238	-	-	-	-	0.985	-	-	-	1.223
2066	-	-	-	-	0.222	-	-	-	-	0.929	-	-	-	1.152
2067	-	-	-	-	0.107	-	-	-	-	0.856	-	-	-	0.964
2068	-	-	-	-	(0.000)	-	-	-	-	-	-	-	-	(0.000)
Total	$ 624.221	$ 435.789	$ 16.272	$ 26.792	$ 88.334	$ 7.009	$ 26.606	$ 219.256	$ 72.540	$ 101.793	$ 175.380	$ 9.172	$ 3.033	$ 1,806.195

Company Exhibit No. ___
Witness: CJL
Filing Schedule 46i
Statement I
Page 2 of 2

Advanced Metering Infrastructure (AMI) Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	Summary of AMI Capital Costs				
2					
3	Meter Deployment Labor Costs	$ 25,775,404	$ 24,121,420	$ 49,896,824	$ 95,182,092
4	Meter & Meter Hardware Costs	$ 76,153,018	$ 43,964,715	$ 120,117,734	$ 263,135,848
5	Network Materials & Installation Costs	$ 2,889,708	$ 2,527,594	$ 5,417,302	$ 13,304,728
6	Licensing & Communications	$ 1,926,701	$ 1,706,466	$ 3,633,167	$ 7,481,178
7	Capability Development/Enhancement	$ 3,544,587	$ 3,478,161	$ 7,022,748	$ 13,495,984
8					
9	**Total AMI Capital Costs**	**$ 110,289,418**	**$ 75,798,357**	**$ 186,087,775**	**$ 392,599,830**
10					
11					
12	Summary of AMI O&M Costs				
13					
14	Internal Labor, Vehicle, & Travel	$ 4,884,358	$ 5,987,533	$ 10,871,890	$ 3,057,192
15	Hardware/Software Maintenance, Communications, & Call Center	$ 560,564	$ 767,381	$ 1,327,946	$ 50,047,834
16					
17	**Total AMI O&M Costs**	**$ 5,444,922**	**$ 6,754,914**	**$ 12,199,836**	**$ 53,105,025**
18					

Key Inputs	
Asset Life	15 yrs
Deployment Timeframe	2019 - 2024
AMI Meters Deployed (2022-2023)	1,163,256
AMI Meters Deployed (2019-2024)	2,170,227

Customer Information Platform (CIP) Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	**Summary of CIP Capital Costs**				
2					
3	Hardware / Software Costs	$ 2,774,445	$ 594,365	$ 3,368,810	$ 28,959,432
4	Implementation Costs	$ 84,005,344	$ 51,721,928	$ 135,727,271	$ 203,947,387
5					
6	**Total CIP Capital Costs**	**$ 86,779,789**	**$ 52,316,293**	**$ 139,096,081**	**$ 232,906,820**
7					
8					
9	**Summary of CIP O&M Costs**				
10					
11	Hardware / Software Maintenance	$ 11,207,470	$ 21,946,032	$ 33,153,501	$ 114,521,679
12	Maintenance Labor	$ 16,892,842	$ 18,712,568	$ 35,605,409	$ 42,774,237
13					
14	**Total CIP O&M Costs**	**$ 28,100,311**	**$ 40,658,599**	**$ 68,758,911**	**$ 157,295,917**
15					

Key Inputs	
Asset Life	15 yrs
Core-Project Go-Live	2023

Company Exhibit No. ___ (NJ)
Witnesses: Multiple
Filing Schedule 46A
Statement 2
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Targeted Corridor Improvement Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	Summary of Targeted Corridor Improvement Capital Costs				
2					
3	Total Targeted Corridor Improvement Capital Costs	$ -	$ -	$ -	$ -
4					
5					
6	Summary of Targeted Corridor Improvement O&M Costs				
7					
8	Ash tree removal - Emerald Ash Borer	$ 5,835,707	$ 5,951,166	$ 11,786,872	$ 20,451,152
9	Herbicide - Establish ground floor	$ 2,388,000	$ 2,097,110	$ 4,485,109	$ 18,038,508
10					
11	Total Targeted Corridor Improvement O&M Costs	$ 8,223,706	$ 8,048,275	$ 16,271,982	$ 38,489,660
12					

Key Inputs	
Ash Trees to be Removed	23,350
Miles of Herbicide Application	32,600

Company Exhibit No. ___
Witnesses: Multiple
Filing Schedule 46A
Statement 2
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Voltage Island Mitigation Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	Summary of Voltage Island Mitigation Capital Costs				
2					
3	Substation Engineering	$ 250,000	$ 300,000	$ 550,000	$ 1,600,000
4	Substation Construction	$ 3,200,000	$ 4,050,000	$ 7,250,000	$ 31,125,000
5	Line Engineering	$ 23,250	$ 31,000	$ 54,250	$ 1,047,016
6	Line Construction	$ 3,405,000	$ 150,000	$ 3,555,000	$ 6,755,000
7					
8	**Total Voltage Island Mitigation Capital Costs**	**$ 6,878,250**	**$ 4,531,000**	**$ 11,409,250**	**$ 40,527,016**
9					
10					
11	Summary of Voltage Island Mitigation O&M Costs				
12					
13	**Total Voltage Island Mitigation O&M Costs**	$ -	$ -	$ -	$ -
14					

Key Inputs	
Asset life	34.1 yrs
Voltage Islands to be Mitigated (10 Yr Total)	18

Company Exhibit No. ___
Witnesses: Multiple
Filing Schedule 46A
Statement 2
Page 5 of 15

Intelligent Grid Devices Capital and O&M

Line No.	Description	2021	2022	2023	Phase II	10 Yr Total
1	Summary of Intelligent Grid Devices Capital Costs					
2						
3	Line Engineering Costs	$ 1,353,910	$ 1,468,425	$ 6,943,614	$ 9,765,949	$ 47,055,349
4	Line Construction Costs	$ -	$ 8,915,922	$ 9,613,095	$ 18,529,017	$ 301,916,499
5	Substation Costs	$ -	$ 127,590	$ 676,597	$ 804,188	$ 27,806,417
6						
7	Total Intelligent Grid Devices Capital Costs	$ 1,353,910	$ 10,511,937	$ 17,233,306	$ 29,099,153	$ 376,778,266
8						
9						
10	Summary of Intelligent Grid Devices O&M Costs					
11						
12	Carrier Telecom Data Plan for Reclosers & Sensors	$ -	$ 5,622	$ 16,278	$ 21,900	$ 886,527
13						
14	Total Intelligent Grid Devices O&M Costs	$ -	$ 5,622	$ 16,278	$ 21,900	$ 886,527
15						

[1]Costs shown for 2021 reflect preparatory work for Phase II

Key Inputs	
Asset Life	34.1 yrs
Feeders Addressed (10 Yr Total)	759
Electronic Reclosers Installed (10 Yr Total)	1,201
Line Sensors Installed (10 Yr Total)	1,012
Digital Relays Installed (10 Yr Total)	130
Communication Gateways Installed (10 Yr Total)	141

Company Exhibit No. ___ (NJ)
Witnesses: Multiple (HD)
Filing Schedule 46A (CD)
Statement 2 (CD)
Page 6 of 15 (CD)

Fault Location, Isolation, Service Restoration Software (FLISR) Capital and O&M

Line No.	Description	2019	2020	2021	2022	2023	Phase II	10 Yr Total
1	Summary of FLISR Capital Costs							
2								
3	Hardware/Software	$ 308,750	$ 277,669	$ 308,750	$ 308,750	$ -	$ 1,203,919	$ 1,203,919
4	Implementation Labor (Internal, Vendor)	$ 772,889	$ 2,755,496	$ 3,280,773	$ 2,000,000	$ -	$ 8,809,158	$ 8,809,158
5	Software Refresh	$ -	$ -	$ -	$ -	$ -	$ -	$ 541,294
6								
7	Total FLISR Capital Costs	$ 1,081,639	$ 3,033,165	$ 3,589,523	$ 2,308,750	$ -	$ 10,013,077	$ 10,554,371
8								
9								
10	Summary of FLISR O&M Costs							
11								
12	Operations & Maintenance	$ -	$ -	$ -	$ 433,114	$ 441,683	$ 874,796	$ 3,215,123
13								
14	Total FLISR O&M Costs	$ -	$ -	$ -	$ 433,114	$ 441,683	$ 874,796	$ 3,215,123
15								

[1]Costs shown for 2019-2021 reflect preparatory work for Phase II

Key Inputs	
Asset Life	5 yrs

Company Exhibit No. ___
Witnesses: Multiple
Filing Schedule 46A
Statement 2
Page 7 of 15

Distributed Energy Resources Management System (DERMS) Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	Summary of DERMS Capital Costs				
2					
3	Software Costs	$ 882,268	$ 1,149,775	$ 2,032,043	$ 15,330,207
4	Implementation Costs	$ 3,155,000	$ -	$ 3,155,000	$ 3,155,000
5					
6	**Total DERMS Capital Costs**	**$ 4,037,268**	**$ 1,149,775**	**$ 5,187,043**	**$ 18,485,207**
7					
8					
9	Summary of DERMS O&M Costs				
10					
11	**Total DERMS O&M Costs**	**$ -**	**$ -**	**$ -**	**$ -**
12					

Key Inputs	
Asset Life	10 yrs

Company Exhibit No. ___
Witnesses: Multiple
Filing Schedule 46A
Statement 2
Page 8 of 15

Enterprise Asset Management System (EAMS) Capital and O&M

Line No.	Description	2021	2022	2023	Phase II	10 Yr Total
1	**Summary of EAMS Capital Costs**					
2						
3	Enabling Costs	$ 2,450,000	$ 4,052,013	$ 525,590	$ 7,027,603	$ 8,410,660
4	Planning and Business Readiness Costs	$ -	$ 500,090	$ 170,817	$ 670,907	$ 670,907
5	Software Costs	$ -	$ 510,362	$ -	$ 510,362	$ 510,362
6	Implementation Costs	$ -	$ 3,448,007	$ 7,110,252	$ 10,558,259	$ 10,558,259
7						
8	**Total EAMS Capital Costs**	**$ 2,450,000**	**$ 8,510,472**	**$ 7,806,659**	**$ 18,767,131**	**$ 20,150,188**
9						
10						
11	**Summary of EAMS O&M Costs**					
12						
13	Operations & Maintenance	$ 100,000	$ 205,165	$ 678,011	$ 983,176	$ 6,346,949
14	Licensing & Infrastructure	$ -	$ -	$ 265,434	$ 265,434	$ 3,078,327
15						
16	**Total EAMS O&M Costs**	**$ 100,000**	**$ 205,165**	**$ 943,446**	**$ 1,248,611**	**$ 9,425,276**
17						

[1]Costs shown for 2021 reflect preparatory work for Phase II

Key Inputs	
Asset Life	10 yrs
Deployment Timeframe	2021 - 2024

Company Exhibit No. ___
Witnesses: Multiple
Filing Schedule 46A
Statement 2
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Voltage Optimization Enablement Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	Summary of Voltage Optimization Enablement Capital Costs				
2					
3	System/Infrastructure Upgrades to Improve Voltage	$ 31,960,512	$ 65,185,698	$ 97,146,210	$ 442,543,064
4					
5	**Total Voltage Optimization Enablement Capital Costs**	**$ 31,960,512**	**$ 65,185,698**	**$ 97,146,210**	**$ 442,543,064**
6					
7					
8	Summary of Voltage Optimization Enablement O&M Costs				
9					
10	**Total Voltage Optimization Enablement O&M Costs**	**$ -**	**$ -**	**$ -**	**$ -**
11					

Key Inputs	
Asset Life	31.4 yrs
Targeted Voltage Improvement	1.0%

Company Exhibit No. ___
Witnesses: Multiple
Filing Schedule 46A
Statement 2
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Substation Technology Deployment Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	Summary of Substation Technology Deployment Capital Costs				
2					
3	Substation Engineering	$ 2,410,691	$ 2,417,714	$ 4,828,406	$ 15,449,251
4	Substation Construction	$ -	$ 22,015,436	$ 22,015,436	$ 138,558,277
5	Other Technology Pilots	$ 728,183	$ 4,568,229	$ 5,296,412	$ 5,296,412
6					
7	**Total Substation Technology Deployment Capital Costs**	**$ 3,138,874**	**$ 29,001,379**	**$ 32,140,253**	**$ 159,303,940**
8					
9					
10	Summary of Substation Technology Deployment O&M Costs				
11					
12	**Total Substation Technology Deployment O&M Costs**	$ -	$ -	$ -	$ -
13					

Key Inputs	
Asset Life	31.4 yrs
Substations to be Upgraded (10 Yr Total)	60

Company Exhibit No. ___
Witnesses: Multiple
Filing Schedule 46A
Statement 2
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Physical Security Capital and O&M

Line No.	Description	2021	2022	2023	Phase II	10 Yr Total
1	**Summary of Physical Security Capital Costs**					
2						
3	Planning & Construction Costs	$ 200,000	$ 18,373,032	$ 18,736,541	$ 37,309,573	$ 143,870,281
4						
5	**Total Physical Security Capital Costs**	**$ 200,000**	**$ 18,373,032**	**$ 18,736,541**	**$ 37,309,573**	**$ 143,870,281**
6						
7						
8	**Summary of Physical Security O&M Costs**					
9						
10	Operations & Maintenance	$ -	$ 62,988	$ 177,150	$ 240,138	$ 6,783,925
11						
12	**Total Physical Security O&M Costs**	**$ -**	**$ 62,988**	**$ 177,150**	**$ 240,138**	**$ 6,783,925**
13						

[1]Costs shown for 2021 reflect preparatory work for Phase II

Key Inputs	
Asset life	45.5 yrs
Substations Secured	46

Company Exhibit No. ___
Witnesses: Multiple
Filing Schedule 46A
Statement 2
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Telecommunications Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	**Summary of Telecommunications Capital Costs**				
2					
3	Site by Site Telecom Design and Strategy, RFP Creation, and Vendor(s) Selection	$ -	$ -	$ -	$ -
4	Tier 1 - SONET to MPLS Conversion	$ -	$ -	$ -	$ 16,010,222
5	Tier 2 - Fiber, Microwave, and MPLS Deployment	$ 48,557,520	$ 47,959,682	$ 96,517,202	$ 268,206,761
6	Network Operating Center (NOC) Capacity Increase	$ 500,000	$ 850,000	$ 1,350,000	$ 5,277,422
7					
8	**Total Telecommunications Capital Costs**	**$ 49,057,520**	**$ 48,809,682**	**$ 97,867,202**	**$ 289,494,404**
9					
10					
11	**Summary of Telecommunications O&M Costs**				
12					
13	Site by Site Telecom Design and Strategy, RFP Creation, and Vendor(s) Selection	$ -	$ -	$ -	$ 681,089
14	Tier 1 - SONET to MPLS Conversion	$ -	$ -	$ -	$ 4,503,041
15	Tier 2 - Fiber, Microwave, and MPLS O&M	$ 1,109,900	$ 1,880,021	$ 2,989,921	$ 19,930,408
16	Network Operating Center (NOC) Capacity Increase O&M	$ 550,000	$ 550,000	$ 1,100,000	$ 4,486,145
17					
18	**Total Telecommunications O&M Costs**	**$ 1,659,900**	**$ 2,430,021**	**$ 4,089,921**	**$ 29,600,683**
19					

Key Inputs	
Asset Life	18 yrs
Fiber, MW, MPLS Sites (Phase II)	136

Company Exhibit No. ___
Witnesses: Multiple
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Cyber Security Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	Summary of Cyber Security Capital Costs				
2					
3	Cyber Security Support	$ -	$ -	$ -	$ 165,981
4	Physical Security Support	$ -	$ -	$ -	$ 1,480,000
5	AMI Support	$ -	$ -	$ -	$ -
6	CIP Support	$ 2,400,000	$ 800,000	$ 3,200,000	$ 3,806,000
7	Telecom Support	$ -	$ -	$ -	$ -
8	Intelligent Grid Devices Support	$ 676,068	$ 411,705	$ 1,087,773	$ 4,471,586
9	Substation Technology Deployment Support	$ -	$ 306,079	$ 306,079	$ 3,533,896
10	DERMS Support	$ -	$ -	$ -	$ -
11	EAMS Support	$ -	$ -	$ -	$ -
12	Voltage Optimization Enablement Support	$ -	$ -	$ -	$ -
13	Physical Security Support	$ 483,604	$ 204,053	$ 687,656	$ 2,582,469
14	Transportation Electrification Support	$ -	$ -	$ -	$ -
15					
16	Total Cyber Security Capital Costs	$ 3,559,672	$ 1,721,837	$ 5,281,508	$ 16,039,933
17					
18					
19	Summary of Cyber Security O&M Costs				
20					
21	Cyber Security Support	$ -	$ -	$ -	$ 267,179
22	Physical Security Support	$ -	$ -	$ -	$ -
23	AMI Support	$ 55,153	$ 59,203	$ 114,356	$ 476,016
24	CIP Support	$ 425,076	$ 750,000	$ 1,175,076	$ 5,066,768
25	Telecom Support	$ 32,148	$ 35,630	$ 67,778	$ 272,883
26	Intelligent Grid Devices Support	$ 489,249	$ 748,200	$ 1,237,449	$ 12,308,646
27	Substation Technology Deployment Support	$ -	$ -	$ -	$ -
28	DERMS Support	$ 18,363	$ 29,278	$ 47,641	$ 222,509
29	EAMS Support	$ 30,763	$ 42,034	$ 72,797	$ 329,674
30	Voltage Optimization Enablement Support	$ 20,694	$ 29,943	$ 50,638	$ 229,116
31	Physical Security Support	$ -	$ -	$ -	$ -
32	Transportation Electrification Support	$ 11,506	$ 13,134	$ 24,641	$ 95,325
33					
34	Total Cyber Security O&M Costs	$ 1,082,952	$ 1,707,424	$ 2,790,376	$ 19,268,116
35					

Key Inputs	
Asset life	5 yrs
Number of Devices Secured	2,483
Substations Secured	160

Customer Education Capital and O&M

Line No.	Description	2022	2023	Phase II	10 Yr Total
1	Summary of Customer Education Capital Costs				
1					
2	Total Customer Education Capital Costs	$ -	$ -	$ -	$ -
3					
4					
5	Summary of Customer Education O&M Costs				
6					
7	Collateral & Events	$ 1,285,000	$ 1,132,500	$ 2,417,500	$ 8,408,684
8	Internal Labor	$ 304,837	$ 310,934	$ 615,771	$ 2,565,106
9					
10	Total Customer Education O&M Costs	$ 1,589,837	$ 1,443,434	$ 3,033,271	$ 10,973,791
11					

Petition of Virginia Electric and Power Company
For approval of a plan for electric distribution grid transformation projects
pursuant to § 56-585.1 A 6 of the Code of Virginia
Case No. PUR-2021-00127

Filing Schedule 46A, Statement 3
Documents Supporting Projected Costs – Senior Management Materials

Instructions: Provide key documents supporting the projected and actual costs of the project for which the applicant seeks a prudency determination, such as economic analyses, support used by senior management for major cost decisions as determined by the applicant, contracts, studies, investigations, results from requests for proposals, cost-benefit analyses, and other items supporting the costs. Schedule 46.d.1.ii.

See attached Filing Schedule 46A, Statement 3 for materials provided to senior management to support the major cost decisions for this proceeding.

GT Plan Total (as of Phase II)

Cost/Benefit Summary (Utility Cash Flow Cost Basis) (Asset Life)

(in Millions)

BENEFITS & COSTS	NOMINAL	PV[1]
BENEFITS *(Asset Life)*:		
Customer	$12,109.1	$3,441.4
Avoided/Deferred Capital[2]	$1,120.6	$426.6
O&M Savings	$692.8	$340.4
Energy & Demand Savings	$2,653.6	$741.7
Enhanced Reliability	$7,385.8	$1,790.4
Reduction of Bad Debt & Energy Diversion	$256.3	$142.4
COSTS *(Asset Life)*:	$4,140.4	$3,009.8
Capital	$2,973.6	$2,396.7
O&M	$1,166.7	$613.1
Total Net Benefit (Cost):	$7,968.7	$431.7
Total Benefit/Cost Ratio:	2.9	1.1

[1] Present Value (PV) calculated using Weighted Average Cost of Capital (WACC) of 6.806%
[2] Avoided/Deferred Capital is stated on a Cash Flow basis

	NOMINAL	PV[1]
Additional Benefits	$317.9	$152.3
Reduced GHG	$290.8	$142.1
EV Ownership Savings[3]	$27.1	$10.1

[3] Adjusted to apply 7.2% benefits correlation factor to reduction associated with GT Plan EV investment

Economic Impact[4] & Jobs Creation[5]	
Incremental Impact On VA Economy (PV)	$2,272.2
Indirect Jobs	1,066
Direct Jobs	281

[4] Economic Impact benefits are calculated using BEA RIMS II multipliers with the Net Incremental Capex and O&M; this benefit is neither included in the Total + Additional Net Benefit nor in the Total + Additional Benefit/Cost Ratio
[5] Jobs creation is calculated using a multiplier applied to Millions of $ in Total CapEx and OpEx (PV) net of Avoided CapEx and OpEx, and divides the total by the Capital deployment timeframe (10yrs)

GT Plan Total (as of Phase IB Rebuttal)

Cost/Benefit Summary (Utility Cash Flow Cost Basis) (Asset Life)

(in Millions)

BENEFITS & COSTS	NOMINAL	PV[1]
BENEFITS *(Asset Life)*:		
Customer	$11,379.7	$3,231.7
Avoided/Deferred Capital[2]	$724.6	$360.7
O&M Savings	$652.9	$282.9
Energy & Demand Savings	$625.9	$260.3
Enhanced Reliability	$9,116.0	$2,200.2
Reduction of Bad Debt & Energy Diversion	$260.3	$127.7
COSTS *(Asset Life)*:	$4,214.1	$2,772.2
Capital	$2,848.7	$2,108.4
O&M	$1,365.4	$663.8
Total Net Benefit (Cost):	$7,165.6	$459.5
Total Benefit/Cost Ratio:	2.7	1.2

[1] Present Value (PV) calculated using Weighted Average Cost of Capital (WACC) of 6.83%
[2] Avoided/Deferred Capital is stated on a Cash Flow basis

	NOMINAL	PV[1]
Additional Benefits	$211.1	$92.8
Reduced GHG	$8.9	$4.3
EV Ownership Savings[3]	$202.1	$88.5

[3] Adjusted to apply 7.2% benefits correlation factor to reduction associated with GT Plan EV investment

Economic Impact[4] & Jobs Creation[5]	NOMINAL	PV[1]
Incremental Impact On VA Economy	$2,954.6	$2,059.9
Indirect Jobs	9,663	
Direct Jobs	2,546	

[4] Economic Impact benefits are calculated using BEA RIMS II multipliers with the Net Incremental Capex and O&M; this benefit is neither included in the Total + Additional Net Benefit nor in the Total + Additional Benefit/Cost Ratio
[5] Jobs creation is calculated using a multiplier applied to Millions of $ in Total CapEx net of Avoided CapEx and OpEx

GT Plan Cost-Benefit Model Summary

(Utility Cash Flow Cost Basis, $ In Millions)

BENEFITS & COSTS	NOMINAL	PV[1]
AMI-Centric Programs		
AMI, Time-of-Use Rate, and Peak-Time Rebate (Incl. Cyber Security Expenses)		
BENEFITS *(Asset Life)*:	$1,155.7	$584.6
Avoided/Deferred Capital[2]	$282.9	$130.4
O&M Savings	$409.6	$217.9
Energy & Demand Savings	$206.9	$93.9
Reduction of Bad Debt & Energy Diversion	$256.3	$142.4
COSTS[3] *(Asset Life)*:	$613.2	$492.0
Net Benefit (Cost):	$542.5	$92.6
Benefit/Cost Ratio:	1.9	1.2
Grid Infrastructure		
Mainfeeder Hardening, Targeted Corridor Improvement, and Voltage Island Mitigation (Incl. Cyber Security Expenses)		
BENEFITS *(Asset Life)*:	$3,660.6	$899.9
Avoided/Deferred Capital[2]	$27.4	$7.8
O&M Savings	$63.4	$17.9
Enhanced Reliability	$3,569.9	$874.3
COSTS[3] *(Asset Life)*:	$800.5	$633.2
Net Benefit (Cost):	$2,860.1	$266.7
Benefit/Cost Ratio:	4.6	1.4
Grid Technologies		
Intelligent Grid Devices, FLISR Software, DERMS, Hosting Capacity, EAMS, Voltage Optimization Enablement, Substation Technology Deployment, Locks Campus Microgrid, and Telecom (Incl. Cyber Security Expenses)		
BENEFITS *(Asset Life)*:	$6,891.5	$1,758.4
Avoided/Deferred Capital[2]	$532.3	$150.5
O&M Savings	$155.4	$71.6
Energy & Demand Savings	$2,387.9	$620.2
Enhanced Reliability	$3,816.0	$916.1
COSTS[3] *(Asset Life)*:	$1,718.7	$1,187.7
Net Benefit (Cost):	$5,172.9	$570.7
Benefit/Cost Ratio:	4.0	1.5
Transportation Electrification		
Customer EV Programs (Incl. Cyber Security Expenses)		
BENEFITS *(Asset Life)*:	$272.9	$122.1
Avoided/Deferred Capital[2]	$214.1	$94.5
Energy & Demand Savings	$58.8	$27.6
COSTS[3] *(Asset Life)*:	$151.3	$104.1
Net Benefit (Cost):	$121.6	$18.0
Benefit/Cost Ratio:	1.8	1.2
GT Plan Total[4]		
Total Net Benefit (Cost):	$7,968.7	$431.7
Total Benefit/Cost Ratio:	2.9	1.1

