

Summary of the Pre-filed Testimony of Carol B. Myers

Customer Bill Impacts

My testimony presents an analysis of projected monthly bills for residential, small general service, and large general service customers of Virginia Electric and Power Company d/b/a Dominion Energy Virginia ("Company") based on Plans A, B, and B₁₉ of its 2020 Integrated Resource Plan ("IRP") as compared to monthly bills as of May 1, 2020, summarized as follows:

	Residential ¹		GS-1 ²		GS-4P ³	
	Plan B ₁₉	Plan B	Plan B ₁₉	Plan B	Plan B ₁₉	Plan B
May 1, 2020	\$116.18	\$116.18	\$536.13	\$536.13	\$311,302	\$311,302
Plan A	\$24.70	\$24.70	\$148.69	\$148.69	\$103,464	\$103,464
Pre-2020 Legislation	\$16.57	\$16.84	\$78.46	\$80.08	\$29,595	\$31,215
2020 Legislation	\$26.05	\$22.73	\$125.05	\$108.31	\$55,596	\$45,920
Total 2030 Year End	\$183.50	\$180.45	\$888.33	\$873.21	\$499,957	\$491,901
Total Bill Increase	\$67.32	\$64.27	\$352.20	\$337.08	\$188,655	\$180,599

¹ Residential Bill Analysis assumes monthly typical usage of 1,000 kWh

² GS-1 Bill Analysis assumes monthly usage of 6,000 kWh

³ GS-4P Bill Analysis assumes monthly usage of 6,000,000 kWh and monthly demand of 10,000 KW

Staff's analysis of projected monthly bills for residential customers ("Residential Bill Analysis") for Plans B and B₁₉, respectively, calculates higher projected bill increases of between \$64.27 and \$67.32 per month, as compared to the Company's projected increases of between \$52.40 and \$55.02 per month. On an annual basis, Staff's analysis calculates for Plans B and B₁₉, respectively, projected bill increases of between \$771.24 and \$807.84, compared to the Company's estimate of between \$628.80 and \$660.24. This difference is driven by the use of differing residential allocation factors and kilowatt-hour ("kWh") sales between Staff and the Company.

In its Residential Bill Analysis, the Company uses projected kWh sales and projected residential allocation factors based on its internal load forecast that decline to a low of 49.12% by 2030. Staff has concerns regarding the Company's use of declining residential allocation factors because they are significantly lower than actual residential allocation factors over the last ten years, which average 55.85%. To provide a more realistic estimate of the cost to a typical residential customer of Plans A, B, and B₁₉ based on how costs are assigned to the residential customer class today, Staff's Residential Bill Analysis is calculated using the residential allocation factor of 55.26% and kWh sales actually proposed by the Company for use in setting rates in recent 2020 rate adjustment clause proceedings.

I also discuss other key assumptions included in the Residential Bill Analysis conducted by both the Company and Staff, including the following: (1) that base rates will remain at their current level through 2030; (2) the use of a historical Virginia jurisdictional allocation factor that assumes North Carolina customers will pay for the investments in Plans B and B₁₉; (3) that the Company will continue to participate in the PJM capacity market; and (4) the use of monthly usage of 1,000 kWh to calculate bill impacts for a residential customer.

2020-2035 Projected Capital Investments

My testimony also presents 2020 through 2035 generation growth capital investments (and associated total Company lifetime revenue requirements) included in Plans B and B₁₉ and identified in recent Dominion Energy, Inc., presentations to investors. A summary of these investments for Plan B is summarized as follows, in billions of dollars:

	Additional Generation	Projected Capital Investment	Lifetime Revenue Requirement
Offshore Wind	5,280 MW	\$17.18	\$37.12
Solar	10,375 MW	\$15.45	\$38.52
Storage	1,755 MW	\$6.82	\$15.47
Gas Combustion Turbines	970 MW	\$0.62	\$1.90
Nuclear License Renewals	--	\$3.44	\$7.61
Total	18,380 MW	\$43.51	\$100.63

My testimony also quantifies projected growth capital investments for the distribution function of \$4.5 billion from 2020 through 2030 (at a total Company lifetime revenue requirement of \$13.4 billion). These investments include the Company's Strategic Undergrounding Program, Grid Transformation Plan, and broadband projects. In addition, my testimony identifies \$8 billion of additional transmission function growth capital investments included in recent investor presentations. In total, Plan B of the 2020 IRP includes generation, transmission, and distribution growth capital investments of approximately \$56 billion.

PRE-FILED TESTIMONY

OF

CAROL B. MYERS

**VIRGINIA ELECTRIC AND POWER COMPANY
CASE NO. PUR-2020-00035**

EXTRAORDINARILY SENSITIVE VERSION

September 29, 2020

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

A. My name is Carol B. Myers. I am a Deputy Director in the Commission's Division of Utility Accounting and Finance.

Q. PLEASE PROVIDE A SUMMARY OF YOUR TESTIMONY.

A. My testimony addresses the following topics related to Virginia Electric and Power Company d/b/a Dominion Energy Virginia's ("Dominion," "DEV," or "Company") 2020 Integrated Resource Plan ("IRP"):

1. Customer Bill Impacts: I present Staff's analysis of projected monthly bills for residential, small general service, and large general service customers based on Plans A, B, and B₁₉ of the 2020 IRP as compared to monthly bills as of May 1, 2020, as summarized in the following table:

Table 1
Summary of Staff Bill Analyses

	Residential ¹		GS-1 ²		GS-4P ³	
	Plan B ₁₉	Plan B	Plan B ₁₉	Plan B	Plan B ₁₉	Plan B
May 1, 2020	\$116.18	\$116.18	\$536.13	\$536.13	\$311,302	\$311,302
Plan A	\$24.70	\$24.70	\$148.69	\$148.69	\$103,464	\$103,464
Pre-2020 Legislation	\$16.57	\$16.84	\$78.46	\$80.08	\$29,595	\$31,215
2020 Legislation	\$26.05	\$22.73	\$125.05	\$108.31	\$55,596	\$45,920
Total 2030 Year End	\$183.50	\$180.45	\$888.33	\$873.21	\$499,957	\$491,901
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Staff's analysis of projected monthly bills for residential customers ("Residential Bill Analysis") for Plans B and B₁₉, respectively, calculates higher projected bill increases of between \$64.27 and \$67.32 per month, as compared to the Company's projected increases of between \$52.40 and \$55.02 per month. On an annual basis, Staff's analysis calculates for Plans B and B₁₉, respectively, projected bill increases of between \$771.24 and \$807.84, compared to the Company's estimate of \$628.80 and \$660.24. This difference is driven by the use of differing residential allocation factors and kilowatt-hour ("kWh") sales between Staff and the Company.

In its Residential Bill Analysis, the Company uses projected kWh sales and projected residential allocation factors based on its internal load forecast that decline to a low of 49.12% by 2030. Staff has concerns regarding the Company's use of declining residential allocation factors because they are significantly lower than actual residential allocation factors over the last ten years, which average 55.85%. To provide a more realistic estimate of the cost to a typical residential customer of Plans A, B, and B₁₉ based on how costs are assigned to the residential customer class today, Staff's Residential Bill Analysis is calculated using the residential allocation factor of 55.26% and kWh sales actually proposed by the Company for use in setting rates in recent 2020 rate adjustment clause ("RAC") proceedings.

