INTEGRATED RESOURCE PLAN

2025 UPDATE

Dominion Energy South Carolina, Inc.

March 31, 2025

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I. INTRODUCTION

Dominion Energy South Carolina, Inc.'s ("DESC" or the "Company") is a vertically integrated utility that operates generation, transmission, and distribution systems that serves approximately 800,000 electric customers and 500,000 gas customers in South Carolina. The Company's mission is to provide the reliable, affordable, and increasingly clean energy that powers its customers' lives every day. DESC has a proven track record of operating reliably, with customers having uninterrupted power more than 99% of the time. Its rates are currently below the national average (currently more than 8% below the national average)[1].

Looking forward, additional in-state resources to generate, transmit, and distribute power reliably are needed as has been shown by DESC's previous integrated resource plans ("IRPs"). South Carolina is among the fastest growing states in the nation, and DESC's electric demand is forecasted to increase 25% by 2044, or 1.2% compound annual growth over the twenty-year planning horizon. Serving this demand, combined with creating the ability to retire coal, will require an "all of the above" approach that includes investment in a diverse mix of energy sources.

The South Carolina integrated resource planning statute (the "IRP Statute")[2] requires utilities to update their IRPs annually. This report (the "2025 IRP Update") is the second update to DESC's triennial 2023 Integrated Resource Plan (the "2023 IRP") which it filed with the Public Service Commission of South Carolina (the "Commission") on January 30, 2023, and which was accepted by the Commission in its Order No. 2023-860(A). In this report, DESC refreshes the analysis provided in the 2023 IRP – which was based on data available in late 2022 – and reviews

[1] https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=epmt_5_6_a

[2] S.C. Code Ann. Section 58-37-40.

its generation planning in light of recent developments in energy markets, construction decisions and the emerging needs of its service territory and the State of South Carolina. The strategies and options evaluated in the 2025 IRP Update support DESC's continued ability to provide safe, reliable, affordable and increasingly clean electricity to its South Carolina customers.

II. EXECUTIVE SUMMARY

A. Modeling and Methodology

In preparing this 2025 IRP Update, DESC used the same modeling methods and evaluation metrics it used in the 2023 IRP but refreshed the analysis with current forecasts of customer load growth, fuel costs, and generation technology costs, as well as a census of current generation and committed peaking generation replacement units, and other updated inputs. Three of the five Core Build Plans extend the retirement date of the Wateree and Williams coal units until December 31, 2031, which is the date on which the Environmental Protection Agency ("EPA") Greenhouse Gas Rules ("GHG Rules"), issued under Section 111(d) of the Clean Air Act would require DESC to retire these units. A fourth build plan, which DESC is providing for comparison purposes only, is the Updated 2023 Reference Build Plan which was the preferred build plan in the Company's most recently approved triennial IRP and has been modified by adding optimized generating resources to meet new, higher load forecasts. This build plan is no longer a viable candidate for selection because it relies on now unachievable assumptions about the date by which suitable replacement resources can be made available to support retiring DESC's remaining coal plants. Specifically, the Updated 2023 Reference Build Plan assumes that DESC can retire the Wateree and Williams units by December 31, 2028, and December 31, 2030, which dates are now unachievable considering recent increases in demand on the system.

The fifth and final Core Build Plan, the Alternate Reference Build Plan, extends the assumed retirement dates of the Wateree and Williams units to December 31, 2032, and December

31, 2034, respectively, based on the assumption that the Section 111 GHG Rules are rescinded or reconsidered such that these units can remain in operation beyond 2031. On March 12, 2025, the EPA announced that it had begun the process of reconsidering both the Section 111 GHG Rules issued under the previous administration as well as its 2009 finding that GHG emissions posed an endangerment to public health (the "Endangerment Finding") and all of its other regulations and actions that rely on the Endangerment Finding. The GHG Rules could be rescinded or revised as a result of this review which is in its initial phases. The Alternate Reference Build Plan or one like it could become the preferred build plan if the GHG Rules are rescinded or reconsidered.

B. Results of the Modeling

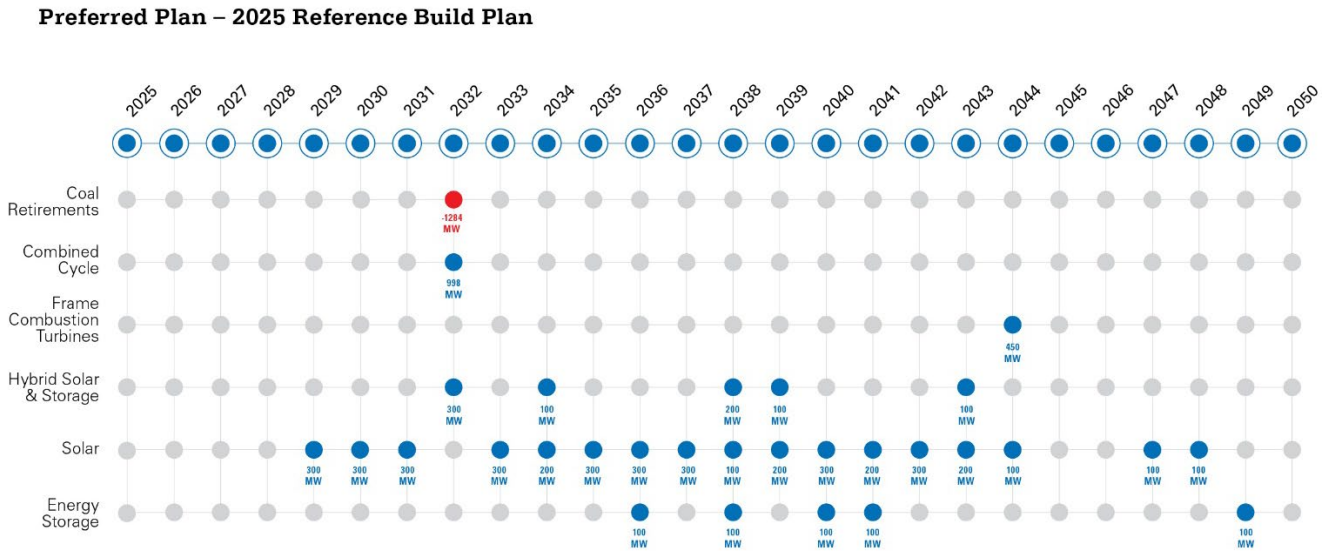
The modeling performed for this 2025 IRP Update shows the 2025 Reference Build Plan to be the superior build plan under current conditions. It outperformed the Updated 2023 Reference Build Plan by a significant margin across multiple cost and risk metrics. Apart from the Alternate Reference Build Plan, the 2025 Reference Build Plan had the second or third lowest cost to customers across the fifteen Core Market Cases, demonstrating that it is a robust plan that performs well under divergent sets of market conditions. Of the five Core Build Plans, the Alternate Reference Build Plan is the least cost build plan for customers, but it was not selected because the retirement date assumptions for that Build Plan are only feasible if the GHG Rules are rescinded or reconsidered.

Within the Core Build Plan analysis, the Updated 2023 Reference Build Plan models the greatest reduction in carbon emissions by 2050, but it was the highest cost plan by a wide margin. The Alternate Reference Build Plan generated the second highest reductions in carbon emissions across the three Core Market Scenarios, even though it alone did not incorporate the effects of the current GHG Rules. While the Updated 2023 Reference Build Plan generated the highest reductions in carbon emissions, it was the highest cost plan. The High Fossil Fuels Prices Build

Plan and the 2025 Reference Build Plan essentially tied having the third or fourth highest level of carbon emission reductions in each of the three Core Market Scenarios. The Zero Carbon Cost Build Plan which imposes no additional cost on carbon emissions, as expected, generated the lowest reduction in carbon emissions.

All Core Build Plans assume DESC's system will see the addition of significant amounts of photovoltaic solar generation ("Solar") and battery energy storage ("Battery") or hybrid solar and storage ("Hybrid Solar & Storage") by 2050. Excluding the Updated 2023 Reference Build Plan, all other Core Build Plans assume the system will see the addition of between 500 MW and 800 MW of Battery or Hybrid Solar & Storage. Based on these updated inputs and modeling results and a careful review of the current needs of the electric system, DESC selected the 2025 Reference Build Plan as its preferred plan to guide its planning decisions at the present time.

Figure 1. Resource Additions under the Preferred Plan – 2025 Reference Build Plan



C. Legislative Focus on the Need to Expand and Modernize South Carolina's Electric Grid

In 2023, the Speaker of the South Carolina House of Representatives ("House of Representatives") convened an Ad Hoc Committee on Economic Development and Utility Modernization to consider legislative action to support South Carolina's needs for expanded energy supplies to meet growth and economic development. This Committee was charged with exploring initiatives to create a secure pathway for electric utilities to modernize and expand their generation fleets and replace aging coal-fired plants with new and lower emitting resources, among other considerations. In 2024, both chambers of the South Carolina General Assembly ("General Assembly") passed versions of an energy bill based on the work of the ad hoc committee and other legislative committees, but the General Assembly postponed finalizing a bill until the current session.

In 2025, the House of Representatives introduced a successor bill for the new session that recognizes the benefits to the State from DESC and the South Carolina Public Service Authority ("Santee Cooper") jointly building a high-efficiency, modern, and operationally flexible natural gas-fired combined cycle resource at the site of DESC's former Canadys Station approximately forty miles north of Charleston. DESC and Santee Cooper have been developing such a resource (the "Joint Resource") under a Memorandum of Understanding that was initially executed in 2022.

Policymakers have also identified the synergies between electric generation and natural gas supply and that the Joint Resource can provide the opportunity to expand access to natural gas in underserved regions of the State as an "anchor load." Policymakers have recognized the need to expand firm natural gas transportation into the State to support continued economic development.

D. The Joint Resource

Consistent with the findings in the 2022 Coal Plants Retirement Study, the 2023 IRP and the 2024 IRP Update, DESC has been developing the proposed Joint Resource, as a multi-unit natural gas-fired advanced-class combined cycle ("CC") generation plant, to be co-owned with Santee Cooper. In each of its twelve build plans ("Build Plans"), the 2024 IRP Update selected the Joint Resource in either a 662 MW or 1,325 MW configuration, including the two most highly carbon-constrained Build Plans (the Proposed GHG Rule Build Plan and the 85% CO_2 Reduction Build Plan) and the Build Plan that assumed the highest future cost of natural gas commodity (the High Fossil Fuel Prices Build Plan). The 2023 IRP also selected a combined cycle in all build plans, either a 50% share, 662 MW, of the proposed Joint Resource or 100% share, 1,325 MW. The 2025 IRP Update assumes a larger combined cycle configuration with a 50% DESC share, 998 MW.

If constructed, the Joint Resource will be located on DESC's former Canadys Station site in Colleton County, South Carolina. Construction of the Joint Resource would be subject to review and approval by the Commission in a future application for a Certificate of Environmental Compatibility, Public Convenience and Necessity under the South Carolina Utility Facility Siting and Environmental Compatibility Act (the "Siting Act") as well as legislation from the General Assembly authorizing Santee Cooper to participate in joint ownership of the facility with an investor-owned utility.

The Canadys site is a former electric generating site approximately forty miles northwest of Charleston. As a brownfield site, Canadys is environmentally well-characterized and offers robust electric transmission interconnectivity from rights of way that radiate from the site toward major load centers. It is in close proximity to existing and planned Santee Cooper electric transmission lines as well. The Joint Resource would anchor a major expansion of natural gas

pipeline capacity serving the South Carolina Lowcountry where economic development is increasingly limited by lack of access to firm natural gas transportation service. DESC has executed two Precedent Agreements ("PAs") related to pipeline expansion projects that will provide Firm Transportation ("FT") service from supply centers to the Georgia border in sufficient volumes on its system to support the potential Joint Resource. DESC is not the sole customer for these expansion projects. Shortly before filing this update, DESC executed a third PA for FT service via a pipeline expansion project from the Georgia border to the Canadys site and other locations in South Carolina.

