PART B

Summary of the Testimony of David J. Dalton

My testimony addresses Appalachian Power Company's ("APCo" or "Company") annual plan for the development of new renewable generation and energy storage capacity ("RPS Plan") associated with the mandatory renewable energy portfolio standards ("RPS") provisions of § 56-585.5 of the Code of Virginia. My testimony:

1. Reviews the Company's request for proposal ("RFP") documentation and process and includes several recommendations for further refinement of both the RFP process as well as specific terms, conditions, and/or schedules of the Company's purchase sales agreement RFP and power purchase agreement RFP.

2. Further develops the record regarding the implications of, and Staff's position on, the proposed generation and storage projects contained within APCo's RPS Plan. Specifically:

    a. Staff does not support the Commission's approval of the proposed Livingston Wind facility based on the economic value of the project and the fact that many of the economic and environmental benefits associated with the project are likely to accrue outside of the Commonwealth;

    b. Staff does not support the Commission's approval of the proposed Wythe Battery Energy Storage System facility based on the economic value of the project; and

    c. Staff recommends that the Commission approve the Collier Solar Power Purchase Agreement.

PRE-FILED TESTIMONY
OF
DAVID J. DALTON

PETITION OF APPALACHIAN POWER COMPANY
FOR APPROVAL OF ITS 2025 RPS PLAN UNDER
§ 56-585.5 OF THE CODE OF VIRGINIA AND RELATED REQUESTS

CASE NO. PUR-2025-00049

July 16, 2025

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

A. My name is David J. Dalton and in the Commission's Division of Public Utility Regulation ("PUR") I am a PUR Manager.

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

A. My testimony addresses Appalachian Power Company's ("APCo" or "Company") petition ("Petition") for approval of its annual development plan ("RPS Plan") for new generation and energy storage resources in connection with the renewable energy portfolio standards ("RPS") program ("RPS Program") enacted by the 2020 General Assembly as part of the Virginia Clean Economy Act ("VCEA").[1] The Company's RPS Plan is filed pursuant to § 56-585.5 D 4 of the Code of Virginia ("Code"). Specifically, my testimony is intended to develop the record for the Commission's consideration regarding:

- The Company's request for proposal ("RFP") process and documents; and
- The implications of, and Staff's positions on, the renewable generation and storage resources proposed by APCo in the instant case.

[1] 2020 Va. Acts chs. 1193, 1194.

Review of the RFPs

Q. WHY IS STAFF REVIEWING THE COMPANY'S RFP PROCESS IN THE INSTANT CASE?

A. As discussed in more detail by Staff witness Little, the input assumptions utilized in the Company's modeling regarding the levelized cost of energy ("LCOE") of onshore wind and solar generation in the instant case appear to be substantially higher than responses received in prior RFPs. As such, Staff believed that it was appropriate to review the Company's RFPs and RFP process in more detail.

Q. ARE THERE ANY OTHER ISSUES RELATED TO THE COMPANY'S RFP PROCESS THAT YOUR TESTIMONY WILL ADDRESS?

A. Yes. In addition to Staff's concerns regarding the LCOEs and net present values ("NPVs") of responses received in response to solicitations by the Company and presented in this proceeding, Staff is concerned about the number of projects that were short-listed by the Company but then withdrawn prior to the filing of the instant case.[2] Similarly, Staff is concerned about the number and size of several of the Company's projects that previously received Commission approval to be constructed, acquired, or contracted with, but which were ultimately terminated prior to completion.[3]

Q. DID THE COMPANY PROVIDE COPIES OF THE MOST RECENT RFPS AS PART OF THIS FILING?

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[2] *See* Attachment 1 to the Petition ("2025 RPS Plan"), at 10, Table 5. These projects are discussed in more detail by Staff witness Little in his direct testimony. These projects will also be addressed more fully later in my testimony.

[3] *See* Company's Response to Staff Interrogatory No. 1-20, CONFIDENTIAL Attachment 1, attached hereto as part of Attachment No. DJD-1. Unless otherwise noted, all referenced discovery responses will be attached to this testimony as part of Attachment No. DJD-1. These projects will be discussed in more detail later in this testimony.

A. Yes. The Company's 2024 RFPs for purchase sales agreements ("PSAs"), power purchase agreements ("PPAs"), and renewable energy certificates ("RECs") are provided as Schedules 2, 3, and 4, respectively, of Company witness Miller's direct testimony. These RFPs were all issued on May 13, 2024, and are the sources of the generation and energy storage resources proposed in the instant case.[4] Responses from bidders were due for each of the RFPs by July 30, 2024.[5]

Q. PLEASE PROVIDE A BRIEF OVERVIEW OF THE COMPANY'S RFP PROCESS.

A. As discussed in more detail in the direct testimony of Company witness Miller, the Company has seven main steps in its RFP process:

1. Issuance of the RFP;
2. Receipt and review of proposals;
3. Screening of eligibility and threshold requirements;
4. Economic screening analysis;
5. Due diligence;
6. Short-list and identification of selected renewable resources; and
7. Final project selection, negotiation, and execution of agreements.[6]

Q. ON WHICH PORTIONS OF THE COMPANY'S RFP PROCESS WILL YOUR TESTIMONY FOCUS?

[4] Direct Testimony of Company witness Seth L. Miller ("Miller Direct") at 7.

[5] *Id.*, at Schedule 2 page 1, Schedule 3 page 1, and Schedule 4 page 1.

[6] *Id.* at 7.

A. My testimony will focus on Step 1, issuance of the RFPs, and several specific provisions of the RFPs.

Q. WHAT ARE STAFF'S COMMENTS REGARDING THE COMPANY'S ISSUANCE OF THE RFPS?

A. The Company's RFPs are publicized by posting them to the website www.appalachinapower.com/rfp, issuing a press release to various publications and notifying prospective bidders via e-mail.[7] The Company states that it also "keeps a distribution list of potential bidders" that it notified via e-mail that the Company had issued the 2024 RFPs, with the email including the aforementioned link to the Company website.[8] The Company's response to Staff Interrogatory No. 2-84 states that the Company routinely has developer outreach calls and meetings and that it attends conferences to meet with developers, during which the Company makes developers aware of APCo's service territory and also that APCo has a preference for projects developed in Virginia and West Virginia.[9]

Staff acknowledges the attempts to ensure robustness of the Company's solicitation of responses to its various RFPs. However, based on the Company's proposals presented in the instant case, Staff believes that APCo should endeavor to review its RFP distribution process and seek to expand the distribution of its RFPs to maximize responses and increase

[7] *Id.* *See also* Company's Response to Staff Interrogatory No. 2-97, Attachment 1, Attachment 2, and Confidential Attachment 3.

[8] Company Response to Staff Interrogatory No. 2-83. *See also* Company's Response to Staff Interrogatory No. 2-97 Attachments 1, Attachment 2, and Confidential Attachment 3.

[9] Company's Response to Staff Interrogatory No. 2-84.

the opportunities for economic projects to be identified and proposed in response to future RFPs.

Q. WHAT PROVISION OF THE PSA RFP DO YOU WISH TO HIGHLIGHT?

A. I will address the siting requirements for the development stage projects[10] contained in the PSA RFP.

Q. WHAT ARE THE SITING REQUIREMENTS FOR DEVELOPMENT STAGE PROJECTS IN THE PSA RFP?

A. Section 3.7.1 of the PSA RFP is titled "Development Stage Project(s) (VA and WV-sited only)," indicating that development stage projects must be sited in Virginia or West Virginia.[11] Section 4.1.1, titled "Development Stage Project," also states, in part, "[e]ach Project must be located in Virginia or West Virginia."[12] Finally, Section 4.4, "Location," also states, in part, that "Development Stage Projects must be located in Virginia or West Virginia (Section 3.4)."[13]

Q. DID THE COMPANY PROVIDE AN EXPLANATION FOR THE LOCATIONAL REQUIREMENT FOR DEVELOPMENT STAGE PROJECTS IN THE PSA RFP?

A. Yes. In response to Staff Interrogatory No. 2-94, the Company states, "Development Stage Projects are a first-time evolution approach for the company. With the possibility that

[10] It is Staff's understanding that "development stage projects" are those that will be acquired by APCo prior to mechanical completion and that will be completed by the Company. This is in contrast to "completed projects," which Staff understands to be acquired upon mechanical completion.

[11] Miller Direct at Schedule 2, page 6 (RFP page 4).

[12] *Id.* at 8 (RFP page 6).

[13] *Id.*

projects might need further permitting and coordination with local and state officials, the Company made a conscious decision to leverage familiarity with local and state requirements within Virginia and West Virginia for this first of a kind approach."[14]

Q. DOES STAFF BELIEVE THIS REQUIREMENT IS APPROPRIATE FOR DEVELOPMENT STAGE PROJECTS?

A. Not entirely. Staff recognizes that, given that this is the first time the Company has requested proposals for development stage projects, there may be certain advantages for APCo having familiarity with the legal and regulatory apparatuses of the two primary states that comprise APCo's service territory within which development stage projects would be located. However, due to the statutory language regarding the requirements for development of specific quantities of renewable generation and the Company's compliance with the REC-retirement requirements found in Code §§ 56-585.5 D and C, respectively, this Company-imposed locational requirement in the RFP may not be entirely appropriate in the future.

To explain further, Staff notes that, under Code § 56-585.5 D 1, the Company must petition for 600 megawatts ("MW") of solar or onshore wind generation that is located within the Commonwealth by December 31, 2030.[15] Staff also notes, however, that under Code § 56-585.5 C, APCo may utilize RECs produced by RPS-eligible resources[16]

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[14] Company's Response to Staff Interrogatory No. 2-94.

[15] Staff notes that the quantity of RECs necessary for compliance with the increasing percentage of the total electric energy sold (as set forth in Code § 56-585.5 C) will exceed the quantity of RECs produced by this quantity of resources. The Company's progress toward the requirements of Code § 56-585.5 D 1 are discussed in more detail in Staff witness Little's testimony.

[16] Code § 56-585.5 C identifies the requirements applicable to generation resources to qualify as "RPS eligible sources." Staff's use of this term is intended to be consistent with the Code's requirements.

"physically located within the PJM region," a region that includes states outside of Virginia and West Virginia. Staff also notes, on advice of counsel, that there does not appear to be any locational requirement for energy storage resources provided under Code § 56-585.5 E.

Additionally, the PSA RFP does not require that *completed* projects be located in the Commonwealth or West Virginia,[17] nor is there such a requirement for the Company's PPA RFP.[18]

Given that the Company may utilize RECs produced by RPS-eligible resources physically located within the PJM[19] region, Staff is concerned that requiring development stage projects to be located in Virginia or West Virginia may limit the number of responses that the Company receives to its PSA RFP for development stage projects. This may mean that economically viable, or even economically preferable, projects that are in the development stage but are located outside of these two states, may be precluded from bidding into the Company's RFP.

Q. WHAT IS STAFF'S RECOMMENDATION REGARDING THE LOCATIONAL REQUIREMENT FOR DEVELOPMENT STAGE PROJECTS IN THE COMPANY'S PSA RFP?

A. Staff recommends that the Company review this requirement going forward and consider removing it altogether or reducing the requirement to be a stated preference that will weigh

[17] Miller Direct at Schedule 2 page 6 (RFP page 4).

[18] *Id.* at Schedule 3, page 5 (RFP page 3). *See also* Company's Response to Staff Interrogatory No. 2-85.

[19] PJM Interconnection, LLC, is the regional transmission organization of which APCo is a member. PJM coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia.

in favor of one project over another. This could be accomplished in many ways; however, Staff notes that one option would be future use of language similar that contained in Section 4.4 of the PSA RFP, titled "Location," which states, in part, "The Company prefers projects located in the Commonwealth of Virginia or the state of West Virginia on Eligible Sites (Section 3.5)."[20]

Q. ARE THERE ANY PROVISIONS IN BOTH THE PSA RFP AND PPA RFP PROCESS THAT STAFF WISHES TO HIGHLIGHT AS CONCERNS?

A. Yes. Both the PSA and PPA RFPs identify the contract execution date for the proposed resources as by the date of April 25, 2025.[21] Staff notes that this is approximately six months after the Company has made its final project selections.[22] Staff finds this long timeframe concerning because it may allow or encourage bidders to offer a given project into multiple offer processes of various utilities and then execute a contract with whichever utility first accepts their offer, which may not be APCo. This could mean that the Company is not fully able to take advantage of the bids received in response to its RFPs.