I also discuss other key assumptions included in the Residential Bill Analysis conducted by both the Company and Staff, including: (1) that base rates will remain at their current level through 2030; (2) the use of a historical Virginia jurisdictional allocation factor that assumes North Carolina customers will pay for the investments in Plans B and B₁₉; (3) that the Company will continue to

participate in the PJM capacity market; and (4) the use of monthly usage of 1,000 kWh to calculate bill impacts for a residential customer.

2. 2020-2035 Projected Capital Investments: I present Staff's analysis of 2020 through 2035 generation growth capital investments (and associated total Company lifetime revenue requirements) included in Plans B and B₁₉ and identified in recent Dominion Energy, Inc.,¹ presentations to investors. The following table summarizes these investments for Plan B:

Table 2
Summary of Plan B Capital Investments
From 2020 - 2035
(In Billions of Dollars)

	<u>Additional Generation</u>	<u>Projected Capital Investment</u>	<u>Lifetime Revenue Requirement</u>
Offshore Wind	5,280 MW	\$17.18	\$37.12
Solar	10,375 MW	\$15.45	\$38.52
Storage	1,755 MW	\$6.82	\$15.47
Gas Combustion Turbines	970 MW	\$0.62	\$1.90
Nuclear License Renewals	--	\$3.44	\$7.61
Total	<u>18,380 MW</u>	<u>\$43.51</u>	<u>\$100.63</u>

My testimony also quantifies projected growth capital investments for the distribution function of \$4.5 billion from 2020 through 2030 (at a lifetime revenue requirement of \$13.4 billion). These investments include the Company's Strategic Undergrounding Program, Grid Transformation Plan, and broadband projects. In addition, my testimony identifies \$8 billion of additional transmission function growth capital investments included in recent investor presentations. In total, Plan B of the 2020 IRP includes generation, transmission, and distribution growth capital investments of approximately \$56 billion.

¹ Dominion Energy, Inc., is the parent company of Dominion.

I. 2020 IRP CUSTOMER BILL IMPACTS

Residential Bill Analysis

Q. PLEASE PROVIDE AN OVERVIEW OF THE COMMISSION'S MARCH 9, 2020 ORDER IN THIS PROCEEDING AS IT RELATES TO THE RESIDENTIAL BILL ANALYSIS.

A. In its March 9, 2020 Order in this proceeding, the Commission directed Dominion to model the costs and reliability impacts of the Virginia Clean Economy Act ("VCEA") and other relevant legislation in its 2020 IRP.² Specifically, the Commission directed that DEV's 2020 IRP shall do the following, among other things:

Model the mandates and requirements of the VCEA and other relevant legislation based on the best available information, using reasonable and appropriately documented assumptions if necessary;³

The Commission also directed DEV to:

Calculate separately the annual bill impacts of the least cost plan, the VCEA, and additional legislation over each of the next ten years as compared to the bill of a residential customer using 1,000 kilowatt-hours per month as of May 1, 2020, including not only generation costs but also transmission and distribution costs;⁴

² *Commonwealth of Virginia, ex rel. State Corporation Commission, In re: Virginia Electric and Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq.*, Case No. PUR-2020-00035, Doc. Con. Cen. No. 200320013, Order (Mar. 9, 2020).

³ *Id.* at 2.

⁴ *Id.*

Q. DID THE COMPANY PREPARE A RESIDENTIAL BILL ANALYSIS AS DIRECTED BY THE COMMISSION?

A. Yes, it did. DEV's 2020 IRP includes a comprehensive Residential Bill Analysis based on least cost Plan A as well as VCEA-compliant Plans B and B₁₉, showing projected residential monthly bills over the next ten years. Figure 2.5.3 from the 2020 IRP, as revised on May 14, 2020, summarizes the results of the Company's Residential Bill Analysis as follows:⁵

Figure 2.5.3 – Residential Bill Projection for Plan B and Plan B₁₉ (1,000 kWh per Month)

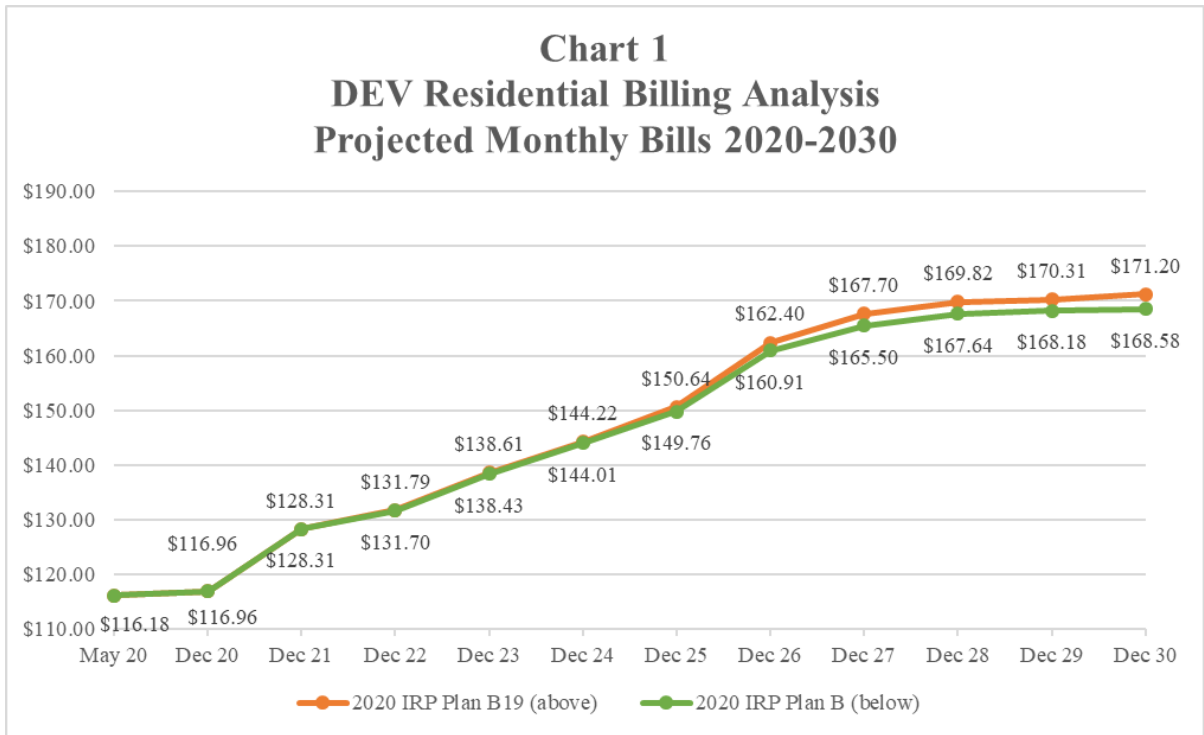
	Plan B ₁₉		Plan B	
	Projected Bill	CAGR	Projected Bill	CAGR
May 1, 2020	\$116.18		\$116.18	
Plan A ¹	\$18.18	1.4%	\$18.18	1.4%
Pre-2020 Legislation ²	\$15.01	1.0%	\$15.28	1.0%
2020 Legislation ³	\$21.83	1.3%	\$18.94	1.2%
Total 2030 Year End	\$171.20	3.7%	\$168.58	3.6%
Total Bill Increase	\$55.02		\$52.40	

Notes: (1) Represents bill projections associated with future generation in Alternative Plan A; approved and proposed investments in demand-side management programs; approved investments in the Grid Transformation Plan (*i.e.* Phase IA and IB); investments in the Strategic Underground Program; and compliance with environmental laws and regulations, including coal combustion residuals investments. (2) Represents bill projections associated with future generation in Alternative Plan B or B₁₉, as applicable, and other investments incentivized or mandated by legislation prior to 2020, including legislation related to pumped storage (2017), the GTSA (2018), and rural broadband (2019). (3) Represents bill projections associated with future generation in Alternative Plan B or B₁₉, as applicable, and other investments incentivized or mandated by the VCEA and other 2020 legislation.