E. Risk Factors Concerning the Joint Resource

DESC and Santee Cooper face a number of challenges to the development of the Joint Resource. One of the greatest schedule risks is the time required to design, site, procure, and construct the required electric transmission assets after the generation interconnection studies are completed. Another is the time required for interstate natural gas pipeline companies to complete the capacity expansion projects required to provide fuel to the Joint Resource. In addition, building the Joint Resource will require DESC to procure the necessary generating plant equipment including combustion turbines and large generator step-up transformers in a market that is experiencing high demand and supply chain congestion. Amendments are needed to Santee Cooper's enabling statutes to support its participation in the project and those amendments are moving through the legislative process at the time of this filing. As the project progresses, risks to both schedule and cost will need to be closely monitored with mitigations identified to protect reliability.

A project of this magnitude requires significant capital investment. To cost effectively source this funding, investors will require reasonable assurances that South Carolina's regulatory process will provide timely recovery of capital costs to justify an investment of this magnitude. In

recognition of this critical concern, the General Assembly is considering legislative initiatives to support timely recovery of electric utilities' prudent investments.

F. Wateree and Williams Replacement

The proposed Joint Resource along with other resources would support the eventual retirement of the Wateree and Williams Stations. The ability to retire these facilities is contingent upon the availability of suitable replacements, including the Joint Resource and other resources which may include Hybrid Solar & Storage.

G. ELG Compliance

In the 2024 IRP Update, DESC affirmed that it was proceeding to comply with the EPA's Steam Electric Effluent Limitation Guidelines ("ELG") at Williams Station. Construction of the required facilities is now well underway. In this 2025 IRP Update, the Company has assumed that DESC will invest in ELG compliance at Wateree which will allow Wateree to continue to operate beyond 2028 and will limit the possibility that environmental regulations will compromise system reliability by forcing the Wateree units offline before suitable replacement capacity is available.

On March 12, 2025, the EPA announced that it will reconsider the 2024 ELG Rules. This review is in its initial phase and the results of the review are not known. DESC has not yet taken any action based on the March 12, 2025, announcement but will continue to monitor developments.

The cost of Wateree ELG compliance is modest compared to the annual value of the 684 MW of firm, dispatchable capacity that the plant provides. DESC anticipates its ELG upgrades to be completed at Wateree by the end of 2028 and at Williams by the end of 2025.

H. Revised and Expanded Build Plans

Along with updated forecasts and other inputs, this 2025 IRP Update provides a revised and expanded set of candidate resources for the model to select from and a more diverse set of build plans and sensitivities which include:

- An updated version of the Reference Build Plan from the 2023 IRP (the "Updated 2023 Reference Build Plan") with sufficient resources added through optimization to meet new and higher customer load forecasts;
- A newly optimized 2025 Reference Build Plan;
- A High Fossil Fuel Prices Build Plan;
- A Zero Carbon Cost Build Plan;
- An Alternate Reference Build Plan that assumes that the GHG Rules are rescinded or reconsidered, and that Wateree remains in service until December 31, 2032, and Williams until December 31, 2034;
- Five Sensitivity Cases; and
- One Supplemental Case to assess the types and levels of resources required for DESC to achieve a reduction in CO_2 emissions of 85% by 2050.

III. OVERVIEW OF THE BUILD PLANS, MARKET SCENARIOS, AND CASES

In this 2025 IRP Update, DESC has evaluated a total of eleven Build Plans, each of which reflects a unique balance of affordability, environmental considerations, carbon emissions, and generation diversity in meeting customers' future energy needs over the planning horizon. Collectively they represent a broad range of available options to serve DESC's approximately 800,000 customers in South Carolina safely, reliably, and cost effectively under a diverse set of potential future market conditions and approaches to carbon reduction. All eleven Build Plans envision a significant expansion of Solar, Battery and Hybrid Solar & Storage, while in all cases adding the generation resources needed to ensure that the reliability of the grid is protected. DESC has analyzed the eleven Build Plans across twenty-one individual cases to evaluate how well each performs under a range of different fuel costs, customer loads, and other assumptions.

A. The Twenty-One Cases

DESC evaluated the five Core Build Plans (the "Core Build Plans") across the three most likely Market Scenarios, resulting in ***fifteen core cases*** (the "Core Cases"). The other six non-Core Build Plans include five sensitivity cases ("Sensitivity Cases") to assess how Build Plans might vary under other sets of market conditions and to satisfy specific statutory and regulatory requirements and one supplemental case ("Supplemental Case") to assess the types and levels of resources, based on the Reference Market Scenario, to achieve a reduction in CO_2 emissions of 85% by 2050 to be accomplished in stages beginning in 2031.

In preparing the 2025 IRP Update, DESC modeled a total of ***twenty-one cases:***

[Table begins on following page]

Table 1. The Eight Market Scenarios, 11 Build Plans, 21 Cases and 15 Core Cases

Eight Market Scenarios, 11 Build Plans, 21 Cases and 15 Core Build Plans			
Market Scenarios 8	**Build Plans 11**	**Cases 21**	
Core Cases			
Reference	Updated 2023 Reference Build Plan	**Five Core Build Plans times Three Market Scenarios = 15 Core Cases**	**15**
Reference	2025 Reference Build Plan		
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan		
Zero Carbon Cost	Zero Carbon Cost Build Plan		
Reference	Alternate Reference Build Plan		
Sensitivity Cases			
Electrification	Electrification Build Plan	**Five Sensitivity Cases**	**5**
Energy Conservation	Energy Conservation Build Plan		
Aggressive Regulation	Aggressive Regulation Build Plan		
Low DSM	Low DSM Build Plan		
High DSM	High DSM Build Plan		
Supplemental Cases			
Reference	85% CO_2 Reduction Build Plan	**One Supplemental Case**	**1**
		TOTAL	**21**

Each of the five Core Build Plans is optimized to achieve the lowest cost for customers under different market conditions or assumptions seeking to achieve CO_2 emissions reductions. The Core Cases show how those plans respond under a broad range of conditions.

- As discussed above, the Updated 2023 Reference Build Plan is the 2023 Reference Build Plan reevaluated under 2025 load and fuel cost forecasts and other updated inputs. To meet the increase in the load forecast from the 2023 IRP, the model used its optimization function to add the required capacity resources. Otherwise, the Updated 2023 Reference Build Plan is the same as the 2023 Reference Build Plan.
- The 2025 Reference Build Plan is a new Build Plan optimized under the most reasonable and likely future market conditions and using updated inputs.
- The High Fossil Fuel Prices Build Plan assumes high fossil fuel costs and Medium CO_2 costs in an environment where public policy discourages investment in fossil fuel supplies and reliance on them by end users.
- The Zero Carbon Cost Build Plan assumes policies neutral or favorable towards fossil fuels, low fuel costs, and no CO_2 costs at all.
- The Alternate Reference Build Plan assumes the Reference Market Scenario but also assumes the Clean Air Act Section 111 GHG Rules are rescinded or reconsidered and the Wateree and Williams retirement dates are deferred.

Table 2 below presents the twenty-one cases, with the fifteen Core Cases in blue, the Sensitivity Cases in orange, and the Supplemental Case in green.

[Table begins on following page]

Table 2. The Twenty-One Cases

	Fuel	CO_2 Price	Load Forecast	DSM	Wateree Retirement	Williams Retirement
Reference Market Scenario						
Updated 2023 Reference Build Plan	Medium	Medium	Reference	Medium	2028	2030
2025 Reference Build Plan	Medium	Medium	Reference	Medium	2031	2031
High Fossil Fuel Prices Build Plan	Medium	Medium	Reference	Medium	2031	2031
Zero Carbon Cost Build Plan	Medium	Medium	Reference	Medium	2031	2031
Alternate Reference Build Plan	Medium	Medium	Reference	Medium	2032	2034
High Fossil Fuel Prices Market Scenario						
Updated 2023 Reference Build Plan	High	Medium	Reference	Medium	2028	2030
2025 Reference Build Plan	High	Medium	Reference	Medium	2031	2031
High Fossil Fuel Prices Build Plan	High	Medium	Reference	Medium	2031	2031
Zero Carbon Cost Build Plan	High	Medium	Reference	Medium	2031	2031
Alternate Reference Build Plan	High	Medium	Reference	Medium	2032	2034
Zero Carbon Cost Market Scenario						
Updated 2023 Reference Build Plan	Low	Zero	Reference	Medium	2028	2030
2025 Reference Build Plan	Low	Zero	Reference	Medium	2031	2031
High Fossil Fuel Prices Build Plan	Low	Zero	Reference	Medium	2031	2031
Zero Carbon Cost Build Plan	Low	Zero	Reference	Medium	2031	2031
Alternate Reference Build Plan	Low	Zero	Reference	Medium	2032	2034
Sensitivity Cases						
Electrification Build Plan	Low	Zero	High	Medium	2031	2031
Energy Conservation Build Plan	High	Medium	Low	Medium	2031	2031
Aggressive Regulation Build Plan	High	High	High	Medium	2031	2031
High DSM Build Plan	Medium	Medium	Reference	High	2031	2031
Low DSM Build Plan	Medium	Medium	Reference	Low	2031	2031
Supplemental Case						
85% CO_2 Reduction Build Plan	Medium	Medium	Reference	Medium	2031	2031

B. The Core Analysis

The core analysis (the "Core Analysis") compared the results of the five Core Build Plans across the three representative Market Scenarios ("Core Market Scenarios") for a total of fifteen Core Cases. To ensure comparability between the results, the five Core Build Plans and three Core Market Scenarios were all based on the Reference load growth projection so that all results show the costs and CO_2 emissions from meeting the same level of customer demand.

Table 3. The Fifteen Core Cases

Market Scenario	Case	Build Plan
Reference	**1**	Updated 2023 Reference Build Plan
	2	2025 Reference Build Plan
	3	High Fossil Fuel Prices Build Plan
	4	Zero Carbon Cost Build Plan
	5	Alternate Reference Build Plan
High Fossil Fuel Prices	**6**	Updated 2023 Reference Build Plan
	7	2025 Reference Build Plan
	8	High Fossil Fuel Prices Build Plan
	9	Zero Carbon Cost Build Plan
	10	Alternate Reference Build Plan
Zero Carbon Cost	**11**	Updated 2023 Reference Build Plan
	12	2025 Reference Build Plan
	13	High Fossil Fuel Prices Build Plan
	14	Zero Carbon Cost Build Plan
	15	Alternate Reference Build Plan

IV. SUMMARY OF BUILD PLAN SCORING

A. Scoring the Core Build Plans on Cost and CO_2 Emissions Reduction

Across all fifteen Core Cases, the Alternate Reference Build Plan had the lowest cost to customers expressed as the levelized net present value ("LNPV") cost per year for generation supply. The differences in cost to customers between the next three most cost-effective Build Plans, specifically the 2025 Reference Build Plan, the High Fossil Fuel Prices Build Plan and the Zero Carbon Cost Build Plan, were relatively small, between 0.6% and 0.9%.

The Updated 2023 Reference Build Plan had the highest LNPV cost across all three Core Market Scenarios, with an annual LNPV cost between $327 million and $333 million more than the lowest cost plan, the Alternate Reference Build Plan, under each Market Scenario. The difference between the Updated 2023 Reference Build Plan and the Alternate Reference Build Plan for each Market Scenario was an increase of between 12.4% and 13.9%.

The Core Build Plans resulted in DESC reducing its CO_2 emissions between 52.5% and 56.8% compared to emissions in 2005. The Updated 2023 Reference Build Plan achieved the greatest CO_2 emissions reduction of the Core Build Plans producing a 56.8% reduction in CO_2 emissions from 2005 levels. CO_2 emissions reductions among the remaining four Core Build Plans vary between 52.5% and 55.0% with the Zero Carbon Cost Build Plan having the lowest reduction of 52.5% and the Updated 2023 Reference Build Plan achieving the highest of 56.8% reduction.

