

PART 3

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PART D

Long

Summary of the Testimony of Daniel M. Long

1 My testimony addresses the following topics and makes the following recommendations for
 2 the Commission's consideration:

3 • Staff has reviewed the Company's bill analysis, and Staff presents its own bill analysis
 4 ("Bill Analysis") that incorporates several changes. Staff's Bill Analysis results in a
 5 cumulative bill increase of 48.72% for residential customers by 2035. Small general
 6 service customers are projected to see a 46.28% bill increase, and large power service
 7 customers are projected to see a 76.18% bill increase.

8 • Staff has reviewed the Company's calculations of the long-term revenue requirement,
 9 and Staff presents its own long-term revenue requirement that incorporates energy
 10 offsets. Staff's long-term revenue requirement extends through 2050 and totals
 11 approximately \$3.79 billion.

12 • Staff has reviewed the Company's rate year revenue requirement calculations, and Staff
 13 presents its own revenue requirements utilizing the rate recovery framework as
 14 presented in the testimony of Staff witness Carr. Staff's recommended revenue
 15 requirements based on Staff's proposed rate recovery framework are displayed below:

16 ○ Renewable Energy Certificate ("REC") Rate Adjustment Clause ("RAC") for
 17 resources needed to comply with Code §§ 56-585.5 D&E ("REC-RAC_{D&E}):
 18 \$1,506,059

19 ○ REC-RAC for resources needed to comply with Code § 56-585.5 C (but not
 20 eligible to comply with §§ 56-585.5 D&E) ("REC-RAC_F): \$26,603,086

21 ○ Power Purchase Agreement ("PPA") RAC for resources needed to comply with
 22 Code §§ 56-585.5 D&E ("PPA-RAC_{D&E}): \$216,898

23 ○ Cost of Service ("COS") RAC for resources needed to comply with Code §§
 24 56-585.5 D&E ("COS-RAC_{D&E}): \$182,848

**PREFILED STAFF TESTIMONY
OF
DANIEL M. LONG**

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

MARCH 30, 2022

PUBLIC VERSION

INTRODUCTION

1 **Q. PLEASE STATE YOUR NAME AND THE POSITION YOU HOLD WITH THE**
2 **STATE CORPORATION COMMISSION ("COMMISSION").**

3 **A.** My name is Daniel M. Long. I am a Principal Utility Specialist with the Commission's
4 Division of Utility Accounting and Finance.

5 **Q. PLEASE PROVIDE A SUMMARY OF THE CURRENT PETITION.**

6 **A.** On December 30, 2021, Appalachian Power Company ("APCo" or "Company"), filed with
7 the Commission a petition ("Petition") in which the Company requested, among other
8 things, the following:

- 9 • Approval of its annual plan for the development of new solar, wind, and energy
10 storage resources pursuant to § 56-585.5 D 4 of the Code of Virginia ("Code") to
11 comply with the mandatory renewable energy portfolio standard program ("RPS"
12 or "RPS Program").¹

¹ The Company filed a corrected 2021 RPS Plan ("2021 RPS Plan") on January 7, 2022.

- 1 • Approval of a revenue requirement of \$32,069,614 for the rate year August 2022
- 2 through July 2023 ("Rate Year").
- 3 • Approval of the cost recovery mechanisms to recover the Rate Year revenue
- 4 requirement and future revenue requirements pertaining to RPS Program
- 5 compliance.²

6 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

7 **A.** My testimony will address three topics:

- 8 1. I will discuss the customer bill impact analysis as presented in the Company's 2021
- 9 RPS Plan and Staff's alternative bill analysis ("Bill Analysis").
- 10 2. I will discuss the Company's long-term revenue requirement and Staff's alternative
- 11 long-term revenue requirement that incorporates energy benefits.
- 12 3. I will present Staff's recommended revenue requirements based on the rate recovery
- 13 framework as proposed by Staff witness Carr. In addition, should the Commission
- 14 adopt the Company's proposed rate recovery framework, I will quantify the effect on
- 15 Staff's proposed revenue requirements.

16 **Bill Analysis**

17 **Q. PLEASE DESCRIBE THE BILL ANALYSIS PRESENTED IN THE COMPANY'S**

18 **2021 RPS PLAN.**

² See Petition at 1.

1 A. The Company presents a bill analysis for residential, small general service ("SGS"), and
 2 large power service ("LPS") customers that extends from 2020 through 2035.³ The
 3 Company's bill analysis relies on multiple assumptions and is based on the implementation
 4 of the Virginia Clean Economy Act ("VCEA") under the Company's Portfolio 2.⁴ In
 5 addition, the Company's bill analysis assumes the following monthly usage by customer
 6 class: Residential: 1,000 kilowatt hours ("kWh"); SGS: 5,000 kWh; and LPS: 1 megawatt
 7 ("MW") (with an 80% load factor).

8 The Company's bill analysis results in a cumulative bill increase of 46.72% for
 9 residential customers by 2035. SGS customers are projected to see a 44.38% bill increase,
 10 and LPS customers are projected to see a 73.06% bill increase. Refer to the table below
 11 for the bill increases by customer class from the Company's bill analysis:

Table 1				
Summary of Company bill analysis				
Customer Class	2020 Average Bill	2035 Average Bill Increase	Cumulative % Increase	Avg. Annual % Increase
Residential	\$117.09	\$54.70	46.72%	2.59%
SGS	\$495.99	\$220.14	44.38%	2.48%
LPS	\$37,788	\$27,606	73.06%	3.72%

12 **Q. PLEASE DISCUSS STAFF'S REVIEW OF THE COMPANY'S BILL ANALYSIS.**

13 A. Staff reviewed the calculations and assumptions underlying the Company's bill analysis.
 14 The purpose of Staff's review was to determine whether the projected monthly bills

³ See Table 23 in the 2021 RPS Plan.