[1] *Present Value (PV) calculated using Weighted Average Cost of Capital (WACC) of 6.806%*
[2] *Avoided/Deferred Capital is stated on a Cash Flow basis*
[3] *Costs are inclusive of Cyber Security costs required to support projects within the investment grouping*
[4] *GT Plan Total includes costs and benefits associated with CIP, Customer Education, Physical Security, and Cyber Security costs not tied to specific projects*

GT Plan Cost-Benefit Model Summary

(Revenue Requirement Basis, $ In Millions)

BENEFITS & COSTS	NOMINAL	PV[1]
AMI-Centric Programs		
AMI, Time-of-Use Rate, and Peak-Time Rebate (Incl. Cyber Security Expenses)		
BENEFITS *(Asset Life)*:	$1,320.6	$593.1
Avoided/Deferred Capital[2]	$447.8	$138.9
O&M Savings	$409.6	$217.9
Energy & Demand Savings	$206.9	$93.9
Reduction of Bad Debt & Energy Diversion	$256.3	$142.4
COSTS[3] *(Revenue Requirement)*:	$888.1	$547.9
Net Benefit (Cost):	$432.5	$45.2
Benefit/Cost Ratio:	1.5	1.1
Grid Infrastructure		
Mainfeeder Hardening, Targeted Corridor Improvement, and Voltage Island Mitigation (Incl. Cyber Security Expenses)		
BENEFITS *(Asset Life)*:	$3,682.5	$900.7
Avoided/Deferred Capital[2]	$49.3	$8.5
O&M Savings	$63.4	$17.9
Enhanced Reliability	$3,569.9	$874.3
COSTS[3] *(Revenue Requirement)*:	$1,830.1	$721.3
Net Benefit (Cost):	$1,852.4	$179.3
Benefit/Cost Ratio:	2.0	1.2
Grid Technologies		
Intelligent Grid Devices, FLISR Software, DERMS, Hosting Capacity, EAMS, Voltage Optimization Enablement, Substation Technology Deployment, Locks Campus Microgrid, and Telecom (Incl. Cyber Security Expenses)		
BENEFITS *(Asset Life)*:	$7,293.0	$1,771.3
Avoided/Deferred Capital[2]	$933.7	$163.4
O&M Savings	$155.4	$71.6
Energy & Demand Savings	$2,387.9	$620.2
Enhanced Reliability	$3,816.0	$916.1
COSTS[3] *(Revenue Requirement)*:	$3,225.9	$1,322.2
Net Benefit (Cost):	$4,067.0	$449.1
Benefit/Cost Ratio:	2.3	1.3
Transportation Electrification		
Customer EV Programs (Incl. Cyber Security Expenses)		
BENEFITS *(Asset Life)*:	$359.3	$125.4
Avoided/Deferred Capital[2]	$300.5	$97.8
Energy & Demand Savings	$58.8	$27.6
COSTS[3] *(Revenue Requirement)*:	$168.3	$105.6
Net Benefit (Cost):	$190.9	$19.8
Benefit/Cost Ratio:	2.1	1.2
GT Plan Total[4]		
Total Net Benefit (Cost):	$5,473.2	$152.5
Total Benefit/Cost Ratio:	1.7	1.05

[1] *Present Value (PV) calculated using Weighted Average Cost of Capital (WACC) of 6.806%*
[2] *Avoided/Deferred Capital is stated on a Revenue Requirement basis*
[3] *Costs are inclusive of Cyber Security costs required to support projects within the investment grouping*
[4] *GT Plan Total includes costs and benefits associated with CIP, Customer Education, Physical Security, and Cyber Security costs not tied to specific projects*

Capital Expenditures Summary

Nominal dollars, in millions	Phase II	10 Yr Total
Advanced Metering Infrastructure (AMI)	**$186.1**	**$392.6**
Customer Information Platform (CIP)	**$139.1**	**$232.9**
Grid Infrastructure	**$11.4**	**$762.0**
Mainfeeder Hardening	-	$721.4
Targeted Corridor Improvement	-	-
Voltage Island Mitigation	$11.4	$40.5
Grid Technologies	**$192.4**	**$1,035.2**
Intelligent Grid Devices	$29.1	$376.8
Fault Location, Isolation, Service Restoration Software (FLISR)	$10.0	$10.6
Distributed Energy Resources Management System (DERMS)	$5.2	$18.5
Hosting Capacity	-	$0.2
Enterprise Asset Management System (EAMS)	$18.8	$20.2
Voltage Optimization Enablement	$97.1	$442.5
Substation Technology Deployment	$32.1	$159.3
Locks Campus Microgrid	-	$7.3
Physical Security	**$37.3**	**$143.9**
Transportation Electrification	**-**	**$5.9**
Telecommunications	**$97.9**	**$289.5**
Cyber Security	**$5.3**	**$16.0**
Customer Education	**-**	**-**
Total Capital Expenditures:	**$669.4**	**$2,878.1**

Company Exhibit No. ___
Witness: JAW
Filing Schedule 46A
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Operating Expenditures Summary

Nominal dollars, in millions	Phase II	10 Yr Total
Advanced Metering Infrastructure (AMI)	**$12.2**	**$53.1**
Customer Information Platform (CIP)	**$68.8**	**$157.3**
Grid Infrastructure	**$16.3**	**$38.5**
Mainfeeder Hardening	-	-
Targeted Corridor Improvement	$16.3	$38.5
Voltage Island Mitigation	-	-
Grid Technologies	**$2.1**	**$14.3**
Intelligent Grid Devices	$0.0	$0.9
Fault Location, Isolation, Service Restoration Software (FLISR)	$0.9	$3.2
Distributed Energy Resources Management System (DERMS)	-	-
Hosting Capacity	-	$0.3
Enterprise Asset Management System (EAMS)	$1.2	$9.4
Voltage Optimization Enablement	-	-
Substation Technology Deployment	-	-
Locks Campus Microgrid	-	$0.5
Physical Security	**$0.2**	**$6.8**
Transportation Electrification	**-**	**$15.5**
Telecommunications	**$4.1**	**$29.6**
Cyber Security	**$2.8**	**$19.3**
Customer Education	**$3.0**	**$11.0**
Total O&M Expenditures:	**$109.5**	**$345.3**

Company Exhibit No. ___
Witness: JAW
Filing Schedule 46A
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APPENDIX A,
ATTACHMENT 2

For approval and certification of the proposed CE-1 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 CE, under § 56-585.1 A 6 of the Code of Virginia

Annual Revenue Requirement for the Rate Years 2022-2056

Instructions: Provide the annual revenue requirement over the duration of the proposed rate adjustment clause by year and by class.

See attached Filing Schedule 46C, Statement 2, for the projected annual revenue requirement for the years 2022 through 2056.

Total Rider Required Revenues

VA Jurisdiction Only

($000)

Calendar Year	Grassfield	Norge	Sycamore
2022	$3,949	$2,619	$7,216
2023	$3,784	$3,824	$9,191
2024	$3,370	$3,568	$8,511
2025	$3,240	$3,426	$8,179
2026	$3,123	$3,299	$7,882
2027	$3,033	$3,186	$7,618
2028	$2,955	$3,097	$7,407
2029	$2,880	$3,021	$7,239
2030	$2,804	$2,946	$7,059
2031	$2,728	$2,871	$6,878
2032	$2,652	$2,796	$6,698
2033	$2,575	$2,722	$6,518
2034	$2,500	$2,647	$6,337
2035	$2,424	$2,573	$6,168
2036	$2,350	$2,498	$5,987
2037	$2,299	$2,426	$5,810
2038	$2,231	$2,359	$5,644
2039	$2,162	$2,294	$5,483
2040	$2,094	$2,230	$5,322
2041	$2,042	$2,166	$5,168
2042	$1,995	$2,117	$5,041
2043	$1,950	$2,075	$4,926
2044	$1,903	$2,032	$4,811
2045	$1,857	$1,989	$4,695
2046	$1,810	$1,947	$4,582
2047	$1,764	$1,904	$4,476
2048	$1,719	$1,863	$4,373
2049	$1,427	$1,622	$4,270
2050	$572	$1,356	$3,196
2051	$565	$583	$1,657
2052	$572	$582	$1,644
2053	$564	$576	$1,623
2054	$557	$574	$1,606
2055	$550	$572	$1,594
2056	$526	$571	$1,577
	$0	$563	$1,444

For approval and certification of the proposed CE-1 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 CE, under § 56-585.1 A 6 of the Code of Virginia

Document Supporting Filing Schedule 46C, Statement 3

Instructions: Provide all documents, contracts, studies, investigations or correspondence that support projected costs proposed to be recovered via a rate adjustment clause.

See attached Filing Schedule 46C, Statement 3, for documentation supporting the projected annual requirements reflected in Filing Schedule 46C, Statement 2.

Depreciation Schedule (2020)		2020																	
CapEx	A3	0																	
Cost of Land	A3	0																	
Accumulated Depreciation	A3	0																	
Asset Retirement Cost (ARC)	A3	0																	
ARC Accumulated Depreciation	A3	0																	
AFUDC Equity	VA	0																	
AFUDC Equity Amortization	VA	0																	
AFUDC Debt	VA	0																	
AFUDC Debt Amortization	VA	0																	
Capitalized Interest	A3	0																	
Cumulative Deferred Tax Liability (Asset)	A3	0																	
Inventory Balance	A3	0																	
Working Capital	A3	0																	
ARO Liability	A3	0																	
Pre-COD O&M	A3	0																	
Colorado Advanced Data (2000)		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Remaining Construction CapEx	A3	37,584	706	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	A3	(94)																	
Ongoing CapEx after COD	A3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses	A3	85	517	525	533	541	550	557	564	571	578	585	593	600	606	616	624	658	684
Major Maintenance	A3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	A3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																			
ARO Balance		1,024																	
ARO Accrual	A3	6	37	38	39	41	42	44	45	47	49	50	52	54	56	58	60	62	64
ARO Spending	A3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARC Depreciation	A3	7	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
Production Tax Credit (PTC)	A3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	A3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	A3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation for Construction Capital	A3	5,487	8,985	5,708	3,613	3,519	1,993	455	435	438	435	438	435	438	435	438	226	14	11
Federal Tax Depreciation for Construction Capital	A3	5,487	8,985	5,708	3,613	3,519	1,993	455	435	438	435	438	435	438	435	438	226	14	11

end

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Actual Historical $'s (000)																			
CapEx	A3																		
Cost of Land	A8																		
Accumulated Depreciation	A3																		
Asset Retirement Cost (ARC)	A8																		
ARC Accumulated Depreciation	A3																		
AFUDC Equity	VA																		
AFUDC Equity Amortization	VA																		
AFUDC Debt	VA																		
AFUDC Debt Amortization	VA																		
Capitalized Interest	A8																		
Cumulative Deferred Tax Liability (Asset)	A3																		
Inventory Balance	A8																		
Working Capital	A3																		
ARO Liability	A3																		
Pre-COD O&M	A8																		
Generic Forward Data ($000)		2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Remaining Construction CapEx	A8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	A8																		
Ongoing CapEx after COD	A8	0	0	120	120	120	120	120	120	120	120	120	120	0	0	0	0	0	0
Operating Expenses	A8	673	692	691	700	709	718	728	738	748	758	769	779	790	824	836	847	859	728
Major Maintenance	A8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	A8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																			
ARO Balance																			
ARO Accrual	A8	67	69	71	74	77	79	82	85	88	91	94	98	101	105	109	112	116	100
ARO Spending	A8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(3,456)
ARC Depreciation	A8	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	22
Production Tax Credit (PTC)	A8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	A8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	A8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation for Construction CapEx	A8	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	0
Federal Tax Depreciation for Construction CapEx	A8	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	0

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Nominal Dollars ($ '000)		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Capex																				
Cost of Land	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Accumulated Depreciation	A2																			
Asset Retirement Cost (ARC)	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARC Accumulated Depreciation	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Equity	VA																			
AFUDC Equity Amortization	VA																			
AFUDC Debt	VA																			
AFUDC Debt Amortization	VA																			
Capitalized Interest	A2																			
Cumulative Deferred Tax Liability (Asset)	A2																			
Inventory Balance	A2																			
Working Capital	A2																			
ARO Liability	A2																			
Pre-COD O&M	A2																			
Construction Capital Costs (nominal)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Interest During Construction Capex	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	A4																			
Ongoing Capex after COD	A4	0	0	0	195	555	195	195	195	195	195	195	195	195	195	195	195	195	195	195
Operating Expenses	A2	711	725	739	754	785	703	709	614	630	645	653	660	677	915	932	951	969	988	540
Major Maintenance	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	A4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																				
ARO Balance	A2	65	65	70	73	75	78	81	84	87	90	93	96	100	103	107	111	115	119	123
ARO Accrual	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARO Spending	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(123)
ARC Depreciation	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Production Tax Credit (PTC)	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	A2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation for Construction Capital	A2	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	0
Federal Tax Depreciation for Construction Capital	A2	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	0

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Accumulated Cost Basis (2020)		2020																	
Capex	A3	0																	
Cost of Land	A6	8,058																	
Accumulated Depreciation	A6	0																	
Asset Retirement Cost (ARC)	A6	0																	
ARC Accumulated Depreciation	A3	0																	
AFUDC Equity	VA	0																	
AFUDC Equity Amortization	VA	0																	
AFUDC Debt	VA	0																	
AFUDC Debt Amortization	VA	0																	
Capitalized Interest	A6	0																	
Cumulative Deferred Tax Liability (Asset)	A6	0																	
Inventory Balance	A6	0																	
Working Capital	A6	0																	
ARO Liability	A6	0																	
Pre-COD O&M	A6	0																	
Operational Data (2020)		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Remaining Construction CapEx	A6	70,525	15,701	1,857	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	A6	0																	
On-going CapEx after COD	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses	A0	0	251	1,456	1,487	1,504	1,523	1,542	1,564	1,581	1,599	1,600	1,615	1,627	1,638	1,654	1,675	1,225	1,606
Major Maintenance	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																			
ARO Balance			1,572																
ARO Accrual	A6	0	0	56	58	60	63	65	67	69	73	75	77	80	83	86	89	92	95
ARO Spending	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARC Depreciation	A6	0	11	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
Production Tax Credit (PTC)	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation for Construction Capital	A6	0	12,222	20,106	12,907	8,251	8,010	4,637	1,252	1,187	1,189	1,187	1,189	1,187	1,189	1,187	1,189	615	33
Federal Tax Depreciation for Construction Capital	A6	0	12,222	20,106	12,907	8,251	8,010	4,637	1,252	1,187	1,189	1,187	1,189	1,187	1,189	1,187	1,189	615	33

end

Actual/Historical Yard (5000)																				
CapEx	A3																			
Cost of Land	A6																			
Accumulated Depreciation	A3																			
Asset Retirement Cost (ARC)	A3																			
ARC Accumulated Depreciation	A3																			
AFUDC Equity	VA																			
AFUDC Equity Amortization	VA																			
AFUDC Debt	VA																			
AFUDC Debt Amortization	VA																			
Capitalized Interest	A6																			
Cumulative Deferred Tax Liability (Asset)	A6																			
Inventory Balance	A6																			
Working Capital	A6																			
ARO Liability	A6																			
Pre-COD O&M	A6																			
Going-forward Data (5000)		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Remaining Construction CapEx	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	A6																			
On-going CapEx after COD	A6	0	0	0	444	444	444	444	444	444	444	444	444	444	0	0	0	0	0	0
Operating Expenses	A2	1,709	1,718	1,726	1,747	1,758	1,765	1,773	1,786	1,810	1,831	1,852	1,875	1,897	1,920	1,947	1,971	1,995	2,020	1,708
Major Maintenance	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																				
ARO Balance																				
ARO Accrual	A6	99	102	106	110	113	117	122	125	130	135	140	145	150	156	161	167	173	179	154
ARO Spending	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(5,350)
ARC Depreciation	A6	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	34
Production Tax Credit (PTC)	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	A6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation for Construction Capital	A6	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0
Federal Tax Depreciation for Construction Capital	A6	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	0

end

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Required Revenue Calculation for A6 Rider - VA Jurisdiction Only

Unit Assumptions:

This Model Starts	2021
Commercial Op-Ser Date (COD)	1/1/2021
Operating Life	35.0
End date	1/1/2056

Regulatory Assumptions:

1st Rider Effective	6/1/2021	VA Juris	81.00%	
Enhanced Return	0.0%	Pre-COD O&M Recovery Term after COD (months)	5	
Enhanced returns term after COD	0			

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Cost of Equity																		
Base Equity Return	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Enhanced Return	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Equity %	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%
Cost of Debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Debt %	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%

Actuals/Historical Filed ($000)

		2020
CapEx	VA Juris	0
Land Acquisition Cost	VA Juris	0
AFUDC Equity	VA Juris	0
AFUDC Equity Amortization	VA Juris	0
AFUDC Debt	VA Juris	0
AFUDC Debt Amortization	VA Juris	0
Capitalized Interest	VA Juris	0
Accumulated Depreciation	VA Juris	0
Asset Retirement Cost (ARC)	VA Juris	0
ARC Accumulated Depreciation	VA Juris	0
Cumulative Deferred Tax Liability (Asset) with Pro Rata	VA Juris	0
Cumulative Deferred Tax Liability (Asset) w/o Pro Rata	VA Juris	0
ARO Liability	VA Juris	0
Inventory Balance	VA Juris	0
Working Capital	VA Juris	0
Pre-COD O&M	VA Juris	0
Cumulative AFUDC - Equity		0
Cumulative AFUDC - Debt		0
Gross PP&E		0
Cumulative Depreciation		0
Revenues - Rate Year 6/1/2021-5/31/2022	VA Juris	2,615
Expenses, Interest, Taxes - Rate Year 6/1/2021-5/31/2022	VA Juris	2,137

Place-forward Data ($000)

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Remaining Construction CapEx	VA Juris	111,474	572	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	VA Juris	(58)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On-going CapEx after COD	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses	VA Juris	60	419	425	432	439	446	454	457	463	468	474	480	487	493	499	506	532	538
Major Maintenance	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																			
ARO Balance	VA Juris	830																	
ARO Accrual	VA Juris	5	30	31	32	33	34	35	37	38	39	41	42	44	45	47	49	50	52
ARO Spending	VA Juris	0	0	0	0	-0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARC Depreciation	VA Juris	6	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Production Tax Credit (PTC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation (plant closed by COD)	VA Juris	4,448	7,254	4,625	2,829	2,652	1,618	327	353	353	353	353	353	353	353	353	353	183	13
Federal Tax Depreciation (plant closed by COD)	VA Juris	4,448	7,254	4,625	2,829	2,652	1,618	327	353	353	353	353	353	353	353	353	353	183	13

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Required Revenue Calculation for A6 Rider - VA Jurisdiction Only

Tax Assumptions:

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
State Income Tax Rate		6.0%																	
Federal Income Tax Rate		21%																	
Effective Tax Rate		25.8%																	
Tax Depreciation Schedule		5	Years MACRs																
Tax depreciation schedule inputs:		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
3 Year MACRs	3	33.3%	44.4%	14.8%	7.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5 year MACRs	5	20.0%	32.0%	19.2%	11.5%	11.5%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7 year MACRs	7	14.3%	24.5%	17.5%	12.5%	8.9%	8.9%	8.9%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10 year MACRs	10	10.0%	18.0%	14.4%	11.5%	9.2%	7.4%	6.6%	6.6%	6.6%	6.6%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15 year MACRs	15	5.0%	9.5%	8.6%	7.7%	6.9%	6.2%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	2.9%	0.0%	0.0%
20 year MACRs	20	3.8%	7.2%	6.7%	6.2%	5.7%	5.3%	4.9%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Rider effective month	6																		
		1	2	3	4	5	6	7	8	9	10	11	12						
	365	31	28	31	30	31	30	31	31	30	31	30	31						
		0	0	0	0	0	30	31	31	30	31	30	31						
		0	0	0	0	0	30	31	62	122	153	183	214						
		365	365	365	365	365	335	304	273	243	212	182	151						
Pro Rata Factor		100.0%	100.0%	100.0%	100.0%	100.0%	91.8%	83.3%	74.8%	66.6%	58.1%	49.9%	41.4%						
Adj. factor for calendar year	80.5%																		
Assets closed by end of 2020 Rate Year:		2020	%																
Base CapEx	All	1	100.0%																
Capitalized Interest	All	0	0.0%																
Total		1	100.0%																
Investment Tax Credits Adjustment	VA Juris	0	0	0	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)
Permanent Book/Tax Plant Basis Difference	VA Juris	0	0	0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
Impact on deferred tax	VA Juris	0	0	0	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114

Other Operating Assumptions:

Composite Depreciation Rate for capital (except distribution assets)		3.59%																	
Accounts Receivable (days)		30																	
Accounts Payable (days)		30																	
Amortization Months		420	416	408	384	382	370	355	346	334	322	310	298	286	274	262	250	238	226
		2	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
ITC received		9,099	180																
Tax Basis Difference	4,809	4,519	93																
2021 & 2022 ITC amortization - Utilized in 2024	8,218	0	0	0	281	281	281	281	281	281	281	281	281	281	281	281	281	281	281
Total VA ITC Amortization		0	0	0	228	228	228	228	228	228	228	228	228	228	228	228	228	228	228
Investment Tax Credits Adjustment	(10,047)	0	0	0	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)	(305)
	(10,047)																		
Tax Basis difference (with tax gross up)	1,586	0	0	0	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Total VA Tax Basis difference	1,586	0	0	0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
	1,586																		

end

Required Revenue Calculation for A6 Rider - VI

Unit Assumptions:

This Model Starts
Commercial On-line Date (COD)
Operating Life
End date

Regulatory Assumptions:

1st Rider Effective

Enhanced Return
Enhanced return kicks after COD

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Cost of Equity																		
Base Equity Return	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Enhanced Return	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Equity %	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%
Cost of Debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Debt %	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%

Actual/Historical/Plant (000)

CapEx	VA Juris	
Land Acquisition Cost	VA Juris	
AFUDC Equity	VA Juris	
AFUDC Equity Amortization	VA Juris	
AFUDC Debt	VA Juris	
AFUDC Debt Amortization	VA Juris	
Capitalized Interest	VA Juris	
Accumulated Depreciation	VA Juris	
Asset Retirement Cost (ARC)	VA Juris	
ARC Accumulated Depreciation	VA Juris	
Cumulative Deferred Tax Liability (Asset) w/h Pre Rate	VA Juris	
Cumulative Deferred Tax Liability (Asset) w/o Pre Rate	VA Juris	
ARO Liability	VA Juris	
Inventory Balance	VA Juris	
Working Capital	VA Juris	
Pre-COD O&M	VA Juris	
Cumulative AFUDC - Equity		
Cumulative AFUDC - Debt		
Gross PPE		
Cumulative Depreciation		
Revenue - Rate Year 6/1/2021-5/31/2022	VA Juris	
Expenses, Interest, Taxes - Rate Year 6/1/2021-5/31/2022	VA Juris	

Going Forward Data (000)

		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Remaining Construction CapEx	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On-going CapEx after COD	VA Juris	0	0	161	161	161	161	161	161	161	161	161	161	0	0	0	0	0	0
Operating Expenses	VA Juris	545	553	560	567	575	582	590	598	606	615	622	632	640	650	657	667	676	559
Major Maintenance	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																			
ARO Balance	VA Juris																		
ARO Accrual	VA Juris	54	56	58	60	62	64	67	69	71	74	77	79	82	85	88	91	94	81
ARO Spending	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(2,826)
ARC Depreciation	VA Juris	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	18
Production Tax Credit (PTC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation (plant closed by COD)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Federal Tax Depreciation (plant closed by COD)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Required Revenue Calculation for AB Rider - VI

Tax Assumptions:

		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
State Income Tax Rate																			
Federal Income Tax Rate																			
Effective Tax Rate																			
Tax Depreciation Schedule																			
Tax depreciation schedule basis:		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
3 Year MACRs	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5 year MACRs	5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7 year MACRs	7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10 year MACRs	10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15 year MACRs	15	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
20 year MACRs	20	4.5%	4.5%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rider effective month	6																		
	365																		
Pro Rata Factor																			
Adj. factor for calendar year	50.5%																		
Assets closed by end of 2039 Rate Year:																			
Base CapEx	All																		
Capitalized Interest	All																		
Total																			
Investment Tax Credits Adjustment	VA Avb	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(256)
Permanent Book/Tax Plant Basis Difference	VA Avb	39	39	39	39	39	39	39	39	39	39	39	39	39	39	33	39	39	33
Impact on deferred tax	VA Avb	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	85

Other Operating Assumptions:

Composite Depreciation Rate for capital (except distribution asset)																			
Accounts Receivable (days)																			
Accounts Payable (days)																			
Amortization Months		214	202	190	178	166	154	142	130	118	106	94	82	70	58	46	34	22	10
		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10
		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
ITC received																			
Tax Basis Difference	4,809																		
2021 & 2022 ITC amortization - Utilized in 2024	9,218	281	281	281	281	281	281	281	281	281	281	281	281	281	281	281	281	281	234
Total VA ITC Amortization		225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	225	190
Investment Tax Credits Adjustment	(10,047)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(255)
	(10,047)																		
Tax Basis difference (with tax gross up)	1,588	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	40
Total VA Tax Basis difference	1,588	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	33
	1,588																		

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Company Exhibit No. ____
Witness: EL
Filing Schedule: A&C
Staff Set 3
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Required Revenue Calculation for AS Rider - VA Jurisdiction Only

User Assumptions:

This Model Starts	2021
Commercial On-line Date (COD)	9/1/2022
Operating Life	35.0
End date	9/1/2057

Regulatory Assumptions:

1st Rider Effective	6/1/2021		VA Juris		81.0515%													
Enhanced Return	0.0%								Pre-COD O&M Recovery Term after COD (months)				17					
Enhanced return term after COD	0																	
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Cost of Equity																		
Base Equity Return	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%
Enhanced Return	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Cost of Equity	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%
Equity %	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%
Cost of Debt	4.48%	4.35%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Debt %	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%

Actuals/Historical Data (2020):

		2020
CapEx	VA Juris	0
Land Acquisition Cost	VA Juris	0
AFUDC Equity	VA Juris	0
AFUDC Equity Amortization	VA Juris	0
AFUDC Debt	VA Juris	0
AFUDC Debt Amortization	VA Juris	0
Capitalized Interest	VA Juris	0
Accumulated Depreciation	VA Juris	0
Asset Retirement Cost (ARC)	VA Juris	0
ARC Accumulated Depreciation	VA Juris	0
Cumulative Deferred Tax Liability (Asset) w/o Pro Rata	VA Juris	0
Cumulative Deferred Tax Liability (Asset) w/o Pro Rata	VA Juris	0
ARO Liability	VA Juris	0
Inventory Balance	VA Juris	0
Working Capital	VA Juris	0
Pre-COD O&M	VA Juris	0
Cumulative AFUDC - Equity		0
Cumulative AFUDC - Debt		0
Gross PP&E		0
Cumulative Depreciation		0
Revenues - Rate Year 9/1/2021-8/31/2022	VA Juris	1,945
Expenses, Interest, Taxes - Rate Year 9/1/2021-8/31/2022	VA Juris	1,500

Going-forward Data (Accr):

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Remaining Construction CapEx	VA Juris	17,012	13,684	794	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On-going CapEx after COD	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses	VA Juris	0	68	418	427	437	447	458	468	479	488	494	504	514	524	534	544	555	566
Major Maintenance	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																			
ARO Balance	VA Juris	0	845																
ARO Accrual	VA Juris	0	5	30	31	32	34	35	36	37	39	40	42	43	45	46	48	49	51
ARO Spending	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARC Depreciation	VA Juris	0	6	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Production Tax Credit (PTC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation (plant closed by COD)	VA Juris	0	4,250	7,078	4,572	2,933	2,635	1,955	466	436	436	436	436	436	436	436	436	229	18
Federal Tax Depreciation (plant closed by COD)	VA Juris	0	4,250	7,078	4,572	2,933	2,635	1,955	466	436	436	436	436	436	436	436	436	229	18

Required Revenue Calculation for A6 Rider - VA Jurisdiction Only

Tax Assumptions:

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
State Income Tax Rate		5.0%																	
Federal Income Tax Rate		21%																	
Effective Tax Rate		25.0%																	
Tax Depreciation Schedule		5	Years MACRs																
Tax depreciation schedule inputs:		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
3 Year MACRs	3	33.3%	44.4%	14.8%	7.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5 year MACRs	5	20.0%	32.0%	19.2%	11.5%	11.5%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7 year MACRs	7	14.3%	24.5%	17.5%	12.5%	8.9%	8.9%	8.9%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10 year MACRs	10	10.0%	18.0%	14.4%	11.5%	9.2%	7.4%	6.6%	6.6%	6.6%	6.6%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15 year MACRs	15	5.0%	9.5%	8.6%	7.7%	6.9%	6.2%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	2.9%	0.0%	0.0%
20 year MACRs	20	3.8%	7.2%	6.7%	6.2%	5.7%	5.3%	4.9%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Rider effective month	6																		
		1	2	3	4	5	6	7	8	9	10	11	12						
	365	31	28	31	30	31	30	31	31	30	31	30	31						
		0	0	0	0	0	30	31	31	30	31	30	31						
		0	0	0	0	0	30	61	92	122	153	183	214						
		365	365	365	365	365	335	304	273	243	212	182	151						
Pro Rata Factor		100.0%	100.0%	100.0%	100.0%	100.0%	91.8%	83.3%	74.8%	66.6%	58.1%	49.9%	41.4%						
Adj. factor for calendar year	80.5%																		
Assets closed by end of 2020 Rate Year:		2020	%																
Base Capex	All	1	100.0%																
Capitalized Interest	All	0	0.0%																
Total		1	100.0%																
Investment Tax Credits Adjustment	VA Juris	0	0	0	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)
Permanent Book/Tax Plant Basis Difference	VA Juris	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
Impact on deferred tax	VA Juris	0	0	0	108	108	108	108	108	108	108	108	108	108	108	108	108	108	108

Other Operating Assumptions:

Composite Depreciation Rate for capital (except distribution asset)		3.58%																	
Accounts Receivable (days)		30																	
Accounts Payable (days)		30																	
Amortization Months		420	420	416	404	392	380	368	356	344	332	320	308	296	284	272	260	248	236
		0	4	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
ITC received			8,546	241															
Tax Basis Difference	4,394		4,273	120															
2022 & 2023 ITC amortization - starts in 2024	8,813	0	0	0	251	251	251	251	251	251	251	251	251	251	251	251	251	251	251
Total VA ITC Amortization		0	0	0	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212
Investment Tax Credits Adjustment	(9,387)	0	0	0	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)
	(9,577)																		
Tax Basis difference (with tax gross up)	1,484	0	0	0	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
Total VA Tax Basis difference	1,484	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
	1,514																		

end

Required Revenue Calculation for A6 Rider - VI

Unit Assumptions:

This Model Starts
Commercial On-line Date (COD)
Operating Life
End date

Regulatory Assumptions:

1st Rider Effective

Enhanced Return
Enhanced return term after COD

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Cost of Equity																			
Base Equity Return	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Enhanced Return	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Equity %	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%
Cost of Debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Debt %	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%

Actual/Historical Data ($000)

CapEx	VA Juris	
Land Acquisition Cost	VA Juris	
AFUDC Equity	VA Juris	
AFUDC Equity Amortization	VA Juris	
AFUDC Debt	VA Juris	
AFUDC Debt Amortization	VA Juris	
Capitalized Interest	VA Juris	
Accumulated Depreciation	VA Juris	
Asset Retirement Cost (ARC)	VA Juris	
ARC Accumulated Depreciation	VA Juris	
Cumulative Deferred Tax Liability (Asset) with Pro Rata	VA Juris	
Cumulative Deferred Tax Liability (Asset) w/o Pro Rata	VA Juris	
ARO Liability	VA Juris	
Inventory Balance	VA Juris	
Working Capital	VA Juris	
Pre-COD O&M	VA Juris	
Cumulative AFUDC - Equity		
Cumulative AFUDC - Debt		
Gross PP&E		
Cumulative Depreciation		
Revenues - Rate Year 6/1/2021-5/31/2022	VA Juris	
Expenses, Interest, Taxes - Rate Year 6/1/2021-5/31/2022	VA Juris	

Going-forward Data ($000)

		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Remaining Construction CapEx	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On-going CapEx after COD	VA Juris	0	0	0	150	150	150	150	150	150	150	150	150	150	0	0	0	0	0	0
Operating Expenses	VA Juris	577	588	599	611	623	635	647	660	673	686	700	713	727	741	756	771	786	801	817
Major Maintenance	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																				
ARO Balance	VA Juris																			
ARO Accrual	VA Juris	53	55	57	59	61	63	65	68	70	73	75	78	81	84	87	90	93	96	83
ARO Spending	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(2,879)
ARC Depreciation	VA Juris	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	13
Production Tax Credit (PTC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation (plant closed by COD)	VA Juris	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0
Federal Tax Depreciation (plant closed by COD)	VA Juris	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0

Required Revenue Calculation for A8 Rider - VI

		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
State Income Tax Rate																				
Federal Income Tax Rate																				
Effective Tax Rate																				
Tax Depreciation Schedule																				
Tax depreciation schedule inputs:		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
3 Year MACRs	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5 year MACRs	5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7 year MACRs	7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10 year MACRs	10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15 year MACRs	15	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
20 year MACRs	20	4.9%	4.5%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rider effective month	6																			
	365																			
Pro Rata Factor																				
A&L factor for calendar year	60.5%																			
Assets closed by end of 2039 Rate Year :																				
Rate Base	All																			
Capitalized Interest	All																			
Total																				
Investment Tax Credits Adjustment	VA Juris	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(190)
Permanent Book/Tax Plant Basis Difference	VA Juris	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	24
Impact on deferred tax	VA Juris	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	71

Other Depletion Assumptions:																				
Composite Depreciation Rate for capital (except distribution asset)																				
Accounts Receivable (days)																				
Accounts Payable (days)																				
Amortization Months		224	212	200	188	176	164	152	140	128	116	104	92	80	68	56	44	32	20	8
		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	8
		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
ITC received																				
Tax Basis Difference	4,384																			
2022 & 2023 ITC amortization - Starts in 2024	8,613	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261	174
Total VA ITC Amortization		212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	141
Investment Tax Credits Adjustment	(9,387)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(190)
	(9,577)																			
Tax Basis difference (w/Dt tax gross up)	1,484	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	30
Total VA Tax Basis difference	1,484	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	24
	1,514																			

end

Required Revenue Calculation for A6 Rider - VA Jurisdiction Only

Unit Assumptions:

This Model Starts	2021
Commercial On-Line Date (COD)	9/1/2022
Operating Life	35.0
End date	9/1/2057

Regulatory Assumptions:

1st Rider Effective	6/1/2021		VA Juris		81.00%													
Enhanced Return	0.0%							Pre-COD O&M Recovery Term after COD (months)				17						
Enhanced return term after COD	0																	
	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Base Equity Return	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Enhanced Return	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Total Cost of Equity	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%
Equity %	4.49%	4.35%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%	4.06%
Cost of Debt	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%
Debt %																		

Actual/Historical Data (COD): 2020

CapEx	VA Juris	0
Land Acquisition Cost	VA Juris	2,479
AFUDC Equity	VA Juris	0
AFUDC Equity Amortization	VA Juris	0
AFUDC Debt	VA Juris	0
AFUDC Debt Amortization	VA Juris	0
Capitalized Interest	VA Juris	0
Accumulated Depreciation	VA Juris	0
Asset Retirement Cost (ARC)	VA Juris	0
ARC Accumulated Depreciation	VA Juris	0
Cumulative Deferred Tax Liability (Asset) with Pre Rate	VA Juris	0
Cumulative Deferred Tax Liability (Asset) w/o Pre Rate	VA Juris	0
ARO Liability	VA Juris	0
Inventory Balance	VA Juris	0
Working Capital	VA Juris	0
Pre-COD O&M	VA Juris	0
Cumulative AFUDC - Equity		0
Cumulative AFUDC - Debt		0
Gross PP&E		2,479
Cumulative Depreciation		0
Revenues - Rate Year 6/1/2021-5/31/2022	VA Juris	5,814
Expenses, Interest, Taxes - Rate Year 6/1/2021-5/31/2022	VA Juris	4,873

Going-Forward Data (COD):

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Remaining Construction CapEx	VA Juris	57,159	12,727	1,513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On-going CapEx after COD	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses	VA Juris	0	203	1,190	1,205	1,219	1,234	1,250	1,259	1,281	1,293	1,300	1,309	1,319	1,329	1,349	1,357	1,368	1,373
Major Maintenance	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																			
ARO Balance	VA Juris	0	1,274																
ARO Accrual	VA Juris	0	7	48	47	49	51	53	54	56	58	60	63	65	67	69	72	75	77
ARO Spending	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARC Depreciation	VA Juris	0	9	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Production Tax Credit (PTC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation (plant closed by COD)	VA Juris	0	9,907	18,300	10,482	8,697	6,493	3,759	1,023	952	864	952	864	952	864	952	864	438	26
Federal Tax Depreciation (plant closed by COD)	VA Juris	0	9,907	18,300	10,482	8,697	6,493	3,759	1,023	952	864	952	864	952	864	952	864	438	26

Required Revenue Calculation for A6 Rider - VA Jurisdiction Only

Tax Assumptions:

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
State Income Tax Rate		5.99%																	
Federal Income Tax Rate		21%																	
Effective Tax Rate		25.8%																	
Tax Depreciation Schedule		5	Years MACRs																
Tax depreciation schedule Inputs:		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
3 Year MACRs	3	33.3%	44.4%	14.8%	7.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5 year MACRs	5	20.0%	32.0%	19.2%	11.5%	11.5%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7 year MACRs	7	14.3%	24.5%	17.5%	12.5%	8.9%	8.9%	8.9%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10 year MACRs	10	10.0%	18.0%	14.4%	11.5%	9.2%	7.4%	6.6%	6.6%	6.6%	6.6%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15 year MACRs	15	5.0%	9.5%	8.6%	7.7%	6.9%	6.2%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	5.9%	2.9%	0.0%	0.0%
20 year MACRs	20	3.8%	7.2%	6.7%	6.2%	5.7%	5.3%	4.9%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Rider effective month	6																		
		1	2	3	4	5	6	7	8	9	10	11	12						
	365	31	28	31	30	31	30	31	31	30	31	30	31						
		0	0	0	0	0	30	31	31	30	31	30	31						
		0	0	0	0	0	30	61	62	122	153	183	214						
		365	365	365	365	365	335	304	273	243	212	182	151						
Pro Rata Factor		100.0%	100.0%	100.0%	100.0%	100.0%	91.8%	83.3%	74.8%	66.6%	58.1%	49.9%	41.4%						
Adj. factor for calendar year	80.5%																		
Assets closed by end of 2020 Rate Year:		$000	%																
Bare CapEx	All	1	100.0%																
Capitalized Interest	All	0	0.0%																
Total		1	100.0%																
Investment Tax Credits Adjustment	VA Juris	0	0	0	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)
Permanent Book/Tax Plant Basis Difference	VA Juris	0	0	0	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84
Impact on deferred tax	VA Juris	0	0	0	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244

Other Operating Assumptions:

Composite Depreciation Rate for capital (except distribution asset)		3.58%																	
Accounts Receivable (days)		30																	
Accounts Payable (days)		30																	
Amortization Months		420	420	416	404	392	380	368	356	344	332	320	308	296	284	272	260	248	236
		0	4	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
ITC received			18,818	455															
Tax Basis Difference	10,136		9,909	227															
2022 & 2023 ITC Amortization - Starts in 2024	19,871	0	0	0	662	662	662	662	662	662	662	662	662	662	662	662	662	662	662
Total VA ITC Amortization		0	0	0	466	466	466	466	466	466	466	466	466	466	466	466	466	466	466
Investment Tax Credits Adjustment	(21,857)	0	0	0	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)
	0																		
Tax Basis difference (w/h tax gross up)	3,423	0	0	0	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
Total VA Tax Basis difference	3,423	0	0	0	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84
	3,482																		

end

Required Revenue Calculation for A6 Rider - V7

Unit Assumptions:

This Model Starts
Commercial On-line Date (COD)
Operating Life
End date

Regulatory Assumptions:

1st Rider Effective

Enhanced Return
Enhanced return term after COD

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Cost of Equity																			
Base Equity Return	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%
Enhanced Return	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Cost of Equity	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%	8.30%
Equity %	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%	52.29%
Cost of Debt	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%
Debt %	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%	47.71%

Actual/Historical Filed (2020)

CapEx	VA Juris	
Land Acquisition Cost	VA Juris	
AFUDC Equity	VA Juris	
AFUDC Equity Accordion	VA Juris	
AFUDC Debt	VA Juris	
AFUDC Debt Accordion	VA Juris	
Capitalized Interest	VA Juris	
Accumulated Depreciation	VA Juris	
Asset Retirement Cost (ARC)	VA Juris	
ARC Accumulated Depreciation	VA Juris	
Cumulative Deferred Tax Liability (Asset) with Pro Rata	VA Juris	
Cumulative Deferred Tax Liability (Asset) w/o Pro Rata	VA Juris	
ARO Liability	VA Juris	
Inventory Balance	VA Juris	
Working Capital	VA Juris	
Pre-COD O&M	VA Juris	
Cumulative AFUDC - Equity		
Cumulative AFUDC - Debt		
Gross PP&E		
Cumulative Depreciation		
Revenues - Rate Year 6/1/2021-5/31/2022	VA Juris	
Expenses, Interest, Taxes - Rate Year 6/1/2021-5/31/2022	VA Juris	

Going Forward Data (2020)

		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Remaining Construction CapEx	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
On-going CapEx after COD	VA Juris	0	0	0	350	350	350	350	350	350	350	350	350	350	0	0	0	0	0	0
Operating Expenses	VA Juris	1,394	1,393	1,439	1,418	1,423	1,430	1,438	1,446	1,457	1,464	1,502	1,520	1,538	1,556	1,575	1,597	1,617	1,637	1,385
Major Maintenance	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spare Parts Inventory	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO)																				
ARO Balance	VA Juris																			
ARO Accrual	VA Juris	80	83	86	89	92	95	98	102	106	110	113	117	122	126	130	135	140	145	125
ARO Spending	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(4,333)
ARC Depreciation	VA Juris	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	27
Production Tax Credit (PTC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Renewable Energy Certificate (REC)	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue	VA Juris	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
State Tax Depreciation (plant closed by COD)	VA Juris	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	0
Federal Tax Depreciation (plant closed by COD)	VA Juris	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	0

Required Revenue Calculation for A6 Rider - VI

Tax Assumptions:																			
		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
State Income Tax Rate																				
Federal Income Tax Rate																				
Effective Tax Rate																				
Tax Depreciation Schedule																				
Tax depreciation schedule inputs:		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
3 Year MACRs	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
5 year MACRs	5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
7 year MACRs	7	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10 year MACRs	10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
15 year MACRs	15	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
20 year MACRs	20	4.5%	4.5%	2.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Rider effective month	6																			
	365																			
Pre Rate Factor																				
Adj. factor for calendar year	80.6%																			
Assets closed by end of 2020 Rate Year :																				
Base CapEx	All																			
Capitalized Interest	All																			
Total																				
Investment Tax Credits Adjustment	VA Juris	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(436)
Permanent Book/Tax Plant Basis Difference	VA Juris	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	56
Impact on deferred tax	VA Juris	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	163

Other Operating Assumptions:																				
Composite Depreciation Rate for capital (except distribution assets)																				
Accounts Receivable (days)																				
Accounts Payable (days)																				
Amortization Months		224	212	200	188	176	164	152	140	128	116	104	92	80	68	56	44	32	20	8
		12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	8
		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
ITC received																				
Tax Basis Difference	10,136																			
2022 & 2023 ITC amortization - Starts in 2024	19,871	602	602	602	602	602	602	602	602	602	602	602	602	602	602	602	602	602	602	401
Total VA ITC Amortization		488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	488	325
Investment Tax Credits Adjustment	(21,857)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(656)	(436)
	0																			
Tax Basis difference (with tax gross up)	3,423	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	69
Total VA Tax Basis difference	3,423	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	56
	3,492																			

cont

Required Revenue Calculation - VA
Jurisdiction Only

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Construction	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operation	2	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Before 1st Rider eExcitve	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Cost of Debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Equity %	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%
Debt %	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%
VA Required Revenues ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Gross PP&E	31,305	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677	31,677
Accumulated Depreciation	188	1,323	2,458	3,593	4,729	5,864	6,999	8,134	9,269	10,404	11,540	12,675	13,810	14,945	16,080	17,216	18,351	19,486
Net PP&E	31,117	30,354	29,419	28,283	27,148	26,013	24,878	23,743	22,608	21,472	20,337	19,202	18,067	16,932	15,796	14,661	13,526	12,391
AFUDC Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M	(41)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Deferred Taxes Liability/(Asset)	1,080	2,858	3,545	4,025	4,425	4,829	4,453	4,374	4,003	3,872	3,730	3,543	3,366	3,185	2,999	2,773	2,560	2,228
ARO Liability	835	885	896	907	950	995	1,030	1,067	1,105	1,144	1,185	1,227	1,271	1,316	1,363	1,412	1,462	1,514
Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Working Capital	58	71	82	95	74	74	74	74	74	74	78	75	75	75	75	75	75	78
Rate Base	29,205	27,192	25,071	23,437	21,774	20,433	18,467	18,478	17,484	16,431	15,437	14,802	13,605	12,509	11,508	10,543	9,633	8,718
Average Rate Base	14,603	28,164	26,088	24,249	22,601	21,120	19,845	18,871	17,830	16,897	15,934	14,999	14,009	13,057	12,009	11,031	10,088	9,182
Equity Return (Net Income)	410	1,354	1,255	1,166	1,047	1,018	950	913	863	817	769	722	674	628	578	531	488	442
Income Taxes	141	467	433	402	375	320	331	314	298	282	265	249	232	218	199	183	167	153
Interest Expense	182	584	505	469	438	409	386	367	346	328	310	290	271	252	232	214	195	178
AFUDC Recovery	693	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses*	68	419	428	433	439	448	451	457	463	468	474	480	487	493	499	505	532	538
Major Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0
Depreciation	188	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135
Pre-COD O&M Amortization	(27)	(41)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARO Accretion	5	30	31	32	33	34	35	37	38	39	41	42	44	45	47	49	50	52
PTC Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REC Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment Tax Credits	0	0	0	(308)	(308)	(308)	(308)	(308)	(308)	(308)	(308)	(308)	(308)	(308)	(308)	(308)	(308)	(308)
Permanent Book/Tax Plant Basis Difference	0.00	0	0	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
Total Rider Required Revenues - VA Juris Only	$1,660	$3,949	$3,784	$3,370	$3,240	$3,123	$3,033	$2,958	$2,880	$2,804	$2,728	$2,652	$2,575	$2,500	$2,424	$2,350	$2,299	$2,231

Construction per[od ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Withdrawal schedule	30,474	572	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFDUC Calculation:																		
Cumulative Fund - Beginning	233	31,187	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740
Construction Withdrawal	30,474	572	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	30,707	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740
AFUDC - Equity	343	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC - Debt	113	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	31,187	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740
AFUDC Amortization - Equity	524	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalized Interest Calculation:																		
Capitalized Interest Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Fund - Beginning	0	30,474	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047
Construction Withdrawal	30,474	572	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	30,474	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047
Capitalized Interest - tax tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	30,474	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047

On-going CapEx ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
VA portion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Book Depreciation ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Operating Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Initial CapEx BY 2021	182	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091
Initial Capex after 2021	0	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
On-going CapEx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ARC Depreciation	6	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Total Book Depreciation	188	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135	1,135