B. Scoring the Core Build Plans on Rate Impacts

The Alternate Reference Build Plan has the lowest compound annual growth rate ("CAGR") for a typical residential customer's bill (*i.e.,* typical 1,000 kWh/month usage) over a 15-year period planning horizon under all three Core Market Scenarios with a CAGR between 2.01% and 2.93%. The 2025 Reference Build Plan, the High Fossil Fuel Prices Build Plan, and the Zero Carbon Build Plan effectively tied for having the second lowest, with a CAGR between

2.29% and 3.28%. The Updated 2023 Reference Build Plan has the highest CAGR in all Core Market Scenarios with annual growth in a typical residential customer's bill between 2.81% and 3.64%.

These figures represent only the change in customers' bills under the five Core Build Plans and the Reference assumptions due to forecasted changes in generation supply costs and the application of general inflation indices to other cost categories. They are provided as a comparative measure for the Build Plans and not as a comprehensive forecast of future customer rates.

C. Scoring the Core Build Plans on Technologies Selected

Solar, Battery, and Hybrid Solar & Storage emerged as major contributors in each of the Core Build Plans with Solar representing between 55% and 71% (4,300 MW and 5,025 MW) of the resources added (on a nameplate basis) and Battery representing between 20% and 25% (1,300 MW and 2,300 MW) of those resources. While each of the Core Build Plans adds at least 77% of non-emitting resources (on a nameplate basis), each also adds at least 1,448 MW of natural gas-fired generation to support system reliability. This result indicates that dispatchable, non-energy limited generation remains critically important to grid reliability and generation efficiency.

D. Scoring the Core Build Plans on Generation Diversity

All Core Build Plans envision at least 55% of generation added over the planning horizon being Solar, and all involve the eventual elimination of coal as a fuel. Because the Build Plans strongly favor Solar, generation diversity is inversely proportional to the Solar resources added. Of the Core Build Plans, the Zero Carbon Cost Build Plan had the greatest generation diversity, the Alternate Reference Build Plan was second, and the 2025 Reference Build Plan and High Fossil Fuel Prices Build Plan were third. The Updated 2023 Reference Build Plan scored lowest.

E. Scoring the Core Build Plans on Reliability

The Updated 2023 Reference Build Plan scored highest among the Core Build Plans under the reliability metric principally due to the relatively high amount of natural gas-fired combustion turbine ("CT") capacity added to the system under that plan. Based on the similarity in resources added by the 2025 Reference Build Plan, the High Fossil Fuel Prices Build Plan, the Zero Carbon Cost Build Plan and the Alternate Reference Build Plan, these four plans scored equally under the reliability metric.

V. THE FIVE SENSITIVITY CASES AND ONE SUPPLEMENTAL CASE

In addition to the Core Analysis, DESC modeled five additional Market Scenarios as Sensitivity Cases to fulfill requirements of the IRP Statute and Commission mandates. The Sensitivity Cases assume varying levels of CO_2 costs, environmental regulations, economic and load growth, and demand side management ("DSM") effectiveness and confirm the representative nature of the Core Build Plans and the value of the planning insights they provided.

Table 4. The Five Sensitivity Cases

Market Scenario	Sensitivity Case	Build Plan
Electrification	**1**	Electrification Build Plan
Energy Conservation	**2**	Energy Conservation Build Plan
Aggressive Regulation	**3**	Aggressive Regulation Build Plan
High DSM	**4**	High DSM Build Plan
Low DSM	**5**	Low DSM Build Plan

DESC modeled one Supplemental Build Plan to assess the types and levels of resources, based on the Reference Market Scenario, to achieve a reduction in CO_2 emissions of 85% by 2050 to be accomplished in stages beginning in 2029.

Table 5. The Supplemental Case

Market Scenario	Supplemental Case	Build Plan
Reference	**1**	85% CO_2 Reduction Build Plan

The scoring and metrics for the Sensitivity Cases and Supplemental Case are discussed in Section XVI below.

VI. BALANCING THE STATUTORY FACTORS

In evaluating resource plan updates, the IRP Statute requires the Commission to balance multiple factors, including resource adequacy, least cost to customers, environmental compliance, reliability, exposure to commodity price risk, and diversity of generation and fuel supply. The 2025 IRP Update achieves this balance and presents a sound basis to plan for providing safe, reliable, affordable, and increasingly clean energy to its customers, which is DESC's mission. **Appendix K** cross-references the sections of this 2025 IRP Update to the requirements of the IRP Statute and other regulatory requirements.[3]

VII. THE ROLE OF AN IRP

IRPs are snapshots in time based on current forecasts of customers' future energy needs, future environmental constraints, future fuel prices and availability, and the cost or availability of rapidly evolving generation resources and technologies. An IRP update is a reframing of that snapshot. This 2025 IRP Update provides an update to DESC's roadmap and framework for future decision making but does not reflect a fixed decision by DESC to pursue any specific action or project. The IRP and IRP updates do not supplant the Commission's role in reviewing applications under the Siting Act for a Certificate for a specific project.

[3] Appendix K also provides substantive responses to the suggestions made by ORS for matters to be discussed in Stakeholder meetings or the 2025 IRP Update as adopted in Order No. 2023-860(A).

Based on this 2025 IRP Update, DESC plans to move forward to continue to define the most reasonable path toward adding increasingly clean generation resources, to continue the modernization of its generation fleet, to include plans for retiring and replacing Wateree and Williams and pursuing the development of the potential Joint Resource, all while meeting customers' energy needs, today and in the future, safely, reliably and affordably. DESC will continue to meet with South Carolina Office of Regulatory Staff ("ORS") and IRP stakeholders ("Stakeholders") on a regular basis to receive comments on the methodology and inputs used in this 2025 IRP Update. DESC will carefully review and consider the comments and suggestions received on this 2025 IRP Update both through the IRP Stakeholder process and by the Commission, ORS, and other parties through the formal IRP review process.

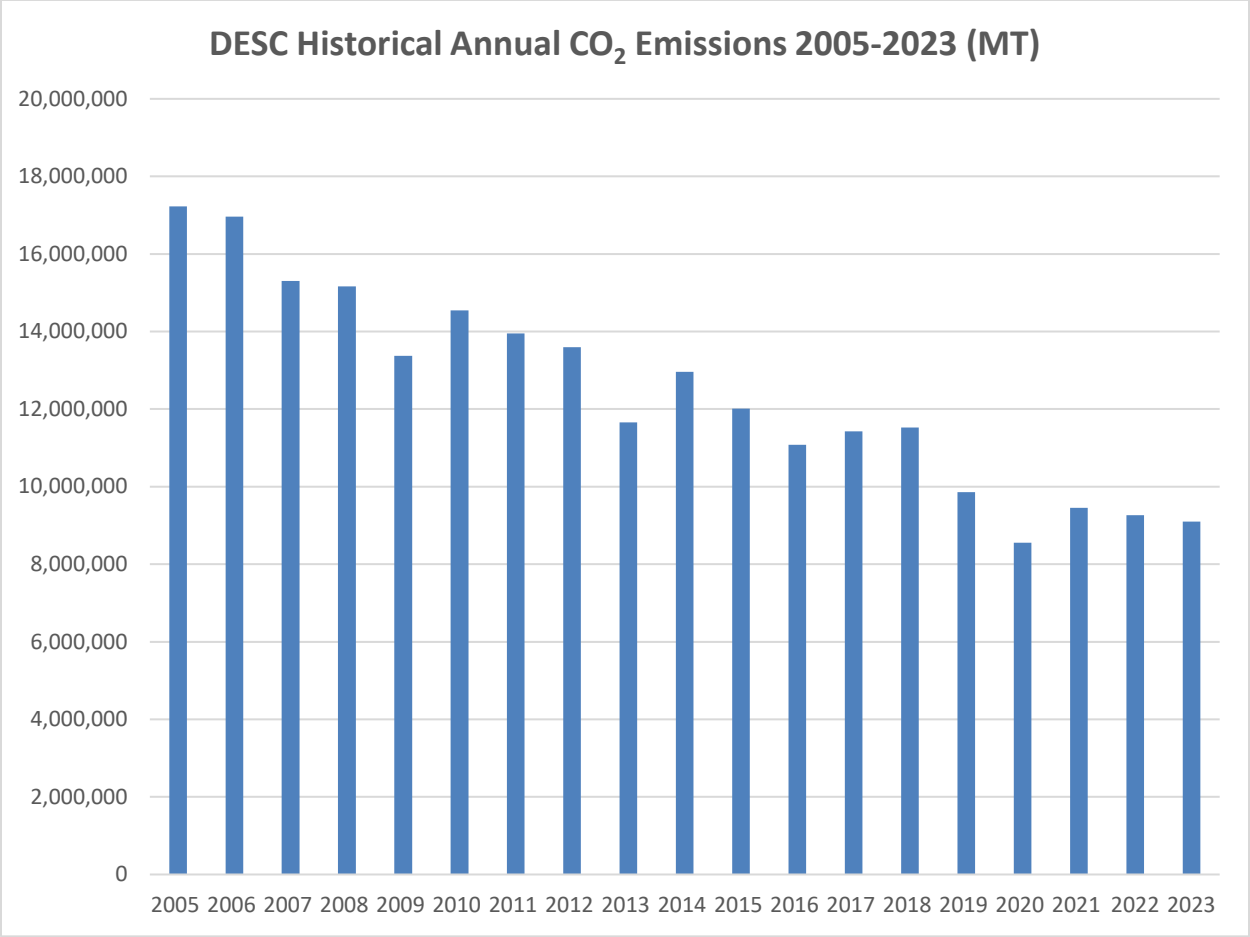
VIII. THE DYNAMIC NATURE OF RESOURCE PLANNING

Resource planning is conducted throughout the year by the Company for multiple planning and resource procurement purposes. DESC's resource plans will be updated to reflect current needs and the timing of those needs when future procurement or retirement decisions are considered. Given the pace of change in environmental policies, technologies, and the expectations of customers and other stakeholders, it is important that the Company remains flexible with respect to Build Plans and the asset procurements and retirements they reflect. The fact that DESC modeled the procurement or retirement of any resource in this 2025 IRP Update does not mean that DESC has made the decision to procure or retire any such resource or that such a decision has been approved by the Commission where such approval is required. These decisions will be presented to the Commission as appropriate at the time they are made or proposed, in accordance with the relevant aspects of the Siting Act and any applicable environmental requirements.

IX. DESC'S COMMITMENT TO REDUCING CARBON EMISSIONS

For nearly two decades, DESC has been reducing the environmental impacts and emissions of electric generation, including carbon emissions, by retiring or repowering coal plants, integrating third-party owned and operated solar, and adding high-efficiency natural gas-fired generation while remaining focused on reliability and affordability for its customers. Since 2000, DESC has either retired or converted eight coal units to natural gas operation, and from 2005 through 2023, carbon emissions have fallen by approximately 48%.

Figure 2. DESC's Historical Annual CO_2 Emissions 2005-2023



DESC's selection of the 2025 Reference Build Plan as its preferred plan to guide its planning decisions at the present time is consistent with its commitment to reducing carbon

emissions. In the near term, the preferred plan adds significant renewable and related resources like Solar, Battery and Hybrid Solar & Storage, while also pursuing the retirement and replacement of Wateree and Williams coal capacity within the constraints imposed by the imperative of maintaining reliability and affordability. As market dynamics, public policy and technologies evolve, DESC will continue to evaluate and consider plans reflecting further carbon reductions consistent with DESC's mission of providing its customers with reliable, affordable, and increasingly clean energy.