Q. WHY DOES STAFF HAVE CONCERNS ABOUT THE LONG LENGTH OF TIME BETWEEN FINAL PROJECT SELECTION AND CONTRACT EXECUTION ESPECIALLY WITH RESPECT TO THE INSTANT CASE?

A. Staff notes that, in the instant case, a number of proposed projects received in response to the Company's RFPs were withdrawn by the respective bidders prior to proposal in the

[20] Miller Direct at Schedule 2, page 8 (RFP page 6).

[21] *Id.* at Schedule 2, page 13 (RFP page 11) (the PSA RFP), and at Schedule 3, page 8 (RFP page 6) (the PPA RFP).

[22] *Id.*

instant case. Table 5 of the 2025 RPS Plan identifies that, of the 14 total projects originally considered for proposal in the instant case, 10 PPA projects and one Company-owned project were withdrawn from the RFP.[23] This means that approximately 79% of all projects that the Company anticipated proposing in this case withdrew from consideration before APCo's filing.[24] The Company's response to Staff Interrogatory No. 1-3 provided the reason(s) for each project's withdrawal.[25] For convenience, these reasons are summarized in Table 1, below.

[23] 2025 RPS Plan at page 10. Staff notes that the title of Table 5 is "VCEA Portfolio Plan Resource Additions being Petitioned."

[24] Staff notes that these projects represent approximately 33.5% of the total nameplate capacity the Company intended to propose in the instant case.

[25] Company's Response to Staff Interrogatory No. 1-3.

Table 1: RFP Responses Withdrawn Before Proposal				
Project Name	**Owned or PPA**	**Resource Type**	**Nameplate MW**	**Reason for Withdrawal**
Mainspring	Owned	BESS[26]	50	Local permitting issues
Apollo	PPA	Solar	5	Site control issues
Sunrise	PPA	Solar	5	Site control issues
Cicely	PPA	Solar	5	Elevated levels of market uncertainty, tariff uncertainty, and possible repeal of tax credits
Hyssop	PPA	Solar	5	Elevated levels of market uncertainty, tariff uncertainty, and possible repeal of tax credits
Judge Springs	PPA	Solar	19.4	Developer decided to sell project as part of a development portfolio
Samson	PPA	Solar	10.6	Developer decided to sell project as part of a development portfolio
Helios	PPA	Solar	13.2	Developer decided to sell project as part of a development portfolio
Willow	PPA	Solar	13.5	Developer decided to sell project as part of a development portfolio
Gilford	PPA	Solar	10.1	Developer decided to sell project as part of a development portfolio
Hera	PPA	Solar	24.6	Developer decided to sell project as part of a development portfolio

As can be seen in Table 1, six of these projects withdrew because the developer elected to sell the project as part of a development portfolio to an entity other than APCo rather than pursue execution of a PPA with APCo. Staff believes that it is possible that a shorter timeline between final project selection and execution of contracts with these resources may have resulted in the successful execution of one or more of these PPAs with APCo.

Q. WHAT ARE STAFF'S RECOMMENDATIONS REGARDING THE TIMING OF CONTRACT EXECUTION RELATIVE TO FINAL PROJECT SELECTION?

[26] "BESS" stands for "battery energy storage system."

A. Staff recommends that the Company to reduce the length of time between final project selection and contract execution. Staff's recommendation is intended to reduce the possible risk that proposed projects withdraw from APCo's consideration prior to their proposal to the Commission. Some options the Company may wish to consider for reducing this timeframe include, but are not limited to: (i) issuing the RFP later in the year and moving all other RFP scheduled dates to backward to later dates in the year; (ii) moving the contract execution date forward; or (iii) a combination of the two.

Q. HAVE ANY PROJECTS THAT THE COMMISSION PREVIOUSLY APPROVED BEEN TERMINATED PRIOR TO COMPLETION?

A. Yes. In the Company's supplemental response to Staff Interrogatory No. 1-20, the Company identified eight such projects and listed the reasons for their termination prior to completion.[27] For convenience, a summary of this list and the reasons for termination are provided in Table 2, below.

[27] Company's Supplemental Response to Staff Interrogatory No. 1-20, CONFIDENTIAL Attachment 1.

[BEGIN CONFIDENTIAL]

Table 2: Previously Approved Projects Terminated Before Completion				
Project	Owned/PPA	Resource Type	Nameplate MW	Reason(s) for Termination
				[30]
				[31]
[2]				
				[33]

[END CONFIDENTIAL]

[28] *Petition of Appalachian Power Company, For approval of its 2023 RPS Plan under § 56-585.5 of the Code of Virginia and related requests*, Case No. PUR-2023-00001, Doc. Con. Cen. No. 230320218, Direct testimony of Joseph A. Karrasch at 5 (Mar. 15, 2023).

[29] *Id.*

[30] *Id.*

[31] *Id.*

[32] The Horsepen Solar PPA, approved in Case No. PUR-2021-00206, was terminated, renegotiated after termination, and reproposed in Case No. PUR-2023-00001 as Horsepen Branch.

[33] Company's Response to Staff Interrogatory No. 2-92.

As can be seen in Table 2, eight previously approved projects have been terminated prior to completion. This represents approximately 38% of the Company's projects for which APCo had received Commission approval. On a nameplate capacity basis, these eight projects represent approximately 48% of the nameplate capacity APCo has received Commission approval for in prior cases. This high quantity of project terminations is concerning to Staff, and consideration of this situation has contributed to Staff's recommendations regarding the Company's RFPs in the instant case.

Additionally, on June 27, 2025, the Company filed a letter in Case No. PUR-2024-00001[34] indicating that the previously-approved Glade-Whitetop BESS project, consisting of two distinct BESS facilities with a total rating of 7.5 MW (capacity) and 30 megawatt-hour ("MWh") (energy),[35] had been terminated.[36] The Termination Letter stated that, in the months since the Commission granted the certificates for public convenience and necessity for the Glade-Whitetop BESS project, "myriad factors, including increased commodity prices and unanticipated construction challenges, have made continuing with the Glade-Whitetop BESS Project imprudent, and thus not in the best interests of [APCo's] customers."[37]

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[34] *Application of Appalachian Power Company, For approval to construct and operate a battery energy storage system*, Case No. PUR-2024-00001, 2024 S.C.C. Ann. Rept. 272, Final Order (Oct. 21, 2024).

[35] *Id.* at 1-2.

[36] *Application of Appalachian Power Company, For approval to construct and operate a battery energy storage system*, Case No. PUR-2024-00001, Doc. Con. Cen. No. 250680075, APCo Notice of Discontinuation of Project (June 27, 2025) ("Termination Letter").

[37] *Id.*

Q. DOES STAFF HAVE ANY RECOMMENDATIONS REGARDING HOW THE COMPANY MAY ADDRESS FUTURE TERMINATIONS OF COMMISSION-APPROVED PROJECTS?

A. Staff does not have any specific recommendations regarding how the Company may seek to prevent the termination of projects after their selection or following Commission approval. However, Staff recommends that the Company investigate all options available to it to ensure that projects that are proposed to and approved by the Commission are completed and enter service. Options may include, but are not limited to:

- The aforementioned modification to the RFP schedule, reducing the amount of time between final project selection and execution of a contract with the projects;

- Requiring projects to have achieved more project milestones (*e.g.*, obtaining necessary local or state permits, having a signed interconnection service agreement with PJM, etc.) prior to submitting proposals to an RFP;

- Including a weighting factor of whether the bidder has previously submitted a proposal in prior RFPs that did not reach completion, as part of the non-price scoring in the evaluation of the proposal(s); or

- Requiring a surety bond or other financial deposit for submission of a response to an RFP that the bidder would forfeit if a project were terminated after specific milestones are met (*e.g.*, after local permitting is achieved but before PJM interconnection service agreement is obtained, after Commission approval is obtained, etc.).

Staff's recommendations are intended to be illustrative, not specific recommendations that the Commission should require the Company to include in future RFPs. Additionally, Staff's recommendations are intended to offer opportunities for modifications that may increase the number of projects proposed to the Company that ultimately reach completion, to the benefit of the Company's ratepayers.

Proposed Projects

Q. PLEASE IDENTIFY THE PROJECTS PROPOSED BY APCO IN THE INSTANT CASE.

A. The Company is proposing a 261 MW (nameplate) Company-owned wind facility in Livingston County, Illinois ("Livingston Wind"), a 7.5 MW (nameplate) solar PPA in Wise County, Virginia ("Collier Solar PPA"), and a 52.2 MW (nameplate) Company-owned BESS facility in Wythe County, Virginia ("Wythe BESS").[38] These projects are described in more detail, and several concerns are identified, in the direct testimony of Staff witness Little.

Livingston Wind Facility

Q. WHAT IS THE NPV OF THE PROPOSED LIVINGSTON WIND FACILITY?

A. As discussed by Staff witness Little, the Company's economic analysis of the Livingston Wind facility indicates that it will impose a -$40,878,281 NPV cost[39] in excess of benefits received by APCo's customers, excluding a financial benefit associated with the avoided

[38] Petition at 10-11.

[39] *See* Company Response to Staff Interrogatory No. 6-157, Attachment 1. Due to its voluminous nature and formatting, Staff is not attaching the referenced attachment to this testimony. Staff has maintained an electronic copy of the attachment and will provide it upon request.

social cost of carbon ("SCoC").[40] Staff notes, as discussed in more detail in Staff witness Little's testimony, that the Company's economic analysis of Livingston Wind utilizes the capacity factor for estimating energy output and REC creation based on the design engineering estimate rather than the three-year historical average capacity factor of wind generating resources.[41] As Staff witness Little notes, the NPV cost to ratepayers of the Livingston Wind facility, if it performs more closely to existing wind generation within PJM, is -$140,294,567, excluding the avoided SCoC benefit.[42] Both the analysis using the design engineering capacity factor and the analysis using three-year historical capacity factor, excluding a benefit associated with the avoided SCoC, indicate that the Livingston Wind facility would impose costs in excess of benefits on the Company's customers.[43]

Staff also notes that the energy and capacity price forecasts of Staff witness Curtis differ from the Company's; specifically, through 2050, Staff witness Curtis' energy price

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[40] Staff's analysis of the NPV excluding the financial benefit associated with the avoided SCoC is not intended to dismiss the SCoC benefit; rather, the analysis of the NPV without SCoC is intended to be consistent with the Commission's guidance provided in its Final Order in Case No. PUR-2022-00124, which states, in part, "[i]n its next CPCN filing accompanying an RPS plan petition, Dominion is directed: (1) to separate, in its economic analysis, any estimated social cost of carbon cost/benefit from the estimated ratepayer benefits and costs;…." *Petition of Virginia Electric and Power Company, For approval of its 2022 RPS Development Plan under § 56-585.5 D 4 of the Code of Virginia and related requests*, Case No. PUR-2022-00124, 2023 S.C.C. Ann. Rept. 217, 221, Final Order (Apr. 14, 2023). Staff acknowledges that this direction was provided to Virginia Electric and Power Company, however, it may be relevant to the Commission's consideration in the instant case as well. Staff further notes that, in each of its prior annual RPS filings and the instant case, APCo has provided its economic analyses of its proposed units both including and excluding the SCoC.

[41] Staff witness Little notes that previously, the Commission has directed the Company to utilize a three-year historical capacity factor in modeling the energy output of wind and solar generating resources. *See, e.g., Application of Appalachian Power Company, For approval of its 2021 RPS Plan under § 56-585.5 C of the Code of Virginia and related requests*, Case No. PUR-2021-00206, 2022 S.C.C. Ann. Rept. 345, 347, Final Order on Petition and Associated Requests, and Order Bifurcating Proceeding (July 15, 2022).