Based on DEV's Residential Bill Analysis, the monthly bill of a Virginia residential customer using 1,000 kWh per month is projected to be \$168.58 for Plan B and \$171.20 for Plan B₁₉ by 2030, an increase of between \$52.40 and \$55.02 per month over the May 1, 2020, typical residential bill of \$116.18 (or an estimated annual increase of \$628.80 to

⁵ See 2020 IRP May 14, 2020 Supplement ("2020 IRP Supplement") at page 5.

\$660.24).⁶ The following chart shows the projected monthly residential bills for each year from 2020 through 2030 as presented in DEV's Residential Bill Analysis.⁷



While the Company did not include Plans C or D in its Residential Bill Analysis, the Company indicated that Plans B and C are the same for the first 10 years, making the projected bill analysis for Plan C substantially the same as for Plan B. Likewise, the Company indicated that Plans B₁₉ and D are the same for the first 10 years, making the projected bill analysis for Plan D substantially the same as for Plan B₁₉.⁸

⁶ Plans B and B₁₉ assume solar capacity factors of 25% and 19%, respectively, but otherwise use the same assumptions. See 2020 IRP Supplement at page 1 (May 14, 2020).

⁷ See 2020 IRP Revised Public Version of Virginia Addendum 1 (June 3, 2020) and 2020 IRP Supplement, Plan B at page 2 of 2, and Plan B₁₉ at page 2 of 2 (May 14, 2020).

⁸ See the response to Staff Interrogatory Set 2, Question No. 43 included in Appendix B to my testimony.

Q. PLEASE DESCRIBE HOW THE COMPANY'S RESIDENTIAL BILL ANALYSIS IS CALCULATED.

A. The Company's Residential Bill Analysis is a comprehensive analysis of residential bill impacts from 2020 through 2030 as required by the Commission's March 9, 2020 Order. In order to present a comprehensive analysis, the Company projected numerous lifetime revenue requirements for both new and existing capital investments based on Plans A, B, and B₁₉ as well as fuel and purchased power costs. The Company also projected Virginia jurisdictional allocation factors, residential allocation factors, and residential kWh sales. These assumptions were then manually input into a complex model ("Bill Model") designed by the Company to calculate numerous projected residential monthly bill impacts.⁹ The Company's Bill Model combines these bill impacts with existing base rates to produce the total projected residential monthly bills for each year from 2020 through 2030.

Q. BEFORE CONTINUING, PLEASE BRIEFLY EXPLAIN HOW A RESIDENTIAL BILL IMPACT IS CALCULATED.

A. As explained above, numerous projected residential monthly bill impacts are included in the Company's Bill Model to produce the Residential Bill Analysis. To illustrate the assumptions required to calculate a residential bill impact, Staff prepared the following table showing a simplified calculation. Based on the simplified assumptions shown in

⁹ The Residential Billing Analysis presents residential monthly bills for a typical customer using 1,000 kWh as of December 31, 2020 through 2030. As directed by the Commission, the Company included projected costs for generation, transmission, and distribution services based upon Plans A, B, and B₁₉.

Table 1 below, a total revenue requirement of \$100 million translates to a residential monthly bill impact for a typical customer using 1,000 kWh of \$1.49.

Table 3
Simplified Calculation of
Residential Monthly Bill Impact

Revenue Requirement	\$100,000,000
x Virginia Jurisdictional Allocation %	80.00%
Virginia Jurisdictional Revenue Requirement	\$80,000,000
x Residential Allocation %	55.00%
Residential Revenue Requirement	\$44,000,000
/ Annual Residential kWh	29,500,000,000
Residential rate per kWh	\$0.00149
x 1,000 Kilowatt-hours per month	1,000
Residential Monthly Bill Impact	\$1.49

Any bill impact calculation begins with an underlying total annual revenue requirement to be recovered from the Company's customers.¹⁰ This simplified example assumes a total annual revenue requirement of \$100 million. Virginia jurisdictional and residential allocation factors are then applied to the total revenue requirement to arrive at a revenue requirement of \$44 million for the Virginia residential class. The residential class revenue requirement is then divided by annual residential class kWh sales to calculate a residential rate per kWh. This residential rate per kWh is then multiplied by 1,000 kWh to arrive at a monthly bill impact of \$1.49 for a typical residential customer using 1,000 kWh per month.

¹⁰ Said another way, a revenue requirement represents the amount of revenues the Company must collect from its customers to recover a cost of providing utility service.

Q. DID STAFF REVIEW THE COMPANY'S RESIDENTIAL BILL ANALYSIS?

A. Yes. Staff conducted a thorough review of the Company's Residential Bill Analysis, including a review of the mechanics of the Company's complex Bill Model and the underlying inputs and assumptions. The objective of Staff's review was to determine whether the projected monthly bills presented in the Company's Residential Bill Analysis are a reasonable approximation of the cost to a typical residential customer of Plans A, B, and B₁₉ as modeled by the Company. To be clear, to the extent that a least cost plan is modeled in a manner that differs from Plan A or the VCEA is modeled in a manner that differs from Plans B or B₁₉, the resulting costs to a typical residential customer would also differ, thereby requiring a new Residential Bill Analysis. Thus, Staff is in no way saying that the Residential Bill Analysis of Plans B or B₁₉ represents the definitive cost to a typical residential customer of the VCEA or that the Residential Bill Analysis of Plan A represents the definitive cost to a typical residential customer of a least cost plan.¹¹

Q. DOES STAFF HAVE CONCERNS REGARDING THE ASSUMPTIONS INCLUDED IN THE COMPANY'S RESIDENTIAL BILL ANALYSIS?

A. Yes. Generally speaking, Staff does not take issue with the calculation of the projected lifetime revenue requirements or fuel and purchased power costs underlying the Residential Bill Analysis, as they appear to be generally consistent with Plans A, B, and B₁₉. Staff

¹¹ For example, the Residential Bill Analysis provides an estimate of the costs that a typical residential customer would have to pay for the Company's identified future build plans that reflect how the Company intends to comply with the VCEA. As discussed by Staff witness Dalton, the Company may not have identified a least-cost plan that is able to meet the requirements of the VCEA. Therefore, actual future bill impacts of complying with the VCEA could be lower.

does, however, have concerns that the projected residential allocation factors and kWh sales used in the Residential Bill Analysis appear to understate the cost to a typical residential customer of Plans A, B, and B₁₉. As discussed in greater detail below, this is because the Company's projected residential allocation factors, which are based on its internal load forecast, decline to a low of 49.12% by 2030, which is significantly lower than actual residential allocation factors over the last ten years, which average 55.85%.¹² To provide a more realistic estimate of the cost to a typical residential customer of Plans A, B, and B₁₉ based on how costs are assigned to the residential customer class today, Staff used the Bill Model to recalculate the Residential Bill Analysis using the residential allocation factor of 55.26% actually proposed by the Company for use in setting rates in recent 2020 RAC proceedings.

