ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 1 of 26

SURREBUTTAL TESTIMONY OF

PHILIP HAYET

ON BEHALF OF

THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF

DOCKET NO. 2019-226-E

IN RE: SOUTH CAROLINA ENERGY FREEDOM ACT (HOUSE BILL 3659) PROCEEDING RELATED TO S.C. CODE ANN. SECTION 58-37-40 AND INTEGRATED RESOURCE PLANS FOR DOMINION ENERGY SOUTH CAROLINA, INCORPORATED

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND OCCUPATION.

A. My name is Philip Hayet and I am a Vice President and Principal of J. Kennedy and Associates, Inc. ("Kennedy and Associates"). My business address is 570 Colonial Park Drive, Suite 305, Roswell, Georgia, 30075.

Q. DID YOU PREVIOUSLY FILE DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes. I previously provided Direct Testimony on behalf of the South Carolina Office of Regulatory Staff ("ORS") on July 10, 2020. My Direct Testimony supported portions of the ORS report entitled, "Review of Dominion Energy South Carolina, Inc. 2020 Integrated Resource Plan" (the "ORS Report") that Kennedy and Associates assisted ORS to prepare.[1] Kennedy and Associates' review of the Dominion Energy South Carolina, Inc. ("DESC" or the "Company") Integrated Resource Plan (the "IRP") included an assessment of the Company's compliance with the statutory requirements of S.C. Code

[1] A copy of the Report was attached to ORS witness Anthony Sandonato's Direct Testimony as his Exhibit AMS-1.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 2 of 26

Ann. Section 58-37-40 ("Section 40"), as amended by the South Carolina Energy Freedom Act ("Act 62").

Q. WHAT IS THE PURPOSE OF YOUR SURREBUTTAL TESTIMONY?

A. I will respond to the Rebuttal Testimony of DESC witnesses Eric Bell and Therese Griffin, in which they discuss the Company's detailed review of the ORS Report. The purpose of my Surrebuttal Testimony is to update the ORS recommendations in response to the Company's Rebuttal Testimony. I present an overview of all of the recommendations that ORS identified and discussed in the ORS Report, and provide a brief statement of the current status of the recommendations. In addition, to the extent that issues with any recommendation are still in dispute or require additional clarification, I indicate which ORS witness will address the issue in more detail in our respective surrebuttal testimonies. Finally, I address certain issues that I was responsible for that were discussed in the ORS Report.

Q. WHAT WAS ORS'S OVERALL ASSESSMENT OF THE COMPANY'S INITIAL IRP REPORT?

A. In Direct Testimony, ORS witnesses Kollen, Baron, and I found that the Company's IRP provides flexibility and identifies a range of plausible long-term expansion paths that the Company could pursue; however, "we also found that the DESC IRP analyses contained a significant number of flaws related to its assumptions and modeling methodologies."[2] In total, ORS presented twenty-seven (27) recommendations, including some with sub-parts, which the Company's witnesses addressed in their rebuttal testimonies. Some of the ORS recommendations were identified as recommendations the

[2] See Hayet Direct Testimony, p. 4, l. 9.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 3 of 26

Company should address immediately in this IRP, and others were identified as long-term recommendations that could be addressed in a future IRP.

Q. HOW DID THE COMPANY RESPOND TO ORS'S REVIEW OF THE COMPANY'S INITIAL IRP?

A. The Company addressed all of the recommendations that ORS identified and in fact, Company witness Eric Bell stated that the Company found the recommendations to be "helpful and constructive."[3] The Company agreed, "either in whole or in part with the suggested changes,"[4] and incorporated all but one of ORS's recommendations for immediate changes in the supplemental analysis (the "IRP Supplement") that Mr. Bell presented in Exhibit No. EHB-3. The IRP Supplement is a revised version of Section II.B.5 of the Company's 2020 IRP Report. Mr. Bell discussed all of ORS's recommendations for changes or improvements that should be addressed in future IRP filings. ORS recommended that the Company attempt to address these issues in the next annual update to the IRP, but no later than the next comprehensive IRP in 2023. Mr. Bell stated that the Company is willing to consult with ORS and other parties on nearly all of these recommendations as it prepares future IRPs or IRP updates.

Q. WHAT IS ORS'S OVERALL ASSESSMENT OF THE COMPANY'S IRP SUPPLEMENT?

A. ORS is satisfied the Company was responsive to the ORS Report, and accordingly revised its entire IRP as reflected in the IRP Supplement attached to Mr. Bell's Rebuttal Testimony. The ORS agrees with the Company that many of the issues that ORS disagreed

[3] Rebuttal Testimony of Eric Bell p. 2, l. 7.
[4] Mr. Bell notes that the Company accepted and accounted for all but one of the ORS's immediate changes, p. 2, l. 12.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 4 of 26

with the Company on can be resolved based on collaboration between the Company and stakeholders in future IRPs. However, some of the issues that are still in disagreement, as discussed in this testimony, will need to be resolved in this proceeding.