[42] *See* Company Response to Staff Interrogatory No. 6-157, Attachment 3. Due to its voluminous nature and formatting, Staff is not attaching the referenced attachment to this testimony. Staff has maintained an electronic copy of the attachment and will provide it upon request.

[43] Staff notes that, given the uncertainty regarding the future of federal tax incentives for renewable generating resources, to the extent the Livingston Wind facility does not qualify for the full tax incentives assumed in the Company's analysis, it is possible that the NPV of the facility could be more negative in the future.

forecasts are higher than the Company's, while his capacity price forecasts are lower than the Company's forecast. While Staff is unable to provide a specific impact of these differences due to the timing differences between the length of the forecasts (through 2050) relative to the Livingston Wind facility's useful life (through 2058), Staff acknowledges that it is possible that these differences would improve the economics of the proposed Livingston Wind facility. In a future scenario that more closely aligns with Staff witness Curtis' energy and capacity price forecasts, it is possible that the proposed Livingston Wind facility is less uneconomic than a future scenario more closely aligned with the Company's energy and capacity price forecasts.

Q. HOW MAY THE LOCATION OF THE PROPOSED LIVINGSTON WIND PROJECT BE RELEVANT TO THE COMMISSION'S CONSIDERATION?

A. Because the proposed Livingston Wind project is proposed to be constructed and operated in Livingston County, Illinois, the direct and indirect economic benefits of the proposed facility (*e.g.*, job creation, tax revenues, etc.) will be accrued outside of the Commonwealth. Additionally, because the unit will likely displace generation in the broader PJM footprint rather than a facility located in the Company's Virginia service territory, the direct benefits associated with the emissions reductions and resulting directly-avoided SCoC benefits will accrue to the locality or localities and areas surrounding whichever generation unit(s) operate at a reduced rate as a result of the energy production by the Livingston Wind project.[44]

[44] Staff does not intend to imply that, even though the direct benefits of the avoided SCoC and emissions reductions are likely to occur outside of the Company's Virginia service territory, there will be *no* avoided SCoC benefit or emissions reductions benefits received by the Company's customers; Staff is simply indicating that this benefit may be reduced due to the location where the emissions reductions are likely to occur, which may not be in Virginia.

Q. HAS THE COMPANY COMMENTED ON ENVIRONMENTAL BENEFITS, POSSIBLY INCLUDING SCOC, IN OTHER CASES?

A. Yes. Staff notes that in Case No. PUR-2024-00161, Company witness Castle stated, in his rebuttal testimony, that, "RECs embody the 'non-energy attributes' of renewable generation in their entirety . . . . In short, any of the various non-power 'value of solar' attributes, however characterized and quantified, are embodied in the REC."[45] It appears to Staff that the Company may be suggesting that the value of avoided SCoC is captured within the value, or cost, of a REC.

Similarly, in Case No. PUR-2025-00028, the Company stated, "Mr. Castle explains that REC credit embodies several benefits that are difficult to quantify separately, such as carbon-free energy, workforce development, and 'energy independence.' Attributing separate values to those items in addition to the REC value would double-count those benefits."[46] Also in that case, Company witness Castle stated, "The REC distinguishes the energy produced by a renewable (solar) resource from other resources and thus is inclusive of many of the less-quantifiable 'non-power attributes' of solar resources, such as carbon-free energy, workforce development, and 'energy independence.' … Attributing discrete

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[45] *Petition of Appalachian Power Company, For approval to revise its net metering program pursuant to § 56-594 of the Code of Virginia*, Case No. PUR-2024-00161, Doc. Con. Cen. No. 250440080, Rebuttal Testimony of William K. Castle at 3-4 (Apr. 29, 2025). Staff notes that, at the time of this filing, Case No. PUR-2024-00161 is pending before the Commission. For convenience, an excerpt of Mr. Castle's referenced rebuttal testimony is included as Appendix A to this testimony.

[46] *Petition of Appalachian Power Company, For approval of a Minimum Bill, Tariffs, and Agreements to Implement a Shared Solar Program, Pursuant to § 56-594.4 of the Code of Virginia*, Case No. PUR-2025-00028, Doc. Con. Cen. No. 250410026, Petition at 5-6 (Apr. 1, 2025). Staff notes that, at the time of this filing, Case No. PUR-2025-00028 is pending before the Commission. For convenience, an excerpt of the Company's referenced Petition is included as Appendix A to this testimony.

value to these and similar items, in addition to the REC value, would be double-counting."[47]

It appears to Staff that the Company is of the opinion that social costs and values associated with the energy output from renewable energy generation may already be captured in the value associated with the RECs created by the facilities. As such, the Commission may determine that it is appropriate to consider the Livingston Wind project's economic value to APCo's customers excluding any additional value associated with the SCoC.

Q. IS THE LIVINGSTON WIND FACILITY NEEDED TO SERVE THE COMPANY'S ENERGY NEED?

A. No. Based on a review of the energy positions resulting from the portfolios modeled by the Company in the instant case,[48] it does not appear that the Livingston Wind facility is needed to serve the Company's projected energy need. For example, Staff notes that in 2029, when the Livingston Wind facility is expected to enter service, the Company expects to have an excess of 946 gigawatt-hours ("GWh") relative to its energy need when including the resources envisioned by Portfolio A,[49] also referred to as the Company's

[47] *Petition of Appalachian Power Company, For approval of a Minimum Bill, Tariffs, and Agreements to Implement a Shared Solar Program, Pursuant to § 56-594.4 of the Code of Virginia*, Case No. PUR-2025-00028, Doc. Con. Cen. No. 250410026, Direct testimony of William K. Castle at 6 (Apr. 1, 2025). For convenience, an excerpt of Mr. Castle's referenced testimony is included as Appendix A to this testimony.

[48] Company's Amended Response to Staff Interrogatory No. 1-23, Attachment 7. Due to its voluminous nature and formatting, Staff is not attaching the referenced document to this testimony. Staff has maintained an electronic copy of the attachment and will provide it upon request. Staff witness Boehnlein addresses the energy positions resulting from the Company's modeled portfolios in more detail in his testimony.

[49] *Id.*

VCEA Portfolio Plan,[50] which the Company considers its "proposed portfolio."[51] This excess energy position grows to approximately 6,238 GWh in 2035, and to approximately 6,995 GWh in 2044.[52]

Staff notes that, under the Company's going-in energy position, absent any resource additions and assuming the retirement of the Company's Amos and Mountaineer generation plants, the Livingston Wind facility would be needed to serve the Company's energy need. However, the Company would still have a significant energy deficit from 2025 through the end of the period.[53] It is Staff's opinion that it is unlikely that no additional resources will be constructed, acquired, or contracted for in the future or that no modifications may occur to allow the Company's Amos and Mountaineer generating facilities to continue operation, as envisioned by the Company's VCEA Portfolio Plan. Additionally, to the extent that the Company requires additional energy, it may be able to purchase it through the PJM energy market.

Q. IS THE LIVINGSTON WIND FACILITY NEEDED TO MEET THE COMPANY'S PROJECTED CAPACITY NEED?

A. Considering the resource additions contained in the Company's VCEA Portfolio Plan, the Company would have an excess of approximately 768 MW of excess capacity in 2029, the

[50] 2025 RPS Plan at 54. *See also id.* at 42-43.

[51] *Id.* at 6. *See also* Company's Response to Staff Interrogatory No. 1-33 (stating that Portfolio A is the "preferred plan").

[52] Company's Amended Response to Staff Interrogatory No. 1-23, Attachment 7. Due to its voluminous nature and formatting, Staff is not attaching the referenced document to this testimony. Staff has maintained an electronic copy of the attachment and will provide it upon request.

[53] Company's Response to Staff Interrogatory No. 2-99, Attachment 3. Due to its voluminous nature and formatting, Staff is not attaching the referenced document to this testimony. Staff has maintained an electronic copy of the attachment and will provide it upon request.

year the Livingston Wind Facility is expected to come online.[54] This excess capacity position grows to approximately 1,110 MW in 2035 and decreases to approximately 188 MW in 2044.[55]

Staff notes that, under the Company's going-in capacity position, absent any resource additions and assuming the retirement of the Company's Amos and Mountaineer generation plants, the Livingston Wind facility would be needed to serve the Company's capacity need. However, the Company would still have a capacity deficit of **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** in 2029, when the facility would come online that would decrease to approximately **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** in 2035 and to a total capacity deficit of **[BEGIN CONFIDENTIAL]** [redacted] **[END CONFIDENTIAL]** in 2044.[56] It is Staff's opinion that it is unlikely that no additional resources will be constructed, acquired, or contracted for in the future or that no modifications may occur to allow the Company's Amos and Mountaineer generating facilities to continue operation, as envisioned by the Company's VCEA Portfolio Plan. Additionally, to the extent that the Company were to require additional capacity to meet its load obligation, it may be able to enter into bilateral contracts with resources within the PJM region to meet its load obligation. Further, should an additional capacity resource be needed to replace the

[54] Company's Amended Response to Staff Interrogatory No. 1-23, Attachment 8. Due to its voluminous nature and formatting, Staff is not attaching the referenced document to this testimony. Staff has maintained an electronic copy of the referenced attachment and will provide it upon request. Staff witness Boehnlein addresses the capacity positions resulting from the modeled portfolios in his direct testimony.

[55] *Id.*

[56] Company's Response to Staff Interrogatory No. 2-99, CONFIDENTIAL Attachment 1. Due to its voluminous nature and formatting, Staff is not attaching the referenced document to this testimony. Staff has maintained an electronic copy of the attachment and will provide it upon request.

baseload generation that Amos and Mountaineer currently provide, it is unlikely the model would economically select the Livingston Wind Facility as a replacement resource.

Q. IS THE LIVINGSTON WIND FACILITY NEEDED TO MEET THE COMPANY'S PROJECTED REC OBLIGATION?

A. No. Considering the resources envisioned by the Company's VCEA Portfolio Plan, the Company would have sufficient or excess RECs through 2044. Staff notes that, to the extent RECs from the Livingston Wind facility were not available for use for RPS Program compliance, the Company could purchase RECs from the PJM markets to meet its RPS Program obligations, as discussed earlier in this testimony.

Q. WHAT IS THE LIFETIME REVENUE REQUIREMENT OF THE LIVINGSTON WIND FACILITY?

A. The Company's response to Staff Interrogatory No. 2-82 stated that the annual revenue requirements for the Livingston Wind facility were provided in Schedule 2 of Company witness Schwarz's direct testimony.[57] Staff notes that the Company's response to Staff Interrogatory No. 6-157, Attachment 1, corrected an error in the Company's economic analysis of the Livingston Wind facility, resulting in slight changes to the revenue requirement;[58] as such Staff's analysis focused on the corrected information provided in the Company's response to Staff Interrogatory No. 6-157. Summing the annual revenue requirements from the Company's response to Staff Interrogatory No. 6-157 produces a

[57] Company's Response to Staff Interrogatory No. 2-82. *See also* Direct Testimony of Company witness Rebecca A. Schwarz ("Schwarz Direct") at Schedule 2.

[58] Company's Response to Staff Interrogatory No. 6-157, Attachment 1. Due to its voluminous nature and formatting, Staff is not attaching the referenced document to this testimony. Staff has maintained an electronic copy of the attachment and will provide it upon request.

total Company (*i.e.*, for both APCo's Virginia and West Virginia service territories) lifetime revenue requirement over 30 years of $1,889,539,282, for which APCo's customers will be responsible.[59]

Q. DID THE COMPANY PROVIDE AN ANTICIPATED ANNUAL OR CUMULATIVE BILL IMPACT TO ITS CUSTOMERS FOR THE LIVINGSTON WIND FACILITY?