X. COAL RETIREMENT AND REPLACEMENT PLANNING

A. The Potential of the Joint Resource

Since 2023, DESC and Santee Cooper have been planning and pursuing the potential Joint Resource project to meet their systems' future generation needs. Since 2024, the focus of their collaboration has been on natural gas-fired generation assets located at DESC's former Canadys Station site. The focus on the Canadys site is due to multiple factors —land use considerations, access to water supplies, proximity to electric transmission infrastructure, and the feasibility of expanding natural gas transportation services to the site. All of these considerations are foundational when siting a natural gas-fired generation resource. The Canadys site is an environmentally well-characterized (i.e., well-understood) brownfield site with compatible existing land use which offers robust electric transmission interconnectivity through multiple rights of way radiating out from the site, including key corridors leading toward major load centers and transmission hubs in coastal South Carolina. Further, the site is well-positioned for supporting the expansion of natural gas transportation infrastructure to supply fuel to the site. Santee Cooper has existing, near-term plans to construct a new 230 kV transmission pathway along the Interstate 95 corridor and close to the Canadys site which will simplify Santee Cooper's interconnection of the Joint Resource into their Balancing Area. By working together, DESC and Santee Cooper are

creating economies of scale in natural gas pipeline and electric transmission expansions, and generation plant construction and operation. The benefits and savings achieved through their collaboration ultimately will flow to the customers of both utilities.

The ultimate size and configuration of the potential Joint Resource continues to be evaluated through on-going development activities, but DESC and Santee Cooper's current assumption is that each will own and receive 50% of the output of three 1x1 CC units (a 1x1 CC is one combustion turbine paired with one steam turbine unit that generates electricity from the heat recovered from the exhaust of the combustion turbine) with a total plant capacity of approximately 1,996 MW. The 1x1 CC configuration maximizes operational flexibility, reliability, and resiliency and mitigates "single point" contingencies that could impact a significant amount of generation on both the DESC and Santee Cooper systems. For planning purposes, the assumed in-service dates for the Joint Resource range from January 1, 2031, to January 1, 2033, as identified in this Update's Build Plans.

The Joint Resource as modeled in the 2025 IRP Update would provide approximately 998 MW of fully dispatchable, highly responsive, and highly efficient baseload-capable capacity that can be used to replace existing coal fired generation or support an increasing load forecast over the next decade. While the size of the Joint Resource in the 2025 IRP Update is greater than was anticipated in the 2023 Reference Build Plan (998 MW vs. 662 MW), it is approximately 25% smaller than the CC candidate resource selected in high load growth sensitivities that were evaluated in the 2024 IRP Update. In this 2025 IRP Update, DESC has reoptimized the 2023 Reference Build Plan which included a fixed 662 MW CC rather than the 998 MW Joint Resource. Under current demand and fuel cost forecasts, the Updated 2023 Reference Build Plan results in a much higher cost than any of the Core Build Plans that include a 998 MW Joint Resource. The

operational flexibility of three 1x1 CC units would enhance grid reliability in extreme weather and would support the integration of increasing levels of non-emitting, but intermittent solar generation onto the grid. When located at the Canadys site, the Joint Resource would also provide generation and electric transmission support for the Charleston area and would represent an important step towards the eventual retirement of the Williams Station.

In early 2024, DESC and Santee Cooper issued a joint Request for Information ("RFI") to qualified turbine-generator equipment suppliers to inform development activities for the Joint Resource. This RFI primarily sought up-to-date market information concerning equipment configurations, operating characteristics and lead times for the key equipment for a Joint Resource. DESC and Santee Cooper have met with these vendors at length and these meetings have provided valuable information concerning costs, schedules and market conditions for procuring such equipment.

B. Fueling Strategy for the Joint Resource

Fueling the Joint Resource reliably and cost effectively will require DESC and Santee Cooper to hold firm natural gas transportation capacity linking the Canadys site to commercial natural gas trading hubs where sufficient supply is available to ensure a liquid market. DESC has entered into two PAs for upstream/long-haul interstate natural gas transportation back to such major trading hubs. These two PAs are for participation in the South System Expansion 4 ("SSE4") and the Mississippi Crossing ("MSX") pipeline expansion projects. DESC is not the sole customer for these projects—both SSE4 and MSX have elicited considerable interest from other shippers that have signed on to these expansion projects. DESC is participating in these projects as an "anchor shipper" which provides important price and contractual protections.

In March of 2025, DESC executed a third and final PA for an expansion project to secure firm natural gas transportation from the Georgia-South Carolina border to the Canadys site. This

expansion project will complete the route to Canadys while also providing access for additional gas supplies for other customers in South Carolina to support and sustain economic development in this region of the State. The timing and availability of additional natural gas transportation capacity to the site is subject to federal approvals by FERC and therefore ultimately outside of the direct control of DESC, Santee Cooper, and South Carolina policymakers. Receiving these approvals in a timely manner is a key scheduling consideration for the Joint Resource. However, all indications remain that sufficient additional capacity can be provided in a timely way to support construction of the Joint Resource.

With the Joint Resource serving as the lead customer to support this natural gas transportation capacity expansion into South Carolina, other customers including local natural gas distribution systems and prospective and existing industrial customers looking to secure firm natural gas transportation service stand to benefit from this expansion. The lack of incremental FT service on natural gas systems is a limitation on the economic development potential in parts of South Carolina; the Joint Resource would provide an opportunity to help overcome that limitation.

C. Transmission Planning

On May 24, 2024, DESC submitted the 2024 Transmission Impact Analysis ("TIA") request asking its transmission planners to update the scope, schedule and cost estimates for the electric transmission upgrades required to integrate the proposed Joint Resource into the DESC Balancing Area. This request asked transmission planners to evaluate interconnection of the Joint Resource at 998 MW and with assumed staggered retirement dates for Wateree and Williams. The 2024 TIA assumed that Wateree is retired concurrently with the commercial availability of the full output of the Joint Resource and assumed retirement of the Williams unit at a later date. The transmission planning groups of DESC and Santee Cooper carefully coordinated the TIAs for each

entity's assumed ownership share of the Joint Resource to ensure consistency in planning assumptions.

The specific case description for the case in the 2024 TIA is as follows:

[Table begins on following page]

Table 6. The 2024 TIA Case

Case	Location	Primary Coal Replacement
1. Case One	*Canadys Site*	*2,000 MW of Generation at the Canadys Site*
Wateree Station is retired on December 31, 2032, and Williams Station is retired by December 31, 2034. The Joint Resource sited at the former Canadys Station facility should be assumed for the purposes of this analysis to be commercially available by December 31, 2032 (*i.e.,* coincident with the retirement of Wateree Station). Also, in line with the earlier reference to updated commercial specifications, the Joint Resource should be assumed for the purposes of this analysis to be comprised of three (3) 1X1 combined-cycle blocks. Each block of generation should be assumed to have a year-round net rating of approximately 667 MW, with a normal turndown while in automatic generation control to approximately 270 MW steady-state, a full-load average heat rate of approximately 6,200 BTU/kWh ("HHV") and a ramping capability of approximately 75 MW/minute each. Both cases should assume undivided joint-ownership between DESC and Santee Cooper at a plant-level resulting in a 50/50 split of net generation for dispatch and offline station service regardless of the plant output.		
<u>Interconnection Facilities Impacts – Multi-Shaft or Single-Shaft Arrangement</u> One-on-one (1X1) combined-cycle generators can be configured two ways—a multi-shaft and a single-shaft equipment arrangement. In both equipment configurations, the plant can be designed to have simple-cycle operability during startup, shutdown, and periods of unavailability of the steam turbine. As with other combined-cycle units on the DESC system, in a multi-shaft equipment arrangement the steam turbine-generator ("STG") and combustion turbine-generator ("CTG") are on two separate drive shafts for each combined-cycle generating block each with its own electrical generator. This configuration has one larger CTG rated assumed to be rated at 577 MVA / 490.45 MW and a smaller STG assumed to be rated at 249 MVA / 211.65 MW. For three generating blocks, this configuration results in a total of six (6) generators and associated generator step-up transformers ("GSUs"). In a single-shaft combined-cycle arrangement, the steam turbine, combustion turbine, and a single electrical generator are arranged along a single draft-shaft arrangement (two prime movers/turbines and one generator on a single shaft). In such an arrangement, each of the three (3) generators for a three-block arrangement should be assumed to be rated at 801 MVA / 680.85 MW, each with its own GSU transformer.		

On December 4, 2024, DESC's transmission planners issued the 2024 TIA Report which estimated the cost of the transmission upgrades associated with DESC's assumed 998 MW ownership share of the Joint Resource to be approximately $231 million (in 2024 dollars). This is slightly less than the estimate used in the 2024 IRP Update which was for an assumed 662 MW ownership share. Construction of the required transmission upgrades was forecasted in the 2024 TIA Report to require approximately 54 months from the date that a fully executed Large Generator Interconnection Agreement ("LGIA") is received. It is worth noting that the TIA results (including the scope of upgrades, cost estimates, and schedule estimates) are indicative in nature and are subject to change with definitive interconnection costs being provided by the DISIS cluster study process.

In August 2024, DESC submitted interconnection requests for the Joint Resource into the 2024 Definitive Interconnection System Impact Study ("DISIS") cluster study process conducted annually under the Company's FERC-regulated Open Access Transmission Tariff ("OATT") which began the process of identifying the definitive electric transmission upgrades and associated cost allocations and construction schedules required to interconnect the Joint Resource with DESC's transmission system. Future reports from the DISIS cluster study process (*i.e.,* Phase I, Phase II) will inform the 2026 IRP and future filings under the Siting Act for the Joint Resource and associated network electric transmission upgrades.

The TIAs prepared to date indicate that one of the principal schedule challenges in retiring Wateree and Williams will be the time required to complete the requisite generation interconnection studies and subsequent design, siting, procurement, and construction of the electric transmission assets needed for the replacement generation resources.

D. The Joint Resource as a Potential Replacement for Wateree Capacity

When the 2023 IRP was filed, the Preferred Plan modeled the replacement of the 684 MW of Wateree capacity with 400 MW of Battery at the Wateree site while relying on existing capacity reserves to supply the balance of the required capacity. Since 2023, economic development projects have added approximately 256 MW of demand to DESC's load forecast making the prior plan impractical and creating a capacity need large enough to justify coordinating the Wateree retirement with the construction of the larger, more efficient and lower emitting Joint Resource.

Decoupling the construction of the Joint Resource from the transmission improvements needed to support the Williams retirement reduces the schedule risks associated with a future Williams retirement and allows DESC to continue to review its generation and transmission plans in light of the rapid growth that it and Santee Cooper are experiencing in the greater Charleston and Low Country load centers. Yet another advantage of this approach is that additional generation capacity and upgraded transmission available to the Charleston area from the Canadys site may facilitate allowing a portion of the capacity to replace Williams to be physically located outside of the constrained land use patterns in the Charleston area, creating more options for other generating technologies to compete to replace Williams. Resequencing the procurement of replacement resources for the two units may also allow sufficient time for emerging technologies, like Battery, Offshore Wind, or SMRs to mature before a Williams replacement decision is made.

XI. KEY DEVELOPMENTS SINCE THE 2025 IRP Update

A. Stakeholder Process Update

The IRP Stakeholder Advisory Group[4] has met eighteen times since it first convened in 2020 and has provided the opportunity for a meaningful exchange of views to inform the IRP process. DESC has reported to the Commission on Stakeholder Sessions I-XVII and has filed the agendas, presentation materials, minutes, and follow-up responses to prior Stakeholder sessions in Docket No. 2019-226-E, or the current docket, Docket No. 2024-9-E.

DESC will continue to convene Stakeholder sessions to encourage parties to raise questions and issues that they believe are important or relevant to the development of future IRPs and IRP updates.