Required Revenue Calculation - VA
Jurisdiction Only

		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Tax Depreciation ($000)		2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
MACRs Schedule		20.0%	32.0%	19.2%	11.5%	11.5%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
State Tax Depreciation for construction capital		4,443	7,284	4,625	2,929	2,852	1,618	377	353	353	353	353	353	353	353	353	183	12	[illegible]
Federal Tax Depreciation for construction capital		4,443	7,284	4,625	2,929	2,852	1,618	377	353	353	353	353	353	353	353	353	183	12	[illegible]
On-going CapEx		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Tax Depreciation - State		4,443	7,284	4,625	2,929	2,852	1,618	377	353	353	353	353	353	353	353	353	183	12	[illegible]
Total Tax Depreciation - Federal		*4,443*	*7,284*	*4,625*	*2,929*	*2,852*	*1,618*	*377*	*353*	*353*	*353*	*353*	*353*	*353*	*353*	*353*	*183*	*12*	[illegible]
On-Going CapEx Depreciation Schedules		470	418	426	394	382	370	358	346	334	322	310	298	286	274	262	250	238	226
On-Going CapEx Book Depreciation		335	335	335	335	335	335	335	335	334	322	310	298	286	274	262	250	238	225
	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	161	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	163	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total On-going Book Depreciation		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-Going CapEx Tax Depreciation		20%	32%	19%	12%	12%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	161																		
	163																		
	163																		
	161																		
	161																		
	163																		
	163																		
	163																		
	161																		
	163																		
Total On-going Tax Depreciation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Required Revenue Calculation - VA
Jurisdiction Only

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Taxes (1000)																		
State Income Tax Rate	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Federal Income Tax Rate	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Effective Income Tax Rate	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
State Deferred Tax	249	358	222	110	109	33	(43)	(41)	(41)	(41)	(41)	(42)	(42)	(43)	(43)	(52)	(52)	(52)
Federal Deferred Tax	841	1,210	884	371	353	111	(134)	(139)	(140)	(140)	(140)	(141)	(141)	(141)	(141)	(175)	(176)	(176)
Total Deferred Tax	1,090	1,568	886	481	461	144	(174)	(181)	(181)	(181)	(182)	(182)	(182)	(183)	(183)	(227)	(228)	(228)
Cumulative Deferred Taxes	1,090	2,658	3,545	4,025	4,486	4,629	4,455	4,274	4,093	3,912	3,730	3,548	3,366	3,183	3,000	2,772	2,500	2,228
Pre Rate Adjustment:																		
Federal Tax Depreciation w/o Capitalized Interest	4,448	7,394	4,625	2,929	2,652	1,818	377	353	353	353	353	353	353	353	353	185	12	0
Federal Deferred Tax subject to Pre Rate	935	1,291	725	377	361	101	(150)	(184)	(184)	(184)	(184)	(184)	(184)	(184)	(184)	(209)	(236)	(236)
Adjustment Factor for Calendar Year	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%
Federal Deferred Tax with Pre Rate Adjustment	720	1,039	580	303	290	81	(120)	(132)	(132)	(132)	(132)	(132)	(132)	(132)	(132)	(161)	(190)	(190)
Total Deferred Tax with Pre Rate Adjustment	918	1,318	743	427	390	124	(143)	(149)	(149)	(149)	(150)	(150)	(150)	(151)	(151)	(185)	(228)	(227)
ADIT Beginning (Regular)	0	1,090	2,658	3,545	4,025	4,486	4,629	4,455	4,274	4,093	3,912	3,730	3,548	3,366	3,183	2,999	2,772	2,500
Deferred Tax with Pre Rate Adjustment	918	1,318	743	427	390	124	(143)	(149)	(149)	(149)	(150)	(150)	(150)	(151)	(151)	(185)	(228)	(227)
ADIT Ending (Pre Rate)	918	2,408	3,402	3,972	4,415	4,610	4,486	4,306	4,125	3,944	3,762	3,580	3,398	3,215	3,031	2,814	2,547	2,274
Pre-COD O&M (1000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Pre-COD O&M	(22)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recovery Schedule	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M Amortization	(27)	(41)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M Balance	(41)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
[Asset Retirement Obligation [ARO] (5405]	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
ARO Balance																		
Beginning Balance	630	825	865	896	927	960	995	1,030	1,067	1,105	1,144	1,185	1,227	1,271	1,316	1,363	1,412	1,462
ARO Accrual	5	30	31	32	33	34	35	37	38	39	41	42	44	45	47	49	50	52
ARO Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Balance	825	865	896	927	960	995	1,030	1,067	1,105	1,144	1,185	1,227	1,271	1,316	1,363	1,412	1,462	1,514
Working Capital (1000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Accounts Receivable	231	136	325	311	277	268	257	249	243	237	230	224	218	212	205	198	193	189
Accounts Payable	176	65	250	215	203	192	183	173	169	162	158	149	143	137	130	124	118	113
Working Capital Balance	56	71	83	96	74	74	74	74	74	74	72	75	75	75	75	75	75	75

end

Company Exhibit No. 2
Witness: EL
Filing Schedule 4BC
Statement 3
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Company Exhibit No.__
Witness: EL
Filing Schedule 46C
Statement 3
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Required Revenue Calculation - VA Jurisdiction Only

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operation	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	10
Before 1st Rider effective	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Cost of Debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Equity %	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%
Debt %	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%

VA Required Revenues ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Gross PP&E	31,877	31,877	32,033	32,199	32,360	32,521	32,682	32,843	33,005	33,166	33,327	33,483	33,483	33,423	33,423	33,483	33,423	33,423
Accumulated Depreciation	20,621	21,756	22,902	24,058	25,226	26,406	27,600	28,809	30,034	31,278	32,286	32,462	32,633	32,814	32,991	33,162	33,343	33,488
Net PP&E	11,256	10,120	9,136	8,141	7,134	6,115	5,082	4,034	2,970	1,888	1,041	1,028	850	675	497	321	143	0
AFUDC Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Deferred Taxes Liability/(Asset)	1,955	1,831	1,412	1,154	[illegible]	848	330	139	(121)	(259)	(501)	(583)	(609)	(601)	(625)	(656)	(680)	(0)
ARO Liability	1,588	1,824	1,691	1,741	1,805	1,868	1,934	2,003	2,074	2,148	2,225	2,304	2,388	2,471	2,559	2,650	2,745	(0)
Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Working Capital	78	78	63	64	65	66	67	68	70	71	73	54	(1)	(1)	(0)	(0)	0	0
Rate Base	7,809	6,833	6,105	5,310	4,438	3,667	2,822	1,961	1,086	196	(520)	(641)	(852)	(1,118)	(1,437)	(1,674)	(1,909)	0
Average Rate Base	8,267	7,350	6,499	5,709	4,893	4,092	3,245	2,381	1,524	641	(162)	(580)	(788)	(1,078)	(1,317)	(1,556)	(1,783)	(954)
Equity Return (Net Income)	398	354	313	275	236	185	156	115	73	31	(8)	(28)	(38)	(52)	(63)	(75)	(86)	(46)
Income Taxes	137	122	108	95	81	66	54	40	25	11	(3)	(10)	(13)	(18)	(22)	(26)	(30)	(13)
Interest Expenses	160	142	126	110	95	79	63	46	29	12	(3)	(11)	(15)	(21)	(26)	(30)	(35)	(15)
AFUDC Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses*	545	553	560	587	576	592	500	509	605	615	625	622	640	650	677	687	690	589
Major Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	1,135	1,135	1,145	1,158	1,168	1,180	1,194	1,209	1,225	1,244	1,008	178	178	178	178	178	178	145
Pre-COD O&M Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARO Accretion	54	56	58	60	62	64	67	69	71	74	77	79	82	85	88	91	94	81
PTC Adjustment	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-
REC Adjustment	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-
Capacity Revenue Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment Tax Credits	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(306)	(255)
Permanent Book/Tax Plant Basis Difference	39	39	39	39	39	39	39	39	39	39	39	33	39	39	39	39	39	33
Total Rider Required Revenues - VA Juris Only	$2,162	$2,094	$2,042	$1,996	$1,950	$1,903	$1,857	$1,810	$1,764	$1,719	$1,427	$572	$565	$572	$564	$557	$550	$526

Construction period ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Withdrawal schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Calculations:																		
Cumulative Fund - Beginning	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740
Construction Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740
AFUDC - Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC - Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740	31,740
AFUDC Amortization - Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalized Interest Calculations:																		
Capitalized Interest Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Fund - Beginning	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047
Construction Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047
Capitalized Interest - for tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047	31,047

On-going CapEx ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
VA portion	0	0	161	161	161	161	161	161	161	161	161	161	0	0	0	0	0	0

Book Depreciation ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Operating Year	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Initial CapEx BY 2021	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	1,091	838	0	0	0	0	0	0	0
Initial Capex after 2021	20	20	20	20	20	20	20	20	20	20	19	0	0	0	0	0	0	0
On-going CapEx	-	-	10	21	33	45	59	74	90	108	128	152	152	152	152	152	152	127
ARC Depreciation	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	18
Total Book Depreciation	1,135	1,135	1,145	1,158	1,168	1,180	1,194	1,209	1,225	1,244	1,008	178	178	178	178	178	178	148

Required Revenue Calculation - VA
Jurisdiction Only

#		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
# [Tax Depreciation (1000)		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
MACRS Schedule		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
State Tax Depreciation for construction capital		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	0	0
Federal Tax Depreciation for construction capital		9	0	9	0	9	9	9	9	9	9	9	9	9	9	9	0	9	0
On-going CapEx		0	0	32	64	115	133	152	161	161	161	161	161	129	77	48	28	9	0
Total Tax Depreciation - State		9	9	41	83	134	142	161	170	179	170	170	170	138	86	58	37	18	9
Total Tax Depreciation - Federal		9	9	41	83	134	142	161	170	179	170	170	170	138	86	58	37	18	0
# On-Going CapEx Depreciation Schedules		214	202	190	178	166	154	142	130	118	106	94	82	70	58	46	34	22	10
# On-Going CapEx Book Depreciation		214	202	190	178	166	154	142	130	118	106	94	82	70	58	46	34	22	10
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	161	-	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8
	161	-	-	-	11	11	11	11	11	11	11	11	11	11	11	11	11	11	9
	161	-	-	-	-	12	12	12	12	12	12	12	12	12	12	12	12	12	10
	161	-	-	-	-	-	13	13	13	13	13	13	13	13	13	13	13	13	10
	161	-	-	-	-	-	-	14	14	14	14	14	14	14	14	14	14	14	11
	161	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	12
	161	-	-	-	-	-	-	-	-	16	16	16	16	16	16	16	16	16	14
	161	-	-	-	-	-	-	-	-	-	18	18	18	18	18	18	18	18	15
	161	-	-	-	-	-	-	-	-	-	-	21	21	21	21	21	21	21	17
	161	-	-	-	-	-	-	-	-	-	-	-	24	24	24	24	24	24	20
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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total On-going Book Depreciation		-	-	10	21	33	45	59	74	90	108	129	152	152	152	152	152	152	127
# On-Going CapEx Tax Depreciation		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	161			32	52	31	19	19	9	-	-	-	-	-	-	-	-	-	-
	161				32	52	31	19	19	9	-	-	-	-	-	-	-	-	-
	161					32	52	31	19	19	9	-	-	-	-	-	-	-	-
	161						32	52	31	19	19	9	-	-	-	-	-	-	-
	161							32	52	31	19	19	9	-	-	-	-	-	-
	161								32	52	31	19	19	9	-	-	-	-	-
	161									32	52	31	19	19	9	-	-	-	-
	161										32	52	31	19	19	9	-	-	-
	161											32	52	31	19	19	9	-	-
	161												32	52	31	19	19	9	-
	-													-	-	-	-	-	-
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Total On-going Tax Depreciation		0	0	32	84	115	133	152	161	161	161	161	161	129	77	48	28	9	0

Required Revenue Calculation - VA
Jurisdiction Only

z		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
z	[Taxes (1600)]	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
	State Income Tax Rate	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
	Federal Income Tax Rate	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
	Effective Income Tax Rate	26%	25%	26%	26%	26%	26%	25%	26%	26%	26%	26%	26%	25%	25%	26%	26%	26%	26%
	State Deferred Tax	(52)	(53)	(51)	(50)	(50)	(50)	(50)	(50)	(50)	(50)	(47)	2	(0)	(4)	(6)	(7)	(9)	(5)
	Federal Deferred Tax	(211)	(213)	(207)	(203)	(199)	(199)	(199)	(199)	(200)	(204)	(192)	8	(3)	(12)	(18)	(23)	(27)	(15)
	Total Deferred Tax	(279)	(274)	(259)	(253)	(254)	(253)	(253)	(255)	(258)	(263)	(252)	7	(3)	(16)	(24)	(30)	(35)	(20)
	Cumulative Deferred Taxes	1,855	1,581	1,412	1,154	902	648	395	139	(121)	(385)	(591)	(583)	(585)	(601)	(625)	(655)	(690)	(2)
	Pro Rata Adjustment:																		
	Federal Tax Depreciation w/o Capitalized Interest	9	9	41	83	124	142	161	170	170	170	170	170	139	83	55	37	18	0
	Federal Deferred Tax subject to Pro Rata	(236)	(236)	(232)	(223)	(210)	(217)	(217)	(216)	(222)	(228)	(178)	(1)	(9)	(19)	(25)	(29)	(33)	(20)
	Adjustment Factor for Calendar Year	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%
	Federal Deferred Tax with Pro Rata Adjustment	(190)	(190)	(187)	(180)	(170)	(175)	(175)	(174)	(179)	(184)	(143)	(1)	(8)	(15)	(20)	(24)	(27)	(16)
	Total Deferred Tax with Pro Rata Adjustment	(227)	(228)	(222)	(215)	(211)	(211)	(210)	(212)	(218)	(221)	(171)	8	(8)	(12)	(16)	(24)	(29)	(18)
	ADIT Beginning (Register)	2,328	1,855	1,581	1,412	1,154	899	648	393	139	(121)	(388)	(581)	(583)	(585)	(601)	(625)	(656)	(600)
	Deferral Tax with Pro Rata Adjustment	(227)	(228)	(222)	(215)	(211)	(211)	(210)	(212)	(218)	(221)	(171)	8	(8)	(12)	(16)	(24)	(29)	(18)
	ADIT Ending (Pro Rata)	2,001	1,727	1,458	1,197	942	688	438	181	(78)	(342)	(559)	(573)	(591)	(597)	(620)	(649)	(684)	8
z	[Pre-COD O&M (1600)]	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
	Pre-COD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Recovery Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pre-COD O&M Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Deferred Pre-COD O&M Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
z	[Asset Retirement Obligation (ARO) (1600)]	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
	ARO Balance																		
	Beginning Balance	1,514	1,568	1,624	1,681	1,741	1,803	1,868	1,934	2,003	2,074	2,148	2,225	2,304	2,388	2,471	2,559	2,650	2,745
	ARO Accrual	54	56	58	60	62	64	67	69	71	74	77	79	82	85	88	91	94	81
	ARO Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(2,826)
	Ending Balance	1,568	1,624	1,681	1,741	1,803	1,868	1,934	2,003	2,074	2,148	2,225	2,304	2,388	2,471	2,559	2,650	2,745	(0)
z	[Working Capital (1600)]	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
	Accounts Receivable	183	178	172	166	164	160	156	153	149	145	141	117	47	48	47	48	48	45
	Accounts Payable	106	102	108	104	99	94	89	84	78	74	68	85	47	48	47	48	48	45
	Working Capital Balance	76	76	63	64	65	66	67	68	70	71	73	64	(1)	(1)	(0)	(0)	0	0

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Required Revenue Calculation - VA
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	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Construction	12	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operation	0	4	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Before 1st Rate effective	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Cost of Debt	4.09%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Equity %	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%
Debt %	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%
VA Required Revenues ($000)	3675	2939	2919	2924	2918	2918	2917	2928	2928	2930	2933	2933	2933	2934	2934	2935	2937	2938
Gross PP&E	17,012	31,420	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217	32,217
Accumulated Depreciation	0	371	1,518	2,665	3,813	4,960	6,107	7,254	8,402	9,549	10,696	11,843	12,991	14,138	15,285	16,432	17,580	18,727
Net PP&E	17,012	31,051	30,699	29,551	28,404	27,257	26,110	24,962	23,815	22,668	21,521	20,373	19,226	18,079	16,932	15,784	14,637	13,490
AFUDC Balance	208	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M	0	(77)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Deferred Taxes Liability/(Asset)	13	997	2,515	3,412	3,859	4,339	4,487	4,231	4,108	4,001	3,835	3,670	3,504	3,337	3,170	3,003	2,782	2,905
ARO Liability	0	851	881	912	945	979	1,013	1,050	1,087	1,126	1,166	1,207	1,250	1,295	1,341	1,389	1,436	1,487
Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Working Capital	0	(1,035)	(14)	69	78	77	77	77	77	77	77	77	77	77	78	78	78	78
Rate Base	17,206	28,631	27,388	25,318	23,648	22,016	20,669	19,853	18,833	17,818	16,884	16,072	14,660	13,624	12,438	11,471	10,485	9,872
Average Rate Base	8,603	22,819	27,830	26,302	24,483	22,832	21,381	20,173	19,143	18,129	17,127	16,035	15,062	14,037	13,011	11,885	10,883	10,004
Equity Return (Net Income)	241	1,069	1,331	1,265	1,179	1,099	1,027	970	921	872	823	774	725	675	626	577	528	483
Income Taxes	83	375	458	436	406	378	354	334	317	300	284	267	250	233	216	199	182	166
Interest Expenses	107	459	535	509	474	442	413	391	371	351	331	311	292	272	252	232	213	194
AFUDC Recovery	243	778	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses*	0	65	418	427	437	447	458	468	475	485	494	504	514	524	534	544	555	566
Major Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	0	371	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147
Pre-COD O&M Amortization	0	(35)	(35)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARO Accretion	0	5	30	31	32	34	35	36	37	39	40	42	43	45	46	48	49	51
ITC Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REC Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment Tax Credits	0	0	0	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)	(284)
Permanent Book/Tax Plant Basis Difference	0	0	0	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
Total Rider Required Revenues - VA Juris. Only	$675	$2,619	$3,824	$3,568	$3,428	$3,299	$3,186	$3,097	$3,021	$2,948	$2,871	$2,796	$2,722	$2,647	$2,573	$2,498	$2,426	$2,359

Construction period ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Withdrawal schedule	17,012	13,584	794	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFDUC Calculations:																		
Cumulative Fund - Beginning	177	17,533	31,097	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891
Construction Withdrawal	17,012	13,584	794	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	17,189	31,097	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891
AFUDC - Equity	261	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC - Debt	83	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	17,533	31,097	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891
AFUDC Amortization - Equity	184	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	59	67	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalized Interest Calculations:																		
Capitalized Interest Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Fund - Beginning	0	17,012	30,578	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371
Construction Withdrawal	17,012	13,584	794	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	17,012	30,578	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371
Capitalized Interest - for tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	17,012	30,578	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371

On-going Capex ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
VA portion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Book Depreciation ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Operating Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Initial Capex in 2021	0	333	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609	609
Initial Capex in 2022	0	162	435	435	435	435	435	435	435	435	435	435	435	435	435	435	435	435
Initial Capex in 2023	0	0	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
On-going Capex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ARC Depreciation	0	6	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Total Book Depreciation	0	371	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147	1,147

Company Exhibit No. 7
Witness: EL
Filing Schedule 46C
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	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Tax Depreciation (1000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
MACRs Schedule	0.0%	32.0%	19.2%	11.5%	11.5%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
State Tax Depreciation for construction capital	0	4,290	7,070	4,572	2,833	2,035	1,035	438	436	436	436	436	436	436	436	436	229	18
Federal Tax Depreciation for construction capital	0	4,290	7,070	4,572	2,833	2,035	1,053	463	436	436	436	436	436	436	436	436	229	18
On-going CapEx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Tax Depreciation - State	0	4,289	7,078	4,572	2,833	2,033	1,455	448	438	431	436	438	436	438	436	433	228	18
Total Tax Depreciation - Federal	0	4,290	7,078	4,572	2,833	2,035	1,456	463	436	431	436	438	436	438	436	431	229	18
On-Going CapEx Depreciation Schedules	420	420	418	404	392	380	353	356	344	332	320	308	296	284	272	260	248	236
On-Going CapEx Book Depreciation	335	335	335	335	336	336	333	333	333	332	320	308	296	284	272	260	248	236
Total On-going Book Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-Going CapEx Tax Depreciation	20%	32%	19%	12%	12%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total On-going Tax Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Required Revenue Calculation - VA
Jurisdiction Only

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Taxes (1000)																		
State Income Tax Rate	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Federal Income Tax Rate	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Effective Income Tax Rate	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
State Deferred Tax	3	225	347	205	169	103	34	(36)	(37)	(38)	(38)	(38)	(38)	(38)	(38)	(38)	(38)	(38)
Federal Deferred Tax	10	739	1,171	692	568	340	114	(121)	(127)	(127)	(128)	(128)	(128)	(128)	(129)	(129)	(170)	(213)
Total Deferred Tax	13	964	1,518	897	478	451	148	(156)	(165)	(165)	(166)	(166)	(166)	(166)	(167)	(167)	(221)	(276)
Cumulative Deferred Taxes	13	997	2,515	3,412	3,889	4,339	4,487	4,331	4,166	4,001	3,836	3,670	3,504	3,337	3,170	3,003	2,782	2,506
Pre Rate Adjustment:																		
Federal Tax Depreciation w/o Capitalized Interest	0	4,280	7,078	4,572	2,933	1,835	1,535	458	436	438	435	435	436	436	436	436	229	18
Federal Deferred Tax subject to Pre Rate	0	823	1,248	719	375	354	107	(143)	(149)	(149)	(142)	(143)	(143)	(143)	(143)	(143)	(183)	(237)
Adjustment Factor for Calendar Year	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%
Federal Deferred Tax with Pre Rate Adjustment	0	662	1,002	579	302	285	86	(115)	(120)	(120)	(120)	(115)	(120)	(120)	(120)	(120)	(147)	(191)
Total Deferred Tax with Pre Rate Adjustment	13	825	1,273	756	403	387	127	(126)	(136)	(136)	(136)	(137)	(137)	(137)	(137)	(137)	(169)	(226)
ADIT Beginning (Regular)	0	13	837	2,515	3,412	3,889	4,339	4,487	4,331	4,166	4,001	3,836	3,670	3,504	3,337	3,170	3,003	2,782
Deferred Tax with Pre Rate Adjustment	13	825	1,275	756	403	387	127	(126)	(136)	(136)	(136)	(137)	(137)	(137)	(136)	(136)	(169)	(226)
ADIT Ending (Pre Rate)	13	838	2,272	3,271	3,815	4,276	4,466	4,359	4,196	4,030	3,865	3,699	3,533	3,368	3,199	3,033	2,819	2,556
Pre-COD O&M ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Pre-COD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recovery Schedule	0	4	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO) ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
ARO Balance																		
Beginning Balance	0	848	851	881	912	945	979	1,013	1,050	1,087	1,128	1,168	1,207	1,250	1,295	1,341	1,389	1,439
ARO Accrual	0	5	30	31	32	34	35	36	37	39	40	42	43	45	46	48	49	51
ARO Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Balance	0	851	881	912	945	979	1,013	1,050	1,087	1,128	1,168	1,207	1,250	1,295	1,341	1,389	1,439	1,489
Working Capital ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Accounts Receivable	180	55	215	314	293	282	271	262	255	248	242	235	230	224	218	211	205	199
Accounts Payable	1,524	1,150	230	225	217	205	194	185	178	171	165	159	153	148	142	134	128	121
Working Capital Balance	(1,344)	(1,095)	(14)	89	76	77	77	77	77	77	77	77	77	77	76	78	78	78
Cash return on CWIP schedule	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amortization schedule	0	4	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash Working Capital during Construction (CWC)	(1,284)	(1,095)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financing costs on CWC:																		
AFUDC Equity	(38)	(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Debt	(17)	(15)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Equity	0	(23)	(54)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	0	(3)	(24)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financing Costs Balance	(55)	(77)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

end

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Required Revenue Calculation - VA
Jurisdiction Only

