

VCEA Costs & Savings to the Virginia Ratepayer: AN UPDATED ANALYSIS

Analysis by Douglas Jester, 5 Lakes Energy
Commissioned by Virginia Advanced Energy Economy

February 7, 2022

TO: Harry Godfrey, Advanced Energy Economy

FROM: Douglas Jester, Partner, 5 Lakes Energy

DATE: 7 January 2022

SUBJECT: Residential Bill Impacts of the Virginia Clean Economy Act

At your request, 5 Lakes Energy is providing analysis of the effects of the Virginia Clean Economy Act (“VCEA”) on a typical residential customer bill in 2030. This memo summarizes our findings. We used both STEP, our integrated resource planning tool, and various direct calculations. Results are presented in 2022 dollars, ignoring the effects of general inflation that might occur between now and 2030.

On the basis of these calculations, we find that, adjusted for inflation, implementation of the VCEA through 2030 will modestly reduce the monthly electric bill of a residential customer using 1000 kWh per month in 2022.

2022 Baseline

As a starting point, we used a residential bill calculator that is available from the Dominion web site (<https://cdn-dominionenergy-prd-001.azureedge.net/-/media/files/bill-calculator-worksheet-va.xlsx?la=en&rev=a6f3c04f98c943e5918a3925f42bedc8&hash=56AD192E1FEAC82EDBE7665D4BC68156>). The following shows the monthly bills that would be expected in 2022 by a customer using 1000 kWh per month:

Bill Component	October - May	June - September
Distribution Service	\$29.29	\$29.29
Electricity Supply Services	\$50.36	\$55.60
Transmission	\$16.60	\$16.60
Fuel	\$20.45	\$20.45
Non-Bypassable Surcharges	\$3.32	\$3.32
Rider PIPP Universal Service Fee	\$0.03	\$0.03
Sales and Use Surcharge	\$ 0.36	\$0.36
Consumption Tax	\$ 1.57	\$1.57
TOTAL	\$121.98	\$127.22

The VCEA will have little effect on distribution costs. but energy efficiency surcharges are included in the distribution service portion of the bill. Transmission costs will be required for offshore wind, which we discuss below. Non-Bypassable charges may include certain energy related costs but appear in non-bypassable charges based on who is to pay the costs. Although Rider PIPP was created pursuant to the VCEA, we do not anticipate that its cost will be materially affected by the balance of the VCEA. Even though they are priced volumetrically, the underlying costs will not be much affected by energy efficiency and under standard ratemaking practices the unit rates will be adjusted to offset changes in total consumption. We therefore focus our analysis on the costs of electricity supply, fuel, and related changes in taxes.

Inflation Assumptions

In this analysis, cost data from a number of different years are used. In order to present these in 2022 dollars, we assume that the average general inflation rate will be 2% per year. This is the target adopted by the Federal Reserve and we assume that, over time, they will achieve this target through monetary policy.

Energy Efficiency

The VCEA requires energy efficiency programming that will reduce the average customer's electricity use 5% by 2025 and, subject to decisions by the SCC, continuing energy efficiency programming thereafter. Details of Dominion's future programs as approved by the SCC are unknown at this time.

As a basis for our projections, we assume that Dominion's programs will follow the "Enhanced LMI VCEA" scenario presented in "Pathways for Energy Efficiency in Virginia: Scenarios for Virginia Electric and Power Company to Achieve the Virginia Clean Economy Act Energy Efficiency Savings Goals", which is available from <https://www.aceee.org/pathways-energy-efficiency-virginia>. This scenario maps an energy efficiency pathway wherein the utility meets its overall EE targets while emphasizing efficiency for low- and moderate-income residential consumers, a priority in the VCEA. As this analysis indicates, the utility should meet their efficiency goals in the near term, resulting in their continuation and growth over the full decade.