B. Peaking Generation Replacements

In March 2021, DESC applied to the Commission for rulings to allow the Company to proceed with its plan to retire thirteen end-of-life and increasingly difficult to maintain natural gas-fired CT units and one natural gas-fired steam unit and to replace them with modern generation resources. Despite their age and condition, these older units have played an important role in maintaining grid reliability including providing DESC with the ability, if needed, to restart the grid

[4] Stakeholder meetings are open to interested parties. The thirteen invited members of the IRP Stakeholder Advisory Group are:

- Office of Regulatory Staff
- SC Energy Office
- Coastal Conservation League
- SC Small Business Chamber of Commerce
- SC Office of Economic Opportunity
- SC Energy Users Committee
- SC Community Action Partnership
- Southern Alliance for Clean Energy
- Johnson Development Associates, Inc.
- South Carolina Solar Business Alliance
- Sierra Club
- AARP South Carolina
- Walmart, Inc.

after blackouts through blackstart capabilities. In November 2021, the Company entered into a Partial Settlement, which allowed for the retirement and replacement of most of these units to proceed. The exception was the retirement and replacement of several units at Urquhart Station, which the Partial Settlement required to be the subject of an all-sources request for proposal ("RFP") for replacement capacity. The Commission approved the Partial Settlement in Order No. 2022-27.

The Hardeeville, Bushy Park, Parr, and Coit Retirements and the Bushy Park and Parr Replacements

In accordance with the terms of the Partial Settlement, DESC has proceeded with the retirement of seven CT units at four sites (one unit at Hardeeville, two units at Bushy Park, four units at Parr) and construction of three modern aeroderivative combustion turbine ("Aero CT") replacement units (one unit at Bushy Park and two units at Parr). DESC retired the Hardeeville unit effective March 31, 2022, the Bushy Park units effective September 30, 2022, and the Parr units effective March 31, 2023. Dismantling and demolition activities were completed at Hardeeville and Bushy Park in 2022 and at Parr in 2023. DESC plans to retire the Coit CT units following commercial availability of the replacement Parr units, at which point dismantling and demolition activities are planned to commence for those units.

The replacement Bushy Park unit ("Bushy Park CT #1") entered commercial operation on November 1, 2024. Construction of the replacement Parr units continued throughout 2024 and these units are anticipated to enter commercial service before the end of 2025.

[Figure begins on following page]

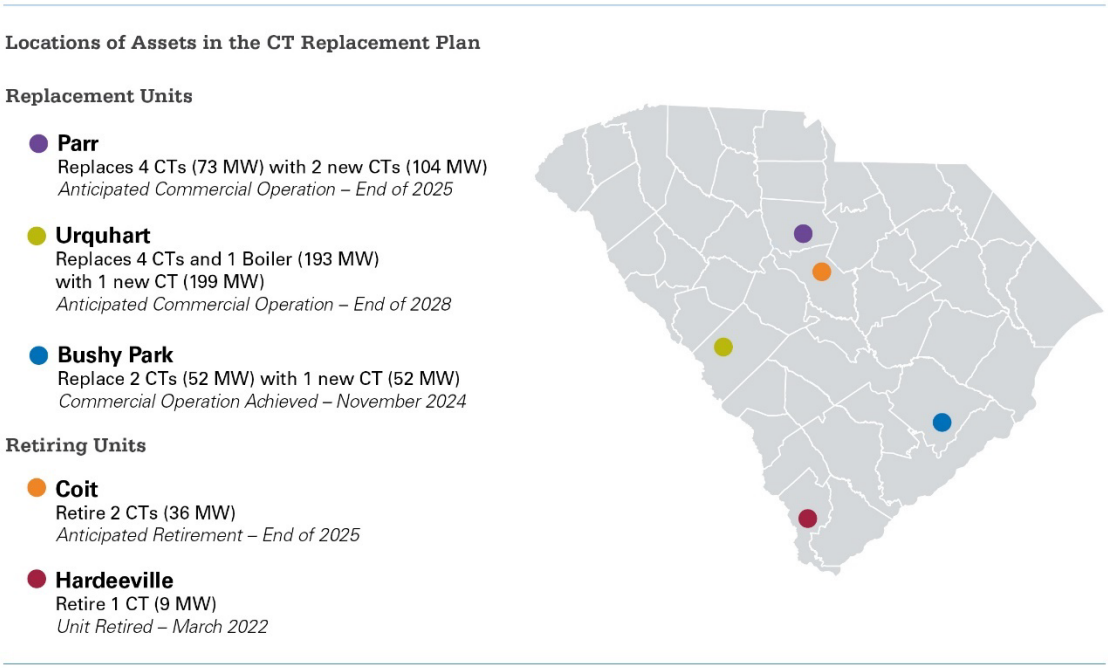
Figure 3: Bushy Park CT #1 Unit (In Commercial Operation)

Figure 4: Construction Progress at Parr Station (As of February 5, 2025)

Urquhart Replacements

Under the Partial Settlement, DESC agreed to conduct an all-sources RFP to replace the four existing CTs and one natural gas-fired conventional steam unit at the Urquhart Station site. DESC completed the all-sources RFP process in 2024 and received final approval from the Commission in Order No. 2025-69 to construct a single, frame-type simple-cycle CT unit at the Urquhart site ("Urquhart CT #7"). Several of the major contracts for the replacement unit at Urquhart have been executed and DESC anticipates the replacement unit entering commercial operation by the end of 2028.

Figure 5: Location of Proposed Combustion Turbine Retirements and Replacements



C. The Infrastructure Investment and Jobs Act

On November 15, 2021, the Infrastructure Investment and Jobs Act ("IIJA") was enacted and, in part, seeks to:

- build a national network of high-speed electric vehicle ("EV") chargers;
- upgrade power infrastructure to deliver clean, reliable energy across the country;
- deploy cutting-edge energy technology to support a zero-carbon future; and
- make infrastructure resilient against the impacts of climate change, cyber-attacks, and extreme weather events.

To support these goals, over five years, primarily Federal Fiscal Years 2022 through 2026, the IIJA provides several competitive funding opportunities directly available to utilities, and some based on joint utility/governmental projects, such as electrification of school and transit buses and other governmental fleets. Much of the IIJA's funding is awarded on a competitive basis and in many cases will involve negotiating project agreements with federal, state, and local governments.

On January 31, 2025, DESC filed its semi-annual report with the Commission addressing efforts of the utility to obtain, directly or indirectly, federal grants, low interest loans or other benefits under the IIJA and the Inflation Reduction Act of 2022 ("IRA").

In September 2024, the DOE notified DESC that the applications for the Parr Design Flow – Increased Hydraulic Capacity (PDF-IHC) and the Increased Oxygen Concentration in River via Saluda Turbine Aerating Runner (ICOR STAR) projects were selected for award negotiation under the IIJA's Maintaining and Enhancing Hydroelectric incentive payment opportunity program, which can award up to $5 million per project. Negotiations for a final award are ongoing, and updates will be provided in the next semi-annual report. DESC will continue to pursue available IIJA opportunities over the law's five-year funding window.

D. The Inflation Reduction Act of 2022

On August 16, 2022, the IRA was enacted, which includes an estimated $369 billion in climate and clean energy provisions, including grants and increased tax credits for new-build renewable generation resources including solar, storage, nuclear, and wind capacity. For purposes of this 2025 IRP Update, as in the 2024 IRP Update, the modeling assumes that all Solar resources receive a PTC starting at $25.00 per MWh (2021 dollars), escalating annually, and that Battery resources receive a 30% ITC on 85% of the total project cost. Under Internal Revenue Service ("IRS") rules, not all project costs qualify for an ITC and 85% is a reasonable estimate of the project components that will qualify. The modeling presented here assumes that the ITC and PTC apply to projects completed during the life of the program and for two years after the program closes to capture projects grandfathered into eligibility that were begun before the sunset date. Offshore Wind, Small Modular Reactors and Green Hydrogen

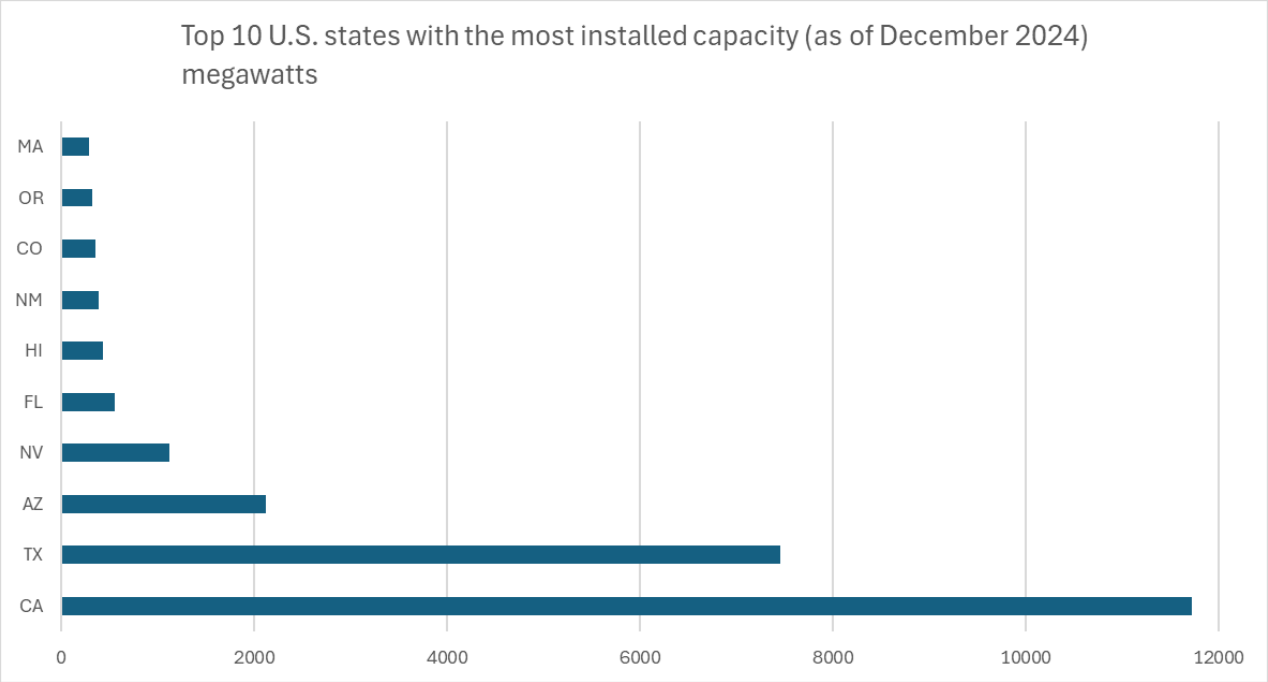
As in the 2024 IRP Update, DESC has assumed for modeling and planning purposes that offshore wind ("OSW") could be added as a resource beginning in January 2035 and that small

modular reactors ("SMRs") could be a feasible supply-side resource option starting in 2040. At the federal level, the ADVANCE Act was signed into law in July of 2024. This legislation supports the development and deployment of new nuclear energy technologies by reducing regulatory costs for companies seeking to license advanced nuclear reactor technologies, establishing an accelerated licensing review process to site and construct reactors at existing nuclear sites, and strengthening the U.S. nuclear energy fuel cycle and supply chain infrastructure, among other provisions. Based on updated capital, operating and maintenance costs, and the continued progress of licensing timelines, it remains conceivable that the deployment of SMRs could be further accelerated. Green hydrogen is not a selectable candidate resource in the 2025 IRP Update based on lack of commercial availability and uncertainty with cost forecasts.

E. Medium and Long Duration Energy Storage

The 2025 IRP Update continues to identify battery storage as an important resource for meeting future system needs, particularly with high levels of intermittent non-dispatchable energy resources being added to the system. Based on the most current information from the Energy Information Administration ("EIA"), the amount of utility-scale battery storage installed in the entire United States by the end of 2024 was 26.2 GW, up from 15 GW from the end of 2023. Approximately two-thirds of that capacity is installed in the California and Texas markets with only about 5000 MW, or less than a fifth of that amount, having been in service for four years or more. The early experiences with lithium-ion batteries have caused some concern related to fires and forced outage rates, but the industry has made strides in battery safety as more installations go into service. With changes to battery energy storage system ("BESS") chemistry, notably the greater use of Lithium Iron Phosphate ("LFP") for grid storage, the cost and fire risk are decreasing.