⁴ See 2021 RPS Plan at 42. Staff notes that the Company's Portfolio 2 assumes a 2040 retirement date for the Amos units. In response to Staff Interrogatory No. 8-67, the Company stated that its "base case assumption is that the Amos

1 represented a reasonable approximation of the cost to the typical residential, SGS, and LPS
 2 customer based on implementation of the VCEA under the Company's proposed Portfolio
 3 2. Both Staff's and the Company's bill analyses rely on a significant number of projections
 4 and assumptions, and any deviations from the Company's Portfolio 2 could have a
 5 significant impact on Staff's Bill Analysis. Thus, the Bill Analysis exists for informational
 6 purposes only and cannot represent the definitive cost for a typical residential, SGS or LPS
 7 customer.

8 **Q. PLEASE PRESENT THE RESULTS OF STAFF'S BILL ANALYSIS AND**
 9 **DESCRIBE THE DIFFERENCES BETWEEN THE STAFF AND COMPANY**
 10 **ANALYSES.**

11 **A.** A summary of Staff's Bill Analysis is presented in the table below:

Table 2				
Summary of Staff Bill Analysis⁵				
Customer Class	2020 Average Bill	2035 Average Bill Increase	Cumulative% Increase	Avg. Annual % Increase
Residential	\$117.09	\$57.04	48.72%	2.68%
SGS	\$495.99	\$229.55	46.28%	2.57%
LPS	\$37,788	\$28,786	76.18%	3.85%

units will run through 2040 consistent with the [Public Service Commission of West Virginia's] order in Case No. 20-1040-ECN."

⁵ Staff's Bill Analysis presents typical customer bills on a net basis (i.e., net of potential offsets). Staff notes that the energy offsets of \$10.229 billion in Table 3 are incorporated in the Bill Analysis. This is in addition to other offsets reflected in the Bill Analysis, including Renewable Energy Certificate ("REC") sales revenue.

1 Staff's Bill Analysis differs from the Company's calculation in several respects. For
2 example, in calculating the bill impacts, **[BEGIN CONFIDENTIAL]** [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 [REDACTED]
7 [REDACTED]
8 [REDACTED]
9 [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] **[END**
10 **CONFIDENTIAL]**

11 In addition, Staff excludes capacity offsets in its Bill Analysis. Staff does not
12 incorporate capacity offsets due to the significant uncertainty as to whether the Company
13 will be in a position to sell capacity into the market in the foreseeable future.

- 14 **Q. DOES STAFF HAVE ANY RECOMMENDATIONS FOR THE COMPANY'S**
15 **PROSPECTIVE BILL ANALYSES?**
- 16 **A. Yes, refer below for Staff's recommendation regarding the Company's prospective bill**
17 **analyses:**

1 1. In calculating prospective bill analyses, the Company should clearly distinguish
 2 between the following: (i) resources that are, or will be, allocated to both Virginia retail
 3 and West Virginia customers; and (ii) resources whose costs and benefits are forecast
 4 to accrue entirely to Virginia retail customers. In the Company's bill analysis in this
 5 proceeding, [BEGIN CONFIDENTIAL] [REDACTED]
 6 [REDACTED]
 7 [REDACTED] [REDACTED]
 8 [REDACTED]
 9 [REDACTED] [REDACTED]
 10 [REDACTED] [END
 11 CONFIDENTIAL]

12 Long-Term Revenue Requirement

13 **Q. PLEASE DESCRIBE THE LONG-TERM REVENUE REQUIREMENT AS**
 14 **PRESENTED IN THE COMPANY'S 2021 RPS PLAN.⁸**
 15 **A.** The Company presents a long-term revenue requirement in its 2021 RPS Plan that extends
 16 from 2021 through 2050.⁹ This long-term revenue requirement is presented in nominal
 17 dollars on a Virginia retail basis and does not include any offsets (e.g., energy and capacity

⁶ See Company response to Staff Interrogatory No. 1-19.

⁷ See the 2021 RPS Plan at 15.

⁸ Staff uses the "long-term revenue requirement" description, instead of "lifetime revenue requirement," as the Company has identified specific resources that are projected to be in operation beyond 2050. For example, see Table 2 in the Company's 2021 RPS Plan.

⁹ See Table 22 in the 2021 RPS Plan.

1 benefits). Based on this presentation, the Company estimates a total long-term revenue
2 requirement of approximately \$14.019 billion.

3 **Q. PLEASE DESCRIBE STAFF'S CALCULATION OF THE LONG-TERM**
4 **REVENUE REQUIREMENT.**

5 **A.** Similar to the Company, Staff calculates a long-term revenue requirement in nominal
6 dollars on a Virginia retail basis that extends from 2021 through 2050. However, the
7 primary difference between the Staff and Company calculations is Staff incorporates
8 energy benefits (i.e., offsets) in the long-term revenue requirement.¹⁰ In the Company's
9 2021 RPS Plan, the Company acknowledges the issues with excluding offsets from the
10 long-term revenue requirement. The Company states, "[The long-term revenue
11 requirement] is not particularly meaningful and can be misleading as it does not include
12 the value of the energy or capacity generated by these renewable, efficiency and storage
13 resources."¹¹ Thus, Staff maintains that including energy benefits provides a more accurate
14 representation of the costs to be borne by ratepayers. Staff, however, does not incorporate
15 capacity revenue benefits due to the significant uncertainty as to whether the Company will
16 be in a position to sell capacity into the market in the foreseeable future.

17 See below for a reconciliation between the Company and Staff long-term revenue
18 requirements:

¹⁰ In response to Staff Interrogatory 8-65, the Company provided a long-term revenue requirement that incorporated energy offsets. Staff utilized these offsets, with some adjustments, as the basis for the energy offsets in Staff's long-term revenue requirement.

¹¹ See 2021 RPS Plan at 42-43.

Table 3 Reconciliation of Company and Staff Long-Term Revenue Requirements (in 000s)	
Company's Long-Term Revenue Requirement	\$14,018,990
Addition of Energy Offsets	(\$10,228,989)
Miscellaneous	(\$3,625)
Staff's Long-Term Revenue Requirement	\$3,786,377

1 Staff's calculation results in a total long-term revenue requirement of
 2 approximately \$3.786 billion on a Virginia retail basis.