For this analysis, we exclude increases in electricity usage from adoption of electric vehicles and similar structural changes in the economy; this enables a clear analysis of the effect of the VCEA on the costs of power supply. Electrification of transportation and heat will dilute the utility costs that are fixed relative to electricity delivery and will lower rates for the existing uses and the bills for customers who have not adopted electric vehicles or electric heat.

Under the Enhanced LMI VCEA scenario, the Pathways model shows that Dominion would achieve cumulative energy savings of 10.66% by 2030 as compared to a 2019 baseline. But the cumulative energy savings through 2021 as compared to the 2019 baseline was 1.41%. Thus the 2030 savings as compared to a 2022 baseline are projected to be 9.25%. Because the original analyses of the bill impacts of the VCEA were based on a customer using 1000 kWh per month in 2020, we include all of the cumulative savings to 2030 as reductions in usage of such a customer. We therefore project that an average customer using 1000 kWh per month in 2020 will be using 907 kWh per month in 2030.

Reducing average energy consumption to 907 kWh per month would proportionally reduce electricity supply costs and fuel costs. Using Dominion's residential bill calculator, electricity supply savings for our representative residential customer would be \$4.86 per month in October – May and \$5.14 per month in June – September. Fuel cost savings in both periods would be \$1.90 per month, for a total savings of \$6.76 per month in October – May and \$7.04 per month June - September.

The current Dominion residential bill calculator includes \$1.28 per month for energy efficiency programs in the distribution service charge. According to the "Pathways" report, the "Enhanced LMI VCEA" energy efficiency scenario assumed that energy efficiency programs essentially end at the start of 2030, so the costs of efficiency programs are not projected into 2030. In order to provide a fair analysis of the bill impacts of this energy efficiency scenario, we assume the 2029 energy efficiency budget carries over to 2030, equivalent to assuming that the programs continue at the 2029 levels. Under the assumptions of

the “Pathways” model, this would result in a monthly surcharge of \$3.58 for our representative residential customer who used 1000 kWh per month in 2020. Thus, the incremental monthly energy efficiency surcharge in a 2030 bill compared to a 2022 bill will be \$2.30 per month, which we subtract from gross bills savings resulting from efficiency.

Net bill savings in the projected 2030 bill, considering fuel supply and fuel cost savings and energy efficiency surcharges, would be \$4.46 per month in October – May and \$4.74 in June – September.

Energy efficiency also reduces the consumption tax, but that is accounted for below in discussion of net tax changes.

Offshore Wind

We assume that the renewable generation that will be implemented by 2030 will include the approximately 2587 MW of offshore wind project proposed by Dominion in SCC docket PUR-2021-00142. Dominion estimates that this will require \$9.8 billion investment and have a gross capacity factor of 43.3%; we accept these projections for the purposes of this analysis. Capacity factor is the amount of energy that will be produced in the average hour as a percentage of the nominal capacity of a plant. Investment in the proposed offshore wind facilities will create revenue requirements for recovery of depreciation expenses, cost of capital, and operations and maintenance expenses of the facilities but also will save power purchase costs and/or fuel and other expenses of alternative ways to provide the power that will be provided by the offshore wind facilities. In SCC docket PUR-2021-00142, Dominion provided estimates of the net revenue requirements in each calendar year that result from investing in the proposed offshore wind facilities. (See PUR-2021-00142 VEPCO Application Volume 2 Appendix VII.1.a, Appendix VII.1.b, and Appendix VII.1.c)

It should be noted that, as with all utility capital investments, the required revenue is higher in early than later years due to the need to recover cost of capital on the undepreciated balance of the investment. 2030 is relatively early in the life of the proposed offshore wind facilities, so there is a net cost that adds to customer bills in 2030. In Dominion’s projections, that net cost becomes negative (i.e., bill-reducing) in 2047 and thereafter. This is typical of new power generation facilities and the proper economic perspective is whether the investment is beneficial over its lifetime. Dominion estimates that the proposed offshore wind facilities investment is a net benefit over the full lifecycle of these facilities.