Figure 6: Installed Battery Capacity by State



Dominion Energy Virginia ("DEV") is conducting or planning to conduct pilot projects that are using lithium-ion batteries ranging in size from 2 MW / 4 MWh to 10 MW / 40 MWh, iron-air battery chemistry at 5 MW / 500 MWh, and zinc-hybrid battery chemistry at 4 MW / 16 MWh. These pilots will provide the Dominion Energy operating companies valuable real world practical knowledge of the operations, maintenance, and development of these novel energy storage solutions. In addition to these pilot projects, DEV solicits energy storage projects and power purchase agreements ("PPA") in its annual RFPs and petitions the Virginia State Corporation Commission ("SCC") for approval of the best projects in its annual RFPs Development Plan proceeding.

F. The GHG Rules and Other Power Plant Regulations

In April 2024, the EPA issued its GHG Rules under Section 111 of the Clean Air Act regulating CO_2 emissions from existing fossil fuel-fired steam generating units and new and reconstructed fossil fuel-fired combustion turbines. These rules require existing coal units to either

retire by 2032, transition to 40% natural gas co-firing by 2030, or implement carbon capture and storage ("CCS") technology by 2032. Standards for new, reconstructed and modified units also require significant CO_2 reductions through the utilization of CCS or hydrogen blending.

On March 12, 2025, the EPA announced that it had begun the process of reconsidering both the Section 111 GHG Rules issued by the prior administration and its 2009 Endangerment Finding which underly all of its existing regulations and actions on GHGs. On that same date, EPA announced a similar review of other rules and regulations that may affect generation plant operations and planning including revisions previously issued to the Mercury and Air Toxics Standards ("MATS"), the PM2.5 National Ambient Air Quality Standards ("NAAQS"), and the ELG standards for the Steam Electric Power Generating Plants. These regulatory reviews are in their early stages, the timing and final outcome is unknown and DESC has not taken action on them at this time. They will be the subject of further reporting and consideration in the 2026 IRP.

From an electric utility resource planning perspective, the Company has modeled in the 2025 IRP Update the constraints imposed by the current rules on existing and prospective candidate generation resources in four of the Core Build Plans. However, recent public statements suggest that the EPA may rescind or reconsider these rulemaking activities, and DESC has modeled an Alternative Reference Build Plan which is not constrained by the GHG Rules.

G. State Legislative Developments

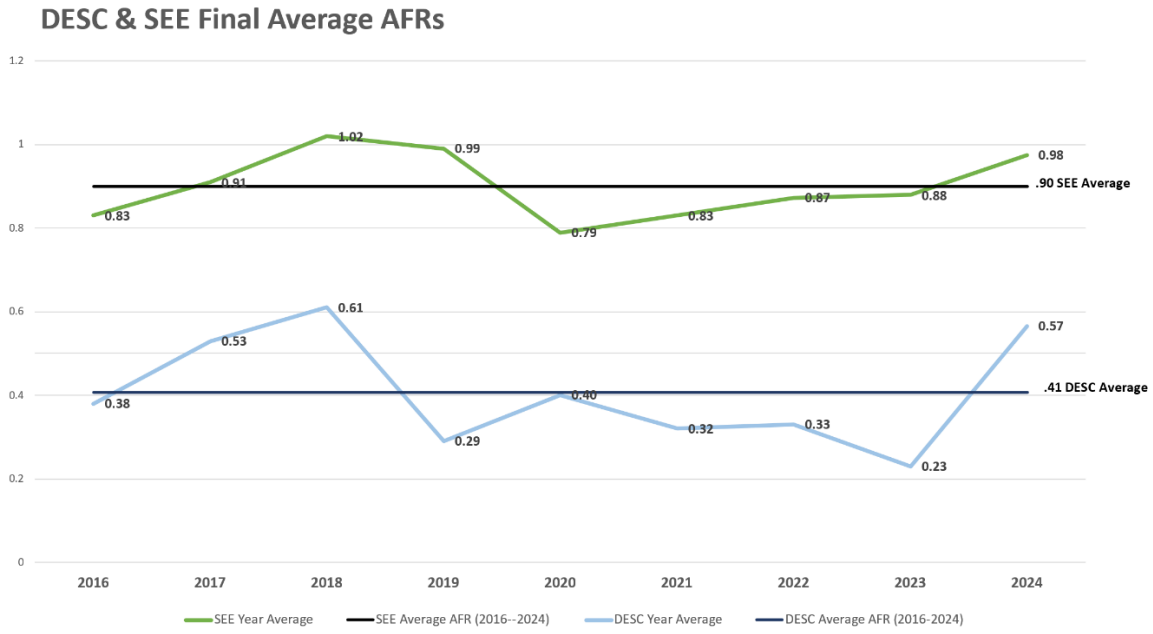
House Bill 3309, titled the "South Carolina Energy Security Act," introduces several significant legislative changes aimed at enhancing the state's energy and regulatory framework. The bill encourages major utilities to evaluate and potentially deploy new energy generation facilities, including nuclear technologies, and would allow Santee Cooper to co-own the proposed Joint Resource with DESC. If passed, the bill would also set up the South Carolina Energy Policy

Research and Economic Development Institute and introduce an economic development rate for electrical utilities.

XII. SAFETY

Safety, which is the Company's primary core value, is measured through the accident frequency rate ("AFR"). DESC's electric system average AFR for 2016-2024 is less than half the average for the same years of the Southeastern Electric Exchange ("SEE"):

Table 7. Accident Frequency Rate ("AFR")



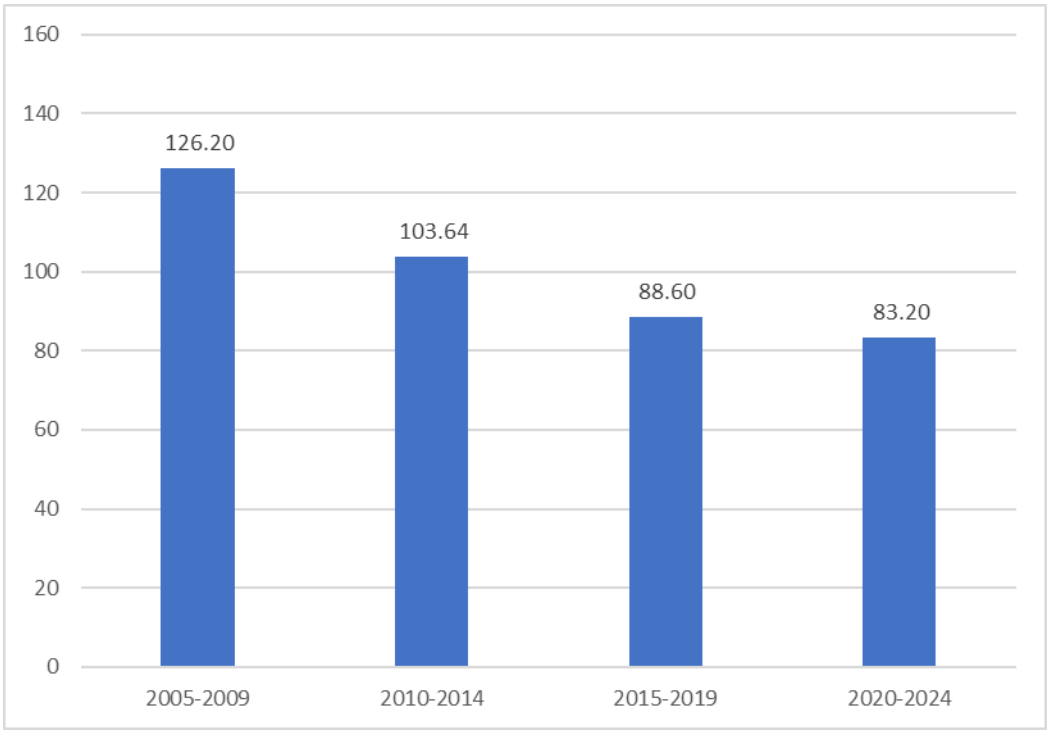
In 2024, DESC's OSHA recordable incident rate was 0.57. Its days away from work rate ("DART") rate[1] was 0.38, and its DART severity rate[2] was 50.14.

XIII. DISTRIBUTION AND TRANSMISSION OPERATING REPORT UPDATE

A. Outages and Reliability

The industry benchmark for measuring operational effectiveness in transmission and distribution operations is the number of minutes on average a customer is without power, which is the System Average Interruption Duration Index, or SAIDI score. DESC's 2024 SAIDI was 80.61 minutes, compared to the 2024 average SAIDI of the investor-owned utilities in the State of South Carolina of 126 minutes. A lower SAIDI score indicates more reliable transmission and distribution systems.

Figure 7. System Average Interruption Duration Index – average minutes for each 5-year period



B. Storms and Storm Response

DESC experienced five major storm events in 2024 that impacted its service territory. In all cases the system performed well, and service was restored in a timely manner.

Winter Storm Finn occurred on January 9, 2024, beginning at approximately 8:00 a.m. The storm impacted a total of 106,214 customers. The peak outage occurred at 4:36 p.m. on January 9, 2024, with 50,299 customers without power. Restoration of power was largely complete within 36 hours.

A microburst and windstorm occurred in the Summerville area on June 10, 2024, beginning at approximately 7:30 p.m. The storm impacted a total of 21,849 customers. The peak outage occurred at 8:22 p.m. on June 10, 2024, with 21,500 customers without power. Restoration of power was largely complete within 12 hours.

A microburst and thunderstorm occurred in the Columbia area on August 4, 2024, beginning at approximately 5:45 p.m. The storm impacted a total of 16,750 customers. The peak outage occurred at 6:11 p.m. on August 4, 2024, with 15,238 customers without power. Restoration of power was largely complete within 12 hours.

Tropical Storm Debby occurred on August 5, 2024, beginning at approximately 4:15 p.m. The storm impacted a total of 123,280 customers. The peak outage occurred at 11:56 p.m. on August 8, 2024, with 29,724 customers without power. Restoration of power was largely complete within 72 hours.

Hurricane Helene occurred on September 26, 2024, beginning at approximately 11:30 p.m. This historic storm impacted a total of 446,987 customers. The peak outage occurred at 8:10 a.m. on September 27, 2024, with 386,270 customers without power. Over one half of DESC's customers in locations spanning its entire service territory were impacted with catastrophic damage to the system at the transmission, distribution and substation levels. The western district of DESC's

service territory was among the hardest hit requiring the longest restoration, impacting 95% of its customers. Damage from this storm far exceeded other historical storms, but restoration of power was largely complete within 12 days through the coordinated planning, preparation, communication, and execution by Company personnel, in partnership with over 2,300 off-system personnel to include vegetation crews, damage assessors, transmission linemen, and distribution linemen.