Rate Year Revenue Requirements

4 **Q. PLEASE DESCRIBE THE COMPANY'S PROPOSED RATE YEAR REVENUE**
 5 **REQUIREMENTS.**

6 **A. The Company presents the following Rate Year revenue requirements:**

- 7 • A.5 RPS Rate Adjustment Clause ("RAC") to recover the non-energy, non-
 8 ancillary services, and non-capacity costs for owned facilities, Power Purchase
 9 Agreements ("PPAs"), and REC purchases:¹² \$1,507,459 for the A.5 RPS RAC_{D&E}
 10 and \$26,618,882 for the A.5 RPS RAC_F.
- 11 • A.5 PCAP RAC to recover the costs of capacity purchased through PPAs:¹³
 12 \$3,704,780.
- 13 • A.6 RPS RAC to recover the costs of capacity and energy from Company-owned
 14 facilities:¹⁴ \$238,491.

¹² See Petition at 16.

¹³ *Id.* at 17.

¹⁴ *Id.*

1 Q. PLEASE DESCRIBE THE DIFFERENCES BETWEEN STAFF'S CALCULATION
 2 OF THE REC RAC FOR RESOURCES NEEDED TO COMPLY WITH CODE §§
 3 56-585.5 D&E ("REC-RAC_{D&E}") AND THE COMPANY'S CORRESPONDING
 4 RAC (I.E., THE A.5 RPS RAC_{D&E}).

5 A. There are several differences between Staff's REC-RAC_{D&E} as compared to the Company's
 6 calculation. Please see below for a reconciliation between the Company and Staff revenue
 7 requirements:

Table 4 Reconciliation of the Company A.5 RPS RAC_{D&E} and Staff REC-RAC_{D&E} Revenue Requirements	
Company's Rate Year Revenue Requirement	\$1,507,459
Amherst Revenue Requirement Updates	\$3,085
Leatherwood Megawatt Hours ("MWh")	(\$2,544)
Miscellaneous	(\$1,941)
Staff's Recommended Rate Year Revenue Requirement	\$1,506,059

8 Select changes that Staff incorporates in its revenue requirement are described
 9 below.

10 *Amherst Revenue Requirement Updates*

11 As discussed later in my testimony, Staff's revenue requirement for the Amherst
 12 solar facility differs from the Company's proposed revenue requirement. Staff's resulting
 13 revenue requirement has an impact on the cost of RECs attributable to Amherst and
 14 increases Staff's REC-RAC_{D&E} revenue requirement by \$3,085.

15 *Leatherwood Megawatt Hours*

1 For November through December 2021, Staff calculates the REC costs for the
 2 Leatherwood solar facility using the Company's MWh estimate for these specific months.
 3 This differs from the Company's calculation in which the Company utilizes a generic MWh
 4 estimate for these months. Staff's change reduces the revenue requirement by \$2,544.

5 **Q. PLEASE DESCRIBE THE DIFFERENCE BETWEEN STAFF'S CALCULATION**
 6 **OF THE REC RAC FOR RESOURCES NEEDED TO COMPLY WITH CODE §**
 7 **56-585.5 C (BUT NOT ELIGIBLE TO COMPLY WITH §§ 56-585.5 D&E) ("REC-**
 8 **RAC_F") AND THE COMPANY'S A.5 RPS RAC_F.**

9 **A.** Staff's calculation of the REC-RAC_F differs in one respect from the Company's calculation
 10 of its A.5 RPS RAC_F. Please see below for a reconciliation between the Company and
 11 Staff revenue requirements:

Table 5 Reconciliation of the Company A.5 RPS RAC_F and Staff REC-RAC_F Revenue Requirements	
Company's Rate Year Revenue Requirement	\$26,618,882
Wytheville PPA ("Wytheville") RECs	(\$15,796)
Staff's Recommended Rate Year Revenue Requirement	\$26,603,086

12 *Wytheville RECs*

13 In the Company's A.5 RPS RAC_{D&E} revenue requirement, the Company
 14 incorporates December 2021 REC costs for Wytheville based on an estimate of 1,890
 15 MWhs produced. However, the Company did not incorporate the 1,890 RECs when
 16 calculating the total Virginia RECs produced for 2021. This resulted in an overstatement
 17 of REC market purchases for 2021 in the calculation of the Company's A.5 RPS RAC_F.

1 Staff appropriately incorporates the 1,890 RECs for Wytheville in the calculation of total
 2 2021 Virginia RECs produced, and this lowers Staff's revenue requirement by \$15,796.

3 **Q. PLEASE PROVIDE A RECONCILIATION BETWEEN THE COMPANY'S A.5**
 4 **PCAP RAC AND STAFF'S PPA RAC FOR RESOURCES NEEDED TO COMPLY**
 5 **WITH CODE §§ 56-585.5 D&E ("PPA-RAC_{D&E}").**

6 **A.** Please see below for a reconciliation between the Company A.5 PCAP RAC and Staff
 7 PPA-RAC_{D&E} revenue requirements:

Table 6	
Reconciliation of the Company A.5 PCAP RAC and Staff PPA-RAC_{D&E} Revenue Requirements	
Company's Rate Year Revenue Requirement	\$3,704,780
Inclusion of Energy Costs	\$1,669,888
Calculation for Wytheville and Leatherwood ("Qualifying Facilities")	\$217,589
Removal of Legacy Wind PPAs ¹⁵	(\$2,935,488)
[BEGIN CONFIDENTIAL]	
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[END CONFIDENTIAL]	
Staff's Recommended Rate Year Revenue Requirement	\$216,898

8 A description of select changes that Staff incorporates in its revenue requirement
 9 are included below.

¹⁵ The Legacy Wind PPAs consist of the Bluff Point Wind Farm PPA, Camp Grove Wind Farm PPA, and Fowler Ridge Wind Farm PPA.

1 *Inclusion of Energy Costs*

2 In Staff's PPA-RAC_{D&E}, Staff incorporates energy costs for the Leatherwood,
3 Wytheville, and Depot facilities. This contrasts with the Company's proposal to recover
4 PPA energy costs through the fuel factor. Staff's inclusion of energy costs increases the
5 PPA-RAC_{D&E} revenue requirement by \$1.7 million.