A. No. The Company's response to Staff Interrogatory No. 2-82 stated, in part:

> Schedule 4, Typical Bills, is exclusively the proposed rates for the approved in-service facilities throughout the Rate Year. The Company does not calculate rates based off the proposed facilities we are seeking prudency on, therefore we are unable to provide a typical bill impact on these facilities. However, the above mentioned Schedules 1, 2, and 3 all include a year 1 rate impact analysis.[60]

Company witness Schwarz's Schedule 2 shows a 0.72% increase to Annual Virginia Retail Revenues resulting from Livingston Wind if the West Virginia Public Service Commission also approves the project; if the West Virginia Public Service Commission does not approve the project, Annual Virginia Retail Revenues will increase by approximately 1.36%.[61]

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[59] Staff notes that, given the uncertainty regarding the future status of federal tax incentives for the construction of renewable generation, including wind generation, it is possible that, to the extent the Livingston Wind facility does not receive the full tax incentives assumed in the Company's analysis, the total Company revenue requirement for the facility may be higher than what is shown here. Staff witness Welsh discusses the revenue requirement for the Livingston Wind facility in more detail in his testimony.

[60] Company's Response to Staff Interrogatory No. 2-82.

[61] Schwarz Direct at Schedule 2.

Q. PREVIOUSLY, YOU MENTIONED THAT THE COMPANY MAY BE ABLE TO PURCHASE RECS FOR RPS COMPLIANCE AS AN ALTERNATIVE TO USING RECS CREATED BY LIVINGSTON WIND. WHAT WOULD BE THE COST FOR THIS ALTERNATIVE?

A. The cost of purchasing the same quantity of RECs created by the Livingston Wind project using the Company's design engineering estimate capacity factor, is approximately $823,389,462 over the 30-year life of the facility.[62] This is more than $1 billion less expensive than the revenue requirement of the Livingston Wind facility over the same period. On an NPV basis, the cost of purchasing RECs to replace those projected to be created by Livingston Wind using the design engineering estimate capacity factor is approximately $328,567,022.[63]

As mentioned previously, and discussed in more detail in Staff witness Little's testimony, the historical three-year average capacity factor for wind generation utilized in the Company's modeling was lower than the design engineering estimate capacity factor; specifically, it was 28.7%.[64] Utilizing the projected annual energy output of, and RECs created by, the Livingston Wind facility using this capacity factor, Staff calculates the total cost of purchasing the RECs created by the facility to be approximately $711,943,526.[65] On an NPV basis, the cost of purchasing the same quantity of RECs expected to be

[62] *See* Appendix B for the calculation of this value, which uses the Company's REC price forecast used in its modeling as the value of RECs.

[63] *Id.*

[64] 2025 RPS Plan at 32.

[65] *See* Appendix B for the calculation of this value.

produced by the Livingston Wind facility using the three-year historical average capacity factor for wind is approximately $284,095,406.[66]

Q. WHAT WOULD HAPPEN IF THE COMPANY WERE UNABLE TO PROCURE THE QUANTITIES OF RECS PROJECTED TO BE PRODUCED BY THE LIVINGSTON WIND FACILITY?

A. In the event that the Company was unable to procure the full quantity of RECs that are projected to be produced by the Livingston Wind facility and the failure to do so meant the Company did not have a sufficient quantity of RECs to comply with the REC retirement requirements of the RPS Program in a given year, the Company would be required to pay a deficiency payment for each MWh shortfall in that year.[67] For illustrative purposes, if the Company were unable to procure the full quantity of RECs projected to be created by the Livingston Wind facility using the design engineering estimate capacity factor for each year of the 30-year life of the facility, and the inability to do so resulted in a shortfall equal to this output, the total cost of the deficiency payment for RECs would be approximately $1,299,217,318; on an NPV basis, the cost of the deficiency payment for the full projected quantity of RECs cost would be approximately $493,762,496.[68] This represents, in Staff's opinion, an absolute worst-case scenario and assumes that the Company was unable to procure RECs or construct, acquire, or contract for generating facilities that create RECs to offset any lack of RECs expected from the Livingston Wind facility using the design

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[66] *Id.*

[67] *See* Code § 56-585.5 D 5.

[68] *See* Appendix B for the calculation of these values.

engineering estimate capacity factor. Staff does not believe this is representative of future conditions, but rather offers this datapoint to fully develop the record.

Using the historical three-year average capacity factor for wind resources utilized in the Company's modeling, the total cost of deficiency payments for RECs projected to be created by Livingston Wind would be approximately $1,123,367,982; on an NPV basis, this cost would be approximately $426,931,639.[69] Again, Staff does not intend this analysis to be representative of the expected future scenario, but simply offers this datapoint to illustrate a possible outcome if the Company were unable to procure *any* RECs to replace the RECs from Livingston Wind and was also, as a result of a REC deficiency for the full quantity of RECs, required to pay the statutorily defined deficiency payment.

Q. DOES STAFF HAVE A POSITION REGARDING WHETHER THE COMMISSION SHOULD APPROVE THE LIVINGSTON WIND FACILITY?

A. Ultimately, whether the proposed Livingston Wind facility, and all projects proposed in the instant case, is in the public interest is a question for the Commission's determination. After its review, and based on the proposed project's economic costs (including the negative NPV results of the project when the SCoC benefits are excluded), the fact that the direct and indirect benefits of the project (*e.g.*, job creation, increased tax revenues, etc.) accrue outside of the Commonwealth, the high likelihood that the direct benefits associated with avoided SCoC will occur outside of the Commonwealth, the apparent lack of an immediate need for the energy and capacity of the project (according to the Company's own forecasts), and the ability of the Company to avail itself of RECs from the PJM

[69] *Id.*

markets for compliance with the mandatory RPS Program REC retirement requirements, mean that Staff cannot support the approval of the proposed Livingston Wind facility.

Wythe BESS Facility

Q. WHAT IS THE NPV OF THE PROPOSED WYTHE BESS FACILITY?

A. As addressed more thoroughly by Staff witness Little, the proposed Wythe BESS facility has an NPV cost of approximately -$94,468,546, indicating that the costs of the facility exceed the benefits.

Q. IS THE PROPOSED WYTHE BESS FACILITY NECESSARY TO MEET THE COMPANY'S ENERGY NEED?

A. Similar to the analysis of the Livingston Wind facility above, on an individual basis, it does not appear that the proposed Wythe BESS facility is necessary to serve the Company's energy needs under the VCEA Portfolio Plan proposed by the Company. The proposed Wythe BESS would, however, serve some of the Company's need for energy in the going-in scenario absent the addition of any resources in the future or future modifications to existing generation facilities to allow for their continued operation.

Q. IS THE PROPOSED WYTHE BESS FACILITY NECESSARY TO MEET THE COMPANY'S CAPACITY NEED?

A. While Staff recognizes that the proposed Wythe BESS would provide capacity value to the Company's portfolio of generation resources, under the VCEA Portfolio Plan, it does not appear that the Wythe BESS facility is necessary to serve the Company's capacity need.[70]

[70] As discussed above, the VCEA Portfolio Plan adds resources that result in the Company having some excess capacity relative to the Company's forecast of its need for capacity.

Under a scenario where no future resource additions occur and no future modifications to existing generating plants were to occur, and under APCo's going-in capacity position, the Wythe BESS would serve some of the Company's capacity need. Staff recognizes that this facility was proposed, at least in part, to satisfy the requirements of Code § 56-585.5 E 1,[71] which requires APCo to petition the Commission for a minimum of 400 MW of nameplate energy storage resources by December 31, 2035, and 20 VAC 5-335-30 of the Commission's Regulations Governing the Deployment of Energy Storage, 20 VAC 5-335-10 *et seq.*, which establishes incremental dates by which the Company must petition the Commission for approval of incremental quantities of energy storage resources in the interim periods.[72]

Q. DOES STAFF HAVE A POSITION REGARDING WHETHER THE COMMISSION SHOULD APPROVE THE WYTHE BESS FACILITY?

A. Based on Staff's review of the economic costs of the proposed Wythe BESS facility, including its negative NPV results and the apparent lack of an immediate need for the capacity value of the project, Staff cannot support the approval of the proposed Wythe BESS facility.

Collier Solar PPA

Q. WHAT IS THE NPV OF THE PROPOSED COLLIER SOLAR PPA?

[71] Petition at 13-14.

[72] Staff witness Little addresses these requirements and the Company's compliance therewith in more detail in his testimony.

A. As addressed more fully in Staff witness Little's testimony, the NPV of the proposed Collier Solar PPA, excluding the value of avoided SCoC, is approximately $13,847,129, using the design engineering estimate capacity factor. Using the historical three-year average capacity factor for solar resources, the NPV of the proposed Solar PPA, excluding the value of avoided SCoC, is approximately $11,144,302. Under both sets of analyses, the Collier Solar PPA appears to be in the economic interest of APCo's customers.

Q. DOES STAFF HAVE A POSITION REGARDING WHETHER THE COMMISSION SHOULD APPROVE THE COLLIER SOLAR PPA?

A. Based on Staff's review of the economic costs of the proposed Collier Solar PPA, it appears to be in the economic interest of APCo's customers to approve the proposed facility. As such, Staff recommends that the Commission approve the Collier Solar PPA.

Recent Legislative Actions that may be Relevant for the Commission's Consideration

Q. ARE THERE OTHER RECENT EVENTS REGARDING APCO THAT STAFF WISHES TO HIGHLIGHT AS POTENTIALLY RELEVANT TO THE COMMISSION'S CONSIDERATION OF THE PROPOSED RESOURCES?

A. Yes. During its 2025 Regular Session, the Virginia General Assembly passed Chapter 497 of the Acts of Assembly, which, among other things, amends Code § 56-585.8 related to the financing of certain securitized asset costs by a Phase I Utility,[73] amends Code § 56-596.5 to prohibit increases from November through February by a Phase I Utility, and contained Enactment Clause 3, which prohibits a Phase I Utility from charging a residential customer interest or late fees between July 1, 2025, and December 31, 2025, or charge a

[73] Under Code § 56-585.1, APCo is a Phase I Utility.

residential customer any reconnection fees between July 1, 2025, and March 1, 2026. The Commission may wish to consider recent legislative actions taken by the General Assembly, especially as it relates to charges APCo's customers are responsible for, in weighing the proposed resources in the instant case.

Conclusions and Recommendations

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING THE DISTRIBUTION OF THE COMPANY'S ANNUAL PSA, PPA, AND REC RFPS.

A. Staff recommends that the Company endeavor to review the distribution of its annual RFPs to identify and pursue ways to expand the distribution. This recommendation is intended to maximize the responses received and increase the opportunities for economic projects to be identified and proposed in future proceedings.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING THE SITING REQUIREMENTS FOR DEVELOPMENT STAGE PROJECTS CONTAINED WITHIN THE PSA RFP?

A. Staff recommends that, as the Company continues to gain experience with development stage projects, it should review and consider revisions to the requirement that development stage projects be located in West Virginia or Virginia. Options to address Staff's recommendation could include striking the requirement for development stage projects or refining the requirement to be a statement of preference that will weigh in favor of one project over another but not be mandatory.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING BOTH THE PPA AND PSA RFPS RELATED TO THE TIMING OF CONTRACT EXECUTIONS.

A. As discussed above, the delay of up to approximately six months between final project selection and contract execution is concerning to Staff. Specifically, Staff is concerned that this potentially long timeframe may cause bidders to simultaneously offer their projects into multiple solicitations from multiple utilities or other entities and accept a contract from with whichever utility or other entity responds first, which may not be APCo, potentially to the Company's loss. Staff recommends that the Company thoroughly review the timelines of its RFP and consider options – including issuing the RFPs later in the year while maintaining the contract execution date, moving the contract execution date forward in time, or a combination of these options – to reduce the period between final project selection and contract execution.

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING PROJECTS THAT HAVE PREVIOUSLY RECEIVED COMMISSION APPROVAL BUT TERMINATED PRIOR TO COMPLETION.