Dominion’s estimate is that net revenue required in 2030 for the offshore wind facilities is \$707.687 million to be recovered through electricity supply charges and a total of \$95.208 million to be recovered as transmission charges. Their net revenue analysis includes the costs of the offshore wind facilities, offset by avoided costs of purchases of power and capacity in the PJM market. As costs are currently allocated, 42.2559% of these costs would be allocated to residential customers. Under current practices, these costs allocated to residential customers would be charged to customers per kWh. Using these factors, we calculate that the bill impact on our representative residential customer in 2030 would be \$10.32 per month in 2030 dollars. Adjusting for inflation, this is equivalent to \$8.81 per month in 2022 dollars, of which \$7.76 would be in electricity supply services plus fuel and \$1.05 per month would be in transmission.

If Dominion is able to take advantage of a Production Tax Credit currently pending in Congress, and which we think is likely to be adopted, the net cost per month for our representative residential

customer would be reduced by approximately \$0.91 per month in 2030 dollars, or about \$0.84 in 2022 dollars. Thus, the incremental cost that we use in our bill comparison is \$6.92 per month for electricity supply services. We assume that the pending tax changes will not affect the costs of required transmission investments.

Other Renewable Energy

The least-cost, best-fit way to meet the rest of the required renewable generation up to 2030 under the VCEA is to use solar generation. The combined generation from Dominion's planned offshore wind project and solar developments will exceed the requirements of the RPS in 2030.

To estimate the bill impacts of solar additions in 2030, we assumed the solar additions plan presented by Dominion in the VCEA compliant options in its most recent integrated resource plan addendum (SCC docket PUR-2021-00201). That plan calls for the cumulative addition of 8,055 MW between 2022 and 2029, which is approximately the additions that would affect bills in 2030 but not in 2022. We assumed solar cost trends based on the National Renewable Energy Laboratory's Annual Technology Baseline Advanced Technology projection. We assume that solar will predominantly be acquired through competitive power purchase agreements. The VCEA requires that 35% of the solar and onshore wind constructed to comply with the VCEA be 3rd party owned and operated. Moreover, the SCC has been receptive to arguments that PPAs and REC purchases represent the least-cost compliance pathway under the RPS, giving us confidence that a significant share of solar development will follow those pathways. Based on that analysis, we project that 2030 revenue requirements for this incremental solar build will be approximately \$381 million.

We also project that solar generation in 2030 from these incremental solar additions from 2022 through 2029 will be approximately 14.625 million MWh. Based on an ICF forecast of PJM market prices in 2030 (SCC docket PUR-2021-00201 Appendix 4O), we estimate that the avoided energy and capacity cost in 2030 attributable to this solar generation will be approximately \$704 million (in 2030 nominal dollars). Net savings in 2030 dollars will be approximately \$323 million, which is the amount by which solar generation is less costly than power purchases from the PJM market. Assuming that current cost allocation factors (42.2559% to residential customers) will prevail in 2030, the residential share of these savings will be approximately \$137 million and the savings per kWh of residential energy delivery will be just under one-half cent per kWh. For our representative 2030 residential customer, this will constitute a monthly bill savings of \$4.28 in 2030 dollars. Adjusted to 2022 dollars for our bill comparison, this savings is approximately \$3.66 per month.

If Congress passes expected changes to the investment tax credit system for solar, which we think is likely, the cost of solar will be reduced and the bill savings increased. We estimate that the bill savings in 2022 dollars will increase to \$4.61 per month. This is the incremental savings we use in our analysis of bill changes for our representative residential customer.

Coal, Oil, and Biomass Plant Closings

Closing coal, oil, and biomass plants as prescribed by the VCEA will eliminate the fuel, operations, and maintenance costs for those plants, as well as removing the generation of those plants from the grid. Based on operating records, we find that this will reduce generation by about 9.281 billion kWh and reduce utility annual required revenue by about \$284 million in 2022 dollars. This reduced generation is

more than made up by the generation from offshore wind and solar described above. However, above we subtracted the avoided cost of market purchases due to the availability of offshore wind and solar in calculating the net cost of those investments and must therefore add back the costs of replacing the generation not supplied by these coal and biomass plants. We estimate that these are worth about \$320 million in 2022 dollars, for a net cost of \$36 million. As allocated to residential customers and included in rates, this is equivalent to about \$0.45 per month in 2030 (but in 2022 dollars) for our representative residential customer.