6 *Calculation for Qualifying Facilities*

7 To calculate the energy and capacity costs for the Qualifying Facilities, Staff first
8 subtracts the costs attributable to RECs (recovered under the REC-RAC_{D&E}) from the total
9 revenue requirement. The residual value is then allocated 100% to energy and capacity.
10 Staff utilizes this approach as there is an explicit price for the Qualifying Facilities' RECs.¹⁶
11 Given the explicit REC prices, Staff maintains that this methodology of calculating a
12 residual value for capacity and energy produces a more accurate revenue requirement than
13 utilizing the Company's value stream methodology for the Qualifying Facilities.

14 Staff's calculation of the capacity and energy costs for the Qualifying Facilities
15 increases Staff's revenue requirement by \$218,000.

16 *Removal of Legacy Wind PPAs*

17 Staff removes the Legacy Wind PPAs from the PPA-RAC_{D&E}. As addressed by
18 Staff witness Carr, Staff is proposing that the costs of the Legacy Wind PPAs be recovered
19 through a combination of the REC-RAC_F (RECs), base rates (capacity), and the fuel factor
20 (energy). Staff's removal of the Legacy Wind PPAs lowers Staff's PPA-RAC_{D&E} revenue
21 requirement by \$2.9 million.

22 *Inclusion of [BEGIN CONFIDENTIAL] [REDACTED]*

¹⁶ The Company also used this methodology for the REC costs but used a value stream methodology for capacity and energy costs. This resulted in a mismatch and understated revenue requirement, which Staff's methodology corrects.

1 [REDACTED]
2 [REDACTED]
3 [REDACTED]
4 [REDACTED] [END
5 CONFIDENTIAL]

6 **Q. PLEASE DESCRIBE THE COST OF SERVICE ("COS") RAC FOR RESOURCES**
7 **NEEDED TO COMPLY WITH CODE §§ 56-585.5 D&E ("COS-RAC_{D&E}") AND**
8 **THE CHANGES THAT STAFF INCORPORATES IN ITS CALCULATION OF**
9 **THE REVENUE REQUIREMENT.**

10 **A.** The COS-RAC_{D&E} is designed to recover energy and capacity costs of Company-owned
11 facilities that are both located within Virginia and needed to comply with Code
12 §§ 56-585.5 D and E. In the instant proceeding, the Rate Year revenue requirement will
13 recover costs associated with the Amherst solar facility. This includes a return on rate base,
14 which is calculated using the Company's after-tax cost of capital of 6.817%.¹⁷ Please refer
15 to the reconciliation below between the Company's A.6 RPS RAC and Staff's COS-
16 RAC_{D&E}.

¹⁷ See Direct testimony of Company witness Spaeth at 14-15.

Table 7	
Reconciliation of the Company A.6 RPS RAC and Staff COS-RAC_{D&E} Revenue Requirements	
Company's Rate Year Revenue Requirement	\$238,491
[BEGIN CONFIDENTIAL]	
[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]
[END CONFIDENTIAL]	
Federal Income Tax ("FIT") Expense	<u>\$19,814</u>
Staff's Recommended Rate Year Revenue Requirement	\$182,848

1 A description of select changes that Staff incorporates in its revenue requirement
 2 are included below.

3 Inclusion of **[BEGIN CONFIDENTIAL]** [REDACTED]
 4 [REDACTED]
 5 [REDACTED]
 6 [REDACTED] **[END CONFIDENTIAL]**

7 *Federal Income Tax ("FIT") Expense*

8 As displayed in Table 7, an additional difference between the Company and Staff
 9 revenue requirements for the Amherst solar facility is attributable to FIT expense.

10 **[BEGIN EXTRAORDINARILY SENSITIVE]**
 11 [REDACTED]
 12 [REDACTED]
 13 [REDACTED] **[END**

14 **EXTRAORDINARILY SENSITIVE]** This change results in a \$20,000 increase to
 15 Staff's revenue requirement.

1 Overall, Staff's COS-RAC_{D&E} revenue requirement is approximately \$56,000 lower
2 than the Company's A.6 RPS RAC revenue requirement.

3 **Q. HAS STAFF REVIEWED COSTS UNDERLYING ACTUAL COST TRUE-UP**
4 **FACTORS FOR THE RACS IN THIS PROCEEDING?**

5 **A.** No, there are no costs included in Actual Cost True-Up Factors in any of the RACs in this
6 proceeding. Staff will audit the actual costs and revenue recoveries in future RPS filings.

7 **Q. PLEASE PROVIDE STAFF'S RECOMMENDED REVENUE REQUIREMENTS**
8 **UNDER THE COMPANY'S RATE RECOVERY FRAMEWORK SHOULD THE**
9 **COMMISSION ACCEPT THE COMPANY'S FRAMEWORK.**

10 **A.** Please see below for a reconciliation between Staff's recommended revenue requirements
11 under the Staff and Company rate recovery frameworks.¹⁸

¹⁸ As illustrated in Table 8, Staff's recommended revenue requirements for the REC-RAC_{D&E} and REC-RAC_F are the same under both the Staff and Company rate recovery frameworks.

Table 8				
Staff's Recommended Revenue Requirements under the Staff and Company Proposed Rate Recovery Frameworks				
Staff Proposed RAC	Staff Proposed Revenue Requirement	Company Proposed RAC	Staff Proposed Revenue Requirement¹⁹	Difference
COS-RAC _{D&E}	\$182,848	A.6 RPS RAC _e	\$141,051	(\$75,647)
COS-RAC _F	N/A	A.6 RPS RAC _c	\$117,444	
PPA-RAC _{D&E}	\$216,898	A.5 PCAP RAC	\$3,792,455	(\$3,575,557)
PPA-RAC _F	N/A			
REC-RAC _{D&E}	\$1,506,059	A.5 RPS RAC _{D&E}	\$1,506,059	\$0
REC-RAC _F	\$26,603,086	A.5 RPS RAC _F	\$26,603,086	\$0

1 In the tables below, I provide a detailed reconciliation between the Staff proposed
2 revenue requirements under both the Company and Staff frameworks. Table 9 displays the
3 reconciliation for the COS-RAC_{D&E}, and Table 10 displays the reconciliation for the PPA-
4 RAC_{D&E}.