Q. PLEASE PRESENT THE RESULTS OF STAFF'S RECALCULATED RESIDENTIAL BILL ANALYSIS.

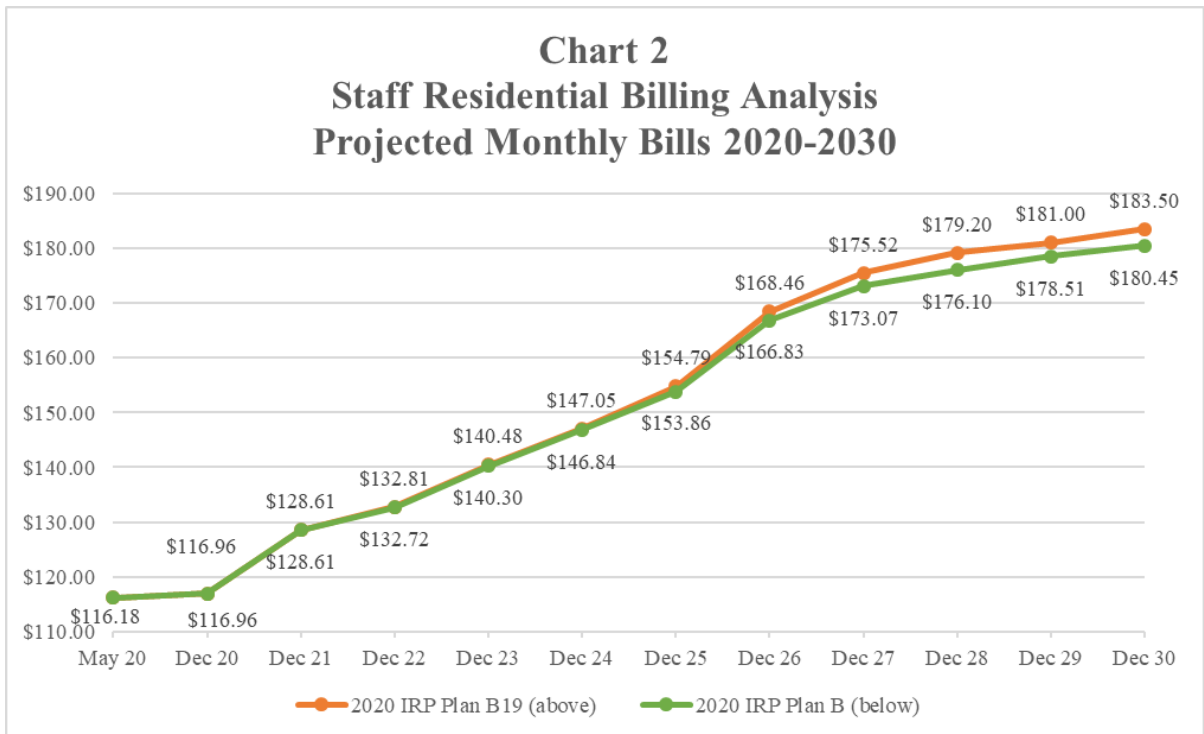
A. Based on Staff's recalculated Residential Bill Analysis, the monthly bill of a residential customer using 1,000 kWh per month is projected to be \$180.45 for Plan B and \$183.50 for Plan B₁₉ by 2030, an increase of between \$64.27 and \$67.32 per month over the May 1, 2020 typical residential bill of \$116.18 (or an estimated annual increase of \$771.24 to \$807.84). The following table compares the results of Staff's and the Company's Residential Bill Analyses as of 2030:

¹² As discussed further below, Staff also has some comments on the Company's assumptions regarding base rates and jurisdictional allocation factors, among other things.

Table 4
Comparison of Staff and Company Residential Bill Analyses (1,000 kWh per month)

	Plan B ₁₉		Plan B	
	Staff	Company	Staff	Company
May 1, 2020	\$116.18	\$116.18	\$116.18	\$116.18
Plan A	\$24.70	\$18.18	\$24.70	\$18.18
Pre-2020 Legislation	\$16.57	\$15.01	\$16.84	\$15.28
2020 Legislation	\$26.05	\$21.83	\$22.73	\$18.94
Total 2030 Year End	\$183.50	\$171.20	\$180.45	\$168.58
Total Bill Increase	\$67.32	\$55.02	\$64.27	\$52.40
Difference	\$12.30		\$11.87	

The following chart shows the projected monthly residential bills for each year from 2020 through 2030 as presented in Staff's recalculated Residential Bill Analysis:¹³



¹³ Additional details on Staff's recalculated Residential Billing Analysis are included in Appendix A to my testimony.

Residential Allocation Factors

Q. PLEASE EXPLAIN THE COMPANY'S USE OF PROJECTED RESIDENTIAL ALLOCATION FACTORS IN GREATER DETAIL.

A. In order to project residential allocation factors and kWh sales for use in the Residential Bill Analysis, the Company relied upon its internal load forecast for the Virginia jurisdiction for 2020 through 2035. The Company's internal load forecast produces a compound annual growth rate ("CAGR") of 1.7% for the Virginia jurisdiction as a whole and a CAGR of 0.4% for the residential class for each year from 2022 through 2030.¹⁴ In other words, the Company's internal load forecast assumes that the Virginia jurisdiction as a whole will grow at a faster pace than the residential class. According to the Company, this is due to the fact:

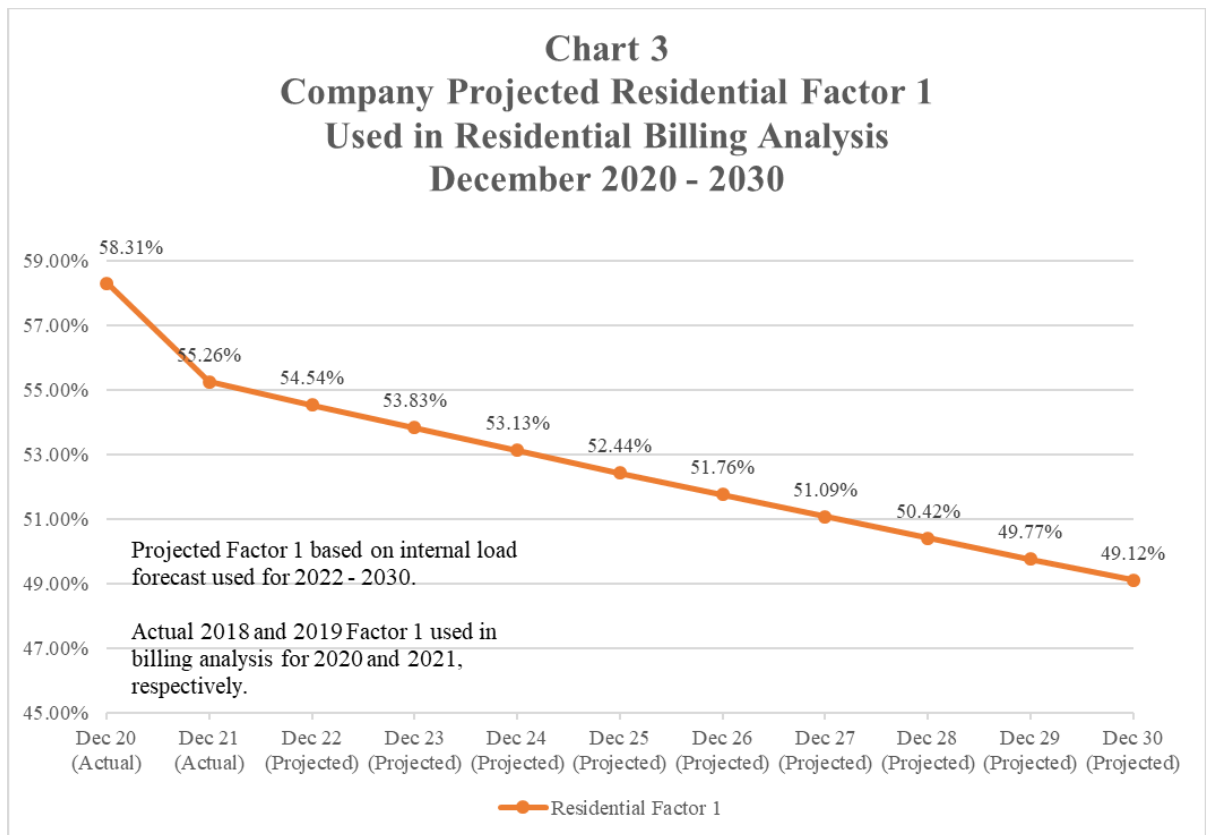
Overall sales are anticipated to grow faster than sales to the residential class because of projected data center growth. In addition, incremental residential sales growth is mostly driven by new single family homes. Single family home growth over the recent 12-month period has been modest and is expected to remain so in the foreseeable future....¹⁵

¹⁴ The internal load forecast produces a CAGR of 2.5% for the GS-4 customer class.