A. Staff identified nine previously approved projects that terminated prior to completion. Staff recommends that APCo review its RFP process and documentation to determine whether the inclusion of additional requirements, non-price weighting of bids, or financial penalties for termination may be appropriate. As illustrative examples of the types of modifications the Company may wish to consider, Staff offers the following:

- The aforementioned modification to the RFP schedule, reducing the amount of time between final project selection and execution of a contract with the projects;

- Requiring projects to have achieved more project milestones (*e.g.*, obtaining necessary local or state permits, having a signed interconnection service agreement with PJM, etc.) prior to submitting proposals to an RFP;

- Include a weighting factor of whether the bidder has previously submitted a proposal in prior RFPs that did not reach completion as part of the non-price scoring in the evaluation of the proposal(s); or

- Requiring a surety bond or other financial deposit for submission of a response to an RFP that the bidder would forfeit if a project were terminated after specific milestones are met (*e.g.*, after local permitting is achieved but before PJM interconnection service agreement is obtained, after Commission approval is obtained, etc.).

Q. WHAT ARE STAFF'S CONCLUSIONS AND RECOMMENDATIONS REGARDING THE PROPOSED LIVINGSTON WIND FACILITY?

A. Based on the negative NPVs of the proposed Livingston Wind facility (-$40,878,281 NPV utilizing the design engineering estimate capacity factor and excluding SCoC benefits; -$140,294,567 NPV utilizing the three-year historical average capacity factor and excluding SCoC benefits), the apparent lack of immediate need of the Company for energy and capacity if it pursues the VCEA Portfolio Plan (as APCo proposes to do),[74] and recognition of the realization of economic and avoided SCoC benefits outside of the Commonwealth, Staff does not support the Commission's approval of the proposed Livingston Wind facility.

Q. PLEASE SUMMARIZE STAFF'S CONCLUSIONS AND RECOMMENDATIONS REGARDING THE PROPOSED WYTHE BESS FACILITY.

[74] 2025 RPS Plan at 6. *See also* Company Response to Staff Interrogatory no. 1-33 (stating that Portfolio A is the "preferred plan").

A. Based on the negative NPV of the proposed Wythe BESS facility (-$94,468,546 NPV) and the apparent lack of immediate need for capacity to meet the Company's customers' capacity needs, Staff does not support the Commission's approval of the proposed Wythe BESS facility.

Q. PLEASE SUMMARIZE STAFF'S CONCLUSIONS AND RECOMMENDATIONS REGARDING THE PROPOSED COLLIER SOLAR PPA.

A. Based on the positive NPV of the proposed Collier Solar PPA ($13,847,129 NPV utilizing the design engineering estimate capacity factor and excluding the SCoC benefits; $11,144,302 utilizing the three-year historical average capacity factor and excluding the SCoC benefits), it appears that the Collier Solar PPA is in APCo's customers' economic interest. Staff recommends the Commission approve the Collier Solar PPA.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.

Attachment No. DJD-1

PUBLIC

250730003

COMMONWEALTH OF VIRGINIA
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Staff Set 1
To Appalachian Power Company

Interrogatory Staff 1-3:

Please refer to the RPS Plan at 10, Table 5. Provide a narrative explanation of the reason(s) for withdrawal of each resource identified as "withdrawn" from the Company's RFP as shown therein.

Response Staff 1-3:

Mainspring BESS was withdrawn due to local permitting issues.
Apollo and Sunrise solar PPAs were withdrawn by the developer due to site control issues.
Cicely and Hyssop solar PPAs were withdrawn by the developer due to elevated levels of market uncertainty, the ever-changing tariff landscape, and risk of repeal of the federal tax credits.
Judge Springs, Samson, Helios, Willow, Gilford, and Hera solar PPAs were withdrawn because the developer decided to sell these projects as part of a development portfolio.

The foregoing response is made by Ismael Martinez, Resource Planning Lead, and by Seth L. Miller, Dir Regulated Infrstr Dev, on behalf of Appalachian Power Company.

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Staff Set 1
To Appalachian Power Company

Interrogatory Staff 1-20:

Please provide a list of all resources, whether Company-owned or contracted for, that the Company has previously sought and received Commission approval to construct and/or operate (through a request for CPCN, a prudence determination, or other approval request). For each resource, please provide the following information: (a): Commission case number(s) in which the resource was petitioned for, including approval(s) requested; (b): The resource type (solar, wind, storage, etc.); (c): Whether the resource is owned by the Company or contracted through a PPA; (d): The nameplate MW rating of the facility; (e): The state and county that the resource was proposed to be located in; (f): The target in-service date for the resource at the time of proposal; (g): Whether the target in-service date has changed and, if so, the new target in-service date; (h): The developer and, if applicable, Engineering, Procurement, and Construction ("EPC") contractor of the resource; (i): The cost of the resource at the time of proposal; (j): Interconnection costs associated with the resource at the time of proposal; (k): Whether costs associated with the resource (including materials, construction costs, interconnection costs, etc.) have changed, including a quantification of the change(s) and a narrative explanation thereof; (l): The total costs associated with the resource approved by the Commission; and (m): The current status of the resource (e.g., completed, under construction, terminated, etc.). For each resource that has been terminated or is otherwise no longer being constructed, contracted, purchased, or pursued, please provide a narrative explanation of why the Company has abandoned the resource.

Response Staff 1-20:

The Company objects to this request on the grounds that it is overly burdensome, requests information that is already in the possession of the requester and is not reasonably calculated to lead to the discovery of admissible evidence.

Supplemental Response Staff 1-20:

This response contains confidential information that is provided pursuant to the Hearing Examiner's June 10, 2025 Protective Ruling Including Additional Protective Treatment for Contracts & Prices Information.

See Staff 1-20 Confidential Attachment 1.

The foregoing response is made by John A. Stevens, Regulatory Consultant Staff, on behalf of Appalachian Power Company.

Staff Interrogatory No. 1-20
CONFIDENTIAL Attachment 1 has been redacted in its entirety.

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Staff Set 1
To Appalachian Power Company

Interrogatory Staff 1-23:

Please refer to the RPS Plan at Appendix B, specifically Tables 29-35. Provide the following information: (a): Did APCo model the Company's Capacity Position, Energy Position, and REC Position to include all resource additions associated with all portfolios? If so, provide tables displaying these results. If not, provide a narrative explanation of why not. (b): For each portfolio (Portfolio A through Portfolio 2S) and the Virginia Clean Economy Act ("VCEA") Plan portfolios, please provide data underlying the figures associated with the Company's Capacity, Energy, and REC Positions in an executable Microsoft Excel format with all underlying formulae intact. Please provide this data inclusive of all resource additions and retirements associated with each respective portfolio.

Response Staff 1-23:

Original Response:

The Company objects to this request on the grounds of vagueness.

Amended Response:

Yes. The Company included all resources in all portfolios in its modeling of its Capacity Position, Energy Position, and REC Position. Tables displaying these results are attached, as follows:

- REC Position:
  - See Staff 1-23 Attachment 1- Reference
  - See Staff 1-23 Attachment 2- Low REC
  - See Staff 1-23 Attachment 3- No Capacity
  - See Staff 1-23 Attachment 4- No Gas
  - See Staff 1-23 Attachment 5- High Load
  - See Staff 1-23 Attachment 6- High Load No Gas
- Energy Position:
  - See Staff 1-23 Attachment 7- Energy
- Capacity Position:
  - See Staff 1-23 Attachment 8-Capacity

The foregoing response is made by Ismael Martinez, Resource Planning Lead, on behalf of Appalachian Power Company.

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Staff Set 1
To Appalachian Power Company

Interrogatory Staff 1-33:

Please refer to the RPS Plan at 42-54, Section 6.3, "Portfolio Analysis and Economic Analysis Summary." Identify which portfolio discussed therein is the Company's proposed, preferred, or otherwise intended path forward for compliance with the requirements of the VCEA and confirm whether it is a least-cost portfolio, as required by the Commission in Case No. PUR-2020-00135. Please also identify any other portfolios that meet the requirements of the VCEA as well.

Response Staff 1-33:

Please see Section 7 of the RPS Plan at 54. The Company identified Portfolio A to be its preferred plan and to serve as its intended path forward for compliance with the requirements of the VCEA, otherwise known as the Company's VCEA Portfolio Plan.
As discussed in Section 7 of the RPS Plan at 54, all the modeled portfolios were developed to comply with the VCEA.

The foregoing response is made by Ismael Martinez, Resource Planning Lead, on behalf of Appalachian Power Company.

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Staff Set 2
To Appalachian Power Company

Interrogatory Staff 2-82:

Please refer to Schwarz Direct at Schedule 4-6, specifically at the estimated cost of service for each proposed unit. Please also refer to the direct testimony of Jaclyn N. Cost ("Cost Direct") at Schedule 4, specifically at the presentation of typical bills. For each facility proposed in the instant case, provide the projected annual revenue requirement and associated typical bill impact on an individual basis over the life of the facility.

Response Staff 2-82:

The Total Company projected annual revenue requirement for Collier can be found in (RAS) Schedule 1 – HCE Collier Solar PPA Economic Analysis under the column labeled "Total Company COS," as well as (RAS) Schedule 4 – PPA Cost of Service.

The Total Company projected annual revenue requirement for Livingston Wind can be found in (RAS) Schedule 2 – Livingston Wind PSA Economic Analysis under the column labeled "Total Company COS," as well as (RAS) Schedule 5 – Livingston Wind Cost of Service on page 7 of 11.

The Total Company projected annual revenue requirement for Wythe BESS can be found in (RAS) Schedule 3 – Wythe BESS PSA Economic Analysis under the column labeled "Total Company COS," as well as (RAS) Schedule 6 – Wythe Bess PSA Cost of Service on page 6 of 9.

Schedule 4, Typical Bills, is exclusively the proposed rates for the approved in-service facilities throughout the Rate Year. The Company does not calculate rates based off the proposed facilities we are seeking prudency on, therefore we are unable to provide a typical bill impact on these facilities. However, the above-mentioned Schedule 1, 2 and 3 all include a year 1 rate impact analysis.

The foregoing response is made by Rebecca A. Schwarz, Dir Reg Pricing & Analysis, and Jaclyn N. Cost, Regulatory Consultant Staff, on behalf of Appalachian Power Company.

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Staff Set 2
To Appalachian Power Company

Interrogatory Staff 2-83:

Please refer to the direct testimony of Company witness Miller ("Miller Direct") at Schedules 2, 3, and 4. Please provide a narrative explanation of how the Company distributes its Requests for Proposals ("RFP") for its purchase sales agreement ("PSA"), power purchase agreement ("PPA"), and Virginia RPS-eligible RECs. Please also identify the entities that the Company specifically notifies or performs outreach to regarding the RFPs. Identify whether each entity has experience developing projects in Virginia or West Virginia.

Response Staff 2-83:

The Company objects to this Request as it is not narrowly tailored or likely to lead to the discovery of admissible evidence. Without waiving this objection, the Company states as follows.

The Company posts Schedules 2, 3, and 4 to its public website at:

https://www.appalachianpower.com/business/b2b/energy-rfps/2024-RFPs

The Company also keeps a distribution list of potential bidders. When the Company issued the 2024 RFP, the potential bidders on the distribution list were notified via email that the Company had issued the 2024 RFP and included the aforementioned link to the Company's public RFP website.

The foregoing response is made by Seth L. Miller, Dir Regulated Infrstr Dev, on behalf of Appalachian Power Company.

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Staff Set 2
To Appalachian Power Company

Interrogatory Staff 2-84:

Please refer to Miller Direct at Schedule 2 (the PSA RFP), page 5 (RFP page 3), Section 3.4, which states in part, "APCo is seeking Projects that are 1) in the Development Stage and located in Virginia or West Virginia…." Please also refer to page 6 (RFP page 4), Section 3.7.1 of the same document, labeled "Development Stage Project(s) (VA and WV-sited only)." Please provide a narrative explanation of what steps the Company takes to promote or pursue projects that will be developed in Virginia and/or West Virginia beyond inclusion of the requirement that projects in the development stage be located in Virginia or West Virginia. For example, does the Company actively contact developers to encourage development in these areas? Does the company actively engage with developers with experience or active projects being developed in these areas?