¹⁹ Should the Commission approve Staff's revenue requirements under the Company's rate recovery framework, the combined revenue requirements of \$32,160,095 would be greater than the \$32,069,614 as contained in the public notice given by the Company. Staff's combined A.6 RPS RACs would be approximately \$20,000 greater than the Company's A.6 RPS RACs, and Staff's A.5 PCAP RAC would be approximately \$88,000 greater than the Company's A.5 PCAP RAC. Staff notes the Commission has historically limited the revenue requirement to the amounts that were originally requested and noticed to the public. If the Commission chooses to limit the revenue requirements to the noticed amounts, the excess would be included in a future true-up factor.

Table 9	
Reconciliation of Staff's Recommended Revenue Requirements under the Company and Staff Proposed Rate Recovery Frameworks for the COS-RAC_{D&E}	
Staff's Recommended Revenue Requirement under Company Framework	\$258,494
[BEGIN CONFIDENTIAL]	
[END CONFIDENTIAL]	
Staff COS-RAC _{D&E} Rev. Req. under Staff Framework	\$182,848

Table 10	
Reconciliation of Staff's Recommended Revenue Requirements under the Company and Staff Proposed Rate Recovery Frameworks for the PPA-RAC_{D&E}	
Staff A.5 PCAP RAC Rev. Req. under Company Framework	\$3,792,455
Removal of Legacy Wind PPAs	(\$2,935,488)
[BEGIN CONFIDENTIAL]	
[END CONFIDENTIAL]	
Inclusion of Energy Costs utilizing Staff methodology for Qualifying Facilities	<u>\$1,867,487</u>
Staff PPA-RAC _{D&E} Rev. Req. under Staff Framework	\$216,898

- 1 Q. DOES THIS CONCLUDE YOUR TESTIMONY?
- 2 A. Yes, it does.

Appalachian Power Company - Virginia
Case No. PUR-2021-00206
PPA-RAC_{D&E}
For the Rate Year August 1, 2022 to July 31, 2023

Line No.	Description	Amount
1	Projected Cost Recovery Factor	216,898
2	Actual Cost True-Up Factor	-
3	Total Revenue Requirement	216,898

Appalachian Power Company - Virginia
 Case No. PUR-2021-00206

PPA-RAC_{Case}

Calculation of the Projected Cost Recovery Factor
 For the Rate Year August 1, 2022 to July 31, 2023

Line No.	2021	2022	2023	Total Through Rate Year	VA Retail Revenue Requirement
1	[BEGIN EXTRAORDINARILY SENSITIVE]		[BEGIN EXTRAORDINARILY SENSITIVE]		
2	\$ 1,627,128	\$ 1,627,128			
3	\$ 365,759	\$ 365,759			
4	\$ 1,261,369	\$ 1,261,369			
5	[END CONFIDENTIAL]	[END CONFIDENTIAL]	[END EXTRAORDINARILY SENSITIVE]	\$ (6,274)	\$ (2,989)
6	[BEGIN EXTRAORDINARILY SENSITIVE]		[BEGIN EXTRAORDINARILY SENSITIVE]		
7	\$ 1,548,460	\$ 1,548,460			
8	\$ 348,074	\$ 348,074			
9	\$ 1,200,385	\$ 1,200,385			
10	[END CONFIDENTIAL]	[END CONFIDENTIAL]	[END EXTRAORDINARILY SENSITIVE]	\$ 237,880	\$ 113,305
11	[BEGIN CONFIDENTIAL]	[BEGIN CONFIDENTIAL]	[BEGIN CONFIDENTIAL]		
12	[END CONFIDENTIAL]	[END CONFIDENTIAL]	[END CONFIDENTIAL]		
	79%	79%	79%		
13	[BEGIN CONFIDENTIAL]	[BEGIN CONFIDENTIAL]	[BEGIN CONFIDENTIAL]		
14	[END CONFIDENTIAL]	[END CONFIDENTIAL]	[END CONFIDENTIAL]		
15	[END CONFIDENTIAL]	[END CONFIDENTIAL]	[END CONFIDENTIAL]	\$ 223,767	\$ 106,582
16	PPA-RAC _{Case} Projected Cost Recovery Factor			\$ 216,898	\$ 216,898

Exhibit No. _____
Long Schedule 3

Appalachian Power Company - Virginia
Case No. PUR-2021-00206
REC-RAC_{D&E}
For the Rate Year August 1, 2022 to July 31, 2023

Line No.	Description	Amount
1	Projected Cost Recovery Factor	\$ 1,506,059
2	Actual Cost True-Up Factor	\$ -
3	Total Revenue Requirement	<u>\$ 1,506,059</u>

Exhibit No. _____
Long Schedule 4

Appalachian Power Company - Virginia
Case No. PUR-2021-00206
REC-RAC_F
For the Rate Year August 1, 2022 to July 31, 2023

Line No.	Description	Amount
1	Projected Cost Recovery Factor	\$ 26,603,086
2	Actual Cost True-Up Factor	\$ -
3	Total Revenue Requirement	<u>\$ 26,603,086</u>

Appalachian Power Company - Virginia
Case No. PUR-2021-00206
REC-RAGs and REC-RAG

Calculation of the Projected Cost Recovery Factor
For the Rate Year August 1, 2022 to July 31, 2023