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operation	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	6
Before 1st Rider effective	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Cost of Debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Equity %	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%
Debt %	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%
VA Required Revenue ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Gross PP&E	32,217	32,217	32,217	32,376	32,535	32,693	32,852	33,011	33,170	33,329	33,488	33,647	33,806	33,806	33,806	33,806	33,806	33,806	33,806
Accumulated Depreciation	18,874	21,021	22,169	23,328	24,494	25,674	26,858	28,072	29,283	30,531	31,758	32,975	33,800	33,977	33,154	33,331	33,508	33,686	33,806
Net PP&E	13,343	11,195	10,049	9,050	8,040	7,019	5,994	4,939	3,877	2,798	1,722	1,024	1,006	829	652	479	297	120	0
AFUDC Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Deferred Taxes Liab/Dy/(Asset)	2,229	1,852	1,574	1,401	1,136	878	621	383	104	(160)	(430)	(683)	(923)	(982)	(800)	(835)	(867)	(704)	0
ARO Liability	1,542	1,597	1,654	1,713	1,774	1,837	1,903	1,971	2,041	2,113	2,189	2,267	2,347	2,431	2,516	2,607	2,700	2,796	(9)
Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Working Capital	78	78	78	68	67	65	69	70	71	73	74	76	42	1	1	1	2	2	2
Rate Base	8,549	7,724	6,798	6,001	5,135	4,371	3,631	2,878	1,803	618	17	(673)	(712)	(1,510)	(1,254)	(1,439)	(1,736)	(1,871)	3
Average Rate Base	9,111	8,187	7,251	6,400	5,538	4,703	3,951	3,103	2,229	1,381	469	(279)	(643)	(991)	(1,122)	(1,376)	(1,615)	(1,833)	(924)
Equity Return (Net Income)	438	394	349	308	268	230	190	149	108	65	23	(13)	(31)	(48)	(54)	(66)	(78)	(89)	(37)
Income Taxes	151	136	120	106	93	79	65	51	37	23	8	(5)	(11)	(16)	(19)	(23)	(27)	(31)	(11)
Interest Expense	178	158	141	124	109	93	78	60	43	26	9	(5)	(12)	(17)	(22)	(27)	(31)	(36)	(15)
AFUDC Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses*	577	549	599	611	623	635	647	660	673	686	700	713	727	741	756	771	786	801	651
Major Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	1,147	1,147	1,147	1,157	1,168	1,180	1,192	1,208	1,221	1,237	1,256	838	177	177	177	177	177	177	129
Pre-COD O&M Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARO Accretion	53	55	57	59	61	63	65	68	70	73	75	78	81	84	87	90	93	96	83
PTC Adjustment	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-
REC Adjustment	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-
Capacity Revenue Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment Tax Credit	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(254)	(182)
Permanent Book/Tax Plant Basis Difference	36	36	36	36	36	36	36	36	36	36	36	36	36	35	35	35	35	35	34
Total Rider Required Revenues - VA Juris Only	$2,294	$2,230	$2,165	$2,117	$2,076	$2,032	$1,989	$1,947	$1,904	$1,863	$1,822	$1,356	$683	$682	$676	$674	$672	$671	$663

Construction period ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Withdrawal schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Calculation:																			
Cumulative Pond - Beginning	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891
Construction Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Pond	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891
AFUDC - Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC - Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Pond - Ending	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891	31,891
AFUDC Amortization - Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalized Interest Calculation:																			
Capitalized Interest Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Pond - Beginning	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371
Construction Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371
Capitalized Interest - for tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Pond - Ending	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371	31,371

Ongoing Capex ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
VA portion	0	0	0	159	159	157	159	159	159	159	159	159	159	0	0	0	0	0	0

Book Depreciation ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Operating Year	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Initial CapEx in 2021	609	609	609	609	609	609	609	609	609	609	609	609	385	0	0	0	0	0	0
Initial Capex in 2022	486	486	486	486	486	486	486	486	486	486	486	486	291	0	0	0	0	0	0
Initial Capex in 2023	28	28	28	28	28	28	28	28	28	28	28	28	27	0	0	0	0	0	0
Ongoing CapEx	-	-	-	10	21	33	45	59	74	90	108	129	153	153	153	153	153	153	129
ARC Depreciation	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	18
Total Book Depreciation	1,147	1,147	1,147	1,157	1,168	1,180	1,192	1,208	1,221	1,237	1,256	838	177	177	177	177	177	177	129

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Required Revenue Calculation - VA
Jurisdiction Only

		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Tax Depreciation ($000)		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
MACRs Schedule		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
State Tax Depreciation for construction capital		14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0
Federal Tax Depreciation for construction capital		14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	0
On-going CapEx		0	0	0	32	83	113	131	150	159	159	159	159	159	127	78	46	27	8	0
Total Tax Depreciation - State		14	14	14	46	97	127	145	163	173	173	173	173	173	141	92	60	41	22	8
Total Tax Depreciation - Federal		14	14	14	46	97	127	145	163	173	173	173	173	173	141	92	60	41	22	8
On-Going CapEx Depreciation Schedules		224	212	200	188	176	164	152	140	128	116	104	92	80	68	56	44	32	20	8
On-Going CapEx Book Depreciation		224	212	200	188	176	164	152	140	128	116	104	92	80	68	56	44	32	20	8
	159	-	-	-	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7
	159	-	-	-	-	11	11	11	11	11	11	11	11	11	11	11	11	11	11	7
	159	-	-	-	-	-	12	12	12	12	12	12	12	12	12	12	12	12	12	8
	159	-	-	-	-	-	-	13	13	13	13	13	13	13	13	13	13	13	13	8
	159	-	-	-	-	-	-	-	14	14	14	14	14	14	14	14	14	14	14	9
	159	-	-	-	-	-	-	-	-	15	15	15	15	15	15	15	15	15	15	10
	159	-	-	-	-	-	-	-	-	-	16	16	16	16	16	16	16	16	16	11
	159	-	-	-	-	-	-	-	-	-	-	18	18	18	18	18	18	18	18	12
	159	-	-	-	-	-	-	-	-	-	-	-	21	21	21	21	21	21	21	14
	159	-	-	-	-	-	-	-	-	-	-	-	-	24	24	24	24	24	24	16
Total On-going Book Depreciation		-	-	-	10	21	33	45	59	74	90	106	129	153	153	153	153	153	153	102
On-Going CapEx Tax Depreciation		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	159				32	51	31	18	18	9	-	-	-	-	-	-	-	-	-	-
	159					32	51	31	18	18	9	-	-	-	-	-	-	-	-	-
	159						32	51	31	18	18	9	-	-	-	-	-	-	-	-
	159							32	51	31	18	18	9	-	-	-	-	-	-	-
	159								32	51	31	18	18	9	-	-	-	-	-	-
	159									32	51	31	18	18	9	-	-	-	-	-
	159										32	51	31	18	18	9	-	-	-	-
	159											32	51	31	18	18	9	-	-	-
	159												32	51	31	18	18	9	-	-
	159													32	51	31	18	18	9	-
Total On-going Tax Depreciation		0	0	0	32	83	113	131	150	159	159	159	159	159	127	78	46	27	8	0

Required Revenue Calculation - VA
Jurisdiction Only

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Taxes ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
State Income Tax Rate	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Federal Income Tax Rate	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Effective Income Tax Rate	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
State Deferred Tax	(52)	(53)	(53)	(53)	(52)	(50)	(50)	(52)	(50)	(52)	(52)	(52)	1	(1)	(1)	(6)	(7)	(6)	181
Federal Deferred Tax	(214)	(214)	(214)	(211)	(205)	(200)	(189)	(188)	(200)	(204)	(206)	(128)	4	(3)	(13)	(20)	(24)	(29)	543
Total Deferred Tax	(277)	(277)	(278)	(273)	(267)	(259)	(258)	(257)	(260)	(264)	(270)	(183)	5	(4)	(17)	(26)	(32)	(37)	724
Cumulative Deferred Taxes	2,229	1,952	1,674	1,401	1,135	879	621	363	104	(160)	(430)	(563)	(558)	(530)	(809)	(835)	(867)	(704)	0
Pre Rate Adjustment:																			
Federal Tax Depreciation w/o Capitalized Interest	14	14	14	45	88	127	143	183	172	172	172	172	172	141	80	58	41	23	0
Federal Deferred Tax subject to Pre Rate	(230)	(230)	(230)	(234)	(225)	(221)	(220)	(219)	(220)	(224)	(227)	(139)	(1)	(0)	(10)	(25)	(29)	(32)	(22)
Adjustment Factor for Calendar Year	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%
Federal Deferred Tax with Pre Rate Adjustment	(192)	(192)	(192)	(192)	(181)	(178)	(177)	(176)	(177)	(180)	(183)	(112)	(1)	(0)	(13)	(20)	(23)	(26)	(22)
Total Deferred Tax with Pre Rate Adjustment	(231)	(231)	(231)	(227)	(218)	(216)	(215)	(215)	(217)	(224)	(225)	(136)	6	(3)	(14)	(21)	(25)	(31)	709
ADIT Beginning (Regular)	2,508	2,229	1,952	1,674	1,401	1,135	879	621	363	104	(160)	(430)	(563)	(558)	(530)	(809)	(835)	(867)	(704)
Deferred Tax with Pre Rate Adjustment	(231)	(231)	(231)	(227)	(218)	(216)	(215)	(215)	(217)	(224)	(225)	(136)	6	(3)	(14)	(21)	(25)	(31)	709
ADIT Ending (Pre Rate)	2,278	1,998	1,722	1,447	1,182	922	664	406	147	(117)	(385)	(566)	(558)	(560)	(825)	(830)	(860)	(897)	5
Pre-COD O&M ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Pre-COD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recovery Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO) ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
ARO Balance																			
Beginning Balance	1,488	1,542	1,597	1,654	1,713	1,774	1,837	1,903	1,971	2,041	2,113	2,189	2,267	2,347	2,431	2,518	2,607	2,700	2,796
ARO Accrual	53	55	57	59	61	63	65	68	70	73	75	78	81	84	87	90	93	96	83
ARO Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(2,879)
Ending Balance	1,542	1,597	1,654	1,713	1,774	1,837	1,903	1,971	2,041	2,113	2,189	2,267	2,347	2,431	2,518	2,607	2,700	2,796	(0)
Working Capital ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Accounts Receivable	194	189	183	178	174	171	167	164	160	157	153	150	111	56	56	56	55	55	55
Accounts Payable	119	110	105	112	107	103	98	94	89	84	78	74	70	55	55	54	54	53	53
Working Capital Balance	75	78	78	66	67	68	69	70	71	73	74	76	42	1	1	1	1	1	1
Cash return on CWIP schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amortization schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash Working Capital during Construction (CWC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financing costs on CWC:																			
AFUDC Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financing Costs Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Required Revenue Calculation - VA
Jurisdiction Only

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Construction	12	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operation	0	4	12	12	13	12	12	12	12	12	12	12	12	12	12	12	12	12
Before 1st Elder effective	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Cost of Debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Equity %	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%	52.5%
Debt %	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%
VA Required Revenues ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Gross PP&E	99,847	73,849	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182	75,182
Accumulated Depreciation	0	843	3,438	6,029	8,622	11,215	13,808	16,400	18,993	21,586	24,179	26,772	29,365	31,958	34,550	37,143	39,736	42,329
Net PP&E	99,847	72,808	71,728	69,153	66,541	63,944	61,395	58,782	56,189	53,596	50,983	48,390	45,798	43,203	40,632	38,039	35,426	32,833
AFUDC Balance	588	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M	0	(170)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Deferred Taxes Liability/(Asset)	33	2,307	5,021	7,828	8,868	10,035	10,368	10,053	9,693	9,293	8,822	8,561	8,179	7,807	7,434	7,081	6,847	6,853
ARO Liability	0	1,282	1,328	1,375	1,424	1,475	1,527	1,581	1,638	1,696	1,757	1,819	1,884	1,951	2,021	2,092	2,167	2,244
Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Working Capital	0	(901)	2	200	170	170	170	170	171	171	171	171	171	171	172	172	172	172
Rate Base	85,180	68,854	64,376	60,079	58,247	52,665	49,512	47,318	46,018	42,748	40,476	38,191	35,908	33,818	31,329	29,033	26,864	24,899
Average Rate Base	91,643	84,118	66,617	62,225	59,184	54,451	51,109	48,445	44,179	43,899	41,617	39,333	37,049	34,762	32,473	30,183	27,951	25,836
Equity Return (Net Income)	885	3,864	3,180	2,869	2,729	2,818	2,458	2,331	2,221	2,112	2,002	1,892	1,782	1,672	1,562	1,452	1,345	1,245
Income Taxes	305	1,063	1,099	1,033	964	902	847	803	765	728	690	652	614	578	539	500	463	429
Interest Expense	385	1,331	1,224	1,207	1,128	1,054	988	933	884	850	805	761	717	673	629	584	541	500
AFUDC Recovery	588	781	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses*	0	200	1,150	1,205	1,219	1,234	1,250	1,259	1,281	1,290	1,300	1,309	1,319	1,328	1,340	1,357	1,368	1,375
Major Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	0	843	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593
Pre-COD O&M Amortization	0	(77)	(210)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARO Accretion	0	7	48	47	49	51	53	54	56	58	60	63	65	67	69	72	75	77
PTC Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REC Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capacity Revenue Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment Tax Credit	0	0	0	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)
Permanent Book/Tax Plant Basis Difference	0.00	0	0	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84
Total Rider Required Revenues - VA Juris Only	$2,249	$7,216	$9,191	$8,511	$8,179	$7,682	$7,518	$7,407	$7,236	$7,059	$6,878	$6,698	$6,518	$6,337	$5,158	$5,957	$5,810	$5,644
Construction period ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Withdrawal schedule	57,169	12,777	1,513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFDUC Calculation:																		
Cumulative Fund - Beginning	585	58,505	71,333	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836
Construction Withdrawal	57,169	12,777	1,513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	57,754	71,283	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836
AFUDC - Equity	851	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC - Debt	211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	58,505	71,333	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836
AFUDC Amortization - Equity	503	575	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	183	188	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalized Interest Calculation:																		
Capitalized Interest Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Fund - Beginning	0	57,169	69,836	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409
Construction Withdrawal	57,169	12,777	1,513	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	57,169	69,836	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409
Capitalized Interest - for tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	57,169	69,836	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409
Ongoing CapEx ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
VA portion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Book Depreciation ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Operating Year	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Initial CapEx in 2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial CapEx in 2021	0	882	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647	2,647
Initial Capex in 2022	0	153	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456	456
Initial Capex in 2023	0	0	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Ongoing CapEx	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ARC Depreciation	0	9	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
Total Book Depreciation	0	843	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593	2,593

Required Revenue Calculation - VA Jurisdiction Only

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Tax Depreciation ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
MACRs Schedule	0.0%	32.0%	19.2%	11.5%	11.5%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
State Tax Depreciation for construction capital	0	9,907	18,300	10,482	8,857	6,433	3,752	1,023	982	984	982	984	982	984	982	984	438	25
Federal Tax Depreciation for construction capital	0	9,907	18,300	10,482	8,857	6,453	3,758	1,023	982	984	982	984	982	984	982	984	438	25
On-going CapEx	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Tax Depreciation - State	0	9,907	18,300	10,482	8,857	6,433	3,752	1,023	982	984	982	984	982	984	982	984	438	25
Total Tax Depreciation - Federal	0	9,907	18,300	10,482	8,857	6,453	3,758	1,023	982	984	982	984	982	984	982	984	438	25
On-Going CapEx Depreciation Schedules																		
	420	420	418	404	377	350	353	358	344	332	320	308	296	284	272	260	248	236
On-Going CapEx Book Depreciation	335	335	333	335	335	335	335	335	335	332	320	308	296	284	272	260	248	236
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
150	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total On-going Book Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
On-Going CapEx Tax Depreciation	20%	32%	19%	12%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
150																		
150																		
150																		
150																		
150																		
150																		
150																		
150																		
150																		
150																		
Total On-going Tax Depreciation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Required Revenue Calculation - VA
Jurisdiction Only

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Taxes ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
State Income Tax Rate	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Federal Income Tax Rate	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Effective Income Tax Rate	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
State Deferred Tax	8	518	603	473	252	240	79	(31)	(94)	(94)	(83)	(83)	(85)	(85)	(83)	(83)	(113)	(140)
Federal Deferred Tax	25	1,755	2,711	1,965	850	808	260	(772)	(280)	(265)	(258)	(258)	(257)	(257)	(252)	(252)	(381)	(474)
Total Deferred Tax	33	2,274	3,314	2,087	1,102	1,049	340	(354)	(376)	(370)	(371)	(371)	(372)	(372)	(372)	(373)	(493)	(615)
Cumulative Deferred Taxes	33	2,307	5,621	7,708	8,809	10,858	10,198	10,033	9,658	9,288	8,922	8,551	8,179	7,807	7,434	7,061	6,567	5,953
Pre Rate Adjustment:																		
Federal Tax Depreciation w/o Capitalized Interest	0	9,807	16,300	10,482	6,997	6,450	3,759	1,023	983	984	982	984	982	984	982	984	458	78
Federal Deferred Tax subject to Pre Rate	0	1,803	2,678	1,853	982	819	245	(268)	(342)	(347)	(347)	(342)	(342)	(342)	(342)	(342)	(440)	(533)
Adjustment Factor for Calendar Year	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%
Federal Deferred Tax with Pre Rate Adjustment	0	1,532	2,317	1,300	634	659	197	(285)	(275)	(279)	(279)	(275)	(275)	(275)	(275)	(275)	(354)	(434)
Total Deferred Tax with Pre Rate Adjustment	33	1,803	2,852	1,744	933	909	300	(330)	(303)	(304)	(304)	(305)	(305)	(305)	(306)	(307)	(407)	(510)
ADIT Beginning (Regular)	0	33	2,307	5,621	7,688	8,809	10,858	10,198	10,033	9,658	9,288	8,922	8,551	8,179	7,807	7,434	7,061	6,567
Deferred Tax with Pre Rate Adjustment	33	1,803	2,852	1,744	933	826	300	(330)	(303)	(304)	(304)	(305)	(305)	(305)	(306)	(307)	(407)	(510)
ADIT Ending (Pre Rate)	33	1,836	5,159	7,365	8,621	9,678	10,158	10,097	9,730	9,355	8,989	8,618	8,246	7,874	7,501	7,128	6,653	6,058
Pre-COD O&M ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Pre-COD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recovery Schedule	0	4	12	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO) ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
ARO Balance																		
Beginning Balance	0	1,274	1,333	1,328	1,375	1,424	1,475	1,527	1,581	1,638	1,696	1,757	1,819	1,884	1,951	2,021	2,092	2,167
ARO Accrual	0	7	48	47	48	51	53	54	58	58	60	63	65	67	69	72	75	77
ARO Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ending Balance	0	1,282	1,378	1,375	1,424	1,475	1,527	1,581	1,638	1,696	1,757	1,819	1,884	1,951	2,021	2,092	2,167	2,244
Working Capital ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Accounts Receivable	478	185	580	755	700	672	648	626	609	595	580	565	550	536	521	507	492	478
Accounts Payable	5,083	1,178	581	558	530	502	478	456	438	424	408	394	378	364	349	335	320	305
Working Capital Balance	(4,605)	(991)	2	200	170	170	170	170	171	171	171	171	171	171	172	172	172	172
Cash return on CWIP schedule	7	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amortization schedule	0	4	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash Working Capital during Construction (CWC)	(4,605)	(991)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financing costs on CWC:																		
AFUDC Equity	(129)	(32)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Debt	(57)	(14)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Equity	0	(43)	(118)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	0	(19)	(52)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financing Costs Balance	(187)	(170)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

cont

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Required Revenue Calculation - VA
Jurisdiction Only

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operation	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	8
Before 1st Rider +Excite	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of Equity	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%	9.20%
Cost of Debt	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%	4.05%
Equity %	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%	52.3%
Debt %	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%	47.7%
VA Required Revenue ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Gross PPE	75,163	75,163	75,522	75,522	75,522	76,243	76,603	76,963	77,322	77,682	78,042	78,402	78,761	78,761	78,761	78,761	78,761	78,761	78,761
Accumulated Depreciation	44,823	47,515	50,150	52,723	55,364	58,031	60,725	63,452	66,211	69,006	71,847	73,737	74,110	74,493	74,878	75,263	75,642	76,025	76,393
Net PPE	30,340	27,648	25,359	22,799	20,158	18,211	15,878	13,510	11,110	8,675	6,195	4,675	4,652	4,269	3,883	3,503	3,120	2,737	2,479
AFUDC Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Deferred Taxes Liability/(Asset)	5,335	4,716	4,097	3,480	2,865	2,330	1,757	1,167	612	27	(570)	(923)	(939)	(902)	(841)	(862)	(1,055)	0	
ARO Liability	2,224	2,427	2,493	2,561	2,673	2,789	2,867	2,959	3,075	3,185	3,298	3,418	3,537	3,653	3,784	3,829	4,069	4,214	(0)
Inventory	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Working Capital	172	173	173	144	148	149	150	153	158	159	162	168	86	(8)	(5)	(9)	(4)	(4)	(4)
Rate Base	12,764	10,837	10,833	10,871	10,066	13,361	11,402	9,807	7,879	5,671	3,629	2,348	2,038	1,482	823	611	33	(428)	2,478
Average Rate Base	23,781	21,725	19,837	17,784	15,979	14,173	13,331	10,454	8,843	6,600	4,575	2,993	2,221	1,761	1,220	750	278	(197)	1,025
Equity Return (Net Income)	1,144	1,045	949	854	768	682	565	503	411	317	222	144	107	85	59	36	13	(9)	33
Income Taxes	384	350	320	284	255	233	204	173	143	109	77	50	37	30	20	12	5	(3)	11
Interest Expenses	459	421	381	344	309	274	239	202	165	128	90	58	43	35	24	15	5	(4)	13
AFUDC Recovery	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Expenses*	1,384	1,393	1,429	1,418	1,423	1,430	1,438	1,443	1,467	1,484	1,502	1,530	1,538	1,558	1,578	1,597	1,617	1,637	1,385
Major Maintenance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Depreciation	2,593	2,593	2,633	2,618	2,640	2,667	2,695	2,728	2,760	2,797	2,838	2,890	363	383	383	383	383	383	258
Pre-COD O&M Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARO Accretion	80	83	86	89	92	95	98	102	106	110	113	117	122	126	130	135	140	145	125
PTC Adjustment	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-
REC Adjustment	0	0	0	0	0	0	0	0	-	-	-	-	-	-	-	-	-	-	-
Capacity Revenue Adjustment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Investment Tax Credits	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(558)	(438)
Permanent Book/Tax Plant Book Difference	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	84	58
Total Rider Required Revenues - VA Jdfls Only	$5,483	$5,322	$5,168	$5,041	$4,926	$4,811	$4,685	$4,582	$4,478	$4,373	$4,270	$3,196	$1,657	$1,644	$1,625	$1,606	$1,591	$1,577	$1,444
Construction period ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Withdrawal schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Calculation:																			
Cumulative Fund - Beginning	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836
Construction Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836
AFUDC - Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC - Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836	72,836
AFUDC Amortization - Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Capitalized Interest Calculation:																			
Capitalized Interest Rate	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Fund - Beginning	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409
Construction Withdrawal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Fund	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409
Capitalized Interest - for tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumulative Fund - Ending	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409	71,409
On-going CapEx ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
VA portion	0	0	0	360	360	360	360	360	360	360	360	360	360	0	0	0	0	0	0
Book Depreciation ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Operating Year	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
Initial CapEx in 2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial CapEx in 2021	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	1,227	0	0	0	0	0	0
Initial Capex in 2022	456	456	456	456	456	456	456	456	456	456	456	456	273	0	0	0	0	0	0
Initial Capex in 2023	54	54	54	54	54	54	54	54	54	54	54	54	51	0	0	0	0	0	0
On-going CapEx	-	-	-	23	46	74	102	130	157	204	248	283	347	347	347	347	347	347	221
ARO Depreciation	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	37
Total Book Depreciation	2,593	2,593	2,633	2,618	2,640	2,667	2,695	2,728	2,760	2,797	2,838	2,890	1,936	383	383	383	383	383	258

Company Exhibit No. ___
Witness: EL
Filing Schedule: 16C
Supplement 3
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Required Revenue Calculation - VA
Jurisdiction Only

		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Tax Depreciation ($000)		2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
MACRs Schedule		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
State Tax Depreciation for construction capital		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	0
Federal Tax Depreciation for construction capital		18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	0
On-going CapEx		0	0	0	72	187	256	298	339	360	360	360	360	360	287	173	104	62	21	0
Total Tax Depreciation - State		18	18	18	90	205	274	316	357	378	378	378	378	378	305	191	122	80	39	0
Total Tax Depreciation - Federal		18	18	18	90	205	274	316	357	378	378	378	378	378	305	191	122	80	39	0
On-Going CapEx Depreciation Schedules		224	212	200	188	176	164	152	140	128	116	104	92	80	68	56	44	32	20	8
On-Going CapEx Book Depreciation		224	212	200	188	176	164	152	140	128	116	104	92	80	68	56	44	32	20	8
	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	360	-	-	-	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	15
	360	-	-	-	-	25	25	25	25	25	25	25	25	25	25	25	25	25	25	16
	360	-	-	-	-	-	26	26	26	26	26	26	26	26	26	26	26	26	26	18
	360	-	-	-	-	-	-	28	28	28	28	28	28	28	28	28	28	28	28	19
	360	-	-	-	-	-	-	-	31	31	31	31	31	31	31	31	31	31	31	21
	360	-	-	-	-	-	-	-	-	34	34	34	34	34	34	34	34	34	34	22
	360	-	-	-	-	-	-	-	-	-	37	37	37	37	37	37	37	37	37	25
	360	-	-	-	-	-	-	-	-	-	-	42	42	42	42	42	42	42	42	28
	360	-	-	-	-	-	-	-	-	-	-	-	47	47	47	47	47	47	47	31
	360	-	-	-	-	-	-	-	-	-	-	-	-	54	54	54	54	54	54	36
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Total On-going Book Depreciation		-	-	-	23	48	74	102	133	167	204	246	293	347	347	347	347	347	347	231
On-Going CapEx Tax Depreciation		0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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	360					72	115	69	41	41	21	-	-	-	-	-	-	-	-	-
	360						72	115	69	41	41	21	-	-	-	-	-	-	-	-
	360							72	115	69	41	41	21	-	-	-	-	-	-	-
	360								72	115	69	41	41	21	-	-	-	-	-	-
	360									72	115	69	41	41	21	-	-	-	-	-
	360										72	115	69	41	41	21	-	-	-	-
	360											72	115	69	41	41	21	-	-	-
	360												72	115	69	41	41	21	-	-
	360													72	115	69	41	41	21	-
	-														-	-	-	-	-	-
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Total On-going Tax Depreciation		0	0	0	72	187	256	298	339	360	360	360	360	360	287	173	104	62	21	0