Response Staff 2-84:

Yes. The Company routinely has developer outreach calls/meetings and attends renewable conferences to meet with developers. During those discussions, the developers are made aware of APCo's service territory and the preference to have development in Virginia and West Virginia.

The foregoing response is made by Seth L. Miller, Dir Regulated Infrstr Dev, on behalf of Appalachian Power Company.

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
APPLICATION OF
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Staff Set 2
To Appalachian Power Company

Interrogatory Staff 2-85:

Please refer to the Miller Direct at Schedule 3 (the PPA RFP). Does the Company have any requirement that PPA projects be located in (or will additional consideration be given to projects located in) Virginia or West Virginia, similar to the requirement that development- stage projects submitted under the PSA RFP (Schedule 2 of Miller Direct) be located in Virginia or West Virginia? If so, please identify the location of such requirement or discussion of additional consideration being given these projects. If not, provide a narrative explanation of why not.

Response Staff 2-85:

As specified in the Code of Virginia § 56-585.5, PPA projects used to meet RPS requirements under the VCEA must be located either within the Commonwealth of Virginia or within the PJM Interconnection region.

The foregoing response is made by Seth L. Miller, Dir Regulated Infrstr Dev, on behalf of Appalachian Power Company.

COMMONWEALTH OF VIRGINIA
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Staff Set 2
To Appalachian Power Company

Interrogatory Staff 2-92:

Please provide an update on the status of the County Line Solar PPA, which received a determination of prudence in Case No. PUR-2023-00212.

Response Staff 2-92:

The Developer terminated the PPA in January 2025 due to higher-than-expected interconnection cost estimates.

The foregoing response is made by John A. Stevens, Regulatory Consultant Staff, on behalf of Appalachian Power Company.

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
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Staff Set 2
To Appalachian Power Company

Interrogatory Staff 2-94:

Please refer to Miller Direct at Schedule 2 (the PSA RFP), page 5 (RFP page 3) , specifically the statement, "APCo has a preference for projects located in the Commonwealth of Virginia or the State of West Virginia on Eligible Sites; however, this is not an Eligibility and Threshold Requirement (Section 9.1) for participation in the RFP." Please also refer to page page 6 (RFP page 4), Section 3.7.1 of the same document, titled "Development Stage Project(s) (VA and WV-sited only)." [Emphasis added] Provide the following information:
(a): Please clarify whether the Development Stage Projects are required to be sited in Virginia or West Virginia. If so, please provide a narrative explanation of how this does not represent an Eligibility and Threshold Requirement for the proposed projects' location.
(b): If Development Stage Projects are required to be located in Virginia or West Virginia, please provide a narrative explanation of why the Company requires Development Stage Projects to be located in these states rather than allowing bidders to propose Development Stage Projects across the PJM footprint.
(c): If Development Stage Projects are required to be located in Virginia or West Virginia, please provide a narrative explanation of why the proposed Livingston Wind project was selected as it appears to be in the "development stage" rather than a "completed project" (based on anticipated commercial operations being achieved in 2029) and it is not located in Virginia. Please also clarify whether this project is considered to be in the Development Stage or Completed.
(d): Provide a narrative explanation of why Completed Projects are not required or encouraged to be located in Virginia or West Virginia.

Response Staff 2-94:

(a): Under Section 9.1.2 of the Eligibility and Threshold Requirements in the PSA RFP, Development Stage Projects must be located in Virginia or West Virginia.

(b): Development Stage Projects are a first-time evolution approach for the Company. With the possibility that projects might need further permitting and coordination with local and state officials, the Company made a conscious decision to leverage familiarity with local and state requirements within Virginia and West Virginia for this first of a kind approach.

(c): Livingston Wind project is a Completed Project because the Developer is constructing the project, and the Company is purchasing the project after it is built.

(d): Please see the response to subsection (b) above.

The foregoing response is made by Seth L. Miller, Dir Regulated Infrstr Dev, on behalf of Appalachian Power Company.

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COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
APPLICATION OF
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SCC CASE NO. PUR-2025-00049
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Staff Set 2
To Appalachian Power Company

Interrogatory Staff 2-97:

Please refer to Miller Direct at 7-8 and provide the following information:
(a): For each RFP issued by the Company in 2024, provide a copy of the news release issued to "various publications." Please also identify the publications to whom the Company issued the press release.
(b): Identify the prospective bidders that were notified via e-mail of the 2024 RFPs.

Response Staff 2-97:

This response contains confidential information that is provided pursuant to the Hearing Examiner's June 10, 2025 Protective Ruling Including Additional Protective Treatment for Contracts & Prices Information.

(a) Please see Staff 2-97 Attachments 1 and 2 for the requested information.
In addition, The *APCo 2024 RFPs News Release* issued by the Company is available on the Company's public RFP webpage at:

https://www.appalachianpower.com/business/b2b/energy-rfps/2024-RFPs.

(b) Please see Staff 2-97 Confidential Attachment 3 for the requested information.

The HSPI *APCo 2024 RFP Distribution List* attachment includes the list of prospective bidders that were notified via email of the 2024 RFPs. The *2024 RFP Distribution Email Wording* attachment is the email that was sent the prospective bidders, notifying them of the 2024 RFPs.

The foregoing response is made by Seth L. Miller, Dir Regulated Infrstr Dev, on behalf of Appalachian Power Company.

Subject: Appalachian Power Company - 2024 PSA, PPA and REC RFPs

Good afternoon –

Appalachian Power Company (APCo) has issued three Request for Proposals (RFPs) for wind, solar, battery energy storage systems and renewable energy certificates.

The first RFP requests bids for up to 800 megawatts (MW) of wind and/or solar resources, as well as co-located and standalone battery energy storage systems. The company seeks to acquire completed or development stage projects through one or more purchase and sale agreements (PSAs) with a preference for projects located in 1) Virginia or 2) West Virginia on Eligible Sites as defined in Senate Bill 583. Facilities must achieve a commercial operation date of no later than Dec. 15, 2028, and be within the PJM region and/or interconnected to the Appalachian Power distribution system. To qualify for consideration, resources that interconnect to PJM must be at least 50 MW in size for wind and solar and 10 MW in size for standalone battery energy storage systems. Resources that interconnect to the Appalachian Power distribution system must be at least 10 MW in size. The company is requesting proposals for both new and operational projects.

The second RFP requests bids for up to 300 MW of solar and/or wind resources via one or more long-term power purchase agreements (PPAs) for the energy, capacity, ancillary services, and environmental attributes including renewable energy certificates (RECs) from facilities located within the PJM region and/or interconnected to the Appalachian Power distribution system. To qualify for consideration, resources must be at least 50 MW in size for wind and 5 MW in size for solar and be operational by Dec. 31, 2028.

The third RFP centers on renewable energy certificates (RECs). All RECs purchased must be produced from eligible energy resources as defined in Section 56-585.5 of the Code of Virginia. Bidders may submit proposals for contract terms between 5-and 30-years beginning Jan. 1, 2027; however, alternative terms will also be considered.

Bidders seeking to submit a proposal may access RFP participation criteria, required forms, and other species online at the link below. Proposals must be submitted by Jul. 16, 2024.

www.appalachianpower.com/rfp

To be removed from the Appalachian Power RFP email distribution, please respond "unsubscribe" to this email.

MEDIA CONTACT:
Teresa Hamilton Hall
540-985-2497
tahall@aep.com

APPALACHIAN POWER
An AEP Company
BOUNDLESS ENERGY

FOR IMMEDIATE RELEASE

APPALACHIAN POWER SEEKS PROPOSALS FOR RENEWABLE ENERGY AND BATTERY ENERGY STORAGE RESOURCES

ROANOKE, Va., May 13, 2024 – Appalachian Power is seeking proposals for renewable energy and battery energy storage resources that will help the company meet its future clean energy needs. The three Requests for Proposals (RFPs) were issued today for wind, solar, battery energy storage systems, and renewable energy certificates.

Under the Virginia Clean Economy Act (VCEA), Appalachian Power must meet annual escalating Renewable Energy Portfolio (RPS) requirements enroute to delivering 100 percent carbon-free energy to its Virginia customers by 2050. In addition to complying with the requirements in the VCEA, the company is soliciting bids for West Virginia-sited solar and battery energy storage resources in support of West Virginia Senate Bill 583.

"The advertised RFPs play an important role in helping us meet our clean energy commitments," said Aaron Walker, Appalachian Power president and chief operating officer. "These projects will also support local communities by generating jobs and tax base."

The first RFP requests bids for up to 800 megawatts (MW) of wind and/or solar resources, as well as co-located and standalone battery energy storage systems. The company seeks to acquire completed or development stage projects through one or more purchase and sale agreements (PSAs) with a preference for projects located in Virginia or on eligible sites in West Virginia as defined in Senate Bill 583. Eligible sites in West Virginia are those previously used in electric generation, industrial, manufacturing or mining operations, including, but not limited to, brownfields, closed landfills, hazardous waste sites, former industrial sites, and former mining sites. Facilities must achieve a commercial operation date of no later than Dec. 15, 2028, and be within the PJM region and/or interconnected to the Appalachian Power distribution system. To qualify for consideration, resources that interconnect to PJM must be at least 50 MW in size for wind and solar and 10 MW in size for standalone battery energy storage systems. Resources that interconnect to the Appalachian Power

distribution system must be at least 10 MW in size. The company is requesting proposals for both new and operational projects.

The second RFP requests bids for up to 300 MW of solar and/or wind resources via one or more long-term power purchase agreements (PPAs). With a PPA, the company enters into an agreement for the energy, capacity, ancillary services, and environmental attributes including renewable energy certificates (RECs) from facilities located within the PJM region and/or interconnected to the Appalachian Power distribution system. To qualify for consideration, resources must be at least 50 MW in size for wind and 5 MW in size for solar and be operational by Dec. 31, 2028.

The third RFP centers on renewable energy certificates (RECs). A REC is a market-based instrument issued when one megawatt-hour (MWh) of electricity is generated and delivered to the electricity grid from a renewable energy resource. Under the RFP, all RECs purchased must be produced from eligible energy resources as defined in Section 56-585.5 of the Code of Virginia. Bidders may submit proposals for contract terms between 5-and 30-years beginning Jan. 1, 2027; however, alternative terms will also be considered.

Businesses seeking to submit a proposal may access RFP participation criteria, required forms, and other specifics online at www.appalachianpower.com/rfp. Proposals must be submitted by July 16, 2024. Any project selected by Appalachian Power through the RFP process is conditional upon and subject to approval by the required regulatory authorities.

Appalachian Power has 1 million customers in Virginia, West Virginia, and Tennessee (as AEP Appalachian Power). It is part of American Electric Power, which is focused on building a smarter energy infrastructure and delivering new technologies and custom energy solutions. AEP's nearly 17,000 employees operate and maintain the nation's largest electricity transmission system and more than 225,000 miles of distribution lines to efficiently deliver safe, reliable power to nearly 5.6 million customers in 11 states. AEP is also one of the nation's largest electricity producers with approximately 29,000 megawatts of diverse generating capacity, including nearly 6,000 megawatts of renewable energy.

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Staff Interrogatory No. 2-97
CONFIDENTIAL Attachment 3 has been redacted in its entirety.

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
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Staff Set 2
To Appalachian Power Company

Interrogatory Staff 2-99:

Please provide the Company's "going-in" energy, capacity, and REC position assuming no resource additions (whether Company-owned or PPA) other than those previously approved by the Commission and still anticipated to proceed and the Company's existing generation fleet (including any known or planned modifications, retirements, etc., resulting from existing federal, state, or local regulations [e.g., EPA rules]). Please provide this information in both graphical format and in an executable Microsoft Excel format with underlying formulae intact.

Response Staff 2-99:

This response contains confidential information that is provided pursuant to the Hearing Examiner's June 10, 2025 Protective Ruling Including Additional Protective Treatment for Contracts & Prices Information.