Line No.		2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2022	2022	2022					
		January	February	March	April	May	June	July	August	September	October	November	December	January	February	March					
1	Leatherwood	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 232,521	\$ 19,440	\$ 22,816	\$ 32,536					
2	Wytheville	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 281,374	\$ 17,880	\$ 20,912	\$ 29,512					
3	Depot	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 198,555	\$ 8,378	\$ 8,378	\$ 8,378					
4	Camp Grove	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$					
5	Fowler Ridge	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$					
6	Bluff Point	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$					
7	Amherst																				
8	REC Purchases	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$					
9	Total	\$ 712,450	\$ 712,450	\$ 712,450	\$ 712,450	\$ 712,450	\$ 712,450	\$ 712,506	\$ 727,570	\$ 742,578	\$ 736,754	\$ 732,034	\$ 867,155	\$ 829,526	\$ 835,934	\$ 854,254					
														\$	124,466	\$	55,348	\$	55,348	\$	55,348

Appalachian Power Company - Virginia
 Case No. PUR-2021-00206
 REC-RAG and REC-RAG

Calculation of the Projected Cost Recovery Factor
 For the Rate Year August 1, 2022 to July 31, 2023

Line No.		2022	2022	2022	2022	2022	2022	2022	2022	2022	2023	2023	2023	2023	2023	2023	2023
		April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July
1	Leatherwood	\$ 36,088	\$ 38,808	\$ 40,024	\$ 39,552	\$ 36,488	\$ 32,766	\$ 28,224	\$ 21,754	\$ 17,263	\$ 20,282	\$ 23,780	\$ 33,911	\$ 37,613	\$ 40,448	\$ 41,716	\$ 41,224
2	Wychewille	\$ 34,552	\$ 37,664	\$ 39,040	\$ 37,880	\$ 35,136	\$ 31,919	\$ 27,227	\$ 20,516	\$ 15,838	\$ 18,636	\$ 21,796	\$ 30,759	\$ 36,012	\$ 39,256	\$ 40,690	\$ 39,481
3	Deopot	\$ 8,378	\$ 8,378	\$ 8,378	\$ 8,378	\$ 8,378	\$ 8,378	\$ 8,378	\$ 8,378	\$ 8,378	\$ 9,545	\$ 9,545	\$ 9,545	\$ 9,545	\$ 9,545	\$ 9,545	\$ 9,545
4	Camp Grove	\$ 237,753	\$ 237,753	\$ 237,753	\$ 237,753	\$ 237,753	\$ 237,753	\$ 237,753	\$ 237,753	\$ 237,753	\$ 243,102	\$ 243,102	\$ 243,102	\$ 243,102	\$ 243,102	\$ 243,102	\$ 243,102
5	Fowler Ridge	\$ 287,704	\$ 287,704	\$ 287,704	\$ 287,704	\$ 287,704	\$ 287,704	\$ 287,704	\$ 287,704	\$ 287,704	\$ 294,178	\$ 294,178	\$ 294,178	\$ 294,178	\$ 294,178	\$ 294,178	\$ 294,178
6	Bluff Point	\$ 203,022	\$ 203,022	\$ 203,022	\$ 203,022	\$ 203,022	\$ 203,022	\$ 203,022	\$ 203,022	\$ 203,022	\$ 207,590	\$ 207,590	\$ 207,590	\$ 207,590	\$ 207,590	\$ 207,590	\$ 207,590
7	Amherst										\$ 5,694	\$ 5,694	\$ 5,694	\$ 5,694	\$ 5,694	\$ 5,694	\$ 5,694
8	REC Purchases	\$ 55,348	\$ 55,348	\$ 55,348	\$ 55,348	\$ 55,348	\$ 55,348	\$ 55,348	\$ 55,348	\$ 55,348	\$ 472,743	\$ 472,743	\$ 472,743	\$ 472,743	\$ 472,743	\$ 472,743	\$ 472,743
9	Total	\$ 862,846	\$ 868,678	\$ 871,270	\$ 869,638	\$ 863,830	\$ 856,891	\$ 847,656	\$ 834,474	\$ 825,307	\$ 1,271,750	\$ 1,278,429	\$ 1,297,523	\$ 1,306,478	\$ 1,312,557	\$ 1,315,258	\$ 1,313,557

Appalachian Power Company - Virginia
 Case No. PUR-2021-00206
 REC-RACs and REC-RAC
 Calculation of the Projected Cost Recovery Factor
 For the Rate Year August 1, 2022 to July 31, 2023

Line No.	2021	2022	2023	2021	2022	2023	Aug	Sep	Oct	Nov	Dec	Total
1	8	8.38	8.77									
2		21.4%	21.4%									
3	44.7%	44.7%	44.7%									
4	44.0%	44.0%	44.0%									
5	35.1%	35.1%	35.1%									
6	13.4%	13.4%	13.4%									
7	NA	\$ 986,552	\$ 1,123,956									
8	\$ 13,104,770	\$ 13,399,627	\$ 13,701,119									
9	\$ 16,110,986	\$ 16,473,483	\$ 16,844,137									
10	\$ 14,251,647	\$ 14,572,309	\$ 14,900,186									
11			\$ 1,073,841									
12	47.63%	47.63%	47.63%									
13	Jan	2,430	2,852	Mar	4,067	4,944	4,561	3,910	3,368	2,596	2,060	45,153
14	2,235	2,614	3,689	4,319	4,708	4,880	4,392	3,809	3,249	2,448	1,890	42,968
15	Jul	7	1,890	3,038	2,448	1,890	1,890	1,890	1,890	1,890	1,890	13,039
16	2021	2022	2023	2021	2022	2023						
17	8.83	9.13	27.35	14,096	72,747	207,419						
18	124,466	664,177	5,672,916									

Exhibit No. _____
 Long Schedule 5 (cont.)