STATUS OF ORS 2020 IRP RECOMMENDATIONS

Q. PLEASE PROVIDE AN UPDATE OF THE ORS RECOMMENDATIONS THAT YOU SPONSORED IN YOUR DIRECT TESTIMONY.

A. The following tables contain the ORS recommendations that I included in my Direct Testimony and the current status of each recommendation based on the Company's Rebuttal Testimony, discovery responses, and a discussion between ORS and the Company on September 8, 2020. The tables also identify the ORS witness who discuss each issue in more detail. Our surrebuttal testimonies focus on those recommendations that have not yet been completely resolved or that require additional discussion. The first table contains the immediate issues that the ORS Report recommended should be corrected in the 2020 IRP, and the second table contains the issues that should be addressed as soon as possible, preferably in the next annual update to the IRP, but no later than the next comprehensive IRP in 2023.

Item	Recommendations for this IRP	Status	Addressed by ORS Witness
11	The Company should update its Wateree Unit 2 ("Wateree 2") analysis by correcting errors and properly accounting for the insurance payout.	Updated analysis included in Company's Rebuttal Testimony. Eric Bell at 14-18.	Hayet
12	The Company should include a discussion of the Wateree 2 outage and the decision it makes to either repair or retire the unit.	Updated analysis included in Company's Rebuttal Testimony. Eric Bell at 14-18.	Hayet

Item	Recommendations for this IRP	Status	Addressed by ORS Witness
13	The Company should review its assumptions regarding long-term continuing capital cost de-escalation of renewable energy projects	Assumptions updated in Company's Rebuttal Testimony. No further issue. Jim Neely at 7-8	Kollen
14	The Company should review its capital cost assumptions for its internal combustion turbine ("ICT") resource in this IRP to ensure that the costs are reasonable given its assumption appears to be much lower that other industry estimates.	Reviewed by Company, costs appear to be reasonable. No further issue. Jim Neely at 8-9.	-
15	The Company should include fixed operation and maintenance ("O&M") expenses for new owned solar and battery energy storage system ("BESS") resource additions in this and future IRPs.	Company added fixed O&M costs for new solar and owned BESS resources. No further issue. Jim Neely at 11.	Kollen
16	The Company should review its O&M assumptions for all combined cycle ("CC") and ICT resource options and revise those assumptions in this IRP if they are found to be unreasonable or in error.	Company revised reviewed CC and ICT fixed and variable O&M inputs. No further issue. Jim Neely at 11-12.	-
21	The Company should escalate its cost assumptions for short-term winter capacity purchases.	Company added an escalation rate to its short-term winter capacity purchase cost. No further issue. Jim Neely at 12-13.	-
22	The Company should update its IRP to include tables that rank all RPs under all sensitivities.	Tables now included in IRP Supplement. No further issue. Jim Neely at 14-15.	-
23a	The Company should correct errors in the transfer of PROSYM expenses to the Excel revenue requirement models.	Corrections have been made. No further issue Jim Neely at 15.	-
23b	The Company should include capitalized interest ("AFUDC") in its revenue requirement modeling.	Company has added AFUDC to fossil alternatives, but not renewables. Minor dispute remains. Jim Neely at 15-16.	Kollen
23c	The Company should correct errors in calculations that escalated capital expenditures to future dollars for new resource additions and for Wateree and Williams Effluent Limitation Guidelines ("ELG") capital expenditures/plant additions	Company escalated costs to 2026 dollars and added approx. $30 million. No further issue. Jim Neely at 16.	-

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 5 of 26

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 6 of 26

Item	Recommendations for this IRP	Status	Addressed by ORS Witness
23d	The Company should include incremental capital expenditures/plant additions for existing resources and new resources after commercial operation, with the sole exception of the Wateree and Williams ELG capital expenditures/plant additions.	Company has included capital additions costs. Jim Neely at 16-17.	Kollen
23e	The Company should replace each new BESS resource after its assumed ten-year operating life.	Company found batteries require 20% augmentation every 7 years. Fixed O&M added for a 3% augmentation each year. Jim Neely at 17.	Kollen
23f	The Company should properly account for Investment Tax Credits for new owned solar and BESS resource additions.	Company adjusted Modified Accelerated Cost Recovery System ("MACRS") depreciation rates to account for ITC. Jim Neely at 17-18.	Kollen
23g	The Company should include dismantlement costs, site restoration costs, and incremental transmission costs necessary for post-retirement voltage support for existing resources, particularly resources studied for possible early retirement.	Company believes this has already been addressed and made no adjustment. Jim Neely at page 19, Eric Bell at 5-7.	Kollen
23h	The Company should use the correct depreciable life assumption for ELG capital expenditures/plant additions.	Company adjusted ELG fixed charge schedules to correspond with retirement dates. No further issue. Jim Neely at 20-21.	-
23i	The Company should include ICT natural gas firm transportation costs in any of the RPs.	Previously, Company has not held firm gas transportation for ICTs. Given the size and amount of ICTs being added, Company now includes costs. No further issue. Jim Neely at 21.	-
23j	The company should include the capital revenue requirements of the new ICT resource addition in 2040 in RP8.	Company corrected this and now accounts for these costs. No further issue. Jim Neely at 21.	-

Item	Recommendations for this IRP	Status	Addressed by ORS Witness
23k	The Company should review its escalation calculations for final ten (10) years of the study period as discussed in the Report.	Company reevaluated this and modified escalation. No further issue. Jim Neely at 21-22.	-

Q. PLEASE PROVIDE THE LIST OF RECOMMENDATIONS THAT SHOULD BE ADDRESSED AS SOON AS POSSIBLE, BUT NOT LATER THAN THE NEXT COMPREHENSIVE IRP IN 2023.