Required Revenue Calculation - VA
Jurisdiction Only

	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Taxes ($000)																			
State Income Tax Rate	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
Federal Income Tax Rate	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%	21%
Effective Income Tax Rate	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
State Deferred Tax	(141)	(141)	(141)	(139)	(134)	(131)	(131)	(130)	(131)	(134)	(136)	(6)	7	2	(3)	(9)	(17)	(14)	241
Federal Deferred Tax	(477)	(477)	(478)	(469)	(451)	(444)	(442)	(440)	(444)	(453)	(461)	(372)	23	8	(10)	(30)	(58)	(48)	814
Total Deferred Tax	(618)	(618)	(619)	(607)	(585)	(575)	(572)	(571)	(575)	(585)	(597)	(358)	30	11	(20)	(39)	(75)	(62)	1,055
Cumulative Deferred Taxes	5,335	4,718	4,097	3,490	2,905	2,330	1,757	1,187	612	27	(570)	(928)	(898)	(887)	(907)	(941)	(992)	(1,055)	0
Pre Rate Adjustment:																			
Federal Tax Depreciation w/o Capitalized Interest	18	18	18	90	206	274	316	357	378	378	378	378	378	308	191	122	80	33	0
Federal Deferred Tax subject to Pre Rate	(541)	(541)	(541)	(530)	(511)	(503)	(500)	(497)	(500)	(508)	(517)	(315)	(1)	(10)	(43)	(85)	(64)	(72)	(54)
Adjustment Factor for Calendar Year	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%	80.5%
Federal Deferred Tax with Pre Rate Adjustment	(435)	(435)	(435)	(427)	(412)	(404)	(402)	(400)	(403)	(409)	(416)	(254)	(7)	(12)	(35)	(44)	(51)	(58)	(44)
Total Deferred Tax with Pre Rate Adjustment	(517)	(517)	(514)	(504)	(485)	(477)	(475)	(474)	(477)	(486)	(496)	(291)	30	14	(12)	(33)	(68)	(49)	1,055
ADIT Beginning (Regular)	5,853	5,335	4,718	4,097	3,490	2,905	2,330	1,757	1,187	612	27	(570)	(928)	(898)	(887)	(907)	(941)	(992)	(1,055)
Deferred Tax with Pre Rate Adjustment	(517)	(517)	(514)	(504)	(485)	(477)	(475)	(474)	(477)	(486)	(496)	(291)	30	14	(12)	(33)	(68)	(49)	1,055
ADIT Ending (Pre Rate)	5,440	4,822	4,203	3,593	3,005	2,428	1,855	1,284	710	126	(470)	(861)	(898)	(884)	(899)	(941)	(1,009)	(1,041)	11
Pre-COD O&M ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Pre-COD O&M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Recovery Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-COD O&M Amortization	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Deferred Pre-COD O&M Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Asset Retirement Obligation (ARO) ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
ARO Balance																			
Beginning Balance	2,244	2,324	2,407	2,493	2,581	2,673	2,769	2,867	2,969	3,075	3,185	3,298	3,416	3,537	3,663	3,794	3,929	4,069	4,214
ARO Accrual	80	83	86	89	92	95	98	102	106	110	113	117	122	126	130	135	140	145	125
ARO Spending	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(4,338)
Ending Balance	2,324	2,407	2,493	2,581	2,673	2,768	2,867	2,969	3,075	3,185	3,298	3,416	3,537	3,663	3,794	3,929	4,069	4,214	(0)
Working Capital ($000)	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Accounts Receivable	464	451	437	425	414	405	395	388	377	368	359	351	353	136	135	133	132	131	130
Accounts Payable	291	278	265	281	269	257	245	233	221	209	197	185	175	142	140	138	136	135	133
Working Capital Balance	172	173	173	144	146	148	150	155	156	159	163	166	88	(6)	(5)	(5)	(4)	(4)	(4)
Cash return on CWIP schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Amortization schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cash Working Capital during Construction (CWC)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financing costs on CWC:																			
AFUDC Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Equity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AFUDC Amortization - Debt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Financing Costs Balance	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

end

Company Exhibit No. 4
Witness: EL
Filing Schedule: SBC
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VA [redacted]

Operating Expenses ($000)	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Contract / Outside Service	[redacted]																	
Land Lease Expense																		
Insurance Expense																		
Other Expense																		
Total Operating Expenses* ($000)	[redacted]																	

VA [redacted]

Operating Expenses* ($000):	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
Contract / Outside Service	[redacted]																		
Land Lease Expense																			
Insurance Expense																			
Other Expense																			
Total Operating Expenses* ($000)	[redacted]																		

VA [redacted]

Operating Expenses ($000):	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Contract / Outside Services	[redacted]																	
Land Lease Expense																		
Insurance Expense																		
Other Expense																		
Total Operating Expenses ($000)	[redacted]																	

VA Administered

Operating Expenses ($000):	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Contract / Outside Service																			
Land Lease Expense																			
Insurance Expense																			
Other Expense																			
Total Operating Expenses (000)																			

VA [redacted]

Operating Expenses* ($000):	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Contractor / Outside Services	[redacted]																	
Land Lease Expense																		
Insurance Expense																		
Other Expense																		
Property Taxes	-	21	81	82	82	82	83	80	90	87	84	80	78	74	81	78	71	65
Total Operating Expenses* ($000)	[redacted]																	

Extraordinarily Sensitive Information Redacted

Company Exhibit No. 2
Witness: EL
Filing Schedule: 46C
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[redacted]

VA

Operating Expenses ($000)s	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057
Contract / Outside Service	[redacted]																		
Land Lease Expense																			
Insurance Expense																			
Other Expense																			
Property Taxes																			
Total Operating Expenses* ($000)	[redacted]																		

APPENDIX A,
ATTACHMENT 3

PRE-FILED TESTIMONY
OF
DAVID J. DALTON

VIRGINIA ELECTRIC AND POWER COMPANY

CASE NO. PUR-2020-00134

Q1. PLEASE STATE YOUR NAME AND POSITION WITH THE VIRGINIA STATE CORPORATION COMMISSION ("COMMISSION").

A1. My name is David J. Dalton and I am a Senior Utilities Analyst with the Commission's Division of Public Utility Regulation.

Q2. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A2. My testimony addresses Virginia Electric and Power Company's ("Dominion" or "Company") first annual plan for compliance with the new mandatory renewable energy portfolio standard ("RPS") requirements enacted by the 2020 General Assembly as part of the Virginia Clean Economy Act ("VCEA")[1] and petition for approval to construct, acquire, or enter into contracts for specific resources ("RPS Development Plan" or "Petition"). The Company's plan is filed pursuant to § 56-585.5 D 4 of the Code of Virginia ("Code"). Specifically, my testimony:

- Reviews the VCEA's new RPS requirements;
- Addresses the Company's projected renewable energy certificate ("REC") requirements and energy and capacity positions over the next 15 years;
- Addresses the Company's RPS Development Plan;
- Identifies several concerns regarding the Company's modeling and inputs supporting the RPS Development Plan;

[1] Chapter 1193 of the 2020 Acts of the Assembly.

of [BEGIN EXTRAORDINARILY SENSITIVE] [redacted] [END EXTRAORDINARILY SENSITIVE], escalating at 2.5% per year.

Cavalier is proposed as an approximately 170 MW solar facility located in Isle of White County and Surry County and will be interconnected to the Company's transmission system. The facility will use ground-mounted, single-axis tracking solar panel arrays and has an expected commercial operation date of December 31, 2022. The PPA term is 20 years at a price of [BEGIN EXTRAORDINARILY SENSITIVE] [redacted] [END EXTRAORDINARILY SENSITIVE], escalating at 2.5% per year.

Lastly, Rivanna is an approximately 12.5 MW solar facility located in Albemarle County that will interconnect to the Company's distribution system. The facility will use a mix of ground-mounted, single-axis tracking and fixed tilt solar panel arrays and has an expected commercial operation date of June 30, 2021. The PPA term is 20 years at a price of [BEGIN EXTRAORDINARILY SENSITIVE] [redacted] [END EXTRAORDINARILY SENSITIVE], escalating at 2.5% per year.

Q34. PLEASE IDENTIFY THE PROPOSED COMPANY-OWNED SOLAR GENERATING FACILITIES.

A34. The Company seeks CPCNs to construct and operate three Company-owned solar generating facilities: (i) the Grassfield Solar Project ("Grassfield"), the Norge Solar Project ("Norge"), and the Sycamore Solar Project ("Sycamore").

Q35. PLEASE PROVIDE A MORE DETAILED OVERVIEW OF THE THREE PROPOSED COMPANY-OWNED SOLAR GENERATING FACILITIES.

A35. Company witness Avram provides a detailed description of the three proposed Company-owned solar generating facilities.[66]

Company witness Avram states that Grassfield will be an approximately 20 MW utility-scale solar generating facility located in the City of Chesapeake, located on approximately 234 acres of land. Grassfield will connect to the Company's distribution system at 34.5 kilovolts ("kV"). The generation facility and related distribution facilities have an estimated cost of $38.3 million, excluding financing costs, or approximately $1,915 per kilowatt ("kW").

Norge will be an approximately 20 MW utility-scale generating facility in James City County on approximately 224 acres of land. Norge will be connected to the Company's 34.5 kV distribution system. The generating facility and related distribution facilities are estimated to cost $38.7 million, excluding financing costs, or approximately $1,935 per kW.

Sycamore will be an approximately 42 MW solar facility in Pittsylvania County on approximately 1,085 acres of land. Sycamore will connect to the Company's transmission system via the 69 kV Altavista to Mt Airy transmission line. Sycamore and the related transmission facilities are estimated to cost $91.2 million, excluding financing costs, or approximately $2,170 per kW.

Q36. DID THE COMPANY PERFORM AN NPV ANALYSIS OF THE PROPOSED COMPANY-OWNED SOLAR GENERATION RESOURCES?

[66] Avram Direct at 11-13. Company witness Avram's Schedule 1 provides aerial views of the sites, and his Schedule 2 provides maps of the general locations of the proposed facilities.

A36. Yes. Company witness Kelly's Figure 4, on page 11 of his direct testimony, provides the NPVs of the proposed Company-owned solar generating facilities. It is reproduced in Table 3, below, for convenience.

Table 3: Customer NPV (Cost of Service) as Proposed		
Project	**Vs. Market**	**Vs. Onshore Wind**
Grassfield	$17.1 M	$13.6 M
Norge	$10.2 M	$6.9 M
Sycamore	$14.5 M	$7.4 M

Company witness Kelly states that his Figure 4 demonstrates that the proposed Company-owned solar generating facilities are cost beneficial when compared to the market or an onshore wind unit.

Q37. DOES STAFF HAVE ANY COMMENTS REGARDING THE NPV ANALYSIS OF THE PROPOSED COMPANY-OWNED SOLAR FACILITIES?

A37. Yes. As stated previously, because the RPS Development Plan largely used the same assumptions as the Company's 2020 IRP, and because of the modeling deficiencies Staff identified in the Company's 2020 IRP, Staff lacks confidence in the economic analysis of the Company's proposed solar generating facilities.

The Company revised Company witness Kelly's Figure 4 to reflect the Company's actually-achieved, three-year average capacity factor of Dominion's Virginia-located solar tracking fleet.[67] The use of a three-year historic average was directed by the Commission

[67] *See* the Company's corrected response to Staff Interrogatory No. 1-25, attached hereto as part of Attachment No. DJD-1.

in its Final Order in the Company's 2018 IRP.[68] The results of this revision are reproduced in Table 4, below:

Table 4: Customer NPV (Cost of Service), 19% Capacity Factor		
Project	**Vs. Market**	**Vs. Onshore Wind**
Grassfield	$3.5 M	$0 M
Norge	$2.1 M	($1.2 M)
Sycamore	($9.8 M)	($16.8 M)

As can be seen in Table 4, if the proposed Company-owned solar generation performs in a manner similar to the historical performance of the Company's Virginia-located solar tracking fleet, Grassfield and Norge continue to be cost-beneficial to customers relative to the market, with Grassfield being indeterminate compared to an onshore wind unit and Norge being a net cost to customer relative to an onshore wind unit. Sycamore would be a net cost to ratepayers as compared to both the market and an onshore wind unit.

Staff also notes that the results above do not fully address Staff's concerns regarding the issues raised in the 2020 IRP, as only the capacity factor for the solar generating resources was adjusted. Staff maintains its concerns, as previously outlined, and offers Table 4 as an informational data point.

Q38. WHAT ARE THE LCOE VALUES OF THE PROPOSED COMPANY-OWNED GENERATING FACILITIES AND PPAS?

[68] *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-2018-00065, 2019 S.C.C. Ann. Rept. 190, 191, Final Order (June 27, 2019), and S.C.C. Ann. Rept. 196, 197, Order on Reconsideration (July 19, 2019).

PREFILED TESTIMONY
OF
KATYA KULESHOVA

VIRGINIA ELECTRIC AND POWER COMPANY

CASE NO. PUR-2021-00146

Q1. PLEASE STATE YOUR NAME AND POSITION WITH THE STATE CORPORATION COMMISSION ("COMMISSION").

A1. My name is Katya Kuleshova. I am a Strategic Planning Specialist with the Commission's Division of Public Utility Regulation.

Q2. WHAT ARE YOUR PRESENT RESPONSIBILITIES?

A2. My duties as a Strategic Planning Specialist include reviewing utility rate adjustment applications, integrated resource plans, renewable portfolio standard filings, and generation certificate filings, as well as analyzing public utility rate increase applications regarding cost of service, rate design, and terms and conditions of service. I am also responsible for presenting testimony as a Staff witness and making alternative proposals to the Commission when appropriate.

Q3. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A3. My testimony addresses Virginia Electric and Power Company's d/b/a Dominion Energy Virginia's ("Company" or "Dominion") plan and petition for approval for the development of new solar and onshore wind generation capacity ("Petition" or "2021 RPS Filing") associated with the mandatory renewable portfolio standard ("RPS") requirements of the

Cost

Total cost

Q11. WHAT IS THE TOTAL ESTIMATED COST OF THE CE-2 PROJECTS?

A11. According to the Company, the total estimated cost for the CE-2 Solar Projects is approximately $1.1045 billion, excluding financing costs, or approximately $1,969 per kilowatt ("kW") at the total 561 MW (nominal AC) rating.[17] The total estimated cost for the CE-2 Solar and Storage Project and related transmission facilities is approximately $279.7 million, excluding financing costs, or approximately $1,864/kW at the total 150 MW (nominal AC) rating.[18] For the CE-2 Storage Project, and related distribution facilities, the total estimated cost is $41.2 million, excluding financing costs, or approximately $2,059/kW at the total 20 MW (nominal AC) rating.[19]

The table below is a summary prepared by Staff. The total estimated costs of utility-scale CE-2 Projects is $1.425 billion,[20] as of the time of filing the Petition. This does not include the costs of the CE-2 PPAs or the proposed small-scale solar projects.

CE-2 Projects	Total estimated costs, $ million	Nameplate capacity, MW AC	Cost per kilowatt, $/kW
Solar	1,104.5	561	1,969
Solar and Storage	279.7	150	1,864
Storage	41.2	20	2,059
Total	1,425.4	731	1,950

[17] Direct Testimony of Emil Avram at 18.

[18] *Id.* at 21-22.

[19] *Id.* at 24.

[20] According to the Company's Supplemental response to Staff Interrogatory No. 08-178(a), the Company is currently revising interconnection costs for Piney Creek Projects based on the revised system impact study for the project issued by PJM in October 2021. The resulting decrease in the project's cost, and, consequently, total cost of CE-2 Solar projects, may amount to $38.3 million, which, in turn, will result in a slight decrease in the average cost per kilowatt for CE-2 Solar Projects. *See* Attachment KK-14.

Economic Cost-Benefit Analysis

NPV analysis

Q12. HOW DID THE COMPANY CALCULATE THE NET PRESENT VALUE OF COSTS AND BENEFITS OF THE CE-2 PROJECTS?

A12. Company witness Shane T. Compton describes the Company's approach to calculating net present value ("NPV") of costs and benefits of the CE-2 Projects on pages 11 through 15 of his direct testimony. However, it was unclear to Staff exactly how the NPV of costs and benefits was calculated. After conducting discovery,[21] however, Staff understands that the Company ran PLEXOS to evaluate each CE-2 Project on a *system* basis. Each CE-2 Project was added to the Company's system in PLEXOS, separately from other CE-2 Projects, and the resulting project's NPV reflects the *change in the total NPV of the Company's whole system*. In other words, costs and benefits of each CE-2 project are fused with the project's effects on the Company's system in PLEXOS.[22]

Staff does not oppose the system approach to NPV calculation of CE-2 Projects. The Company is a vertically integrated utility that operates a complex system within PJM (which is even more complex), not a merchant plant that considers building a standalone generation asset. At a high level, once a project is added to the Company's system, the

[21] *See* Attachment KK-15 for copies of the Company's responses to Staff Interrogatory No. 06-155 for an explanation of emissions costs calculation in PLEXOS, Staff Interrogatory No. 06-157 for a confirmation that ITCs and synergies are factored in the model, Staff Interrogatory 08-185 in which the Company explains how its election to go FRR impacts the Company's participation in the PJM capacity market, and Staff Interrogatory No. 08-186 for a clarification that REC values are substituted for deficiency payments in the Company's economic analysis.

[22] Such effects are called synergies, they may be positive or negative, and their NPVs are usually factored in when an acquisition of an asset is considered.

project may eliminate the need to run other generating assets, which may lead to savings on fuel or emission costs, and impact volumes of energy sold into the PJM market or procured from it.[23]

NPVs of the social cost of carbon benefit and avoided deficiency payments for each project were calculated separately from the PLEXOS model and added on top of the NPVs based on the PLEXOS modeling. Furthermore, the Company substitutes avoided deficiency payments for the value of RECs associated with energy generation by the CE-2 Projects. Staff will discuss its position in that regard later in this testimony.

Q13. WHAT CAPACITY FACTORS DID THE COMPANY USE TO CALCULATE THE NPV OF THE CE-2 PROJECTS?

A13. As directed by the Commission in the 2020 RPS Final Order,[24] the Company used the actual capacity factor performance of the Company's solar tracking fleet in Virginia based on an average of the most recent three-year period, which was 21.2% in 2018 - 2020. For the one fixed tilt CE-2 Project (Camellia), the Company used a 19.8% capacity factor, which is the historical capacity factor for the Company's fixed tilt facilities in 2018-2020.[25] Staff refers to this scenario as "the Company's first scenario."

The Company used design capacity factors of CE-2 Projects to calculate NPVs as well, also as directed by the Commission in the 2020 RPS Final Order. Staff refers to this scenario as "the Company's second scenario."

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[23] The Company also asserts that adding CE-2 Projects will result in avoided capacity cost in the PJM market, notwithstanding the Company's election to go FRR.

[24] *See* 2020 RPS Final Order at 20.

[25] Compton Direct at 12. Staff has not independently verified historical capacity factors.

Both scenarios are based on the 2021 PJM Load Forecast and presented in Company witness Compton's Schedule 1.

Q14. WHAT IS THE NPV OF THE COMPANY'S FIRST SCENARIO?

A14. The table on the next page is a modified table from the Company's response to Staff Interrogatory No. 03-71, Attachment 03-71 (c) (9), tab "PJM – 3yr average."

Staff added the columns highlighted in blue to isolate various NPV components and the rows highlighted in grey to break down the NPV of the Dulles project in its solar and storage components based on information in Attachment 03-71 (c) (1) and a consultation with the Company on calculation of storage NPVs.[26] Columns A and B are populated with values from Attachments 03-71 (c) (1) and (2).[27]

[26] The NPV of the storage component of the Dulles project calculated by Staff is 0.4% higher than the amount needed to comprise the correct Dulles Solar + Storage NPV, but it was calculated based on the information in Attachment 03-71 (c) (1).

[27] The total NPV line includes the NPVs of the two small-scale solar projects proposed in the instant proceeding. Staff does not show them in this table because they do not require CPCNs. Staff did not change the total NPV line. The last column is Staff's calculation, which is a simple addition of columns A and C in Table 1.

				A	B	A+B	C	A+B+C	A+C
Project Name	Type	Solar MW	Storage MW	PLEXOS NPV without RECs, avoided deficiency payment, or SCoC	Avoided cost of deficiency payments (the Company's substitute for REC values)	NPV ($000)	Social Cost of Carbon (SCoC), Topside	NPV with avoided cost + SCoC	NPV without avoided cost + SCoC
Camellia	Solar Only	20		(24,622)	20,736	(3,887)	14,222	10,335	(10,400)
Dry Bridge	Storage Only		20	(40,561)	0	(40,561)	0	(40,561)	(40,561)
Dulles	Solar + Storage	100	50	(164,881)	110,973	(53,908)	76,114	22,206	(88,767)
Dulles	Solar	100		[illegible]	110,973	5,830	76,114	81,944	[illegible]
Dulles	Storage		50	[illegible]	0	[illegible]	0	[illegible]	[illegible]
Fountain Creek	Solar Only	80		(66,127)	88,833	22,706	60,928	83,634	(5,199)
Otter Creek	Solar Only	60		(78,358)	66,626	(11,733)	45,697	33,964	(32,661)
Piney Creek	Solar Only	80		(120,260)	88,835	(31,425)	60,930	29,505	(59,330)
Quillwort	Solar Only	18		(20,549)	19,988	(561)	13,710	13,149	(6,840)
Sebera	Solar Only	18		(19,519)	19,984	465	13,707	14,172	(5,812)
Solidago	Solar Only	20		(19,553)	22,208	2,655	15,232	17,887	(4,321)
Sweet Sue	Solar Only	76.78		(106,473)	82,992	(23,481)	56,923	33,442	(49,551)
Walnut	Solar Only	149.9		(132,738)	166,373	33,635	114,112	147,746	(18,627)
Winterberry	Solar Only	20		(22,381)	22,198	(183)	15,225	15,042	(7,156)
Winterpock	Solar Only	20		(31,042)	22,204	(8,838)	15,229	6,391	(15,813)
Total NPV	$ thousand			(859,294)	736,170	(123,125)	504,899	381,774	(354,396)

Q15. PLEASE DISCUSS THE NPV CALCULATION METHODOLOGY SHOWN IN THE TABLE ABOVE.

A15. By way of reconciliation of the table above with the NPV values contained in Company witness Compton's direct testimony, Staff points out that the total NPV in the column "NPV with avoided cost + SCoC" (A+B+C) above matches the numbers for the CE-2

Projects' combined NPV in his testimony, which is approximately $382 million.[28] The table illustrates the impacts of the components used in the Company's calculations.

The first step in the Company's methodology was to add each of the CE-2 Projects to the Company's system in PLEXOS, as described above, and to calculate NPVs of the incremental effect ("PLEXOS NPVs"). The results are shown in column A of the table. All PLEXOS NPVs are negative. As the Company did not assign any REC values to CE-2 Projects in PLEXOS at this first step, these PLEXOS NPVs are lower than they would have been otherwise.

The second step addresses the omission of REC values in PLEXOS by adding NPVs of avoided deficiency payments of $45 per MWh (increasing 1% per year) multiplied by the projected energy output of each project. Column B includes NPVs of avoided deficiency payments, and Column A+B shows NPVs of CE-2 Projects that incorporate avoided deficiency payments as a benefit. Staff agrees that the Company should account for the omitted REC values in the PLEXOS modeling, but opposes using the $45 deficiency payment[29] for this purpose in the economic analysis for the CE-2 projects, as I will discuss in detail later in my testimony.[30]

[28] Compton Direct at 15 and on the summary page. The total NPV line includes NPVs of two small-scale solar projects proposed in the instant proceeding. Staff does not show them is this table because this section of the testimony discusses CE-2 utility solar projects, but keeps the total NPV line unchanged.

[29] The deficiency payment starts at $45 and grows 1% annually.

[30] Staff notes that, if the $45 deficiency payment is deemed to be the correct proxy value of the REC benefit in this proceeding, then this has implications for the calculation of the proxy value of RECs to be determined in Case No. PUR-2021-00156, *Establishing a Proceeding Concerning The Allocation of RPS-Related Costs and The Determination of Certain Proxy Values For Virginia Electric and Power.*

As can be seen in Columns A+B, with the $45/MWh proxy REC value used by the Company at this second step, the NPVs of nine CE-2 Projects remain negative. The NPVs of the other five projects become positive with the addition of the $45/MWh REC value.