Under the VCEA, Dominion is encouraged to acquire additional solar capacity above that required for compliance with the renewable portfolio standard and discussed above. It is therefore reasonable to assume that instead of replacing power currently provided by coal and biomass plants by purchasing energy and capacity from the PJM market, Dominion will replace these plants with solar on an equal-energy basis. As note above, solar provides a net cost savings compared to comparable energy and capacity in the PJM market. Replacing the approximately 9.281 billion kWh currently provided by coal and biomass plants with solar will provide approximately \$205 million in net savings in 2030 as compared to using PJM market power and capacity to replace retiring coal and biomass plants. Converting this amount to savings on our representative customer bill for 2030 in 2022 dollars) we project a monthly bill savings of \$2.93, rather than the increase of \$0.45 calculated in the preceding paragraph that would result from PJM market purchases. We therefore assume that retiring coal and biomass plants and replacing these with solar will result in a monthly bill reduction of \$2.48 and incorporate that into the 2030 total bill impact of the VCEA.

We likewise calculate that, as a result of these retirements, there will be some savings in RGGI carbon allowance requirements as the utility reduces its portfolio of emitting power plants. Forecasts indicate that the costs of carbon allowances should decline over time (SCC docket PUR-2021-00201 Appendix 40). We incorporate \$1.85 in reduced carbon allowance costs which go from \$2.39 per month in 2022 to \$0.54 per month in 2030 for our representative residential customer.

Energy Storage

We assume that Dominion will build additional energy storage as presented in their most recent integrated resource plan addendum (SCC docket PUR-2021-00201). That plan calls for the cumulative addition of 1,063 MW battery storage through 2029. We assumed battery cost trends based on the National Renewable Energy Laboratory's Annual Technology Baseline Advanced Technology projection. We assumed that the depreciation life of such batteries will be 10 years, which is likely conservative but is currently common practice. We also assumed that Congress will pass expected extension of investment tax credits to battery storage, which we think is likely. Based on these projected costs and standard cost recovery practices we project that Dominion's 2030 revenue requirements for storage will be approximately \$256 million in 2030 dollars. Allocating those costs in the same manner we described above for other costs we project a 2030 bill contribution of \$3.36 per month for our representative residential customer. Adjusted for inflation to 2022 dollars, we incorporate into our bill impact analysis a cost of \$2.87 per month in 2022 dollars.

Other Bill Impacts

Sales and Use Surcharges change proportional to the total of the non-tax bill, but the change will be so small that it rounds to no change.

Reduced consumption by our representative residential customer will proportionally reduce the monthly consumption tax from \$1.57 to \$1.41, for a net savings of \$0.16 per month.

Total Bill Impact

We combine all of the effects on a representative residential customer’s monthly bill that are described above in the following summary table:

Energy Efficiency October – May	-\$6.76
Energy Efficiency June- September	-\$7.04
Incremental Energy Efficiency Surcharge	\$2.30
Offshore Wind Transmission	\$1.05
Offshore Wind Energy Supply	\$6.92
Solar Energy Supply	-\$4.61
Coal and Biomass Closings	-\$2.48
Reduced RGGI Payments	-\$1.85
Energy Storage Costs	\$2.87
<u>Net Tax Changes</u>	<u>-\$0.16</u>
TOTAL Change October – May	-\$2.72
TOTAL Change June-September	-\$3.00

Thus, for a representative residential customer and assuming that Dominion and the SCC pursue an appropriate level of energy efficiency programming, the net effect of the VCEA on a monthly bill is a modest reduction.