A. The recommendations are included in the following table.

Item	Recommendations for a Future IRP	Status	Addressed by ORS Witness
1	The Company should provide a more thorough presentation of its load and energy forecasting methodology in future IRPs.	Committed to work with parties to provide this information in future IRPs. Eric Bell at 18.	Baron
2	The Company should improve its residential and commercial peak load forecasting methodology to reflect behavioral factors that are likely to impact peak demand over time.	Committed to work with parties to review the Company's methodologies in future IRPs. Eric Bell at 18.	Baron
3	The Company should expand the number of sensitivities it analyzes to include both Demand Side Management ("DSM") scenarios and actual load growth scenarios in the expansion plan and economic analyses it performs. Also a wider spread in load forecasts should be considered.	Committed to work with parties to expand sensitivities in future IRPs. Eric Bell at pages 18. Joseph Lynch at 9-11.	Follow-up Work Required. Resolved for this IRP
4a	The Company should include a detailed analysis of its reserve margin methodology, possibly in an Appendix, including additional explanation of its dual reserve margin criteria.	Committed to work on this with parties in future IRPs, particularly in light of the implementation of the new resource optimization approach. Eric Bell at 19.	Baron

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 7 of 26

Item	Recommendations for a Future IRP	Status	Addressed by ORS Witness
4b	The Company should also include with its reserve margin information, support for its inclusion of the VACAR Reserve Sharing Agreement operating reserve obligation in its reserve margin calculation.[5]	Committed to work on this with parties in future IRPs, particularly in light of the implementation of the new resource optimization approach. Eric Bell at 19.	Baron
5a	The Company should consider utilizing an optimal economic based reserve margin methodology.	Committed to discuss this with parties. Eric Bell at 20.	Baron
5b	The Company should present the results of a traditional Loss of Load Expectation analysis, which includes assessing the impacts of varying weather conditions and tie line support.	Committed to discuss this with parties. Eric Bell at 20.	Baron
6	The Company should only use DSM assumptions that it has confidence in and believes are reasonable and achievable.	Committed to revisit this and work with parties to limit high DSM assumptions to reasonable and achievable levels. Eric Bell at 19.	Hayet
7	The Company should reexamine its gas forecasting methodology, investigate alternative approaches, and perform a comparison to other publicly available forecasts to evaluate the reasonableness of its forecasts.	Committed to work with parties to reexamine its natural gas forecast approach and to compare to other industry forecasts. Eric Bell at 19.	Follow-up Work Required. Resolved for this IRP
8	The Company should address the availability and constraints of natural gas pipeline capacity and supply on the timing, size, and location of potential new CC and ICT resource additions in future IRPs.	Committed to work with parties to provide discussions of this in future IRPs. Eric Bell at 19.	Follow-up Work Required. Resolved for this IRP
9	The Company should include a third CO_2 price sensitivity case in future IRPs.	Committed to work with parties to provide additional CO2 sensitivities in future IRPs. Eric Bell at 19.	Follow-up Work Required. Resolved for this IRP

[5] North American Electric Reliability Corp VACAR subregion, which includes most of Virginia and the Carolinas.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 8 of 26

Item	Recommendations for a Future IRP	Status	Addressed by ORS Witness
10	The Company should conduct a detailed retirement study using corrected modeling assumptions and address all potential early retirement candidates.	Plans to conduct detailed retirement studies in coming years. States they are time consuming, resource intensive, and expensive. Eric Bell at 21-23.	Kollen
17	The Company should reevaluate its assumption regarding its reliance on generic winter capacity purchases and ensure that any decision to add those capacity purchases is made based on the availability and economics of the capacity purchases.	Committed to work with parties to reevaluate its reliance on winter reliability purchases. Eric Bell at 19.	Follow-up Work Required. Resolved for this IRP
18	The Company should incorporate a least cost optimization expansion planning model.	Currently implementing Plexos – LTR. Goal is to use in 2021 IRP, if possible. Decision to be made Fall 2020. Eric Bell at 25-26.	Hayet
19	The Company should expand the number of RPs evaluated for future IRPs filings.	Company willing to do this, but this will be influenced by how studies are structured once the resource optimization model is implemented. Eric Bell at 26-27.	Hayet
20	The Company should develop alternative RPs for different gas price and CO_2 sensitivities in future IRP filings.	This will be influenced by how studies are structured once the resource optimization model is implemented. Eric Bell at 26-27.	Hayet
24	The Company should complete the studies to address the changes to the transmission system and the related investment infrastructure costs necessary for new solar resource additions and include that information and a description of its studies and conclusions in the next comprehensive IRP in 2023.	Company states that a statewide study is being pursued that presumably will address renewable integration issues. Eric Bell at 29-30.	Hayet
25	The Company should supply additional information about distribution resource plans and integrated system operational plans.	DESC does not see the benefit of including distribution planning or operational information in the IRP. Eric Bell at 30.	Hayet