The third step adds the NPV of the Company's estimate of the social cost of carbon benefit that begins at $51 per metric ton and is increased in line with the forecasts revised by the Biden Administration in February 2021.[31] Estimating this benefit is consistent with the VCEA requirement that the Company shall include, and the Commission shall consider, social cost of carbon in any application to construct a new generating facility.[32] Staff reviewed the social cost of carbon calculation provided by the Company in response to Staff Interrogatory No. 03-70, Attachment 03-70. Staff has concerns with additional assumptions embedded in the Company's social cost of carbon calculation methodology, which, along with Staff's recommendations, will also be discussed later in this testimony.

As described above, based on the Company's assumptions, the Company's analysis shows all CE-2 Solar projects and the solar component of the Dulles project having positive total NPVs. The CE-2 Storage Project and the storage component of Dulles project, however, result in negative total NPVs, partly because the Company did not include either avoided deficiency payments or social cost of carbon in those NPV calculations. Staff agrees that the energy storage projects would not create any avoided deficiency payments or social cost of carbon benefits.

[31] Although the VCEA incorporates a reference to the 2016 social cost of carbon forecast, Staff found that the 2021 social cost of carbon forecast simply adjusts the numbers in the 2016 forecast for inflation. In other words, the numbers are equivalent.

[32] Code § 56-585.1 A 6.

Q16. PLEASE DISCUSS STAFF'S POSITION ON USING THE $45 PER MWH DEFICIENCY PAYMENT AS A PROXY FOR REC VALUE/AVOIDED COST.

A16. In the instant case, Staff disagrees with using the $45 per MWh deficiency payment as a proxy for either REC values or the avoided cost for CE-2 Projects. Staff recommends that the Company's REC price forecast, prepared by ICF and included in the 2021 IRP Update and the instant filing, be used as a proxy instead. In other words, the avoided cost should be the purchase price of a replacement REC rather than a deficiency payment.

There are several reasons why ICF's forecasted REC price is a better proxy.[33] First, the combined capacity of the CE-2 Solar Projects is 661 MW. According to the U.S. Energy Information Administration ("EIA"), as of June 2021, there were approximately 457 MW of existing utility-scale solar facilities and 780 MW of planned utility-scale solar facilities in Virginia, which are neither owned by nor contracted to the Company; their combined capacity amounts to almost double the proposed CE-2 Projects.[34] A portion of their RECs should be available for purchase in lieu of being subject to a deficiency payment.[35]

Second, if RECs available for purchase within Virginia are insufficient to make up for the RECs that are forecasted to be produced by the CE-2 Solar Projects, the VCEA

[33] The Company's PJM Tier I REC price forecast contained in the 2021 IRP Update shows REC prices ranging from $4.87 to $17.17 over the 2021 – 2036 planning period.

[34] *See* Attachment KK-16 that lists these facilities. See also Attachment KK-17 for a copy of the Company's response to Staff Interrogatory No. 02-64, Attachment 02-64, which lists operational solar facilities, as well as solar facilities in progress, owned by the Company and its affiliates. The location of these facilities and other renewable energy facilities are also shown on a map that Staff downloaded from the Company's website.

[35] Indeed, subsequent to the passage of the VCEA, Staff has received numerous calls from developers inquiring how to register RECs of their solar facilities as being Virginia eligible in PJM GATS (the PJM-EIS Generation Attribute Tracking System).

allows the Company, in 2025 and thereafter, to procure up to 25% of RECs necessary for RPS compliance from within PJM. It is highly unlikely that the Company will be unable to procure RECs from within PJM to match the relatively small CE-2 volume, such that it would be subject to the deficiency payment. According to PJM, as of November 1, 2021, there are 109 gigawatts ("GW") of solar capacity (nameplate) in the PJM interconnection queue. Historically, approximately 14% of nameplate capacity in interconnection queues across PJM ends up being built.[36]

Indeed, the Company plans to procure RECs for RPS compliance from within PJM until 2025.[37] Further, the Company expects to bank 4.9 million RECs from its existing renewable facilities in Virginia by the beginning of 2025.[38] These RECs can substitute for a portion of 39.1 million RECs that the Company forecasts will be generated by CE-2 Projects (according to the Company's response to Staff Interrogatory No. 03-66, Attachment 03-66), in lieu of being subject to a deficiency payment.

Staff acknowledges, however, that the availability of RECs may change for future RPS filings as RPS program requirements in PJM states change. Staff recommends that the Company model REC availability within Virginia and other PJM states based on the capacity of existing and planned solar facilities within PJM[39] and RPS requirements in each state, and submit this analysis in future RPS filings.

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[36] Staff e-mail communication with Matthew LaRocque at PJM State Government Policy.

[37] *See*, e.g., Attachment 7 to the RPS Development Plan.

[38] *See* Attachment KK-18 for a copy of the Company's response to Staff Interrogatory No. 04-99.

[39] Such information is updated by EIA on a monthly basis and is available for download at https://www.eia.gov/electricity/data/eia860m/

Q17. DOES STAFF SEE ANY OTHER ISSUES WITH USING THE $45 DEFICIENCY PAYMENT AS THE PROXY REC VALUE IN THE ECONOMIC ANALYSIS?

A17. Yes. According to Staff witness Dalton, the Company's proposed Plan B overproduces RECs relative to the mandatory RPS goals beginning in 2027 and extending through most of the study period. Thus, beginning in 2027, the Company would not be subject to any deficiency payments as there would be an excess of RECs available. Given that RECs can only be banked for five years, the Company will be in a position of having to sell its excess RECs into other PJM states or having them expire. It is not reasonable to assume that the Company would be able to sell these RECs to other states at the $45 deficiency payment price. Staff believes it is more reasonable to assume that these RECs would be sold in alignment with the Company's projected REC prices instead.

Q18. HOW WILL SUBSTITUTING THE COMPANY'S ICF REC VALUE FORECAST FOR $45 PER MWH DEFICIENCY PAYMENT CHANGE THE COMPANY'S NPV ANALYSIS ("THE MODIFIED FIRST SCENARIO")?

A18. The modified first scenario represents a traditional economic analysis that the Company would have undertaken absent the VCEA requirements to retire RECs or make deficiency payments. In other words, RECs associated with the solar projects could be sold in the market at the Company's projected REC prices.

Although the VCEA requirements may make it unlikely that the Company *sells* the RECs produced by the CE-2 Projects, at least in the early years, the Company may still *buy* RECs in Virginia or PJM to substitute for the RECs of the CE-2 Projects if they are not built. As discussed above, the volume of substitute RECs that would be needed is not high

enough to trigger a situation in which deficiency payments would be the only remaining alternative.

Staff, therefore, used the Company's ICF[40] REC price forecast to replace the $45 per MWh REC proxy value in the Company's analysis, with a caveat that Staff extrapolated the ICF REC price forecast over the 2047 – 2058 period.[41] Staff believes that the resulting analysis is directionally correct but acknowledges that REC prices may change in the future.

In this modified first scenario, the NPV of avoided costs for each project calculated based on forecasted REC values is not sufficient to offset the negative PLEXOS NPVs of any of the CE-2 Projects, as can be seen in column A+B in the table below. However, adding the NPV of the social cost of carbon benefits results in three CE-2 Projects having positive NPVs, shown in the column "NPV with SCoC" (A+B+C).

[40] ICF International, Inc. is a Fairfax, Virginia-based global consulting and technology services company, which provides a range of services for governments and businesses, including strategic planning, management, marketing and analytics.

[41] Specifically, to calculate NPV of avoided cost in 2024 - 2058, Staff used REC price forecast for 2021 – 2046 prepared by ICF (RGGI + Federal CO2 Commodity Forecast), provided by the Company in response to Staff Interrogatory No. 04-95, Attachment 04-95. Because this forecast does not extend beyond 2046, Staff then extrapolated REC price into 2047 – 2058 using the forecasted growth rate for 2045 - 2046, which was 4.4%. Staff then substituted this REC price forecast for $45/MWh deficiency payment in the Company's calculation of avoided costs in Attachments Staff 03-71 (c) (1) – (2) and populated column B in the table below with the resulting NPVs of avoided cost for each CE-2 Project. This resulted in changes in columns A+B and A+B+C in the table.

				A	B	A+B	C	A+B+C
Project Name	Type	Solar MW	Storage MW	PLEXOS NPV without RECs, avoided deficiency payment, or SCoC	Avoided REC cost (ICF forecast in 2024-2046, Staff extrapolation in 2047-2058)	NPV ($000)	SCoC Topside	NPV with SCoC
Camellia	Solar Only	20		(24,622)	4,342	(20,281)	14,222	(6,059)
Dry Bridge	Storage Only		20	(40,561)	0	(40,561)	0	(40,561)
Dulles	Solar + Storage	100	50	(164,881)	23,235	(141,646)	76,114	(65,532)
Dulles	Solar Only	100		[illegible]	23,235	[illegible]	76,114	[illegible]
Dulles	Storage Only		50	[illegible]	0	[illegible]	0	[illegible]
Fountain Creek	Solar Only	80		(66,127)	18,600	(47,527)	60,928	13,402
Otter Creek	Solar Only	60		(78,358)	13,951	(64,408)	45,697	(18,711)
Piney Creek	Solar Only	80		(120,260)	18,601	(101,659)	60,930	(40,729)
Quillwort	Solar Only	18		(20,549)	4,185	(16,364)	13,710	(2,654)
Sebera	Solar Only	18		(19,519)	4,184	(15,335)	13,707	(1,628)
Solidago	Solar Only	20		(19,553)	4,650	(14,903)	15,232	329
Sweet Sue	Solar Only	76.78		(106,473)	17,377	(89,096)	56,923	(32,174)
Walnut	Solar Only	149.9		(132,738)	34,835	(97,904)	114,112	16,208
Winterberry	Solar Only	20		(22,381)	4,648	(17,733)	15,225	(2,508)
Winterpock	Solar Only	20		(31,042)	4,649	(26,392)	15,229	(11,164)
Total NPV	$ thousand			(859,294)	154,166	(705,129)	504,899	(200,230)

Q19. WHAT IS THE NPV OF THE COMPANY'S SECOND SCENARIO?

A19. The table below is a modified table from the Company's response to Staff Interrogatory No. 03-71, Attachments 03-71 (c) (9), tab "PJM – Design."

Staff added the columns highlighted in blue to isolate various NPV components and the rows highlighted in grey to break down NPV of Dulles project in its solar and

storage components, in this case based on information in Attachment 03-71 (c) (3).[42] Columns A and B are populated with values from Attachments 03-71 (c) (3) and (4).

				A	B	A+B	C	A+B+C
Project Name	**Type**	**Solar MW**	**Storage MW**	**PLEXOS NPV without RECs, avoided deficiency payment, or SCoC**	**Avoided cost of deficiency payments (the Company's substitute for REC values)**	**NPV ($000)**	**SCoC Topside**	**NPV w/ SCoC**
Camellia	Solar Only	20		(24,394)	21,098	(3,295)	14,471	11,176
Dulles	Solar + Storage	100	50	(170,149)	103,361	(66,788)	70,893	4,105
Dulles	Solar Only	100		[illegible]	103,361	[illegible]	70,893	63,843
Dulles	Storage Only		50	[illegible]	0	[illegible]	0	[illegible]
Fountain Creek	Solar Only	80		(63,698)	92,486	28,788	63,434	92,221
Otter Creek	Solar Only	60		(71,613)	76,556	4,943	52,508	57,451
Piney Creek	Solar Only	80		(116,291)	94,747	(21,544)	64,985	43,441
Quillwort	Solar Only	18		(19,430)	21,661	2,231	14,856	17,087
Sebera	Solar Only	18		(20,376)	18,743	(1,632)	12,856	11,223
Solidago	Solar Only	20		(16,910)	26,130	9,220	17,922	27,142
Sweet Sue	Solar Only	76.78		(96,630)	97,592	962	66,936	67,898
Walnut	Solar Only	149.9		(139,333)	156,807	17,474	107,551	125,025
Winterberry	Solar Only	20		(19,903)	25,872	5,969	17,745	23,714
Winterpock	Solar Only	20		(27,392)	27,598	207	18,929	19,136
Total NPV	**$ thousand**			(797,973)	767,435	(30,538)	526,339	495,802
Dry Bridge	Storage Only		20	(40,561)	0	(40,561)	0	(40,561)
Total NPV with Dry Bridge				(838,534)	767,435	(71,099)	526,339	**455,241**

[42] The NPV of the storage component of the Dulles project calculated by Staff is 0.4% higher than the amount needed to comprise the correct Dulles Solar + Storage NPV, but it was calculated based on the information in Attachment 03-71 (c) (1).

The total NPV in column "NPV with SCoC" (A+B+C) matches the CE-2 Projects' combined NPV for this scenario in Company witness Compton's testimony, which is $455 million.[43]

Adding the $45/MWh deficiency payment used by the Company as the proxy REC value still leaves the PLEXOS NPVs of six CE-2 Projects as negative, but NPVs of the other eight projects become positive.

Similar to the Company's first scenario, adding the NPV of social cost of carbon benefits results in all CE-2 Solar projects and the solar component of the Dulles project having positive total NPVs. However, the CE-2 Storage Project and the storage component of the Dulles project still result in negative total NPVs, partly because the Company included neither avoided deficiency payments nor social cost of carbon benefits in their respective NPV calculations. Staff agrees that the energy storage projects would not create any avoided deficiency payments or social cost of carbon benefits.

Q20. HOW WILL SUBSTITUTING THE COMPANY'S ICF REC VALUE FORECAST FOR THE $45 PER MWH DEFICIENCY PAYMENT CHANGE THE COMPANY'S NPV ANALYSIS ("THE MODIFIED SECOND SCENARIO")?

A20. Everything that was said above about the modified first scenario applies equally to this modified second scenario.[44]

[43] Compton Direct at 15. The total NPV line includes NPVs of two small-scale solar projects proposed in the instant proceeding. Staff does not show them is this table because this section of the testimony discusses CE-2 utility-scale solar projects, but keeps the total NPV line unchanged.

[44] Staff, again, used the Company's ICF REC price forecast to replace the $45 per MWh REC proxy value in the Company's analysis, with a caveat that Staff extrapolated the ICF REC price forecast over the 2047 – 2058 period.

				A	B	A+B	C	A+B+C
Project Name	Type	Solar MW	Storage MW	PLEXOS NPV without RECs, avoided deficiency payment, or SCoC	Avoided REC cost (ICF forecast in 2024-2046, Staff extrapolation in 2047-2058)	NPV ($000)	SCoC Topside	NPV with SCoC
Camellia	Solar Only	20		(24,394)	4,418	(19,976)	14,471	(5,505)
Dulles	Solar + Storage	100	50	(170,149)	21,641	(148,508)	70,893	(77,614)
Dulles	Solar	100		[illegible]	21,641	[illegible]	70,893	[illegible]
Dulles	Storage		50	[illegible]	0	[illegible]	0	[illegible]
Fountain Creek	Solar Only	80		(63,698)	19,365	(44,332)	63,434	19,101
Otter Creek	Solar Only	60		(71,613)	16,030	(55,583)	52,508	(3,075)
Piney Creek	Solar Only	80		(116,291)	19,839	(96,452)	64,985	(31,468)
Quillwort	Solar Only	18		(19,430)	4,535	(14,894)	14,856	(38)
Sebera	Solar Only	18		(20,376)	3,925	(16,451)	12,856	(3,595)
Solidago	Solar Only	20		(16,910)	5,471	(11,439)	17,922	6,483
Sweet Sue	Solar Only	76.78		(96,630)	20,434	(76,197)	66,936	(9,260)
Walnut	Solar Only	149.9		(139,333)	32,832	(106,501)	107,551	1,050
Winterberry	Solar Only	20		(19,903)	5,417	(14,486)	17,745	3,259
Winterpock	Solar Only	20		(27,392)	5,779	(21,613)	18,929	(2,684)
Total NPV				(797,973)	160,715	(637,257)	526,339	(110,918)
Dry Bridge	Storage Only		20	(40,561)	0	(40,561)	0	(40,561)
Total NPV with Dry Bridge				(838,534)	160,715	(677,818)	526,339	(151,479)

In this modified second scenario, again, the NPV of the avoided cost of each project calculated based on forecasted REC values is not sufficient to offset negative PLEXOS NPVs of any of the CE-2 Projects, as can be seen in column A+B. However, adding the NPV of social cost of carbon benefit results in four CE-2 Projects having positive NPVs, as shown in the column "NPV with SCoC" (A+B+C).

Q21. PLEASE SUMMARIZE ALL THE NPV SCENARIOS DISCUSSED IN THIS SECTION.

A21. The Company's calculation of the NPV values of the CE-2 Projects includes three components: each project's incremental impact on the Company's system, an avoided $45 per MWh deficiency payment for each REC generated by the CE-2 Projects, and the social cost of carbon benefit. The Company's analysis of the CE-2 Projects' NPVs incorporated the PJM Load Forecast and either a historical three-year average capacity factor or design capacity factor for each project, among other scenarios. The table below shows that all the CE-2 Solar Projects and the solar component of the Dulles Project have positive NPVs under these assumptions. For the CE-2 Storage Project and the storage component of the Dulles Project, the Company did not factor in either avoided deficiency payments or the social cost of carbon benefit, and the resulting NPVs are negative.

Staff substituted the Company's ICF REC price forecast for the avoided $45 per MWh deficiency payment in the Company's models but kept all the other Company's assumptions unchanged. This substitution resulted in three CE-2 Projects – Fountain Creek, Solidago, and Walnut – having positive NPVs in the scenario with the three-year average capacity factor assumption.[45] All the other CE-2 Projects' NPVs would be negative. Further, if Staff's methodological concerns with the Company's social cost of carbon benefit calculation are taken into account, the resulting NPVs may decrease.

[45] Using the design capacity factor, the same three projects and the Winterberry project will have positive NPVs.

				PJM Load Forecast, 3-year average capacity factor		PJM Load Forecast, design capacity factor	
Project Name	Type	Solar MW	Storage MW	NPV with $45/MWh deficiency payment and SCoC	NPV with ICF REC price forecast and SCoC	NPV with $45/MWh deficiency payment and SCoC	NPV with ICF REC price forecast and SCoC
Camellia	Solar Only	20		10,335	(6,059)	11,176	(5,505)
Dry Bridge	Storage Only		20	(40,561)	(40,561)	(40,561)	(40,561)
Dulles	Solar + Storage	100	50	22,206	(65,532)	4,105	(77,614)
Dulles	Solar Only	100		81,944	[illegible]	63,843	[illegible]
Dulles	Storage Only		50	[illegible]	[illegible]	[illegible]	[illegible]
Fountain Creek	Solar Only	80		83,634	13,402	92,221	19,101
Otter Creek	Solar Only	60		33,964	(18,711)	57,451	(3,075)
Piney Creek	Solar Only	80		29,505	(40,729)	43,441	(31,468)
Quillwort	Solar Only	18		13,149	(2,654)	17,087	(38)
Sebera	Solar Only	18		14,172	(1,628)	11,223	(3,595)
Solidago	Solar Only	20		17,887	329	27,142	6,483
Sweet Sue	Solar Only	76.78		33,442	(32,174)	67,898	(9,260)
Walnut	Solar Only	149.9		147,746	16,208	125,025	1,050
Winterberry	Solar Only	20		15,042	(2,508)	23,714	3,259
Winterpock	Solar Only	20		6,391	(11,164)	19,136	(2,684)
Total NPV	**$ thousand**			**381,774**	**(260,230)**	**455,241**	**(151,479)**

APPENDIX A,
ATTACHMENT 4

Electric Generation Facility
Project Summary

Project: Camellia Solar

Overview.

- Type: Solar
- Size: 20 MWac
- Locality: Gloucester County
- Address: 8084 Daffodil Lane, Gloucester, Virginia 23061
- Acreage: Approximately 137 acres
- Interconnection: Distribution, 34.5 kV
- Approximate Cost: $40.3 million
- Approximate Cost per Kilowatt: $2,014/kW
- Commercial Operation Date: October 2023

Site Information. Specific information about the site for the proposed facility, including: (a) A written description of the location including identification of the city or county in which the facility will be constructed. The description should be suitable for newspaper publication and be sufficient for identification of affected areas. (b) A description of the site, and a depiction on topographic maps of the proposed site. (c) The status of site acquisition (i.e., purchase option, ownership, etc.). (20 VAC 5-302-25(6).)

Camellia Solar will be an approximately 20 MW (nominal AC) utility-scale solar generating facility in Gloucester County, Virginia, located on Daffodil Lane. Camellia will be constructed on approximately 137 acres, and will be connected to 34.5 kV distribution level voltage. The generating facility and related distribution facilities are expected to cost approximately $40.3 million (excluding financing costs), or approximately $2,014/kW at the 20 MW (nominal AC) rating. Camellia was introduced to the Company by the developer, Strata Clean Energy, as a Company-sourced opportunity in March 2021 with a conditional use permit ("CUP") that was approved February 2021 by Gloucester County. After further evaluation and diligence, the development assets will be acquired from the developer. Land for the project site will be purchased.

See Attachments 1, 2, and 3 to this schedule for a topographic map, an aerial view of the site, and a map ready for newspaper publication for the project.

Facility Information. A general description of the proposed facility, type of facility, size and fuel type. (20 VAC-5-302-25(7).)

Camellia Solar is designed as a fixed-tilt system to optimize cost and energy production based on the configuration of the available land on the site. The major components for a fixed tilt array include posts, the fixed tilt racking system, solar modules, inverters, and associated wiring. A brief description outlining the basic function of each of these components is listed below.

DIRECT TESTIMONY
OF
EMIL AVRAM
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2020-00134

Q. **Please state your name, business address, and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").**

A. My name is Emil Avram, and my business address is 600 East Canal Street, Richmond, Virginia 23219. I am Vice President, Business Development for the Company. A statement of my background and qualifications is attached as Appendix A.

Q. **Please describe your areas of responsibility with the Company.**

A. I am responsible for regulated and merchant generation business development for large-scale power generation facilities.

Q. **What is the purpose of your testimony in this proceeding?**

A. I am testifying in support of the Company's annual plan and petition for approval for the development ("Petition") of new solar, onshore wind, and energy storage resources pursuant to § 56-585.5 D 4 of the Code of Virginia ("Va. Code"), in connection with the new renewable energy portfolio standard program (the "RPS Program") requirements (the "RPS Development Plan" or "Development Plan"), and in accordance with the directives of the State Corporation Commission of Virginia ("Commission") in its July 10, 2020 Order Establishing 2020 RPS Proceedings.

As part of its Development Plan, in this proceeding the Company is requesting Commission approval of certificates of public convenience and necessity ("CPCNs") to

constructability and environmental studies, five solar projects were selected as the final candidates for this filing. Further diligence revealed that three solar projects—Sycamore, Grassfield, and Norge—had secured sufficient land rights and permits, and had performed required land studies to meet the in-service date of 2022. Ultimately, these three projects were selected as the CE-1 Solar Projects.

Q. Please provide an overview of the proposed CE-1 Solar Projects and site locations.

A. **Grassfield**

The Grassfield Solar Project will be an approximately 20 MW (nominal AC) utility-scale solar generating facility in Chesapeake, Virginia, located on West Road in the City of Chesapeake. Grassfield will be constructed on approximately 234 acres, and will be connected at a 34.5 kV distribution level. The generating facility and related distribution facilities are expected to cost approximately $38.3 million (excluding financing costs), or approximately $1,915/kW at the 20 MW (nominal AC) rating. Grassfield was selected through the Company's 2019 Solar-Wind RFP as a self-supplied project opportunity.

Norge

The Norge Solar Project will be an approximately 20 MW (nominal AC) utility-scale solar generating facility in James City County, located at 341 Farmville Lane, Williamsburg, Virginia. Norge will be constructed on approximately 224 acres, and will be connected at a 34.5 kV distribution level. The generating facility and related distribution facilities are expected to cost approximately $38.7 million (excluding financing costs), or approximately $1,935/kW at the 20 MW (nominal AC) rating. Norge was selected through the Company's 2019 Solar-Wind RFP as a self-supplied project opportunity.

Sycamore

The Sycamore Solar Project will be an approximately 42 MW (nominal AC) utility-scale solar generating facility in Pittsylvania County, located at 349 Renan Road, Gretna, Virginia. Sycamore will be constructed on approximately 1,085 acres, and will be connected at the 69 kV Altavista to Mt. Airy transmission line. The generating facility and related transmission facilities are expected to cost approximately $91.2 million (excluding financing costs), or approximately $2,170/kW at the 42 MW (nominal AC) rating. Sycamore was selected through the Company's 2019 Solar-Wind RFP.