¹⁵ See the response to Staff Interrogatory Set 16, Question No. 156 included in Appendix B to my testimony. Additionally, see the responses to Staff Interrogatory Set 16, Question Nos. 153, 154, and 155 and Staff Informal Data Requests Set 5, Question Nos. 1 and 2 included in Appendix B to my testimony.

Q. HOW DOES ASSUMING LOWER GROWTH FOR THE RESIDENTIAL CLASS COMPARED TO THE VIRGINIA JURISDICTION AS A WHOLE IMPACT THE RESIDENTIAL BILL ANALYSIS?

A. This assumption results in the use of declining residential cost allocation factors from 2022 through 2030 in the Residential Bill Analysis. Said another way, if the residential customer class experiences slower growth than the Virginia jurisdiction as a whole, the residential customer class would be assigned a smaller portion of the Virginia jurisdictional costs through the use of declining residential allocation factors. The following chart illustrates the declining residential allocation factors included in the Company's Residential Bill Analysis based upon its internal load forecast:



The majority of the costs in the Residential Bill Analysis are assigned to the residential class using Factor 1. As shown in the chart above, the Company used the actual

Factor 1 used to set rates in its 2019 RAC proceedings for 2020¹⁶ and the actual Factor 1 proposed to be used to set rates in its 2020 RAC proceedings for 2021.¹⁷ Then beginning in 2022, the Company used projected declining residential allocation factors based on its internal load forecast. These factors decline from 54.54% in 2022 to 49.12% by 2030. The Company also projected residential kWh sales based on the same residential CAGR from its internal load forecast.

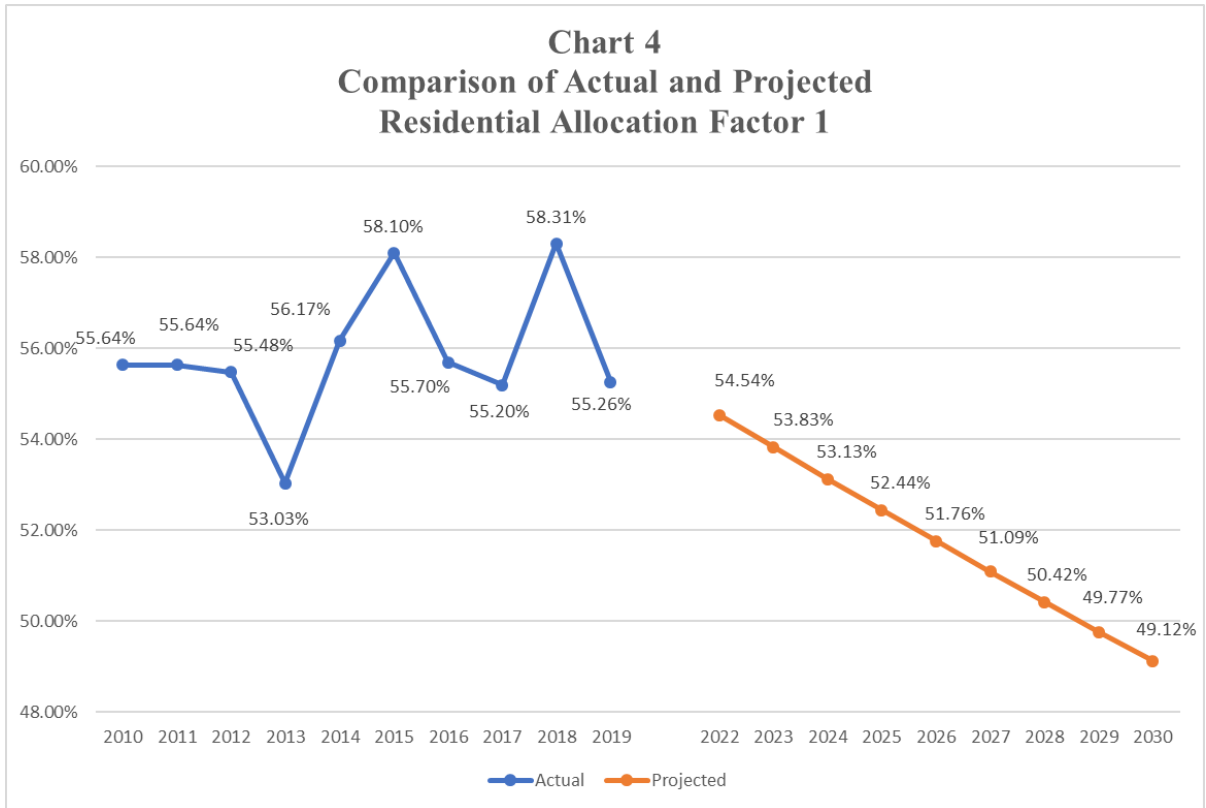
Q. DOES STAFF BELIEVE THAT THE USE OF DECLINING RESIDENTIAL ALLOCATION FACTORS UNDERSTATES THE CUSTOMER BILL IMPACTS PRESENTED IN THE COMPANY'S RESIDENTIAL BILL ANALYSIS?

A. Yes. The use of residential allocation factors that decline to a low of 49.12% by 2030 is far out of line with historical residential allocation factors used to set rates over the last decade. The following chart presents a comparison of residential Factor 1 based on actual data from 2010 through 2019 and the Company's projections from 2022 through 2030:¹⁸

¹⁶ Based on actual data as of December 31, 2018.

¹⁷ Based on actual data as of December 31, 2019.

¹⁸ See the response to Staff Interrogatory Set 2, Question No. 40 for support for the historical residential allocation factors shown below.



As shown above, residential Factor 1 fluctuated from year to year and ranged from a high of 58.31% in 2018 to a low of 53.03% in 2013, with an average over the ten-year period of 55.85%. Based on this long-term data, Staff does not have confidence in the use of projected residential allocation factors declining to 49.12% by 2030, nearly 7 percentage points below the historical ten-year average of 55.85%. Staff is concerned that these projected residential allocation factors are unrealistic and understate the residential bill impacts of Plans A, B, and B₁₉.¹⁹

¹⁹ The Commission addressed the use of the Company's internal load forecast for purposes of forecasting capacity and energy in the Company's 2018 IRP. Specifically, in its December 7, 2018 Order in the 2018 IRP, the Commission found that:

Based on the foregoing, rather than the Company's internal load forecast, the Commission directs that, for purposes of its corrected 2018 IRP, the Company shall utilize the Dominion Zone PJM coincident peak load forecast and energy sales forecast, scaled down to the Dominion load serving

Q. INSTEAD OF THE COMPANY'S PROJECTIONS, WHAT RESIDENTIAL ALLOCATION FACTORS DOES STAFF USE IN ITS RECALCULATED RESIDENTIAL BILL ANALYSIS?