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 9 of 26

Item	Recommendations for a Future IRP	Status	Addressed by ORS Witness
26	The Company should create a stakeholder process to provide opportunities for stakeholder involvement and input in the formulation of future IRPs.	Company fully supports creating a stakeholder process for use in future IRPs. Must be recognized that ultimately it will be the Company's decision about what will be included in the IRP that it will have to support. Eric Bell at 27-28.	Hayet
27	The Company should develop a three-year action plan that identifies all actions the Company intends to take in order to implement its IRP in each future update and comprehensive IRP.	Believes an action plan requirement is incompatible with the nature of an IRP because an IRP does not authorize the Company to take any action. Eric Bell at 28-29.	Hayet

Q. WHAT WERE YOUR PRIMARY RESPONSIBILITIES WITH REGARD TO THE ORS REPORT?

A. I had the primary responsibility for developing the following sections:

- Evolution of the IRP Process in South Carolina
- Demand Side Management
- Natural Gas Price Forecasts
- CO_2 Price Forecasts
- Existing System
- Generic Resource Options
- Transmission System Planning and Investments
- Distribution and Integrated System Operations Plans
- Other Considerations

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 10 of 26

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 11 of 26

I also had primary responsibility for reviewing the Company's production cost modeling results, and also the responsibility for reviewing the workpapers used to create the Company's RPs, the Intervenor's RPs, and the Wateree 2 repair/retirement RPs. Mr. Baron and Mr. Kollen describe their responsibilities in their respective direct testimonies.

Q. PLEASE DISCUSS THE ORS RECOMMENDATIONS NUMBERED 11 AND 12, REGARDING WATEREE 2.

A. Recommendations 11 and 12 concerned Wateree 2, which suffered a major outage from a hydrogen related fire on February 19, 2020 and resulted in a decision by the Company to replace the damaged mid-section of the unit's stator.[6] ORS's finding was that given the number of errors that were identified in both the Company's IRP analyses, and the Company's subsequent Wateree 2 outage evaluation study, the results were unreliable. Recommendation 11 requested the Company correct the errors and conduct additional Wateree 2 analyses, and to reconsider the way insurance payments should be included in the analysis. Recommendation 12 requested that the Company provide additional discussion of the Wateree 2 analysis in testimony or the IRP Report, as the Company had previously only discussed it in discovery responses.

Q. PLEASE EXPLAIN HOW THE COMPANY RESPONDED TO ORS'S RECOMMENDATIONS.

A. The Company revised its modeling assumptions addressing virtually all of ORS's modeling concerns and re-ran its IRP studies and its separate Wateree studies. The changes associated with the ORS's modeling concerns were applied to both the IRP studies and to the Wateree studies; however, the Company still maintained differences in the studies that

[6] Rebuttal Testimony of Eric Bell, p. 14, l. 20.

existed at the time they were originally performed. The reason different study assumptions were used (different vintages of fuel costs, fixed transportation costs, and other inputs) owes to the fact that the studies were initially performed at different times, and the Company's base case assumptions were different at those times. Mr. Bell discusses the Wateree 2 retirement study in his Rebuttal Testimony, and he provides the updated results in Exhibit EHB-4 that is included with his Rebuttal Testimony. Mr. Bell concludes that the updated results confirm the reasonableness of the Company's decision that had already been reached to repair Wateree 2. In fact, the process of repairing the unit is underway at this point.

Mr. Bell also explains that the Company reviewed its insurance payout modeling assumptions with its risk management group and concluded that it had properly accounted for those assumptions in its analyses. ORS was concerned that the Company might have understated the insurance payout assumption it modeled in the Wateree 2 retirement case, which would have biased the economic analysis results in favor of repairing the unit. However, based on the discussions with the DESC risk management group, the Company reconfirmed that if the unit were retired, it would only be entitled to the book value of the asset less depreciation, less the deductible, which it asserts would just be a small amount of money, and "would not have been advisable [to do] given the potential future impact on insurance premiums."[7]

Q. IS ORS SATISFIED THAT THE COMPANY HAS REASONABLY ADDRESSED ORS'S WATEREE 2 RECOMMENDATIONS (11 AND 12)?

[7] Rebuttal Testimony of Eric Bell. p. 17, l. 21.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 12 of 26

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 13 of 26

A. Yes, The Company conducted an updated Wateree 2 study using revised assumptions based on ORS's recommendations, the Company addressed ORS's insurance payout modeling concerns, and the Company provided the updated Wateree 2 study results and an explanation of the results in Mr. Bell's Rebuttal Testimony.