Aerial views of the sites and maps showing the CE-1 Solar Project locations are provided as my Schedules 1 and 2, respectively.

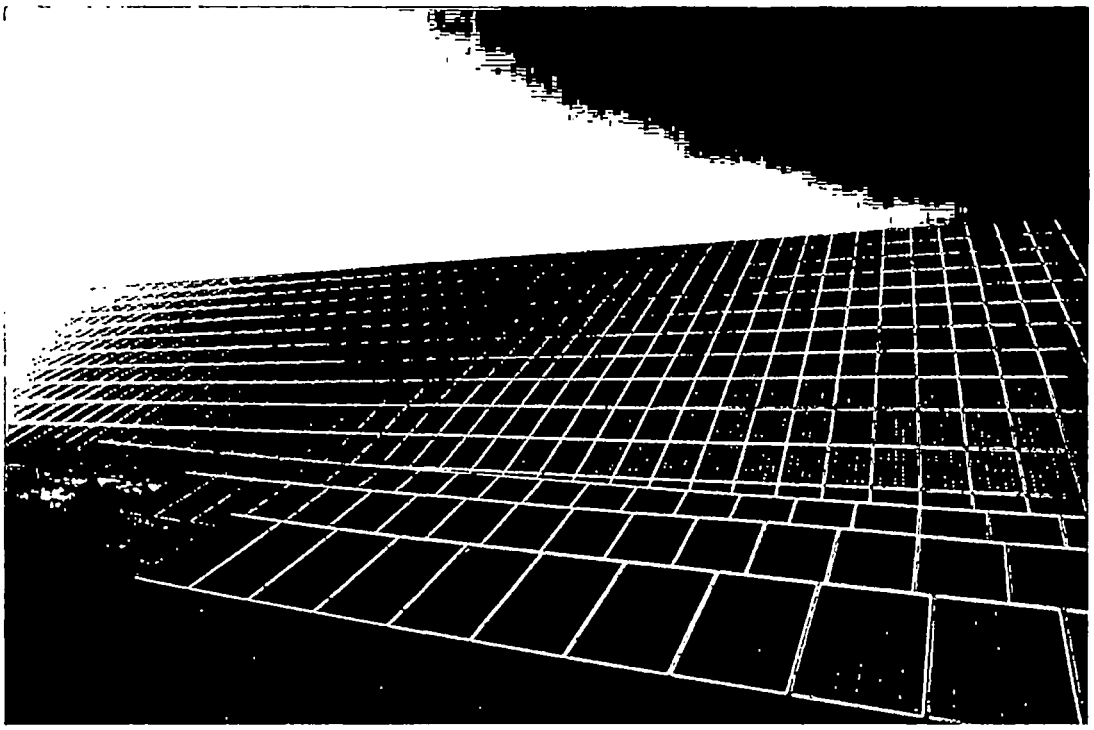
Q. Please describe the configuration and major systems of the CE-1 Solar Projects. (20 VAC 5-302-10, Par. 1(i); 20 VAC 5-302-25(7))

A. Drawings showing the preliminary layout of the CE-1 Solar Projects' respective sites are provided as my Schedule 3. Each facility will be comprised of ground-mounted single-axis tracking solar panel arrays. The major components comprising the ground-mounted single-axis solar panel arrays include posts, the tracking system, solar modules, inverters, and associated wiring. A brief description outlining the basic function of each of these components is listed below.

- Posts – The posts are the main structural component of the solar array, are anchored to the ground, and provide a steady elevated platform in which to mount additional components.

APPENDIX A,
ATTACHMENT 5

PREPARED FOR
Dominion Energy



7/23/21

Economic & Fiscal Impact

Proposed Solidago Solar Project in Isle of Wight County, Virginia

CHMURA

Contents

1. Background

Dominion Energy Virginia (Dominion Energy) is planning to construct a new solar-based electricity-generating station—the Solidago Solar Project—in Isle of Wight County, Virginia. Chmura Economics & Analytics (Chmura) was contracted to evaluate the economic and fiscal impact of this project in Isle of Wight County and Virginia.[1]

The economic impact of a solar power station on state and local economies occurs in two phases. The first takes place during the development and construction period of the facility, which will last from 2021 through 2024 for the Solidago Solar Project. The second phase is the ongoing operations of the station, which are expected to commence in September 2023. The first full year of operations will be 2024. For both phases, the direct, indirect, and induced impacts[2] in spending and job creation are estimated through the IMPLAN® model. In addition, tax revenue is estimated for Isle of Wight County and the state of Virginia.

[1] Chmura provides economic software, consulting, and data to our clients that help them make informed decisions to benefit their communities. Chmura's PhD economists, data scientists, and strategic planners guide clients through their local labor market. Over the past 22 years, Chmura has served hundreds of clients nationwide with thoroughness, accuracy, and objectivity.

[2] Direct impact is defined as the economic activity generated by the project under consideration. Indirect impact is secondary economic activity generated by the project due to suppliers to the development, construction, or ongoing operations. Induced impact is economic activity generated when workers at the power station and their suppliers spend their income at retail stores, restaurants, and professional offices.

2. Economic Impact in Isle of Wight County

The proposed Solidago Solar Project will have a capacity of 20 megawatts (MW), measured in alternating current (AC). The preliminary cost estimate of the project is $36.7 million. Of this amount, 8.0% will be used for soft costs such as architecture, engineering, and other professional services; 45.0% will be spent on construction and installation; 46.0% will be spent on equipment such as solar panels; and the remaining 1.0% is expected to be spent on land.[3] Construction will start in April 2022.[4] The commercial operations of the station are planned to begin in September 2023.

Although Dominion Energy will endeavor to use state and local firms for supplies and services whenever possible, not every product and service needed for construction and operation of the station is available in Isle of Wight County or in Virginia. Consequently, some of the services and products will be purchased from firms located outside the county or the state.[5] Chmura used information from Dominion Energy to estimate the percentage of project spending that is expected to go to firms within Isle of Wight County or Virginia.

Table 2.1 summarizes the estimated economic impact of the Solidago Solar Project in Isle of Wight County. From 2021 to 2024, it is estimated that development and construction of the facility will generate a cumulative $1.1 million in direct economic impact in the county. This will directly create eight cumulative jobs during the development and construction period, with the majority in the areas of construction and installation.[6] The cumulative indirect impact in Isle of Wight County is estimated to be $0.1 million and can support one cumulative job during the development and construction phase. Beneficiaries will be firms providing services such as site preparation and transportation. The cumulative induced impact is estimated to produce $0.1 million in spending that can support one cumulative job in the county during this same period. The induced impact is concentrated in consumer service-related industries such as restaurants, healthcare, and retail stores. On an annual average basis, the development and construction of the Solidago Solar Project is expected to inject $0.4 million (direct, indirect, and induced) into the Isle of Wight County economy and support two jobs per year from 2021 to 2024.

Table 2.1: Economic Impact of the Solidago Solar Project in Isle of Wight County

		Direct	Indirect	Induced	Total
One-Time Impact from Development and Construction					
Total (2021-2024)	Spending ($Million)	$1.1	$0.1	$0.1	$1.4
	Employment	8	1	1	10
Annual Average (2021-2024)	Spending ($Million)	$0.3	$0.04	$0.03	$0.4
	Employment	2	0.1	0.2	2
Ongoing Operations					
Annual, 2024 Onward	Spending ($Million)	$1.4	$0.1	$0.01	$1.5
	Employment	1	0.2	0.1	1

Note: Impacts are measured in the year when they occur. Numbers may not sum due to rounding.

Source: IMPLAN 2019, Dominion Energy, and Chmura

From September 2023 onward, the economic impact of the Solidago Solar Project will come from its ongoing operations. In this study, the operational impact is estimated for 2024, the first full year of operations. The total annual economic impact (direct, indirect, and induced) from the ongoing operations of the project is estimated to be $1.5 million (measured in 2024 dollars), which can support one job in Isle of Wight County. In terms of direct impact, the solar power station is estimated to have an annual direct spending impact of $1.4 million with one job.[7] An additional indirect impact of $0.1 million will benefit other Isle of Wight County businesses that support station operations. There is an additional induced impact in the county.

[3] Source: Dominion Energy.

[4] Some capital expenditures will be incurred in both 2021, before construction begins, and in 2024, after the construction of the station is complete.

[5] For example, it is assumed the majority of solar equipment will be purchased out of state.

[6] The number of cumulative jobs refers to the number of workers multiplied by the number of years they will be employed. For example, one person employed for two years is equal to two cumulative jobs. Two people employed for one year is also equal to two cumulative jobs. Employment estimates in this report include both full-time and part-time jobs.

[7] The direct spending figure is representative of gross sales (revenue or output) of the generating station, estimated using the IMPLAN Model, annual operating expenses, and annual electricity production. The model treats the facility as a stand-alone business. As a result, direct spending includes spending on labor, materials, and profits.

3. Economic Impact in Virginia

The economic impact of the Solidago Solar Project in Virginia is larger than the impact in Isle of Wight County. This is because Virginia businesses outside the county can also benefit from the development and operations of the project.

During the development and construction phase, the state of Virginia is estimated to see a cumulative direct economic impact of $16.4 million from 2021 to 2024 (Table 3.1). This will directly create 89 cumulative jobs in Virginia. The cumulative indirect impact in Virginia is estimated to total $5.5 million and can support 23 cumulative jobs at firms supporting development and construction. The cumulative induced impact is estimated to total $7.4 million, supporting 61 cumulative jobs in the state during this phase. On an annual average basis, development and construction of the Solidago Solar Project is estimated to inject $7.3 million into Virginia's economy and support 43 jobs per year from 2021 to 2024.

Table 3.1: Economic Impact of Solidago Solar Project in Virginia

		Direct	Indirect	Induced	Total
One-time Impact from Development and Construction					
Total (2021-2024)	Spending ($Million)	$16.4	$5.5	$7.4	$29.3
	Employment	89	23	61	173
Annual Average (2021-2024)	Spending ($Million)	$4.1	$1.4	$1.9	$7.3
	Employment	22	6	15	43
Ongoing Operations					
Annual, 2024 Onward	Spending ($Million)	$1.4	$0.2	$0.02	$1.6
	Employment	1	1	0.2	2

Note: Impacts are measured in the year when they occur. Numbers may not sum due to rounding.

Source: IMPLAN 2019, Dominion Energy, and Chmura

The statewide total economic impact (direct, indirect, and induced) of ongoing operations of the Solidago Solar Project is estimated to be $1.6 million, which can support two jobs per year from 2024 onward. The direct impact for the state is the same as that for Isle of Wight County: $1.4 million in spending and one job. The indirect impact for the state is estimated to total $0.2 million and one permanent job, in businesses that support plant operations. There is an additional induced impact in the state.[8]

[8] The statewide indirect and induced impacts include those in Isle of Wight County.

4. Tax Revenue for County and State Governments

Development and operations of the Solidago Solar Project in Isle of Wight County will also bring in tax revenue for the county and state governments. In order to be conservative, only tax revenue from the direct impact is estimated in this section.[9]

During the development and construction phase, construction spending is subject to the county's business, professional, and occupational license (BPOL) tax. The cumulative BPOL tax for Isle of Wight County is estimated to be $2,170 from 2021 to 2024. The state government is expected to receive $369,029 in cumulative individual income tax and $21,508 in cumulative corporate income tax during the development and construction phase (Table 4.1).[10]

After the Solidago Solar Project is in operation, the state government is expected to receive $997 per year in individual income tax, based on estimated wages of the individuals working at the station. The estimated state tax revenue does not include Dominion's corporate income tax.

Table 4.1: Tax Revenue for County and State Governments from the Solidago Project

	Tax Category	Isle of Wight County	Virginia
Cumulative Construction (2021-2024)	BPOL	$2,170	
	Individual Income		$369,029
	Corporate Income		$21,508
	Total Construction	**$2,170**	**$390,538**
Annual Operations (2024 Onward)	Real Estate	$3,116	
	Business Personal Property	$61,688	
	Individual Income		$997
	Total Operations	**$64,804**	**$997**

Source: Chmura Economics & Analytics

For ongoing operations, Isle of Wight County has a business personal property tax, which will be applied to solar equipment. The proposed solar power station will be classified as a public service corporation.[11] Under Virginia law, all local taxes on real estate and tangible personal property of a public service corporation shall be taxed at the real estate tax rate,[12] which is 0.85% for Isle of Wight County.[13] The assessed value of public service corporation properties are determined by the State Corporation Commission. In this analysis, Chmura uses the cost of the station as the approximate assessed value, which amounts to $36.3 million (excluding land). The resulting business personal property tax revenue is estimated to be $61,688 in 2024. This estimate takes into consideration the tax exemption of 80% for solar equipment under Virginia law.[14] The county will also collect real estate tax on the land where the station is located. Based on the land value, annual real estate tax is estimated to be $3,116 in 2024. The local tax revenue for future years may vary due to potential changes in the tax rate, assessment, and depreciation.

[9] This approach is recommended by Burchell and Listokin in *The Fiscal Impact Handbook*.

[10] Taxes from construction are paid by contractors, not directly by Dominion Energy.

[11] Source: Code of Virginia, § 58.1-2600. Definitions. Available at http://law.lis.virginia.gov/vacode/title58.1/chapter26/section58.1-2600/.

[12] Source: Code of Virginia, § 58.1-2606. Local taxation of real and tangible personal property of public service corporations; other persons. Available at: http://law.lis.virginia.gov/vacode/title58.1/chapter26/section58.1-2606/.

[13] Source: Isle of Wight County website, https://www.co.isle-of-wight.va.us/government/treasurer/real_estate_tax.php.

[14] Source: Code of Virginia, § 58.1-3660. Certified pollution control equipment and facilities. Available at: http://law.lis.virginia.gov/vacode/title58.1/chapter36/section58.1-3660/.

Appendix: Impact Analysis Glossary

IMPLAN Professional—an economic impact assessment modeling system. It allows the user to build economic models to estimate the impacts of economic changes in states, counties, or communities. It was created in the 1970s by the Forestry Service and is widely used by economists to estimate the impact of specific events on the overall economy.

Input-Output Analysis—an examination of business-business and business-consumer economic relationships capturing all monetary transactions in a given period, allowing one to calculate the effects of a change in an economic activity on the entire economy (impact analysis).

Direct Impact—economic activity generated by a project or operation. For construction, this represents activity of the contractor; for operations, this represents activity by tenants of the property.

Overhead—construction inputs not provided by the contractor.

Indirect Impact—secondary economic activity that is generated by a project or operation. An example might be a new office building generating demand for parking garages.

Induced (Household) Impact—economic activity generated by household income resulting from direct and indirect impacts.

Ripple Effect—the sum of induced and indirect impacts. In some projects, it is more appropriate to report ripple effects than indirect and induced impacts separately.

Multiplier—the cumulative impacts of a unit change in economic activity on the entire economy.

APPENDIX A,
ATTACHMENT 6

PRE-FILED TESTIMONY
OF
DAVID J. DALTON

VIRGINIA ELECTRIC AND POWER COMPANY

CASE NO. PUR-2020-00134

Q1. PLEASE STATE YOUR NAME AND POSITION WITH THE VIRGINIA STATE CORPORATION COMMISSION ("COMMISSION").

A1. My name is David J. Dalton and I am a Senior Utilities Analyst with the Commission's Division of Public Utility Regulation.

Q2. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A2. My testimony addresses Virginia Electric and Power Company's ("Dominion" or "Company") first annual plan for compliance with the new mandatory renewable energy portfolio standard ("RPS") requirements enacted by the 2020 General Assembly as part of the Virginia Clean Economy Act ("VCEA")[1] and petition for approval to construct, acquire, or enter into contracts for specific resources ("RPS Development Plan" or "Petition"). The Company's plan is filed pursuant to § 56-585.5 D 4 of the Code of Virginia ("Code"). Specifically, my testimony:

- Reviews the VCEA's new RPS requirements;
- Addresses the Company's projected renewable energy certificate ("REC") requirements and energy and capacity positions over the next 15 years;
- Addresses the Company's RPS Development Plan;
- Identifies several concerns regarding the Company's modeling and inputs supporting the RPS Development Plan;

[1] Chapter 1193 of the 2020 Acts of the Assembly.

in its Final Order in the Company's 2018 IRP.[68] The results of this revision are reproduced in Table 4, below:

Table 4: Customer NPV (Cost of Service), 19% Capacity Factor		
Project	**Vs. Market**	**Vs. Onshore Wind**
Grassfield	$3.5 M	$0 M
Norge	$2.1 M	($1.2 M)
Sycamore	($9.8 M)	($16.8 M)

As can be seen in Table 4, if the proposed Company-owned solar generation performs in a manner similar to the historical performance of the Company's Virginia-located solar tracking fleet, Grassfield and Norge continue to be cost-beneficial to customers relative to the market, with Grassfield being indeterminate compared to an onshore wind unit and Norge being a net cost to customer relative to an onshore wind unit. Sycamore would be a net cost to ratepayers as compared to both the market and an onshore wind unit.

Staff also notes that the results above do not fully address Staff's concerns regarding the issues raised in the 2020 IRP, as only the capacity factor for the solar generating resources was adjusted. Staff maintains its concerns, as previously outlined, and offers Table 4 as an informational data point.

Q38. WHAT ARE THE LCOE VALUES OF THE PROPOSED COMPANY-OWNED GENERATING FACILITIES AND PPAS?

[68] *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-2018-00065, 2019 S.C.C. Ann. Rept. 190, 191, Final Order (June 27, 2019), and S.C.C. Ann. Rept. 196, 197, Order on Reconsideration (July 19, 2019).

A38. The Company's response to Staff Interrogatory No. 1-5 provides the LCOEs for the six proposed PPAs and three proposed Company-owned solar generation resources.[69] For convenience, the LOCEs of both groupings are presented in Table 5, below.

Table 5: LCOE of Proposed Resources	
Resource	**Cost ($/MWh)**
Watlington (20-year PPA)	$41.03
Pleasant Hill (20-year PPA)	$41.72
Chesapeake (20-year PPA)	$41.72
Wythe (20-year PPA)	$47.86
Cavalier (20-year PPA)	$52.52
Rivanna (20-year PPA)	$52.97
Grassfield (26% capacity factor)	$72.98
Norge (23% capacity factor)	$83.93
Sycamore (25% capacity factor)	$90.92

Despite Staff's concerns regarding the RFP process, as can be seen in Table 5, it appears that the solar PPAs are low-cost resources available for complying with the RPS requirements and serving customers' load, at least compared to the proposed Company-owned projects.

Q39. DOES STAFF HAVE ANY ADDITIONAL COMMENTS REGARDING THE COMPANY'S PROPOSED SOLAR GENERATING FACILITIES?

A39. Yes. Staff has general concerns regarding the amount of land proposed to be used for the construction of Sycamore. Staff notes that the 2020 IRP stated that, based on current technology, approximately ten acres of land were necessary to provide one MW of capacity from solar generating resources.[70] Staff notes that Sycamore would require 1,085 acres of

[69] The Company's response to Staff Interrogatory No. 1-5, excerpts of Attachment Staff Set 01-05 (MM), and a redacted, public version of Attachment Staff Set 01-05 (MM) ES are attached hereto as part of Attachment No. DJD-1.

[70] 2020 IRP at 101.

land for a 42 MW solar facility. This equates to almost 26 acres of land per MW of solar capacity, or almost 2.5 times more than the estimate presented in the 2020 IRP. The Company's response to Staff Interrogatory No. 4-59 states that the ten acres per MW of solar capacity is not site-specific but represents an average based on the Company's prior experience for actual site improvements.[71] The Company further states that approximately 262 acres of the Sycamore project site were unable to be developed due to exclusions, including zoning setbacks, wetlands, and two landowner exclusions as part of the lease terms.

Staff acknowledges that the ten-acre estimate presented in the 2020 IRP is an average and that actual facilities may require more or less land than that amount. Staff expected the proposals in the Company's RPS Development Plan to be the "low hanging fruit" of available solar sites, however. If Sycamore is, in fact, one of these easier-to-construct projects despite its significantly greater land requirements for construction, as Staff expected, then Staff has concerns regarding the ability of the Company to attain or approach the average ten acres per MW of solar capacity. Also, as discussed by Staff witness Abbott, a larger geographical footprint increases potential environmental justice impacts. Staff recommends that the Company closely monitor the land required to construct future solar projects to ensure that it is able to achieve the construction targets contained within the VCEA.

Q40. GIVEN STAFF'S CONCERNS, DOES STAFF OPPOSE THE SPECIFIC RESOURCES PROPOSED IN THIS CASE?

[71] *See* the Company's response to Staff Interrogatory No. 4-59, attached hereto as part of Attachment No. DJD-1.

A40. The deficiencies within the Company's modeling, as outlined above, prevent Staff from determining whether the specific Company-owned and PPA resources proposed in this case are cost-effective. Staff does note, however, that solar generating resources are typically lower cost resources relative to the other generating resources or market alternatives. Staff further notes that denial of the three proposed Company-owned solar generating facilities and six third-party-owned PPAs would severely hinder the Company's ability to achieve the aggressive targets for renewable generation contained within the VCEA. As mentioned previously, the Company's 2020 IRP is currently pending before the Commission and it would have been difficult to correct the modeling deficiencies identified by Staff in the 2020 IRP. Additionally, as discussed by Staff witness Abbott, the Commission may also find that the benefits of the avoided social cost of carbon may offset a potential negative market value from a more accurate economic analysis. Given these circumstances, Staff does not oppose approval of the Company's proposed resources for the limited purpose of this proceeding, subject to the Company addressing Staff's concerns, to the extent the Commission shares these concerns, in future RPS proceedings.

Conclusions and Recommendations

Q41. PLEASE SUMMARIZE YOUR FINDINGS AND RECOMMENDATIONS.

A41. After my review, I have the following conclusions and recommendations:

- The RPS Development plan largely suffers from the same modeling deficiencies Staff identified in the 2020 IRP, including but not limited to:
    - The modeling inputs for the commodity price forecasts did not include the impacts of the VCEA;

DIRECT TESTIMONY
OF
JOSHUA BENNETT
ON BEHALF OF
VIRGINIA ELECTRIC AND POWER COMPANY
BEFORE THE
STATE CORPORATION COMMISSION OF VIRGINIA
CASE NO. PUR-2021-00142

Q. Please state your name, business address and position with Virginia Electric and Power Company ("Dominion Energy Virginia" or the "Company").

A. My name is Joshua Bennett and my business address is 707 East Main Street, Richmond, Virginia 23219. I am Vice President – Offshore Wind, for the Company. A statement of my background and qualifications is attached as Appendix A.

Q. Please describe your area of responsibility with the Company.

A. I am responsible for overseeing the design, construction, and operation of the Company's offshore wind facilities. This includes development of the Coastal Virginia Offshore Wind Commercial Project ("CVOW Commercial Project," "CVOW" or the "Project") presented in this proceeding, as well as the Company's 12 megawatt ("MW") Coastal Virginia Offshore Wind demonstration project ("Pilot Project"), which was approved by the Virginia State Corporation Commission ("Commission") in Case No. PUR-2018-00121.

Q. What is the purpose of your testimony in this proceeding?

A. My testimony describes the components of the Project designed, constructed, and operated by Dominion Generation, which includes all of the Project's offshore elements up to the point of interconnection ("POI") which is Harpers Switching Station. In this testimony, I outline the legal requirements applicable to the CVOW Commercial Project

Table 2. LCOE Input Component Summary

LCOE Input Component	Value
Capital Expenditures	$9.8 billion
Gross Capacity Factor	43.3%
Availability Factor	97.0%
Renewable Energy Credits ("RECs")	$9
Nominal Capacity	2,587 MW
Book Life	30 years
Annual Operations and Maintenance ("O&M") Expense	$129 million
Investment Tax Credits	83.27% eligibility
Return on Equity ("ROE") Percentage	9.20%

Q. Conducting the calculation using the components noted above, what is the projected LCOE for the Project?

A. The LCOE for the CVOW Commercial Project is projected to be $87 per MWh in 2027 dollars, inclusive of the 30% ITC. For further comparison, the LCOE for the project in 2018 dollars is $73 per MWh. This is well within the legislative cap of 1.4 times the 2019 cost of a CT, which is $125 per MWh, in 2018 dollars.

VI. PROCUREMENT PROCESS AND COMPETITIVELY BID CONTRACTS

Q. The first component of the LCOE described above is capital expenditures, which totals $9.8 billion. Can you explain the major contracts resulting in this total?

A. Approximately $7.6 billion of the $9.8 billion total results from contracts that were competitively bid. The remaining $2.2 billion is composed of Project costs, logistics, onshore transmission scope, and contingency.

The components associated with the major contracts are included in Figure 1 below and the contracts themselves are described in Table 3 and in my testimony, below.

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the foregoing was served on April 6, 2022 by electronic mail to:

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