A. Staff uses residential allocation factors and kWh sales most recently proposed by the Company for purposes of setting RAC rates. For example, Staff used the 2019 residential Factor 1 of 55.26%, which Dominion is currently proposing to use to set rates in pending Riders R, S, B, W, and GV filed with the Commission on June 1, 2020, for the majority of the costs included in Staff's Residential Bill Analysis.²⁰ Staff believes that this allocation factor is in line with the historical average for the last ten years and provides a more realistic estimate of the cost to a typical residential customer of Plans A, B, and B₁₉ based on how costs are assigned to the residential customer class today.²¹ As shown in Table 4 above, Staff's recalculated Residential Bill Analysis increases the monthly bill of a typical

entity level, consistent with the methodology presented by Staff witness White, as further modified below.

See Commonwealth of Virginia, ex rel. State Corporation Commission, In re: Virginia Electric and Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et. seq, Case No. PUR-2018-00065, 2018 S.C.C. Ann. Rept. 417, Order (Dec. 7, 2018).

²⁰ *See, e.g., Application of Virginia Electric and Power Company, For revision of rate adjustment clause: Rider S, Virginia City Hybrid Energy Center, Case No. PUR-2020-00102 ("2020 Rider S Proceeding").* In the 2020 Rider S Proceeding, the Company's proposed residential allocation factor is included in the direct testimony of Emilia L. Catron.

²¹ Staff acknowledges that the PJM load forecast that the Commission directed the Company to use in its December 7, 2018 Order in the 2018 IRP for forecasting capacity and energy is not available at a class level for use in the Residential Billing Analysis (see the response to Staff Interrogatory Set 20, Question No. 185 included in Appendix B to my testimony). This further supports Staff's proposed use of recent actual residential allocation factors in the Residential Billing Analysis, which appear to be more realistic than the Company's projections based on its internal load forecast.

residential customer using 1,000 kWh by an additional \$12.30 (or 22.4%) for Plan B₁₉ and \$11.87 (22.7%) for Plan B as compared to the Company's Residential Bill Analysis.²²

Base Rate Assumptions

Q. DOES STAFF HAVE ANY COMMENTS REGARDING THE BASE RATE ASSUMPTIONS MADE BY THE COMPANY FOR THE RESIDENTIAL BILL ANALYSIS?

A. Yes. The Company assumed that base rates for generation and distribution services will remain unchanged from their current level through 2030 by projecting a monthly bill impact of \$61.82 for a typical residential customer using 1,000 kWh for each year from 2020 through 2030. While Staff did not make an adjustment to this assumption in the Residential Bill Analysis, it is important to point out that Staff views this as a simplifying assumption only. Said another way, this in no way means that customers will not see impacts to their monthly bills resulting from the Company's base rate costs through 2030. In reality, base rate costs can, and likely will, impact customers' bills in a variety of ways during the period covered by the Residential Bill Analysis.

²² Staff's use of historical residential allocation factors to project residential revenue requirements in the Residential Billing Analysis is consistent with the Company's own longstanding practice for estimating lifetime revenue requirements by class as required by Schedule 46 of the Commission's Rules Governing Utility Rate Applications and Annual Informational Filings. *See, e.g.*, Schedule 46 C, Statement 2 – Annual Revenue Requirement by Year and Class for Duration of RAC from the 2020 Rider S Proceeding.

Q. PLEASE EXPLAIN HOW BASE RATE COSTS COULD IMPACT CUSTOMERS' BILLS.

A. Under current law, the outcomes of the triennial reviews of Dominion's base rates pursuant to § 56-585.1 A of the Code of Virginia ("Code") will determine the impact of base rate costs on customers' bills during the period covered by the Residential Bill Analysis.²³ In these proceedings, the Commission will conduct two statutorily inter-related, dependent analyses: (1) a historical review of base rate costs, revenues, and a resulting earned return on equity ("ROE") for the combined test periods under review ("Earnings Test"); and (2) a going-forward analysis of the Company's base rates ("Going Forward Analysis").

In the Earnings Test, costs included in base rate cost of service will have a direct impact on Dominion's base rate earned ROE. This earned ROE will determine the magnitude of any refunds due to customers on their bills as a result of the triennial review Earnings Test. Also, should the Company elect to use the customer credit reinvestment offset ("CCRO") to offset refunds due to customers pursuant to Code § 56-585.1 A 8 d, the base rate earned ROE in the Earnings Test will also impact the magnitude of capital investments in solar, wind, and distribution grid transformation projects recognized as a CCRO. This will impact customers' bills because, to the extent the Company elects to use the CCRO, the Company will have fewer potential capital expenditures to recover from customers in the future through RACs or base rates. Further, because the results of the

²³ In accordance with changes to Code §§ 56-585.1 and 56-585.1:1 made by the 2018 Grid Transformation and Security Act, after the conclusion of the Transitional Rate Period on December 31, 2016, reviews of DEV's rates for generation and distribution services shall resume in 2021, "utilizing the four successive 12-month test periods beginning January 1, 2017, and ending December 31, 2020." All other reviews that will occur after the end of the transitional rate period encompass three test periods. While four successive test periods compose the DEV 2021 review, Code § 56-585.1 as amended by SB 966 requires, "All such reviews occurring after December 31, 2017, shall be referred to as triennial reviews."

Earnings Test determine the Commission's ability under the Code to change base rates going-forward based on a Going Forward Analysis, costs included in the base rate cost of service and their resulting impact on the base rate earned ROE in the Earnings Test can have impacts on customers' bills going forward.

Q. IS STAFF AWARE OF SIGNIFICANT GENERATION-RELATED COSTS THAT WILL IMPACT THE BASE RATE COST OF SERVICE IN THE UPCOMING 2021 TRIENNIAL REVIEW?

A. Yes. In March 2019, DEV announced immediate retirement of 11 base rate fossil fuel-fired generating units as well as the retirement of an additional fossil fuel-fired generating unit in 2021.²⁴ As a result of these early retirement determinations, DEV recognized the remaining value of the generating units as period costs on its books in 2019 in the amount of \$263.7 million on a Virginia jurisdictional basis.²⁵ DEV also recorded significant additional costs associated with early retirements of base rate fossil fuel-fired generating facilities in the first quarter of 2020. Specifically, these costs total \$630.7 million on a Virginia jurisdictional basis and are associated with the announced early retirement of Chesterfield Power Station Units 5 and 6 (coal) and Yorktown Power Station Unit 3 (oil).²⁶

In total between 2019 and 2020, DEV recognized \$894.4 million of costs related to the

²⁴ Specifically, DEV announced the immediate retirement of Possum Point Units 3 and 4 (natural gas); Breomo Units 3 and 4 (natural gas); Chesterfield Units 3 and 4 (coal); Mecklenburg Units 1 and 2 (coal); Bellemeade Units 1 and 2 (natural gas); and Pittsylvania Unit 1 (wood). DEV also announced the early retirement of Possum Point Unit 5 (oil) to occur in 2021.

²⁵ See the response to Staff Interrogatory Set 2, Question No. 44 included in Appendix B to my testimony.