Q. DID YOU IDENTIFY ANY OTHER CONCERNS IN YOUR DIRECT TESTIMONY REGARDING WATEREE 2?

A. Yes, I noted one other concern, which was that ORS was unable to conclude that RP2 should be found to be the Company's preferred IRP expansion plan because the Company had identified a different preferred expansion plan in its Wateree 2 analysis. Even after re-running the IRP and Wateree 2 analyses, which the Company presented in its IRP Supplement, two different preferred expansion plans still exist. The primary difference in the two preferred expansion plans relates to the next major fossil-fueled capacity addition. The preferred plan in the Company's IRP Supplement continues to be RP2, which identifies an ICT resource as the next major fossil-fueled resource addition in the winter of 2035. The preferred plan in the Wateree 2 study identifies a CC as the next major fossil-fueled resource addition (Exhibit EHB-4).

Q. ARE YOU STILL CONCERNED ABOUT THIS ISSUE?

A. Not for the purposes of this IRP proceeding. As with all IRPs, the selection of new resource additions is dependent on many factors and assumptions, which can change from one IRP to the next. The Company modified certain assumptions for purposes of the Wateree studies compared to the assumptions used in the IRP, which caused the selection of the next resource addition to change to a CC in the Wateree studies compared to an ICT in the revised RP2 reflected in the IRP Supplement. It is quite possible that this next

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 14 of 26

resource will change from an ICT to a CC, or possibly some other resource as facts, circumstances, and assumptions are revised in future IRPs.

Another consideration is that the Company will file an updated IRP in February 2021, approximately six (6) months from now, and based on discussions with the Company, the IRP will either use the revised assumptions from the Wateree 2 study or use other revised and more current assumptions. Furthermore, this issue concerns a decision about a resource that will be added in the year 2035, and as such, plenty of time exists before a final decision about that resource will have to be made. Finally, there does not appear to be any major proceeding soon that will rely on the results of this IRP, such as an avoided cost case that will occur prior to when the next IRP is filed in February 2021.[8] For these reasons, ORS is satisfied that Scenario RP2 that the Company identified in its IRP Supplement, based on updated modeling assumptions, is a reasonable preferred resource plan for purposes of this IRP.

Q. PLEASE DISCUSS ORS RECOMMENDATION NUMBER 6, REGARDING THE COMPANY'S DSM ASSUMPTIONS.

A. Recommendation 6 relates to ORS's concern about assumptions the Company used in its DSM analysis. ORS found that it was not reasonable for the Company to have conducted its IRP studies using assumptions that it readily admitted were "likely not achievable,"[9] and ORS recommended that in future IRP's the Company only use assumptions that it has confidence in and believes are reasonable and achievable.

Q. DID THE COMPANY DISPUTE YOUR POSITION ON THIS MATTER IN REBUTTAL TESTIMONY?

[8] Discussions with the Company on September 8, 2020.
[9] DESC 2020 IRP Report, p. 45.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 15 of 26

A. It was not clear from a review of Ms. Griffin's Rebuttal Testimony, thus ORS submitted additional discovery (ORS AIR 10-18b), and the Company clarified its position as follows:

> Ms. Griffin's testimony did not "dispute" Mr. Hayet's testimony but provided clarifications to accurately characterize the approaches used to determine DSM cases modeled in the IRP. While the medium DSM case is supported by the outcome of a comprehensive 18-month potential study where measures passed cost effectiveness testing, the high DSM case did not receive the same level of rigorous analysis. Therefore, the high case is based on assumptions and cannot be validated without completing an additional comprehensive potential study.

In essence, the Company's clarification is that the high DSM case assumptions used in the Company's economic analyses, had not been evaluated using the comprehensive potential study approach that the Company used to evaluate the medium DSM assumptions.

Q. ARE YOU SATISFIED WITH THE COMPANY'S RESPONSE TO THIS ISSUE FOR PURPOSES OF THIS IRP?

A. Yes, but my position is not based on Ms. Griffin's clarification alone. Before explaining this, there a few other points I would like to note. First, I find it highly unusual that a utility would conduct an IRP and utilize assumptions that it had not properly evaluated. The Company could have developed a set of high DSM assumptions when it conducted its 2019 Achievable DSM Potential Study just like it did for its medium DSM assumptions, especially knowing that:

> The IRP statute requires the modeling of "low, medium and high cases" for the adoption of energy efficiency measures. [10]

Second, setting aside the fact that the Company does not support the use of the high DSM assumptions in this IRP, the results of Company's IRP Supplement economic

[10] Rebuttal Testimony of Ms. Therese Griffin, p. 2, l. 6.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 16 of 26

evaluation indicate that the high DSM scenario merits further evaluation. Mr. Bell's Exhibit EHB-3 at pages 10 and 12 provides net present value ("NPV") results separately for forty-eight (48) medium DSM scenarios (page 10), and forty-eight (48) high DSM scenarios (page 12). In 96% of the cases, the high DSM scenarios are lower cost than the corresponding medium DSM cases. The results for the high DSM scenarios certainly indicate that those cases warrant further consideration in the future.