Appalachian Power Company - Virginia
Case No. PUR-2021-00206
REC-RAC_{D&E} and REC-RAC_F
Calculation of the Projected Cost Recovery Factor
For the Rate Year August 1, 2022 to July 31, 2023

Line No.	Resource		2021	2022	2023
1	Camp Grove		99,893	99,893	99,893
2	Fowler Ridge		114,235	114,235	114,235
3	Bluff Point		189,720	189,720	189,720
4	Claytor		161,858	161,858	161,858
5	Leesville		44,634	44,634	44,634
6	Marmet		35,879	35,879	35,879
7	London		36,973	36,973	36,973
8	Buck		21,109	21,109	21,109
9	Byllesby		30,061	30,061	30,061
10	Winfield		43,059	43,059	43,059
11	Niagara		4,501	4,501	4,501
12	Summersville		70,366	70,366	70,366
13	Smith Mtn Free Water		100,665	100,665	100,665
14	Leatherwood	VA Only	13,039	45,153	44,927
15	Wytheville	VA Only	1,890	42,968	42,753
16	Depot		0	13,285	15,475
17	Amherst		0	314	5,290
18	Less WWS Tariff MWh		-80,342	-80,342	-80,342
19	Total VA RECs Produced		887,540	974,332	981,057
20	RPS Requirement		902,433	1,051,191	1,200,202
21	Total Virginia RECs Needed to Purchase		14,893	76,859	219,145
22	VA Retail RECs Needed to Purchase		14,096	72,747	207,419

Exhibit No.____
Long Schedule 6

Appalachian Power Company - Virginia
Case No. PUR-2021-00206
COS-RAC_{D&E}
For the Rate Year August 1, 2022 to July 31, 2023

Line No.	Description	Amount
1	Projected Cost Recovery Factor	\$ 182,848
2	Actual Cost True-Up Factor	<u>\$ -</u>
3	Total Revenue Requirement	<u><u>\$ 182,848</u></u>

Appalachian Power Company - Virginia
Case No. PUR-2021-00206
COS-RAC_{D&E}
Calculation of the Projected Cost Recovery Factor
For the Rate Year August 1, 2022 to July 31, 2023

Line No.	Description	Amount
1	Revenue Requirement	\$ 511,481
2	Total COS-RAC _{D&E} Rev Req Allocation %	<u>86.64%</u>
3	COS-RAC _{D&E} Revenue Requirement	<u>\$ 443,133</u>
4	Prorate for Rate Year - 7 Months	\$ 258,494
[BEGIN CONFIDENTIAL]		
5		
[END CONFIDENTIAL]		
6	Staff Recommended Revenue Requirement	\$ 182,848

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Appendix A

Staff Bill Analysis

Staff Bill Analysis
Estimated Monthly Rate Impacts - Selected Rate Schedules

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Residential Net Bill Impact (1)	\$ 117.09	\$ 117.11	\$ 117.21	\$ 117.05	\$ 117.21	\$ 123.06	\$ 126.63	\$ 125.40	\$ 155.90	\$ 159.60	\$ 159.04	\$ 160.49	\$ 162.48	\$ 166.40	\$ 169.57	\$ 174.13
% increase (cumulative)		0.02%	0.11%	0%	0%	5%	8%	7%	33%	36%	36%	37%	39%	42%	45%	49%
SGS Net Bill Impact (1)	\$ 495.99	\$ 496.08	\$ 496.49	\$ 495.84	\$ 496.47	\$ 520.02	\$ 534.47	\$ 529.43	\$ 652.15	\$ 667.08	\$ 664.80	\$ 670.66	\$ 678.64	\$ 694.42	\$ 707.19	\$ 725.54
% increase (cumulative)		0%	0%	0%	0%	5%	8%	7%	31%	34%	34%	35%	37%	40%	43%	46%
LPS Net Bill Impact (1)	\$ 37.788	\$ 37.800	\$ 37.850	\$ 37.770	\$ 37.849	\$ 40.802	\$ 42.614	\$ 41.982	\$ 57.372	\$ 59.243	\$ 58.958	\$ 59.693	\$ 60.693	\$ 62.673	\$ 64.273	\$ 66.575
% increase (cumulative)		0%	0%	0%	0%	8%	13%	11%	52%	57%	56%	58%	61%	66%	70%	76%
Total Net Annual Increases		0.0%	0.1%	-0.2%	0.2%	5.9%	3.4%	-1.1%	28.2%	2.7%	-0.4%	1.0%	1.4%	2.7%	2.1%	3.0%

(1) Staff's Bill Analysis presents typical customer bills on a net basis (i.e., net of potential offsets).

Appendix B

Staff Long-Term Revenue Requirement

Staff Long-Term Revenue Requirement VA Retail Basis - With Energy Offsets (in 000s)												
	Specific Resources Under Development				Generic Resources				Energy Offsets			
	Wind	Solar	QF PPA's		Wind	Solar	Storage	EE / DR / VVO	REC Purchases	Energy Offset	Total \$000	
2021	-	-	318	-	-	-	-	-	124	(178)	265	
2022	-	-	1,888	-	-	-	-	8,323	664	(2,829)	8,046	
2023	-	1,453	1,912	-	-	-	-	8,589	5,673	(6,068)	11,558	
2024	-	8,816	1,937	-	-	-	-	6,613	-	(12,459)	4,908	
2025	18,751	12,624	1,964	-	-	-	-	4,989	-	(23,423)	14,977	
2026	17,180	13,032	1,992	36,913	4,546	-	-	4,989	-	(53,869)	24,782	
2027	17,206	13,662	2,021	36,913	4,541	-	-	120	-	(57,094)	17,369	
2028	16,222	13,596	2,052	52,661	4,537	-	-	226	-	(82,082)	7,213	
2029	14,732	13,724	2,084	95,325	4,530	-	-	211	-	(113,403)	17,204	
2030	14,491	14,184	2,119	111,476	4,524	-	-	194	-	(123,527)	23,462	
2031	14,178	14,264	2,154	111,476	31,345	26,015	262	262	-	(152,084)	47,611	
2032	13,547	14,099	2,192	111,476	46,597	26,038	802	802	-	(154,133)	60,619	
2033	13,169	13,947	2,231	111,476	78,906	26,049	1,013	1,013	-	(181,734)	65,057	
2034	12,640	13,763	2,273	111,476	94,612	26,065	945	945	-	(197,560)	64,214	
2035	21,472	13,573	2,316	111,476	145,194	26,081	2,133	2,133	-	(240,238)	82,007	
2036	21,105	13,396	2,342	111,476	196,517	70,880	8,327	8,327	-	(298,901)	125,142	
2037	20,666	13,257	-	111,476	196,517	70,905	9,771	9,771	-	(308,594)	113,998	
2038	20,271	13,138	-	111,476	251,301	70,949	13,254	13,254	-	(359,950)	120,439	
2039	19,953	12,981	-	111,476	302,215	70,993	16,750	16,750	-	(398,365)	136,004	
2040	19,440	12,845	-	111,476	340,916	235,730	20,465	20,465	-	(547,550)	193,321	
2041	19,003	12,727	-	111,476	347,725	276,075	25,729	25,729	-	(577,329)	215,406	
2042	18,613	12,618	-	111,476	347,725	276,252	24,701	24,701	34,151	(597,143)	228,393	
2043	18,209	12,490	-	111,476	347,725	276,417	24,860	24,860	35,089	(609,392)	216,875	
2044	17,935	12,326	-	111,476	347,725	276,671	25,041	25,041	72,346	(622,417)	241,103	
2045	17,451	12,155	-	111,476	347,725	276,782	25,189	25,189	93,737	(651,602)	232,912	
2046	17,043	12,016	-	111,476	347,725	283,795	25,359	25,359	136,329	(673,158)	260,586	
2047	16,659	11,891	-	111,476	347,725	347,551	27,135	27,135	161,822	(734,821)	289,438	
2048	16,342	11,753	-	111,476	347,725	347,879	25,738	25,738	212,632	(785,537)	288,008	
2049	15,983	11,561	-	111,476	347,725	348,020	25,901	25,901	265,167	(824,544)	301,289	
2050	15,523	11,362	-	111,476	347,725	405,056	26,424	26,424	295,608	(839,005)	374,170	
Long-Term Revenue Requirement	\$ 447,785	\$ 347,253	\$ 31,794	\$ 2,562,814	\$ 5,161,368	\$ 3,786,882	\$ 364,125	\$ 1,313,344	\$ (10,228,989)	\$ 3,786,377		