- See Staff 2-99 Confidential Attachment 1, worksheet "AP PJM" for the Company's "going-in" capacity.
- See Staff 2-99 Confidential Attachment 2, worksheet "GWh graphic", for the Company's "going-in" REC's.
- See Staff 2-99 Attachment 3 for the "going-in" energy.

The foregoing response is made by Ismael Martinez, Resource Planning Lead, on behalf of Appalachian Power Company.

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COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
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Staff Set 3
To Appalachian Power Company

Interrogatory Staff 3-122:

Please identify and explain the variances between the weighted average costs of capital summarized in the table below: Capital Structure WACC Source 12/31/2024 7.278% Cost Direct Testimony, Page 9 12/31/2024 7.350% Filing Schedule 3, Page 2 12/31/2024 7.395% Filing Schedule 8, Page 1

Response Staff 3-122:

The 7.278% WACC is not correct. The WACC should be 7.35%. Please see VCEA Staff 3-122 Attachment 1 explaining the variances between the 7.278% WACC and the 7.35% WACC. Consistent with the corrected version of Schedule 8, the short-term debt balance should be $70,571,213; the short-term debt rate should be 5.024%; the long-term debt balance should be $5,479,794,375; and the long-term debt rate should be 4.863%.

The 7.395% WACC is also not correct. Please see VCEA Staff 3-122 Attachment 2 for the corrected Schedule 8. There was a formula issue in the original file pulling in the wrong balance and rate for long-term debt. The formula for the cost of short-term debt was also not properly updated. All other amounts are consistent.

The foregoing response is made by John A. Stevens, Regulatory Consultant Staff, on behalf of Appalachian Power Company.

COMMONWEALTH OF VIRGINIA
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Staff Set 6
To Appalachian Power Company

Interrogatory Staff 6-157:

Please refer to the Company's corrected response to Staff Interrogatory No. 1-30 and Company witness Schwarz's Schedule 2. Please provide a narrative explanation of why the values in the column labeled, "Total Company COS" changed between Company witness Schwarz's Schedule 2 and the corrected response to Staff Interrogatory No. 1-30. Please confirm whether the "Total Company COS" values shown in Company witness Schwarz's as-filed Schedule 2 and Schedule 5 are correct. If not, please provide corrected schedules and a narrative explanation for the change in values.

Response Staff 6-157:

This response contains extraordinarily sensitive information that is provided pursuant to the Hearing Examiner's June 10, 2025 Protective Ruling Including Additional Protective Treatment for Contracts & Prices Information.

The COS values in Column G of the as-filed Excel file APCo Exhibit No. __ (RAS) Schedule 2 – Livingston Wind PSA Economic Analysis and Staff 1-30 Attachment 2 are identical. However, the updated informal responses provided in iManage utilize a different WACC, which results in a revised COS.

The Company has prepared an updated Excel file that incorporates a WACC of 7.35% and includes analyses using both the as-filed filed capacity factor of 33.19% and the 28.70% capacity factor requested by Staff. It is important to note that the 28.70% capacity factor does not reflect the expected output of the specific resource and is not a "corrected" value.

Please refer to Staff 6-157 Attachments 1 through 3 for further details:

- Staff 6-157 Attachment 1: Updated Schedule 2 – Livingston Wind PSA Economic Analysis using the as-filed capacity factor and the updated WACC.
- Staff 6-157 EXTRAORDINARILY SENSITIVE Attachment 2: Updated Schedule 5 – Livingston Wind PSA Cost of Service (EXTRAORDINARILY SENSITIVE) reflecting the updated WACC and the as-filed capacity factor.
- Staff 6-157 Attachment 3: Updated response to Staff Interrogatory No. 1-30, incorporating Staff's requested capacity factor and the updated WACC.

The foregoing response is made by Rebecca A. Schwarz, Dir Reg Pricing & Analysis, on behalf of Appalachian Power Company.

Appendix A

APCo Exhibit No. ____
Witness: WKC

REBUTTAL TESTIMONY OF
WILLIAM K. CASTLE
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA S.C.C. CASE NO. PUR-2024-00161

APCo Exhibit No. ____
Witness: WKC

SUMMARY OF REBUTTAL TESTIMONY OF WILLIAM K. CASTLE

In my testimony, I

- Explain that net metering customer-generators are permitted to sell their RECs, either to the utility or a third-party, and thus should not also be compensated for reduced RPS requirements created by the reductions to total electric energy.
- Explain that RECs embody the environmental, social, and other non-power attributes of renewable generation. Seeking to compensate generators for those attributes, in addition to the REC, is double-counting.
- Explain that state policy makers legislate the parameters of an RPS to affect the REC price to meet their objectives.
- Calculate a return on investment of 10.5% and 6.0% for a typical net metering customer-generator under the current compensation and the Company's proposal, respectively, for a behind-the-meter system at current costs and rates.
- Offer tariff language to make clear that low-income utility customers are eligible for either Optional Rider N.M.S. or Optional Rider N.M.S. II.

Q. JOINT ADVOCATES WITNESS RÁBAGO CLAIMS THAT THE COMPANY IGNORED BENEFITS RELATED TO AVOIDED CARBON EMISSIONS, THE VALUE OF RECS, AND OTHER EXTERNALITIES. IS THIS ACCURATE?

A. No. The Company consciously excluded any and all non-power benefits to ensure it did not overcompensate customer-generators for the undifferentiated energy they export to the grid. To obtain the RECs from its customer-generators, the Company must engage in a separate transaction, at the customer-generator's election, pursuant to § 56-594 E. To compensate or otherwise attribute value associated with renewable-ness to customer-generators without the REC is double-counting, which is strictly impermissible.

Q. WHAT VALUES ARE INCLUDED IN A REC?

RECs embody the "non-energy attributes" of renewable generation in their entirety. This is not merely the Company's opinion, but it is the basis of establishing tradable REC markets. The United States Environmental Protection Agency (EPA) states:

> Renewable energy certificates (RECs) are tradeable, market-based instruments that represent the legal property rights to the "renewable-ness" (i.e. environmental attributes) of one megawatt-hour (MWh) of renewable electricity generation. A REC is issued for every MWh of electricity generated and delivered to the electric grid from a renewable energy resource. Electricity cannot be considered renewable without a REC to substantiate its renewable-ness.[1]

EPA further states that,

> A renewable energy certificate, or REC is a market-based instrument that represents the property rights to the environmental, social, and other non-power attributes of renewable electricity generation.[2]

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[1] *See* EPA, *Unbundled Renewable Energy Certificates (RECs)*, https://19january2021snapshot.epa.gov/greenpower/unbundled-renewable-energy-certificates-recs_.html. *See also, e.g.*, EPA, *Renewable Energy Certificates (RECs)*, https://www.epa.gov/green-power-markets/renewable-energy-certificates-recs; *Appalachian Power Co. v. Collegiate Clean Energy, LLC*, Case No. PUR-2018-00039, Final Order at 3 (Sept. 21, 2018) (holding that "for purposes of selling renewable energy under Code 56-577(A)(5)...renewable energy – without the renewable attribute – is just energy.").

[2] *See* EPA, *Renewable Energy Certificates (RECs)*, https://www.epa.gov/green-power-markets/renewable-energy-certificates-recs.

In short, any of the various non-power "value of solar" attributes, however characterized and quantified, are embodied in the REC.

Q. HOW IS THE VALUE OF THOSE ENVIRONMENTAL, SOCIAL, AND OTHER NON-POWER ATTRIBUTES DETERMINED?

A. Those values are determined in the tradable REC markets. There are different markets with different eligibility criteria that place different values on RECs.

Q. WHAT IS THE PRIMARY MECHANISM TO ACHIEVE DESIRED RENEWABLE ENERGY POLICY OUTCOMES?

A. It is the REC. By enacting a mandatory renewable portfolio standard (RPS), a state is hoping to achieve greenhouse gas reductions, workforce development, energy independence, reduced reliance on fossil fuels, reduced emissions, and perhaps other associated attributes. A state may also place a cap on the cost of compliance in the form of a deficiency (sometimes, "alternative compliance") payment. That is, in the view of policy makers, the most they are willing to pay for those attributes. The RPS, including specific carve-outs, such as for solar, in-state siting requirements, or size limitations, will drive REC prices with those specific attributes.

Q. DO STATES HAVE DIFFERING VIEWS ON THE VALUE THEY ARE WILLING TO PAY TO ACHIEVE CERTAIN OUTCOMES?

A. Yes. The District of Columbia (District) has an escalating solar requirement that hits 15% in 2041; the 2025 requirement is 4.3%. To qualify, solar facilities must be located in the District. Given the lack of available land, this is a de facto rooftop solar requirement. The District has set the "solar alternative compliance payment" at $460 for

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

COMMONWEALTH OF VIRGINIA, *ex rel.*

STATE CORPORATION COMMISSION

CASE NO. PUR-2025-00028

Ex Parte: In the matter of future minimum bill proceedings of Appalachian Power Company pursuant to Code § 56-594.4.

PETITION OF APPALACHIAN POWER COMPANY PURSUANT TO VIRGINIA CODE § 56-594.4 PROPOSING A MINIMUM BILL, TARIFFS, AND AGREEMENTS TO IMPLEMENT A SHARED SOLAR PROGRAM

Pursuant to § 56-594.4 of the Code of Virginia ("Code"), and the State Corporation Commission of Virginia's ("Commission") Order Establishing Proceeding issued on February 10, 2025 ("February 10th Order"), Appalachian Power Company ("Appalachian" or the "Company") petitions the Commission for approval of its proposed minimum bill for shared solar programs. In support of this Petition, the Company respectfully states as follows.

I. INTRODUCTION AND BACKGROUND

Appalachian is a Virginia public service corporation serving approximately 542,000 customers in Virginia and maintaining an office at 1051 East Cary Street, Suite 1100, Richmond, Virginia 23219. The Company is also an incumbent electric utility as defined in the Virginia Electric Utility Regulation Act. The contact information for Appalachian's attorneys is stated at the end of this Petition.

During its 2024 Session, the Virginia General Assembly enacted Chapters 715, 716, 763, and 765 of the 2024 Virginia Acts of Assembly. These Acts amended the Code of Virginia ("Code") by revising § 56-594.3 and adding a section numbered § 56-594.4, effective July 1, 2024. Code § 56-594.3 is applicable to Virginia Electric and Power Company. Code § 56-594.4 is applicable to the Company and requires the Commission to "establish by regulation a shared

Based on these costs, prior to the consideration of benefits, the gross minimum bill equals $89.25 for a customer who uses 1,000 kWh of grid electricity per month and subscribes for the same amount. The Company quantified the benefits to the electric grid and the Commonwealth as instructed by the February 10th Order (discussed below) and determined them to be $40.59 per 1,000 kWh. The resultant minimum bill the Company proposes is $48.66 per 1,000 kWh.

B. Benefits of Shared Solar to the Grid and Commonwealth

The Company calculated benefits similarly to how the benefits of utility-scale, distribution-interconnected solar facilities have been presented to and approved by the Commission. As described by Witness Coon, the Company includes credits for shifted PJM zonal transmission costs, avoided load-based ancillary service costs, and Renewable Energy Certificates ("RECs") generated by the shared solar facilities, which will be used to comply with the Company's Renewable Energy Portfolio Standard ("RPS") obligations under the Virginia Clean Economy Act.

The REC credit on the minimum bill is that used in the renewable energy premium charge in Optional Rider W.W.S. for the applicable Subscriber's schedule. Mr. Castle explains that REC credit embodies several benefits that are difficult to quantify separately, such as carbon-free energy, workforce development, and "energy independence." Attributing separate values to these items in addition to the REC value would double-count those benefits.

Relatedly, Mr. Castle explains that, based on his understanding, Subscriber Organizations (or solar project developers) would be eligible for federal investment tax credits ("ITCs") that can range between 30% - 40% of the installed cost of the solar facility. These tax credits are funded by taxpayers, including Appalachian's customers. Accordingly, those attributes of solar energy that are distinguishable from conventional energy resources, as well as non-power

attributes that are shared with other types of renewable and conventional energy resources like economic development and "energy independence," are being encouraged by tax policy. Thus, the owners of solar facilities eligible for the ITC are already compensated for those attributes.