Ultimately, the reason I am satisfied with the Company's response for purposes of this IRP is that in response to ORS AIR 10-18 part d, the Company provided an unqualified commitment that in future IRP's it will utilize DSM assumptions that it believes are reasonable and achievable, meaning it will conduct comprehensive evaluations of all of its DSM assumptions, not just the Medium DSM assumptions. Additionally, as discussed in the ORS IRP Report, because the Company completed an 18 month Achievable Potential Study, which the Commission recently approved, the ORS is generally satisfied with the DSM scenarios, particularly the medium DSM case that the Company relied on for this IRP. Ms. Griffin reiterated this point in her Rebuttal Testimony, in which she stated:

> The study itself required approximately 18 months to complete from those initial scoping sessions to the final report. The regulatory process through which this Commission reviewed its conclusions required an additional period of slightly less than six months from filing through hearing to initial order. Implementation of the plan began earlier this year. In short, the process took over two years. [11]

I also agree with her statement that:

> The 2019 Potential Study was fully reviewed and evaluated in Docket No. 2019-239-E and implementation of it is underway this year. The Company should have the opportunity to implement these programs, assess customer satisfaction, and evaluate the results, none of which can be performed if the programs are relitigated. [12]

[11] Rebuttal Testimony of Therese Griffin, p. 4, l. 10.
[12] Id. p. 4, l. 19.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 17 of 26

I believe that Ms. Griffin's position is reasonable for purposes of this IRP, however, I firmly believe that in conjunction with the evaluation of the DSM results and in conjunction with future IRPs, the Company must derive reasonable assumptions for the high DSM scenario, just as the statute requires, and fully evaluate all scenarios to identify the least cost resource plan for customers. Ms. Griffin may or may not be correct in stating that energy efficiency gains today for lighting and appliances are much less dramatic and more incremental, and that it would be misleading to assume that DSM results from other states, under different regulatory and climate conditions, could necessarily be achieved in South Carolina.[13] However, the results from this IRP suggest that greater levels of DSM, based on reasonable assumptions, should be examined more closely in future IRPs, which the Company has committed to do.

Q. PLEASE DISCUSS THE ORS'S RECOMMENDATIONS THAT THE COMPANY SHOULD 1) IMPLEMENT A LEAST COST OPTIMIZATION MODEL, 2) EXPAND THE NUMBER OF RPS THAT IT EVALUATES, AND 3) DEVELOP ALTERNATIVE RPS IN FUTURE IRPS (RECOMMENDATIONS 18, 19, AND 20, RESPECTIVELY).

A. Recommendation 18 relates to the ORS's concern about flaws in the Company's IRP modeling processes that could be improved by implementing a long-term expansion plan optimization model. The ORS recommended that the Company should place a high priority on completing implementation of such a model prior to the 2021 IRP. However, the ORS also recognized that implementation and use of new modeling tools could require

[13] Id. p. 10, l. 6–11.

additional time and that the Company should simply try to complete this process as quickly as possible, but by no means later than for the next comprehensive IRP in 2023.

Q. HOW DID THE COMPANY RESPOND TO THIS RECOMMENDATION?

A. The Company responded that it was just now beginning the process of implementing the PLEXOS LT – Capacity Expansion module, which Mr. Bell states is currently used across the Dominion Energy footprint. Mr. Bell also stated:

> DESC intends to have that model fully configured and tested in time to support the 2021 IRP update. But it will be a complex process. The model includes hundreds of control inputs and thousands of data inputs. The model manages the inputs and outputs for multiple suites of third-party software and models that assist it in optimizing dozens of models and scenarios. DESC is placing a high priority on this configuration effort as ORS requests, but it could encounter problems and delays that make the 2021 goal impossible. Depending on how the implementation process progresses, during the fall of 2020 a decision will be made about relying on that model for the 2021 update. [14]

Q. DO YOU FIND DESC'S RESPONSE TO BE REASONABLE?

A. Yes.

Q. PLEASE DISCUSS RECOMMENDATIONS 19 AND 20 RELATED TO RESOURCE PLANS.

A. Recommendations 19 and 20 ultimately also could be addressed by the Company implementing a long-term expansion plan optimization model. Recommendation 19 requests the Company to expand the number of resource plans evaluated in future IRPs. In the 2019 IRP, the Company evaluated 19 expansion plan alternatives, while in this IRP, the Company performed evaluations of just 8 different expansion plan alternatives. ORS agrees with Company witness Bell's Rebuttal Testimony that addresses this issue once a long-term expansion plan optimization model begins to be used. Mr. Bell states, "While

[14] Rebuttal Testimony of Eric Bell, p. 26, l. 5.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 18 of 26

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 19 of 26

the Company is willing to provide additional resource plans where it makes sense to do so, the first suggestion is not consistent with the nature of a resource optimization (CAPEX) model."[15] It is true that an optimization model will automatically create numerous resource plans that will be tested against each other, and it will rank order and identify the least cost plan amongst them based on the assumptions provided. Therefore, the Company is correct that it will not necessarily be required to incorporate this recommendation in its IRP process once it implements an optimization model, however, until an optimization model is implemented, ORS continues to support Recommendation 19.