Table 8. Major Storm Outages and Restoration 2014-2024

Event	Dates	Total Customers Impacted	Days to Restore Service
2014 Winter Storm Pax	2/12/14-2/19/14	151,700	7
Hurricane Matthew	10/7/16-10/16/16	313,300	9
Hurricane Irma	9/11/17-9/14/17	173,300	3
Hurricane Florence	9/14/2018	7,500	1
Hurricane Michael	10/11/18-10/12/18	68,800	2
Hurricane Dorian	9/4/19-9/8/19	186,400	4
April 2020 Tornados	4/13/2020	208,620	1
Tropical Storm Elsa	7/7/21-7/8/21	51,644	1
Winter Storm	1/3/22-1/4/22	128,230	1
2022 Winter Storm Izzy	1/16/22-1/18/22	31,321	2
Hurricane Ian	9/30/22-10/2/22	206,176	2
Winter Storm Elliott	12/23/22	49,895	1
Tropical Storm Idalia	8/30/23-8/31/23	69,987	1
Nor'easter Winter Storm	12/17/23	17,536	1
Winter Storm Finn	1/9/24-1/10/24	106,214	2
Summerville Microburst	6/10/24-6/11/24	21,849	1
Columbia Microburst	8/4/24-8/5/24	16,750	1
Tropical Storm Debby	8/5/24-8/9/24	123,280	3
Hurricane Helene	9/26/24-10/8/24	446,987	12

C. Transmission Plans and Planning

DESC continuously analyzes its transmission system to ensure the continued safe, reliable, and economical delivery of power to customers using the Reliability Standards for Transmission Planning (the "Reliability Standards") issued by the North American Electric Reliability Corporation ("NERC"). In 2024, DESC used these criteria to evaluate multiple new generation

interconnection agreements or proposals, including the 2024 TIA for the Joint Resource, and new or rebuilt transmission construction projects. DESC continuously updates its power flow models to reflect planned additions and modifications to the transmission and generation system, changes in power flows from adjacent systems, general levels of forecasted demand growth and specific changes in loads from major new residential developments and commercial, industrial, or wholesale customers. In 2024, the Company participated in multiple near- and longer-term reliability studies under the aegis of the Southeastern Reliability Council ("SERC"), the Carolinas Transmission Coordination Arrangement, and the South Carolina Regional Transmission Planning ("SCRTP") FERC Order 1000 planning region. Also in 2024, DESC began working with the sponsors of Southeastern Regional Transmission Planning ("SERTP") to join the region and retire SCRTP upon our FERC Order 1920 compliance filing.

D. Transmission Projects

During 2024, DESC invested a total of $222 million in capital additions and improvements to its transmission system and completed nine major transmission projects representing $26 million of that amount. As a result of its annual and ongoing transmission reliability assessments, DESC has identified twenty-eight major electrical transmission projects that are either ongoing or planned within the next five years. A listing of these and additional major transmission projects are found in **Appendix B.**

The following nine major transmission projects were completed in 2024. In all cases of rebuilds of existing lines, the wooden structures were replaced with galvanized steel structures meeting all modern electric codes and providing increased reliability and resiliency.

i. **Bushy Park 115kV Substation for New Turbine *(Complete and In Service March 2024).*** DESC completed the new substation required for the replacement CT at Bushy Park.

ii. **Eastover - Square D 115kV Rebuild Transmission Line *(Completed and In Service May 2024).*** DESC rebuilt this line to replace aging infrastructure.

iii. **Coosawhatchie 115-23kV Substation and 115kV Transmission Line Construction *(Completed and In Service May 2024).*** DESC built a new substation to serve increased load and growth in the Yemassee and Coosawhatchie areas.

iv. **Emory 230-23kV Substation and 230kV Transmission Line Construction *(Completed and In Service December 2024).*** DESC built a new substation in the Saluda County area to improve reliability and redundancy in the area.

v. **Hopkins - Square D 115kV Rebuild Transmission Line *(Completed and In Service September 2024).*** DESC rebuilt this line to replace aging infrastructure.

vi. **Queensboro – Fort Johnson 115KV Rebuild Transmission Line *(Completed and In Service December 2024).*** DESC rebuilt this line to replace aging infrastructure.

vii. **Stevens Creek – Hooks 115KV / Little River Plum Branch 46KV Rebuild Transmission Lines *(Completed and In Service August 2024)***. DESC rebuilt this line to replace aging infrastructure and increase the load flows from the North Augusta area of the system.

viii. **Hooks – Thurmond 115KV Tie Rebuild Transmission Line *(Completed and In Service November 2024)***. DESC rebuilt this line to replace aging infrastructure.

ix. **Palmetto Railways 115-13.8KV Substation and 115KV Transmission Line Construction *(Completed and In Service December 2024)***. DESC built a new substation in the North Charleston area to serve growing distribution load.

XIV. GENERATION OPERATING REPORT UPDATE

A. DESC's Current Generation

As of December 31, 2024, DESC operated 59 hydro and fossil generating units with a dependable net winter generating capacity of approximately 5,241 MW and a single unit nuclear station with a net dependable winter generating capacity of approximately 666 MW (DESC's two-thirds share). These resources are supplemented by approximately 1,112 MW of utility-scale solar generation purchased from third parties under long-term power purchase agreements ("PPA") and approximately 163.7 MW of additional customer-scale solar. DESC also benefits from a 2 MW allocation of power from the Southeastern Power Administration ("SEPA"), which operates hydro resources on the upper Savannah River. DESC's updated table of generation assets for 2025 is as follows:

[Table begins on following page]

Table 9. DESC's Existing Supply-Side Resources

	In-Service Date	Probable Retirement Date [1]	Summer 2025 (MW)	Winter 2025 (MW)
Combined-Cycle [2]:				
Jasper – Hardeeville, SC	2004	2044	902	1,000
Columbia Energy Center – Gaston, SC	2004	2054	522	601
Urquhart Combined-Cycle – Beech Island, SC	2002	2029 (Steam) / 2052 (CTs)	458	484
Total Combined-Cycle Capacity			1,882	2,085
Gas-Fired Steam:				
S.C. McMeekin – Irmo, SC	1958	2038	250	250
Urquhart Steam #3 – Beech Island, SC	1954	*2027* [1]	95	96
Total Gas-Fired Steam Capacity			345	346
Coal-Fired Steam:				
Cope - Cope, SC [2]	1996	2071	415	415
Wateree – Eastover, SC	1970	2045	684	684
A.M. Williams – Goose Creek, SC [3]	1973	2048	595	600
Total Coal-Fired Steam Capacity			1,694	1,699
Simple-Cycle Combustion Turbines [2]:				
Bushy Park CT#1 – Goose Creek, SC	2024	*TBD*	42	52
Hagood CT# 4 – Charleston, SC	1991	2041	80	95
Hagood CT #5 – Charleston, SC	2010	2060	18	21
Hagood CT #6 – Charleston, SC	2010	2060	20	21
Coit CT #1 and #2 – Columbia, SC	1969	*2025* [1]	26	36
Urquhart CT #1, #2, #3 – Beech Island, SC	1969	*2027* [1]	39	48
Urquhart CT #4 – Beech Island, SC	1999	*2027* [1]	48	49
Parr CT #1 and CT #2 - Parr, SC	*2025*	*TBD*	*(84)*	*(104)*
Urquhart CT #7 – Beech Island, SC	*2028*	*TBD*	*(149)*	*(199)*
Total Simple-Cycle CT Capacity			273	322
Nuclear:				
V. C. Summer - Jenkinsville, SC [4]	1982	2062	651	666
Hydro:				
Neal Shoals – Carlisle, SC	1905	2055	2	2
Parr Shoals – Parr, SC	1914	2064	7	7
Stevens Creek - Near Martinez, GA	1929	2079	9	12
Saluda - Irmo, SC	1932	2082	190	192
Fairfield Pumped Storage - Jenkinsville, SC	1978	2128	576	576
Total Hydro Capacity			784	789
Other:				
Southeastern Power Administration (SEPA) Allocation			2	2
Total Firm Capacity:			5,631	5,909
Solar: [5]				
PPA DER Program			64	0
PPA Non-DER Program			1,048	0

Notes:

1. Probable retirement dates are based on the 2018 Depreciation Study, except for: Coit CT #1 and CT #2 (planned to be retired following commercial operation of Parr CT #1 and CT #2); Urquhart Steam #3 and CT #1, CT #2, CT #3, and CT #4 (planned to be retired in 2027 in conjunction with construction of Urquhart CT #7).

A depreciation study has not yet been performed for Bushy Park CT #1, Parr CT #1, Parr CT #2, or Urquhart CT #7, so no probable retirement dates have yet been identified for these units.

2. Cope Station can operate on coal and natural gas (as available/economical). All simple-cycle CTs and combined-cycle CTs can operate on either natural gas or ultra-low sulfur fuel oil.

3. A.M. Williams Station is owned by South Carolina Generation Company ("GENCO"), a wholly-owned subsidiary of SCANA Corporation which is a wholly-owned subsidiary of Dominion Energy, Inc. GENCO's sells to DESC the total capacity and the entire output of Williams Station under a Unit Power Sales Agreement approved by the Federal Energy Regulatory Commission.

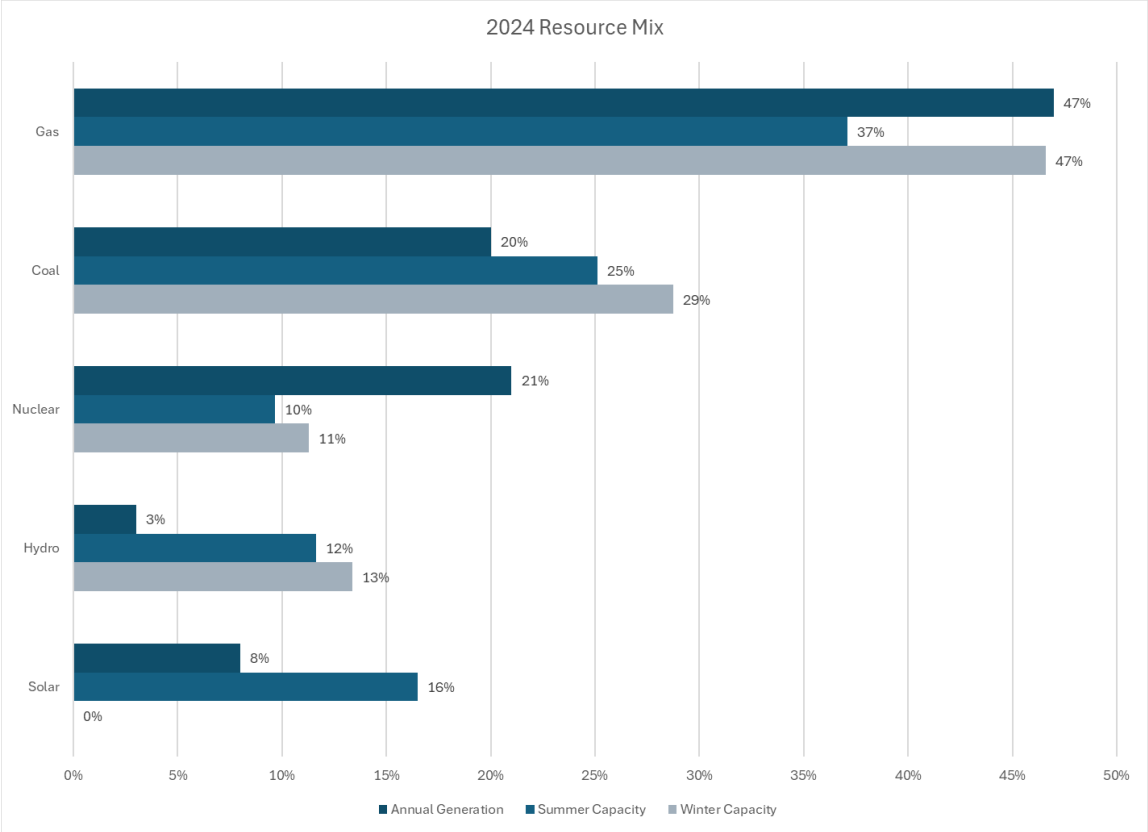
4. V.C. Summer Station capacity rating is at DESC's two-thirds ownership share.

5. Solar MW are nameplate values and do not represent the contribution to peak demand.

In 2024, the five major classes of generation contributed to DESC's safe, reliable and efficient electric service to customers in the following percentages:

[Table begins on following page]

Table 10. DESC'S 2024 Resource Contribution to Energy Supply



1. Solar and Other Renewable Generation

At the end of 2024, Solar and other renewable generation represented 1,112 MW-AC of installed nameplate capacity interconnected to the DESC system and produced approximately 8.35% of DESC's energy needs as non-carbon emitting energy. At the end of 2024, DESC had two Hybrid Solar & Storage projects contracted under PPA arrangements in operation on its system.

2. Nuclear Operating Report Update

In 2024, V.C. Summer Station produced approximately 4,947 GWh of non-carbon emitting base-load energy for DESC, representing approximately 20.7% of DESC's energy needs. Energy produced by V.C. Summer Station during 2024 displaced approximately 7.7 million tons of CO_2

that would have been emitted if replaced by fossil resources. The 2024 100% (undivided) generation output from V.C. Summer Station was approximately 7,421 GWh.