Appendix C

Selected Responses to Staff Interrogatories

19
19
19
19
19
19
19

APPENDIX C
Table of Contents

Responses to Interrogatories

Staff Interrogatory 1-191

Staff Interrogatory 8-652

Staff Interrogatory 8-673

202503140202

**COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
APPLICATION OF
APPALACHIAN POWER COMPANY
SCC CASE NO. PUR-2021-00206
Interrogatories and Requests for the Production
of Documents by the STAFF OF THE STATE CORPORATION COMMISSION
Staff Set 1
To Appalachian Power Company**

Interrogatory Staff 1-019:

Please refer to Tables 22 and 23 in the Company's corrected Attachment 1 (2021 RPS Plan). Please provide these tables and the corresponding data in an executable Microsoft Excel spreadsheet with all formulas intact.

Response Staff 1-019:

This response contains confidential information that is provided pursuant to the Hearing Examiner's February 11, 2022 Protective Ruling and Additional Protective Treatment for Extraordinarily Sensitive Contract & Prices Information and RFP Results.

Please see Staff 1-019 Confidential Attachment 1 for the requested information.

The foregoing response is made by Michael M. Spaeth, Regulatory Consultant Prin, on behalf of Appalachian Power Company.

**COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
APPLICATION OF
APPALACHIAN POWER COMPANY
SCC CASE NO. PUR-2021-00206
Interrogatories and Requests for the Production
of Documents by the STAFF OF THE STATE CORPORATION COMMISSION
Staff Set 8
To Appalachian Power Company**

Interrogatory Staff 8-065:

Please refer to the Company's lifetime revenue requirement (Table 22 of the Corrected 2021 RPS Plan). Please provide a corresponding table that incorporates offsets (e.g., fuel savings and excess capacity revenue).

Response Staff 8-065:

The Company objects to this request as it would require the Company to create new work product, which goes beyond the Company's obligations pursuant to the Commission's Rules. Without waiving this objection, the Company states as follows:

This response contains confidential information that is provided pursuant to the Hearing Examiner's February 11, 2022 Protective Ruling and Additional Protective Treatment for Extraordinarily Sensitive Contract & Prices Information and RFP Results.

Please see Staff 8-065 Confidential Attachment 1 for the requested information.

The foregoing response is made by Michael M. Spaeth, Regulatory Consultant Prin, on behalf of Appalachian Power Company.

**COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
APPLICATION OF
APPALACHIAN POWER COMPANY
SCC CASE NO. PUR-2021-00206
Interrogatories and Requests for the Production
of Documents by the STAFF OF THE STATE CORPORATION COMMISSION
Staff Set 8
To Appalachian Power Company**

Interrogatory Staff 8-067:

Please refer to the Company's bill analysis (Table 23 of the Corrected 2021 RPS Plan).

(a) The Company states that the rate impacts correspond to Portfolio 2 (which assumes a 2040 retirement date for Amos). Please explain why the Company utilizes a 2040 retirement date for Amos instead of the 2032 (units 1 & 2) and 2033 (unit 3) retirement dates from the Company's most recent depreciation study.

(b) Please state whether the Company has incorporated the effects of tax credits pertaining to the Consolidated Appropriations Act of 2021 in the bill analysis (refer to the pre-filed testimony of Staff witness Welsh at 9 and the Final Order at 6 from PUR-2020-00135 for additional details).

(c) Please confirm that the typical bills in this table represent values as of December 31st for each respective year (e.g., values in the "2020" column being representative of typical bills as of December 31, 2020).

Response Staff 8-067:

a) Please see the Company's response to OAG 2-42. The Company did not include a planning scenario that reflected a 2032 retirement date for Amos Units 1 and 2 and 2033 for Amos Unit 3, because the Company's base case assumption is that the Amos units will run through 2040 consistent with the WVPSC's order in Case No. 20-1040-ECN.

b) In its revenue requirement calculation, the Company incorporated the tax effects consistent with the Consolidated Appropriations Act of 2021.

c) Confirmed.

The foregoing response is made by Michael M. Spaeth, Regulatory Consultant Prin, on behalf of Appalachian Power Company.