ORS's Recommendation 20 relates to the fact that the Company performed sensitivity analyses in which it assumed the same long-term expansion plan would occur for the same scenario whether the scenario contained a $25/ton CO2 price assumption or a zero CO2 price assumption. The Company made the same type of assumption with regard to different natural gas price sensitivity cases. The ORS agrees with the Company that "the resource optimization model will develop resource plans that are optimized for each gas price and CO2 cost sensitivity provided to it as ORS requests."[16] This is yet again, another reason why the Company should implement its long-term expansion plan optimization model as quickly as possible.

Q. PLEASE DISCUSS THE ORS RECOMMENDATIONS THAT THE COMPANY SHOULD 1) COMPLETE STUDIES TO FURTHER EVALUATE THE INTEGRATION OF RENEWABLE RESOURCES IN ITS SYSTEM AND 2) SUPPLY ADDITIONAL INFORMATION ABOUT DISTRIBUTION AND

[15] Id. p. 26, l. 19.
[16] Id. p. 27, l. 10.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 20 of 26

INTEGRATED SYSTEM OPERATIONAL PLANS (RECOMMENDATIONS 24 AND 25, RESPECTIVELY).

A. For Recommendation 24, the ORS recommended the Company complete studies investigating transmission and distribution impacts to integrate additional solar resources into the grid. Mr. Bell noted in his Rebuttal Testimony that a statewide renewable integration study is being pursued. Mr. Bell is referring to the fact that S.C. Code Ann. § 58-37-60 (2019) authorized the Commission and the ORS to initiate a study to investigate integration issues associated with increased levels of renewables. The results of the study are to be made available to interested parties. The Commission recently (September 2, 2020) issued a directive to Commission Staff requesting a new docket be opened, and that a virtual forum discussion group be setup to consider issues associated with conducting the study. The ORS is satisfied that Recommendation 24 will be addressed by this integration study.

For Recommendation 25, the ORS recommended that the Company should supply additional information about distribution resource plans and integrated system operation plans in future IRPs. In his Rebuttal Testimony, Mr. Bell states that:

> The Company's IRP guides its decision making regarding system-level resource planning issues. Distribution planning deals more with small area, localized planning and how to deliver power from the transmission grid to neighborhoods and local load centers. At present, distribution planning does not impact system-level resource planning in any meaningful way. DESC does not see the benefit of including distribution planning or operational information in its IRP. [17]

Mr. Bell concluded by stating that the IRP statute does not require this information to be provided.

[17] Id. p 30, l. 10.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 21 of 26

Q. HOW DO YOU INTERPRET THE COMPANY'S POSITION REGARDING ITS WILLINGNESS TO INCORPORATE DISTRIBUTION PLANNING OR OPERATIONAL INFORMATION IN ITS IRP?

A. First, I agree that the IRP statute does not require it. Though the statute (S.C. Code Ann. § 58-37-60) did not establish this as a requirement, it did state that "An integrated resource plan may include distribution resource plans or integrated system operations plans."

Second, I disagree with the Company about the benefit of including distribution planning or integrated system operations plans in its IRP. In fact, as I noted in my Direct Testimony, the Company included discussions of issues related to distribution resource plans throughout its IRP, including discussions of DSM and Advanced Metering Infrastructure, but it did not provide much in the way of detail. ORS submitted follow-up discovery questions, which the Company responded to, however, that information should have been supplied in the initial IRP filing. Ms. Sommer, on behalf of CCL and SACE expressed similar concerns about information that was not supplied in the original IRP filing, and she concluded that providing information in testimony, "does not substitute for having that content in the IRP."[18]

Q. DID THE COMPANY CLARIFY ITS POSITION IN RESPONSE TO RECENT DISCOVERY?

A. Yes. In response to ORS AIR 10-10a, the Company stated, "Mr. Bell's statement in no way indicated that this issue will be foreclosed for consideration in future IRPs when the operative facts and scenarios are more clearly established." The Company's discovery

[18] Direct Testimony of Anna Sommer, p. 26, l. 6.

response further made it clear that the Company's position that was expressed in Mr. Bell's testimony (quoted above) only concerns this IRP. In response to ORS AIR 10-10d, the Company stated, "Distribution system issues may be included in future IRPs or IRP updates when the operative facts and scenarios are more clearly established."

Q. HAVING CONSIDERED THE COMPANY'S REBUTTAL TESTIMONY AND DISCOVERY RESPONSES, PLEASE SUMMARIZE YOUR CURRENT RECOMMENDATION ON THIS MATTER.

A. I remain convinced that distribution planning and the integration of distribution and generation planning is an important and burgeoning issue that should be addressed in the Company's IRP. I continue to recommend that the Company should provide more detailed information concerning what it is doing in this area in future IRPs, including providing background, status, and timeline information with as much detail as possible. As I mentioned, much of this information ultimately was supplied based on discovery requests that were submitted.