TO: Harry Godfrey, Advanced Energy Economy

FROM: Douglas Jester, Partner, 5 Lakes Energy

DATE: 24 January 2022

SUBJECT: Residential Bill Impacts of the Virginia Clean Economy Act – SCC Staff Analysis

At your request, 5 Lakes Energy is providing rebuttal of the SCC Staff analysis of the effects of the Virginia Clean Economy Act (“VCEA”) on a typical residential customer bill in 2030, as presented in the testimony of Carol Myers in SCC docket PUR-2020-00035. This memo summarizes our findings.

On the basis of these calculations, we find that, adjusted for inflation, implementation of the VCEA through 2030 will have no material effect on the monthly electric bill of a residential customer using 1000 kWh per month in 2022.

Summary of SCC Analysis

The SCC Staff analysis includes the following table as a summary of their analysis, which I reproduce here for ready reference. Their table also includes small and large general service customers, but as our analysis is focused on residential bills, only that portion of the table is included.

	Plan B19	Plan B
May 1, 2020	\$116.18	\$116.18
Plan A	\$24.70	\$24.70
Pre-2020 Legislation	\$16.57	\$16.84
2020 Legislation	\$26.05	\$22.73
Total 2030 Year End	\$183.50	\$180.54
Total Bill Increase	\$67.32	\$64.27

Multiplying the Total Bill Increase by 12 yields either \$807.84 (Plan B19) or \$771.24 (Plan B). I believe that the Plan B19 figure has been the basis for publicity about this.

As I show below, this is fundamentally a problem in “comparing apples to oranges”.

Comparison Baseline

SCC Staff’s baseline for this comparison is the May 2020 bill for a residential customer using 1,000 kWh power per month, which would have been \$116.18. In our memorandum earlier this month, we started from January 2022 which would provide a May 2022 bill of \$121.98. Thus, the SCC Staff analysis begins with a customer bill that is \$5.80 less than a current year bill. I could find no basis anywhere in SCC records to suggest that any material portion of this increase is attributable to the VCEA.

Further, our analysis was an attempt to estimate the effects of the VCEA. SCC Staff adds in bill increases that they attribute to Plan A and to Pre-2020 Legislation. Plan A was provided by Dominion Virginia in the IRP case PUR-2020-00035 as the least cost plan absent the requirements of the VCEA and other relevant legislation. Pre-2020 legislation clearly does not include the VCEA. Therefore, it is not appropriate to attribute these costs to the VCEA. Thus the SCC Staff only attribute about 39% of their

claimed bill increase to the VCEA under plan B19 and about 35% of their claimed bill increase to the VCEA under plan B.

If we assume that the rate increase that has occurred between May 2020 and January 2022 was a portion of the increases that SCC Staff attributed to Pre-2020 legislation, then the baseline for comparison to Plan B19 would appropriately be the Staff starting point of \$116.18 in May 2020 plus \$24.70 for Plan A and \$16.57 for pre-2020 Legislation, or \$157.45. Similarly, if we assume that the rate increase that has occurred between May 2020 and January 2022 was a portion of the increases that SCC Staff attributed to Pre-2020 legislation, then the baseline for comparison to Plan B would appropriately be the Staff starting point of \$116.18 in May 2020 plus \$24.70 for Plan A and \$16.48 for pre-2020 Legislation, or \$157.72. This is illustrated in the additional lines in the following table.

	Plan B19	Plan B
May 1, 2020	\$116.18	\$116.18
Plan A	\$24.70	\$24.70
Pre-2020 Legislation	\$16.57	\$16.84
Pre-VCEA Baseline	\$157.45	\$157.72
2020 Legislation	\$26.05	\$22.73
Total 2030 Year End	\$183.50	\$180.54
Bill Increase Attributed to VCEA	\$26.05	\$22.73