For the shifted transmission and ancillary services credit on the minimum bill, the Company proposes to use the avoided cost rates for transmission and ancillary services that were calculated and proposed in the Company's current net metering case, Case No. PUR-2024-00161 ("Net Metering Case"). It should be noted that these rates are subject to change based upon the final ruling or updates made in the Net Metering Case. Witness Coon describes how the Company calculated these credits in the Net Metering Case in her testimony.

With respect to the transmission credit, a customer-generator provides an avoided transmission cost benefit to the Company by generating electricity, which reduces the Company's load during the 12 coincident monthly peaks used to allocate PJM zonal transmission costs under the FERC-approved American Electric Power ("AEP") Transmission Agreement. This also applies to the single highest peak that allocates PJM zonal transmission costs to AEP load-serving entities within the AEP transmission zone. The Company calculated this benefit by comparing the average hourly monthly load profile of a typical residential customer with the average hourly generation profile of an 8.25 kWac/9.89 kWdc solar array using the PVWatts® model. Excess energy produced by the solar array that exceeds the customer-generator's usage is considered excess generation. By averaging the hourly excess generation coinciding with the Company's 2021, 2022, and 2023 Network Service Peak Load ("NSPL"), the Company calculated an average 0.39 kW reduction in its peak load.

Using PJM's transmission-related costs from July 2023 to June 2024, the Company developed an average avoided transmission credit component based on the Annual Network

APCo Exhibit No. ____
Witness: WKC

DIRECT TESTIMONY OF
WILLIAM K. CASTLE
FOR APPALACHIAN POWER COMPANY
IN VIRGINIA S.C.C. CASE NO. PUR-2025-00028

APCo Exhibit No. ____
Witness: WKC

SUMMARY OF DIRECT TESTIMONY OF WILLIAM K. CASTLE

In my testimony, I

- Calculate a minimum bill of $48.66 for a 1,000 kWh residential customer whose subscription amount matches their consumption;
- Describe the elements that constitute the minimum bill; and
- Quantify the benefits to the grid and Commonwealth of a Shared Solar facility.

A. Yes. The Company is proposing to credit subscribers for the value of the renewable energy certificate (REC) that will be retired as part of the Company's RPS compliance obligation.

Q. WHAT BENEFITS DOES THE REC EMBODY?

A. The REC distinguishes the energy produced by a renewable (solar) resource from other resources and thus is inclusive of many of the less-quantifiable "non-power attributes" of solar resources, such as carbon-free energy, workforce development and "energy independence." This is no different than using only RECs to accomplish the RPS requirements and attendant public policy goals in the VCEA. Attributing discrete value to these and similar items, in addition to the REC value, would be double-counting.

Q. ARE THERE OTHER BENEFITS TO THE COMMONWEALTH OF SHARED SOLAR NOT CAPTURED BY THE REC VALUE?

A. There may be, but they are not sufficiently quantifiable, particularly ahead of any actual shared solar projects being constructed in the Company's Virginia service territory, to include as compensation to subscribing customers. These would consist of things such as the value of construction jobs or increases to the tax base of the localities. These same benefits also accrue from the solar facilities that the Company's purchases or contracts from for VCEA compliance purposes, but the Company does not seek to recover such costs from customers.

Q. ARE THERE FEDERAL INCENTIVES AVAILABLE TO THE SUBSCRIBER ORGANIZATIONS?

A. It is my understanding that subscriber organizations (or solar project developers) would be eligible for Investment Tax Credits (ITC) that can range between 30-40% of the

Appendix B

Livingston Wind
From Schwarz Schedule 2

Year	(A) Annual Energy Output (MWh) From 8760 Tab Cross-reference Energy Tab	(B) REC Price ($) From RECs Tab	(C) REC Value ($) (A) * (B)
2029	758,903	$ 39.00	$ 29,597,217
2030	758,903	$ 37.50	$ 28,458,863
2031	758,903	$ 36.18	$ 27,457,149
2032	758,903	$ 35.00	$ 26,557,908
2033	758,903	$ 35.06	$ 26,610,817
2034	758,903	$ 35.13	$ 26,663,726
2035	758,903	$ 35.22	$ 26,725,809
2036	758,903	$ 35.36	$ 26,835,629
2037	758,903	$ 35.41	$ 26,869,070
2038	758,903	$ 35.50	$ 26,940,700
2039	758,903	$ 35.59	$ 27,012,331
2040	758,903	$ 35.69	$ 27,083,962
2041	758,903	$ 35.77	$ 27,146,045
2042	758,903	$ 35.86	$ 27,211,385
2043	758,903	$ 35.94	$ 27,276,725
2044	758,903	$ 36.03	$ 27,342,065
2045	758,903	$ 36.13	$ 27,416,580
2046	758,903	$ 36.18	$ 27,454,770
2047	758,903	$ 36.23	$ 27,492,960
2048	758,903	$ 36.28	$ 27,531,150
2049	758,903	$ 36.33	$ 27,569,340
2050	758,903	$ 36.38	$ 27,607,530
2051	758,903	$ 36.38	$ 27,607,530
2052	758,903	$ 36.38	$ 27,607,530
2053	758,903	$ 36.38	$ 27,607,530
2054	758,903	$ 36.38	$ 27,607,530
2055	758,903	$ 36.38	$ 27,607,530
2056	758,903	$ 36.38	$ 27,607,530
2057	758,903	$ 37.11	$ 28,159,680
2058	758,903	$ 37.85	$ 28,722,874
		Total:	$ 823,389,462
		NPV:	$328,567,022

Correct WACC: 7.35%
As corrected in the corrected
Staff 3-122

NPV matches REC NPV shown in Staff 6-157, Attachment 1

Livingston Wind
Historical Capacity Factor

Capacity Factor:	28.7%
Nameplate (MW)	261
Expected Ann. Energy	656,185

Year	(A) Annual Energy Output (MWh)	(B) REC Price ($) From RECs Tab	(C) REC Value ($) (A) * (B)
2029	656,185	$ 39.00	$ 25,591,227
2030	656,185	$ 37.50	$ 24,606,950
2031	656,185	$ 36.18	$ 23,740,818
2032	656,185	$ 35.00	$ 22,963,290
2033	656,185	$ 35.06	$ 23,009,037
2034	656,185	$ 35.13	$ 23,054,785
2035	656,185	$ 35.22	$ 23,108,465
2036	656,185	$ 35.36	$ 23,203,421
2037	656,185	$ 35.41	$ 23,232,336
2038	656,185	$ 35.50	$ 23,294,271
2039	656,185	$ 35.59	$ 23,356,206
2040	656,185	$ 35.69	$ 23,418,142
2041	656,185	$ 35.77	$ 23,471,822
2042	656,185	$ 35.86	$ 23,528,318
2043	656,185	$ 35.94	$ 23,584,815
2044	656,185	$ 36.03	$ 23,641,311
2045	656,185	$ 36.13	$ 23,705,740
2046	656,185	$ 36.18	$ 23,738,761
2047	656,185	$ 36.23	$ 23,771,782
2048	656,185	$ 36.28	$ 23,804,803
2049	656,185	$ 36.33	$ 23,837,824
2050	656,185	$ 36.38	$ 23,870,845
2051	656,185	$ 36.38	$ 23,870,845
2052	656,185	$ 36.38	$ 23,870,845
2053	656,185	$ 36.38	$ 23,870,845
2054	656,185	$ 36.38	$ 23,870,845
2055	656,185	$ 36.38	$ 23,870,845
2056	656,185	$ 36.38	$ 23,870,845
2057	656,185	$ 37.11	$ 24,348,262
2058	656,185	$ 37.85	$ 24,835,227
		Total:	$ 711,943,526
		NPV:	$284,095,406

Correct WACC:	7.35%
As corrected in the corrected Staff 3-122	

NPV matches REC NPV shown in Staff 6-157, Attachment 3

Livingston Wind
Deficiency Payment, Design CF

Year	(A) Annual Energy Output (MWh) From 8760 Tab Cross-reference Energy Tab	(B) REC Deficiency ($)	(C) REC Value ($) (A) * (B)
2020		$45	$0
2021		$45.45	$0
2022		$45.90	$0
2023		$46.36	$0
2024		$46.83	$0
2025		$47.30	$0
2026		$47.77	$0
2027		$48.25	$0
2028		$48.73	$0
2029	758,903	$49.22	$37,350,047
2030	758,903	$49.71	$37,723,547
2031	758,903	$50.21	$38,100,782
2032	758,903	$50.71	$38,481,790
2033	758,903	$51.21	$38,866,608
2034	758,903	$51.73	$39,255,274
2035	758,903	$52.24	$39,647,827
2036	758,903	$52.77	$40,044,305
2037	758,903	$53.29	$40,444,748
2038	758,903	$53.83	$40,849,196
2039	758,903	$54.36	$41,257,688
2040	758,903	$54.91	$41,670,265
2041	758,903	$55.46	$42,086,967
2042	758,903	$56.01	$42,507,837
2043	758,903	$56.57	$42,932,915
2044	758,903	$57.14	$43,362,245
2045	758,903	$57.71	$43,795,867
2046	758,903	$58.29	$44,233,826
2047	758,903	$58.87	$44,676,164
2048	758,903	$59.46	$45,122,926
2049	758,903	$60.05	$45,574,155
2050	758,903	$60.65	$46,029,896
2051	758,903	$61.26	$46,490,195
2052	758,903	$61.87	$46,955,097
2053	758,903	$62.49	$47,424,648
2054	758,903	$63.12	$47,898,895
2055	758,903	$63.75	$48,377,884
2056	758,903	$64.38	$48,861,662
2057	758,903	$65.03	$49,350,279
2058	758,903	$65.68	$49,843,782
		Total:	$ 1,299,217,318
		NPV:	$493,762,496

Correct WACC: 7.35%
As corrected in the corrected
Staff 3-122

Livingston Wind
Deficiency Payment, Historical CF

Year	(A) Annual Energy Output (MWh)	(B) REC Deficiency ($)	(C) REC Value ($) (A) * (B)
2020		$45.00	$0
2021		$45.45	$0
2022		$45.90	$0
2023		$46.36	$0
2024		$46.83	$0
2025		$47.30	$0
2026		$47.77	$0
2027		$48.25	$0
2028		$48.73	$0
2029	656,185	$49.22	$32,294,710
2030	656,185	$49.71	$32,617,657
2031	656,185	$50.21	$32,943,834
2032	656,185	$50.71	$33,273,272
2033	656,185	$51.21	$33,606,005
2034	656,185	$51.73	$33,942,065
2035	656,185	$52.24	$34,281,485
2036	656,185	$52.77	$34,624,300
2037	656,185	$53.29	$34,970,543
2038	656,185	$53.83	$35,320,249
2039	656,185	$54.36	$35,673,451
2040	656,185	$54.91	$36,030,186
2041	656,185	$55.46	$36,390,487
2042	656,185	$56.01	$36,754,392
2043	656,185	$56.57	$37,121,936
2044	656,185	$57.14	$37,493,156
2045	656,185	$57.71	$37,868,087
2046	656,185	$58.29	$38,246,768
2047	656,185	$58.87	$38,629,236
2048	656,185	$59.46	$39,015,528
2049	656,185	$60.05	$39,405,683
2050	656,185	$60.65	$39,799,740
2051	656,185	$61.26	$40,197,738
2052	656,185	$61.87	$40,599,715
2053	656,185	$62.49	$41,005,712
2054	656,185	$63.12	$41,415,769
2055	656,185	$63.75	$41,829,927
2056	656,185	$64.38	$42,248,226
2057	656,185	$65.03	$42,670,709
2058	656,185	$65.68	$43,097,416
		Total:	$ 1,123,367,982
		NPV:	$426,931,639

Correct WACC: 7.35%
As corrected in the corrected
Staff 3-122