²⁶ See the response to Staff Interrogatory Set 2, Question No. 45 included in Appendix B to my testimony.

retirement of these legacy fossil fuel-fired units.²⁷ These are examples of significant base rate costs that are not captured in the Company's Residential Bill Analysis because of the simplifying assumption that base rates remain unchanged through 2030. Nonetheless, these very significant costs will be recovered from customers in one way or another and will likely impact potential customer refunds, CCROs, and going-forward base rates determined by the Commission in the 2021 triennial review as described above.²⁸

Other Assumptions

Q. DO YOU HAVE ANY OTHER COMMENTS ON THE ASSUMPTIONS MADE BY THE COMPANY IN THE RESIDENTIAL BILL ANALYSIS?

A. Yes. As explained above, the Company's Residential Bill Analysis relies upon numerous, complex projections of lifetime revenue requirements (including underlying projections of capital costs, financing costs, and operations and maintenance ("O&M") expenses), fuel and purchased power costs, Virginia jurisdictional allocation factors, etcetera. To the extent that actuals differ from the Company's projections, the actual costs that typical residential customers will pay on their monthly bills will also differ.

²⁷ During 2019, DEV also recognized approximately \$144.8 million as base rate costs on a Virginia jurisdictional basis associated with the early retirement of its automated meter reading electric distribution service meters. See the response to Staff Interrogatory Set 2, Question No. 46 included in Appendix B to my testimony.

²⁸ Pursuant to Code § 56-585.1 A 8 a, the Commission may not order a going-forward base rate increase for Dominion in the 2021 triennial review. Pursuant to Code § 56-585.1 A 8 c, any reduction to going-forward base rates for Dominion in the 2021 triennial review shall not exceed \$50 million in annual revenues.

Q. COULD THE VIRGINIA JURISDICTIONAL ALLOCATION FACTOR FOR CERTAIN COSTS DIFFER FROM THE COMPANY'S ASSUMPTIONS IN THE RESIDENTIAL BILL ANALYSIS?

A. Yes. For purposes of allocating total Company revenue requirements to the Virginia jurisdiction, the Company used a historical Virginia jurisdictional Factor 1 of approximately 80%.²⁹ This historical Factor 1 assumes that costs will be recovered from North Carolina customers as they have been in the past. However, the VCEA contains a provision, codified as Code § 56-585.5 F, which states that:

If a Phase I or Phase II Utility serves customers in more than one jurisdiction, such utility shall recover all of the costs of compliance with the RPS Program requirements from its Virginia customers through the applicable cost recovery mechanism, and all associated energy, capacity, and environmental attributes shall be assigned to Virginia to the extent that such costs are requested but not recovered from any system customers outside the Commonwealth.

To the extent a cost covered by this statutory language is not recovered from North Carolina customers, the Virginia jurisdictional allocation factor applied to that cost would be higher than the 80% assumed in the Company's Residential Bill Analysis, thereby increasing the associated monthly bill impact to a typical residential customer. For example, if Virginia jurisdictional customers bear 100% of a cost not recovered from North Carolina customers, the Virginia jurisdictional allocation factor applied to that cost could be as high as approximately 85%.

²⁹ Unlike its use of projected residential allocation factors based on its internal load forecast, the Company used historical Virginia jurisdictional allocation factors in its Residential Bill Analysis.

Q. ARE THERE OTHER EXAMPLES OF HOW ACTUALS COULD DIFFER FROM THE COMPANY'S ASSUMPTIONS?

A. Yes. The following are some other examples of how actuals could differ from the Company's assumptions in the Residential Bill Analysis:

- As Staff witness White addresses, the 2020 IRP assumes that Dominion will continue to participate in the PJM capacity market and receive associated capacity revenues. As such, the Residential Bill Analysis assumes that projected capacity revenues will offset, or reduce, the Company's revenue requirement for associated generating resources. If the Company were to no longer participate in the PJM capacity market, it could impact the Residential Bill Analysis.
- The fuel and purchased power costs included in the Residential Bill Analysis are based on the Company's fuel forecast, including the Company's underlying forecasts of commodity prices, PJM market purchases, and power purchase agreement ("PPA") costs. The fuel and purchased power costs modeled and included in the Residential Bill Analysis for Plans B and B₁₉ include the impact of significant fuel savings and reduced PPA costs as compared to Plan A. To the extent that actual fuel and purchased power costs differ from the Company's forecast, the monthly bill impact to a typical residential customer could increase or decrease.
- The capital investments and O&M expenses for Company-build resources are based upon the Company's projections. To the extent that actual capital investments and O&M expenses incurred by the Company differ from the Company's projections, the monthly bill impact to a typical residential customer could increase or decrease.
- Financing costs (i.e., interest expense and ROE) calculated for capital investments in Company-build resources are based upon the Company's current capital structure, cost of debt, and currently authorized ROE of 9.20%. To the extent the capital structure, cost of debt, or ROE change in the future, the monthly bill impact to a typical residential customer could increase or decrease.

Q. DO YOU HAVE ANY COMMENTS ON THE ASSUMED USAGE OF 1,000 KWH PER MONTH FOR A TYPICAL RESIDENTIAL CUSTOMER?

A. Yes. A key assumption in the Residential Bill Analysis is monthly usage for a typical residential customer of 1,000 kWh. It is longstanding Commission practice to use 1,000

kWh of monthly usage to calculate residential customer bill impacts, which provides for consistency and comparability over time. Recent monthly usage for the average residential customer is generally higher than 1,000 kWh, as shown in the following table:³⁰

Table 5
Residential Class Average Monthly Usage
For 2015 – 2019

<u>Year</u>	<u>Residential Bills</u>	<u>Residential Total kWh</u>	<u>Residential Average Usage</u>
2015	25,807,456	29,265,953,000	1,134
2016	26,078,517	28,624,379,996	1,098
2017	26,354,006	28,021,965,999	1,063
2018	26,645,871	30,409,802,002	1,141
2019	26,935,671	29,801,055,999	<u>1,106</u>
Average 2015-2019			1,108

While monthly bills of individual residential customers vary based on each individual customer's usage, the Residential Bill Analysis presents customer bill impacts based on a conservative assumption of 1,000 kWh of monthly usage per customer compared to the average usage of 1,108 kWh per month over the past five years. Staff witness Abbott further addresses customer usage and the impact of energy efficiency on customer bills in his testimony.

³⁰ See the response to Staff Interrogatory Set 2, Question No. 47 included in Appendix B to my testimony.

GS-1 and GS-4 Bill Analysis

Q. HAS STAFF CALCULATED BILL ANALYSES FOR SMALL AND LARGE GENERAL SERVICE CUSTOMERS?

A. Yes. While the Commission's March 9, 2020 Order in this proceeding only required the Company to prepare a Residential Bill Analysis, the Commission's recent July 10, 2020 Order Establishing 2020 RPS Proceedings required Dominion to provide "examples of bill impacts for small general service customers, and examples of bill impacts for large general service customers" for the Company's proposed renewable portfolio standard program.³¹ As a result, Staff used the Company's Bill Model to run a GS-1 Bill Analysis and a GS-4 Bill Analysis for Plans A, B, and B₁₉ to further develop the record in this proceeding.³²

The following table summarizes the results of Staff's GS-1 and GS-4 Bill Analyses:³³

³¹ See *Commonwealth of Virginia, ex rel. State Corporation Commission, Ex Parte: Establishing 2020 RPS Proceeding for Virginia Electric and Power Company*, Case No. PUR-2020-00134, Doc. Con. Cen. No. 200710234, Order Establishing 2020 RPS Proceedings (July 10, 2020).