Given the contents of the pre-2020 Legislation and the fact that some inflation (approximately 4%) has occurred between the times when the May 2020 rates and the May 2022 rates, it is likely that the May 2022 rates represent a mixture of increases due to pre-2020 Legislation and inflation. If we assume 4% inflation from May 2020 to May 2022 on a monthly bill of \$116.18, that would be an increase of \$4.65 per month due to inflation and we could roughly attribute the \$1.15 remainder of the \$5.80 increase from May 2020 to May 2022 to pre-2020 legislation. This results in resetting the Staff baseline for the effects of the VCEA from \$116.18 to \$162.10

	Plan B19	Plan B
May 1, 2020	\$116.18	\$116.18
Inflation to May 2022	\$4.65	\$4.65
May 2022 bill attributed to Pre-2020 Legislation	\$1.15	\$1.15
May 1, 2022 Bill	\$121.98	\$121.98
Plan A	\$24.70	\$24.70
Pre-2020 Legislation	\$16.57	\$16.84
Less May 2022 bill increase already attributed to Pre-2020 Legislation	(\$1.15)	(\$1.15)
Remaining Cost Attributed to Pre-2020 Legislation	\$15.42	\$15.42
Pre-VCEA Baseline	\$162.10	\$162.10
2020 Legislation	\$26.05	\$22.73
Total 2030 Year End	\$188.15	\$188.84
Bill Increase Attributed to VCEA	\$26.05	\$22.73

Without regard to the baseline, which affects calculation of percentage increase and related calculations, the Staff assessment of the incremental monthly bill costs of compliance with the VCEA is \$26.05 under Plan B19 or \$22.73 under Plan B.

Cost Allocation Assumptions

A key point in the SCC Staff analysis, highlighted in the testimony of Carol Myers, is that Dominion projected on the basis of anticipated sales that residential customer revenue requirements as a share of total revenue requirements will decline from 55.26% in 2019 to 49.12% by 2030. Dominion based this forecast on projected growth in industrial, primarily data center, demand that greatly exceeds growth in residential demand. SCC Staff, on the other hand, assumed that the residential share would remain near the most recent 10-year average of 55.85%. Much of the difference between the SCC Staff projection, the Dominion projection, and ours earlier this month spring from this difference in cost allocation.

The first point to observe is that the Staff objection is primarily to assuming the projected data center sales, which are not certain and therefore might not materialize. However, if that growth does not materialize, then Dominion's power supply obligations and opportunities and revenue requirements will be reduced; SCC Staff did not account for any reduced costs in that scenario, instead assuming that all of Dominion's projected costs will be incurred and residential customers will just pay a larger share.

A second point to observe is that the Staff objection to including the data center forecast is fundamentally not about the VCEA, though it could be argued that the data center sales are more likely to materialize under the VCEA due to the well-known preference or requirement of the major data center operators for power supplied from renewable resources. It is simply not appropriate to assume revenue requirements based on projected data center growth but apply cost allocation as though data center growth will not occur. Since it is not possible without a comprehensive reanalysis of the integrated resource plan, consistency requires that we assume that the data center growth will occur and proceed on that basis.

If we maintain the assumption that the residential share of revenue requirements will decline to 49.12% as projected by Dominion and not stay near 55.26% as assumed by SCC Staff, the effect on residential bills will be on the entire bill and all of the SCC Staff projections of the bill impacts of Plan A, of Pre-2020 Legislation, and of the VCEA will be overstated. However, as no material part of that cost allocation question is attributable to the VCEA, it is not appropriate to compare the total bill under these two assumptions and attribute the entire change between 2020 and 2030 to the VCEA, which is what SCC Staff presented.

It is appropriate to consider the effect of the residential cost allocation share on the incremental costs attributed to the VCEA. The Staff attribution of costs due to the VCEA under Plan B is \$22.73 per month based on the staff allocation of 55.26% of revenue to residential customers. We can adjust this amount to the Dominion allocation factor of 49.12% by dividing it by the Staff allocator (55.26%) and multiplying by the Dominion allocator (49.12%), which changes the VCEA costs allocated to a residential customer from \$22.73 to \$20.20. Thus without the Staff reallocation of costs, the Staff are attributing monthly costs of \$20.20 in 2030 to the VCEA.