As to the question of whether the Company is doing enough in the area of integrating generation resource, distribution, transmission, and customer service planning in its overall IRP process, I think this is a rapidly developing area within the utility industry and do believe the Company is monitoring these developments. Furthermore, there are other means by which to ensure the proper focus is being placed on these issues, including establishing an IRP stakeholder process, as I will discuss next, and by ensuring that the renewable integration study is completed, which is currently underway and will involve all of the utilities in the State and other interested stakeholders.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 22 of 26

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 23 of 26

Q. PLEASE DISCUSS ORS RECOMMENDATION 26 THAT STATES THE COMPANY SHOULD CREATE A STAKEHOLDER PROCESS FOR FUTURE IRPS.

A. In his Rebuttal Testimony, Mr. Bell states that, "The Company fully supports creating a stakeholder process," and he also states that, "the Company will give consideration to all suggestions that are provided."[19] The Company conditions such a process on two things. First, it should be understood that while the Company is committed to taking stakeholder comments into consideration, the Company ultimately shall have final authority to decide what is presented in its IRP document. Second, Mr. Bell states it is unlikely that the Company would be able to implement a stakeholder process in the 2021 IRP update filing.

Q. ARE THESE CONDITIONS ACCEPTABLE TO ORS AND DO YOU HAVE ANY FURTHER RECOMMENDATIONS?

A. Yes. With regard to the date to begin the stakeholder process, it does seem reasonable to wait for the 2022 IRP to begin this process given that the Company will not have much time between when an order is issued in this proceeding and when the next IRP will be filed in February 2021. Plus, waiting to begin this process in the 2022 IRP would give the Company and intervenors the opportunity to conduct research regarding stakeholder processes in other states,[20] and for the Company to propose parameters for the stakeholder process when it makes its 2021 IRP filing. Some of the parameters that ORS recommends should be accounted for include:

[19] Rebuttal Testimony of Eric Bell, p. 27, l. 16.
[20] In addition to researching other states, it may be of interest to parties to research the Louisiana Public Service Commission IRP rules regarding stakeholder interaction.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 24 of 26

- Establishing the understanding that the Company is responsible for the content that is ultimately included in its IRP (as Mr. Bell discussed).
- Providing a means for stakeholders to provide written comments and requiring the Company to include those comments in its IRP Report, along with the Company's response to each comment.
- Requiring the Company to facilitate stakeholder meetings and allow stakeholders the opportunity to make presentations.
- Establishing a reasonable number of meetings but limiting the number so that the stakeholder process does not become overly burdensome for any of the participants.

Q. PLEASE DISCUSS THE FINAL ORS RECOMMENDATION, 27, REQUIRING THE COMPANY TO CREATE A THREE (3) YEAR ACTION PLAN.

A. ORS continues to support the recommendation that the Company should be required to include a three (3) year Action Plan in its future IRP Reports. The Company appears to object to this and believes an action plan is incompatible with the nature of an IRP. The Company's reasons appear to be: [21]

- The IRP is a planning document whose purpose is to identify a reference expansion plan to guide future decision making.
- The IRP does not authorize the Company to take any action.
- Inclusion of an action plan in the IRP would distort the purpose of the IRP as a planning document.

[21] Rebuttal Testimony of Eric Bell, p. 29.

- Inclusion of an action plan in an IRP would be contrary to the regulatory structure in South Carolina.

Q. WHY DOES THE COMPANY BELIEVE AN ACTION PLAN WOULD BE CONTRARY TO THE REGULATORY STRUCTURE IN SOUTH CAROLINA?

A. Mr. Bell seems to believe that because the Company has to go through a certification process as part of the Utility Facility Siting and Environmental Compliance Act, it would be a distortion of the IRP's nature and purpose as a planning document and would violate the state's regulatory structure.

Q. DO YOU BELIEVE THIS IS REASONABLE?

A. No, I do not, and I cannot think of another sizable utility such as DESC in another state that files an IRP Report without an Action Plan. I have reviewed many IRP reports over my career in many states, and I believe that most of the states have similar certification requirements as exist here in South Carolina.

Q. ARE YOU AWARE OF ANY OTHER UTILITIES HERE IN SOUTH CAROLINA THAT HAVE FILED IRP REPORTS THAT INCLUDE AN ACTION PLAN?

A. Yes, both Duke Energy Progress, LLC and Duke Energy Carolinas, LLC (collectively "Duke") filed their 2020 IRP Reports in South Carolina on September 1, 2020 and each included a 10 page chapter entitled Short-Term Action Plan (Chapter 14) that covers topics such as recent accomplishments, completed studies informing the IRP, stakeholder engagement process, DSM and renewable information, and plans for transitioning toward integrated systems operations planning. There does not appear to be any information in the Duke Action Plans that should cause a concern that putting in an action plan in an IRP Report would be contrary to the regulatory structure in South

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 25 of 26

Carolina. ORS continues to support its recommendation that DESC should include a three (3) year Action Plan in future IRPs.

Q. WILL YOU UPDATE YOUR SURREBUTTAL TESTIMONY BASED ON INFORMATION THAT BECOMES AVAILABLE?

A. Yes. ORS fully reserves the right to revise its recommendations via supplemental testimony should new information not previously provided by the Company, or other sources, becomes available.

Q. DOES THIS CONCLUDE YOUR SURREBUTTAL TESTIMONY?

A. Yes.

ELECTRONICALLY FILED - 2020 October 2 9:49 AM - SCPSC - Docket # 2019-226-E - Page 26 of 26