³² In these analyses, Staff used recent GS-1 and GS-4 class allocation factors and sales and demand used to set rates in recent RAC proceedings, consistent with the residential class allocation factors used in Staff's recalculated Residential Bill Analysis discussed above.

³³ Additional details on Staff's GS-1 and GS-4 Bill Analyses are included in Appendix A to my testimony.

Table 6
Summary of Staff's GS-1 and GS-4 Bill Analyses

	GS-1 ¹		GS-4P ²	
	Plan B ₁₉	Plan B	Plan B ₁₉	Plan B
May 1, 2020	\$536.13	\$536.13	\$311,302	\$311,302
Plan A	\$148.69	\$148.69	\$103,464	\$103,464
Pre-2020 Legislation	\$78.46	\$80.08	\$29,595	\$31,215
2020 Legislation	\$125.05	\$108.31	\$55,596	\$45,920
Total 2030 Year End	\$888.33	\$873.21	\$499,957	\$491,901
Total Bill Increase	\$352.20	\$337.08	\$188,655	\$180,599

¹ GS-1 Bill Analysis assumes monthly usage of 6,000 kWh

² GS-4P Bill Analysis assumes monthly usage of 6,000,000 kWh and monthly demand of 10,000 KW

II. 2020-2035 PROJECTED CAPITAL INVESTMENTS

Q. PLEASE DISCUSS RECENT DOMINION ENERGY, INC., PRESENTATIONS TO INVESTORS AS THEY RELATE TO THE 2020 IRP.

A. As the Commission recently reported in its August 18, 2020 Status Report on the Implementation of the Virginia Electric Utility Regulation Act Pursuant to § 56-596 B of the Code of Virginia, Dominion Energy, Inc., made a presentation to investors in May 2020.³⁴ This May 5, 2020 investor presentation identified total potential DEV capital investments of \$50 to \$59 billion through 2035, which could increase DEV's total system net rate base by as much as 246% compared to the net rate base on December 31, 2019 of \$24 billion.³⁵ On July 5, 2020, Dominion Energy, Inc., made an additional investor update

³⁴ https://s2.q4cdn.com/510812146/files/doc_financials/2020/q1/2020-05-05-DE-IR-Q1-2020-earnings-call-slides-vTCIII.pdf.

³⁵ The Virginia jurisdictional portion of DEV's total system net rate base is approximately \$19.2 billion, or 80%.

presentation identifying \$47 billion of DEV investment in zero-carbon generation and storage resources from 2020 through 2035.^{36 37}

Q. ARE THE CAPITAL INVESTMENTS IDENTIFIED IN THE INVESTOR PRESENTATIONS CONSISTENT WITH THE COMPANY'S 2020 IRP?

A. Generally speaking, yes. To demonstrate that the 2020 IRP was prepared in a manner that is consistent with capital investment plans presented to investors, DEV reconciled the capital investments included in both investor presentations to the 2020 IRP.³⁸ Both of these presentations are generally consistent with 2020 IRP Plan B.

Q. PLEASE SUMMARIZE THE COMPANY'S CAPITAL INVESTMENT PLANS AS REFLECTED IN PLAN B OF THE 2020 IRP.

A. The following table, compiled by Staff based on numerous work papers provided by the Company supporting the Residential Bill Analysis, identifies the Company's 2020 through 2035 projected generation growth capital investments and associated total Company lifetime revenue requirements based on Plan B of the 2020 IRP:³⁹

³⁶ Zero-carbon generation and storage resources are defined in the July 5, 2020 investor update presentation to include wind, solar, battery, and nuclear re-licensing projects.

³⁷ https://s2.q4cdn.com/510812146/files/doc_presentations/2020/06/2020-07-05-DE-IR-investor-update-presentation-vTC.pdf

³⁸ The reconciliation to the May 5, 2020 investor presentation provided informally to Staff is attached to my testimony in Appendix B. The reconciliation to the July 5, 2020 investor presentation was provided in response to Staff Interrogatory Set 16, Question No. 151 and is included in Appendix B to my testimony.

³⁹ This information is compiled from work papers for the Residential Bill Analysis provided in response to Staff Informal Data Requests Set 1 and Set 2. Due to the voluminous nature of these responses, they are not attached to my testimony.

Table 7
Plan B Capital Investment Details
From 2020 - 2035
(In Billions of Dollars)

	Additional Generation	Projected Capital Investment	Lifetime Revenue Requirement
Offshore Wind Phase 1 - Stage 1	880 MW	\$2.64	\$6.17
Offshore Wind Phase 1 - Stage 2	880 MW	\$2.67	\$6.23
Offshore Wind Phase 1 - Stage 3	880 MW	\$2.70	\$6.16
Offshore Wind Phase 2	2,640 MW	\$9.18	\$18.57
Utility and Small Scale Solar Generic	10,375 MW	\$15.45	\$38.52
Pumped Storage	300 MW	\$2.89	\$9.78
Battery Storage	1,455 MW	\$3.93	\$5.69
Gas CTs	970 MW	\$0.62	\$1.90
Nuclear License Renewals	--	\$3.44	\$7.61
Total	18,380 MW	\$43.51	\$100.63

As the table above shows, Plan B includes \$43.5 billion of generation growth capital investment in solar, offshore wind, storage, gas combustion turbines, and nuclear license extensions. Collectively, these growth capital investments translate to a lifetime revenue requirement of \$100.6 billion on a total Company basis.⁴⁰ Plan B₁₉ is similar to Plan B, but includes additional solar investments of \$2.9 billion at an additional lifetime

⁴⁰ The lifetime revenue requirement is an estimate of the all-in cost of the Company's projected growth capital investments in nominal dollars, including recovery of and a return on the capital investments over their useful lives and associated O&M expenses. The return on the capital investments includes both interest expense on debt financing and a return on equity (or profit margin) to the Company's shareholders. The lifetime revenue requirements presented herein exclude any potential offsetting decreases, such as PJM capacity revenues or fuel savings.

revenue requirement of \$7.2 billion to account for the lower 19% solar capacity factor modeled in Plan B₁₉ compared to the 25% solar capacity factor modeled in Plan B.

The July 5, 2020 investor presentation identified \$47 billion of investment in zero-carbon generation and storage resources from 2020 through 2035, for a difference of approximately \$3.5 billion as compared to the \$43.5 billion included in Plan B of the 2020 IRP. This is because the investor presentation included the Coastal Virginia Offshore Wind Project and US-3 and US-4 solar projects already approved by the Commission as well as certain investments in ring-fenced solar projects⁴¹ that are not included in Plan B of the IRP.

Q. DID THE COMPANY IDENTIFY ITS PROJECTED GROWTH CAPITAL FOR THE DISTRIBUTION AND TRANSMISSION FUNCTIONS?

A. Yes. The Company projects distribution capital investments of \$4.5 billion associated with the Strategic Undergrounding Program, the Grid Transformation Plan, and broadband projects from 2020 through 2030. The lifetime revenue requirement of the Company's projected distribution capital investments is \$13.4 billion on a total Company basis.

As to the transmission function, the Company's May 5, 2020 investor presentation included \$8 billion of projected growth capital investments. While the Company did include projected transmission revenue requirements in its Residential Bill Analysis as directed by the Commission, its projections were limited and did not include underlying lifetime revenue requirement calculations that correspond to the \$8 billion of projected

⁴¹ Ring fenced solar projects are projects that are recovered through a contractual agreement with a specific customer and not recovered from the general body of customers through rates.

capital investment. In total, Plan B of the 2020 IRP includes generation, transmission, and distribution growth capital investments of approximately \$56 billion.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.