Inflation Assumptions

In this analysis, cost data from a number of different years are used. In order to present these in 2022 dollars, we assume that the average general inflation rate will be 2% per year. This is the target adopted by the Federal Reserve and we assume that, over time, they will achieve this target through monetary policy.

The SCC Staff analysis starts with a 2020 residential bill and projects a 2030 residential bill. For purposes of this comparison, we would appropriately adjust the incremental cost that SCC Staff attribute to the VCEA from 2030 dollars to 2020 dollars, which reduces the \$20.20 incremental cost under the Dominion allocator to \$16.57 in 2020 dollars. Thus if we set aside all disputes about the costs for Dominion to comply with the VCEA and simply focus on an “apples-to-apples” comparison, the annual incremental residential bill cost of the VCEA should be considered to be \$198.84 (12*\$16.57), not approximately \$800. All of the balance of the bill increase to 2030 projected by SCC Staff is due to something other than the VCEA and the announced cost of about \$800 per year is misleading.

Below, I show that the bill increase of \$16.57 per month or \$198.84 per year that the SCC Staff attributes to the VCEA is also significantly overstated.

Energy Efficiency

Notwithstanding the energy efficiency requirements of the VCEA (and earlier legislation), SCC Staff persist in comparing bills for a customer consuming 1000 kWh per month. They argue that this provides greater comparability. While it is fair to say that comparing the bills of a standardized customer consuming 1000 kWh per month simplifies the comparison of rates with changing mixes of fixed, variable, and other charges, it is not a fair basis for considering the bill impacts of the VCEA. The VCEA requires energy efficiency programming that will reduce the average customer’s electricity use 5% by 2025 and, subject to decisions by the SCC, continuing energy efficiency programming thereafter. Thus any analysis of bill impact on a representative customer should account for the effects of that energy efficiency programming. Nothing in the SCC Staff testimony seriously engages this issue, so we maintain the analysis in our memorandum from earlier this month. We estimated that the net 2030 monthly residential bill impact of the VCEA energy efficiency requirements in 2022 dollars will be \$4.46 per month in October – May and \$4.74 per month in June – September, for an annual total of \$54.64. However, we included in that calculation the costs of the energy efficiency programs required by the VCEA, which we estimated to be \$2.30 per month. This cost is included in the cost of the VCEA implementation used by Staff, either in the form of direct energy efficiency program costs or in the form of power supply costs that would be avoided through energy efficiency programming; we therefore add that amount, \$27.60 per year, into the savings attributable to energy efficiency and subtract it from the bill impact of the VCEA. Thus, accounting for non-VCEA factors and energy efficiency in the residential bill impact analysis reduces the annual increase that SCC Staff attributes to the VCEA and other changes to \$114.60 in 2022 dollars. This remaining effect is a monthly residential bill impact of \$9.55 instead of \$16.57 per month, with the savings of \$7.02 attributable to the energy efficiency requirements of the VCEA.

Remaining Differences

SCC Staff analysis of the costs of “2020 Legislation” includes not only the VCEA but also the costs of participation in RGGI. As of 2022, the typical residential bill includes approximately \$2.39 per month for RGGI carbon allowances and this amount should not be attributed to the VCEA. Subtracting this amount from our \$9.55 per month correction of the costs the SCC Staff attributed to the VCEA leaves a residual cost assignment to the VCEA of only \$7.16 per month.

In our previous memo regarding the bill impacts of the VCEA, we identified likely cost savings for compliance with the VCEA due to expected extensions of federal investment and production tax credits for renewable energy and storage. The total impact of these tax provisions on the average 2030 residential bill is approximately \$3.09 per month, further reducing the average residential monthly bill impact attributable to the VCEA to \$4.07.

Between the filing of the Dominion IRP on which the SCC Staff analysis was based and the present time, the costs of solar and storage have both declined faster than was forecast by Dominion in their IRP. We estimate that this savings reduces the costs attributed to the VCEA in the SCC Staff analysis by approximately \$4.00 per month.