In 2024, V.C. Summer Station met or exceeded all Nuclear Regulatory Commission ("NRC") safety and environmental requirements and has received favorable ratings from the Institute of Nuclear Power Operations ("INPO") operational standards assessment. For 2024, INPO rated V.C. Summer's overall performance as exemplary. An exemplary rating is the highest achievable rating from INPO.

In 2024, V.C. Summer Station's net capacity factor, based on reasonable excludable nuclear system reductions, computed under the provisions of S.C. Code Ann. § 58-27-865, was 100.81%, indicating a high degree of reliability. During 2024, V.C. Summer conducted Refueling Outage No. 28 and had one maintenance outage in November 2024 to repair a main condenser tube leak. On August 17, 2023, the Company filed an application with the NRC to authorize a "Subsequent Renewed Facility Operating License for Virgil C. Summer Nuclear Station Unit 1" to allow V.C. Summer to operate for an additional 20-years beyond the expiration of the currently in effect renewed license. The subsequent renewed license, if approved, would extend V.C. Summer operation into the year 2062. The process for a subsequent license renewal is a time-consuming process for the Company and the NRC. The application remains under review by the NRC. As to current status, the NRC has completed its Draft Environmental Impact Statement, which is currently out for public comment.

3. Update of the Combined Cycle Generating Plants Operating Report

In 2024, DESC's natural gas-fired CC units produced approximately 39% of DESC's energy needs providing 1,882 MW of capacity in the summer and 2,085 MW of capacity in the winter. These ratings are inclusive of the completed Advanced Gas Path ("AGP") upgrades on the

three Jasper Station CT units and the two Columbia Energy Center CT units. For 2024, DESC's combined cycle units' Forced Outage Factor was only 0.24%.

4. Update of the Simple Cycle Combustion Turbines Operating Report

As of December 31, 2024, DESC's CT units were rated to provide 273 MW of capacity in the summer and 322 MW in the winter. In 2024, simple cycle CT units produced limited energy (0.15% of DESC's energy needs) but provided reserve capacity and blackstart capabilities necessary to ensure system reliability.

On November 1, 2024, the replacement Bushy Park combustion turbine in Berkeley County ("Bushy Park CT #1") entered commercial operation. Construction of the replacement Parr CT units remains on going, and these units are anticipated to enter commercial operation by the end of 2025. The Company plans to retire the Coit CT units in downtown Columbia after the replacement CT units at Parr are available for commercial operation.

5. Fossil-Steam Units Operating Report

In 2024, DESC's fossil steam units provided approximately 28% of DESC's energy needs and provided 2,039 MW of summer capacity and 2,045 MW of winter capacity. The 2024 Forced Outage Factors for DESC fossil coal units and fossil gas units were approximately 2.6 and 0.34%, respectively. Detailed operating results for DESC's fossil steam units are provided in **Appendix J,** Generator Level Performance Data.

6. Hydroelectric-Power Operating Report

In 2024, Fairfield Pumped Storage returned to the system over 472 GWh of stored energy and provided 576 MW of capacity in both summer and winter. The remaining hydro units provided 208 MW of capacity in the summer and 213 MW of capacity in the winter. In 2024, DESC's hydroelectric plants provided approximately 3% of DESC's energy needs. In 2024, the Fairfield Pumped Storage Forced Outage Factor was 0.15%.

Hydro Relicensing. In July of 2009, DESC entered into a Comprehensive Settlement Agreement with the parties to its FERC proceeding to relicense the Saluda Hydro Project. DESC continues to await FERC's decision on the application. The relicensing of the Stevens Creek Project is under active review by FERC staff.

Saluda Hydro Upgrades. The Company is beginning a series of major upgrades on two of the Saluda Hydro units to ensure continued availability and reliable service. These upgrades are expected to include replacement of the penstock headgate assemblies, rewinds and upgrades of the generators, replacement of the turbine runners, and replacement of generator excitation and control systems. The generator step-up transformer units have already been replaced on all five units and the new transformers are sized to accommodate future planned generator upgrades.

Parr Hydro. As part of the renewed license received in late 2020 for the Parr Hydro Project, the Company plans to upgrade all six of the generating units at the Parr Shoals Hydro facility over the next ten years. Completing these upgrades will enhance the reliability and availability of these units, which have been in service for over a century and reduce their impact on the aquatic environment. Replacing or rewinding the generators and replacing the turbine runners are expected to increase the generating capacity of this facility but will not materially affect the capacity available to the system given the intermittent nature of run of river hydro resources.

B. The GHG Rules

On April 25, 2024, EPA issued regulatory actions that address emission guidelines under Clean Air Act Section 111(d) and 111(b) for GHG emissions from existing and new fossil fuel-fired steam generating units.

Clean Air Act Section 111(d)

Section 111(d) sets forth emission guidelines for existing coal, oil and gas fossil fuel-fired electric steam generating units. The final rule was published in the Federal Register on May 9, 2024. Under Section 111(d), coal units have the following options to comply: (1) retire by January 1, 2032; (2) transition to 40% natural gas co-firing by 2030; or (3) install carbon capture and sequestration ("CCS") technology with a 90% capture rate by 2032. Units that elect natural gas co-firing but do not install CCS, must retire by January 1, 2039. As an alternative, units can also convert to 100% natural gas, but must cease using coal entirely by January 1, 2030. Units that convert to 100% gas or install CCS do not have a mandated retirement date. EPA had indicated it planned to include existing gas and oil-fired combustion turbines under section 111(d) in a future rulemaking. States have flexibility to consider a range of approaches to achieve the emission reductions identified through Best System Emission Reduction ("BSER").

Clean Air Act Section 111(b)

The EPA revised the New Source Performance Standards ("NSPS") under Section 111(b) for greenhouse gas emissions from new and reconstructed gas and oil-fired stationary combustion turbines as well as coal-fired steam generating units that undertake a large modification. The rule was published in the Federal Register on May 9, 2024. Section 111(b) sets different standards for CO_2 emissions based on a unit's capacity factor. New or reconstructed gas-fired combustion turbines that operate at or less than 40% capacity factor will have a CO_2 emission standard upon startup but do not require CCS. Units operating above 40% capacity factor have an accompanying CO_2 emission standard upon startup and are required to install CCS technology with a 90% capture rate by 2032. Coal fired steam generating units that undertake a large modification would need to

employ a unit-specific emission standard determined by an 88.4% percent reduction in the unit's best historical annual CO_2 emission rate (from 2002 to the date of the modification). Other technologies, such as hydrogen fuel blending, also can be used to meet the new emission standards or in lieu of CCS to meet EPA's Best System Emission Reduction, so long as use of those technologies result in equivalent stringencies.

C. Particulate Regulations

On March 6, 2024, EPA released a final rule, lowering the primary (health-based) National Ambient Air Quality Standards for Particulate Matter ("PM NAAQS") from 12.0 ug/m3 to 9.0 ug/m3. EPA retained all other PM NAAQS at their current levels. States are required to develop and submit attainment plans for areas designated as nonattainment for the revised NAAQs no later than 18 months after EPA finalizes designations. For areas in moderate nonattainment, these plans must provide for attainment as expeditiously as practicable but no later than the end of the sixth calendar year after nonattainment designations. Areas with more severe levels of nonattainment have longer periods to achieve attainment of the new standards. According to EPA, the earliest states would need to come into attainment with the revised PM2.5 NAAQS is in 2032. All of the DESC assets are currently in locations that are in attainment with the lower PM2.5 standards.

Potential Review, Revision or Withdrawal of these Rules

On March 12, 2025, the EPA announced that it was reconsidering these rules with the potential for revising or withdrawing them or the findings on which they are based.

XV. MODELING INPUTS AND ASSUMPTIONS

A. Load Growth Forecast

As its reference load forecast, the 2025 IRP Update incorporates the Company's 2025 annual Base Load Forecast of customers' future energy and demand needs. The compound annual

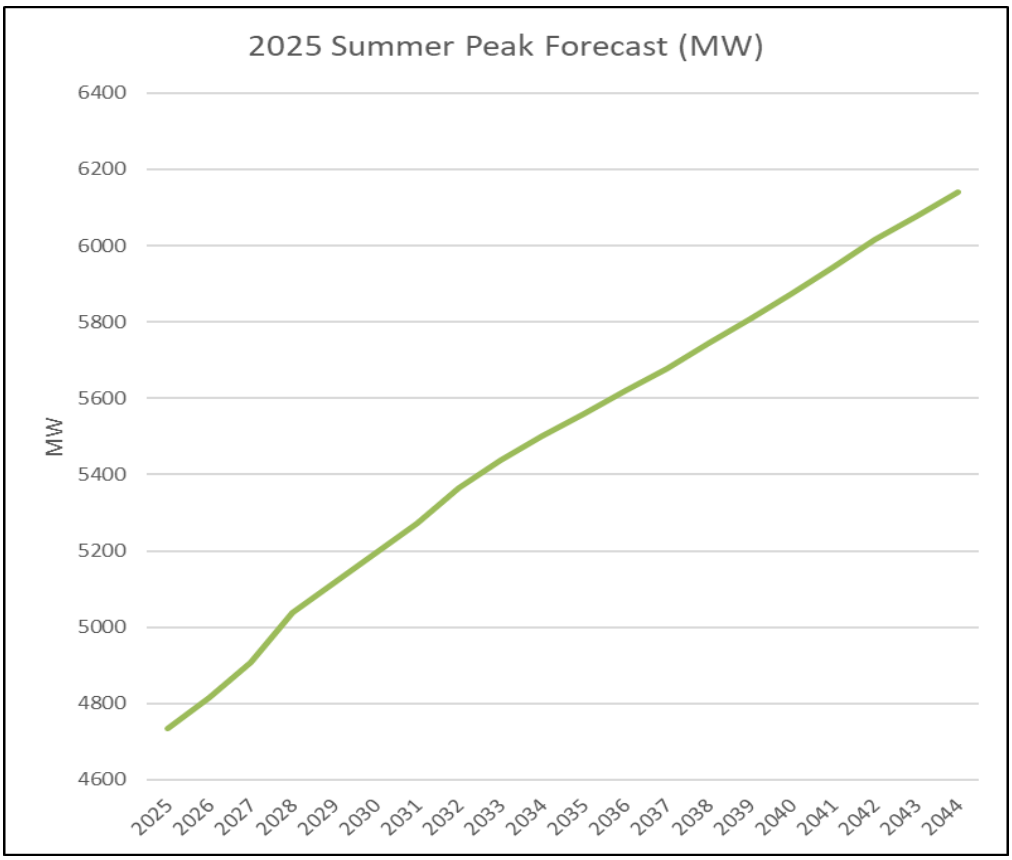
rate of growth in summer and winter demand over the twenty-year planning horizon are 1.4% and 1.17%, respectively. Compared to the 2024 demand growth forecast, the 2025 demand growth forecast is lower by 0.105 percentage points in summer and higher by 0.036 percentage points in winter.

Table 11. 2025 Annual Energy and Peak Forecast

	Energy Forecast	Peak Forecast	
Year	Sales GWh	Summer MW	Winter MW
2025	22937	4733	4672
2026	23385	4815	4743
2027	24379	4909	4848
2028	25280	5039	4960
2029	25811	5116	5035
2030	26342	5193	5097
2031	26941	5273	5167
2032	27433	5366	5239
2033	27769	5437	5283
2034	28115	5501	5322
2035	28499	5560	5363
2036	28873	5620	5404
2037	29224	5678	5442
2038	29665	5745	5495
2039	30084	5808	5545
2040	30499	5873	5602
2041	30962	5944	5660
2042	31397	6015	5720
2043	31842	6077	5777
2044	32266	6140	5833

Below is the 2025 summer peak forecast.

Figure 8. Summer Peak Forecast (MW)

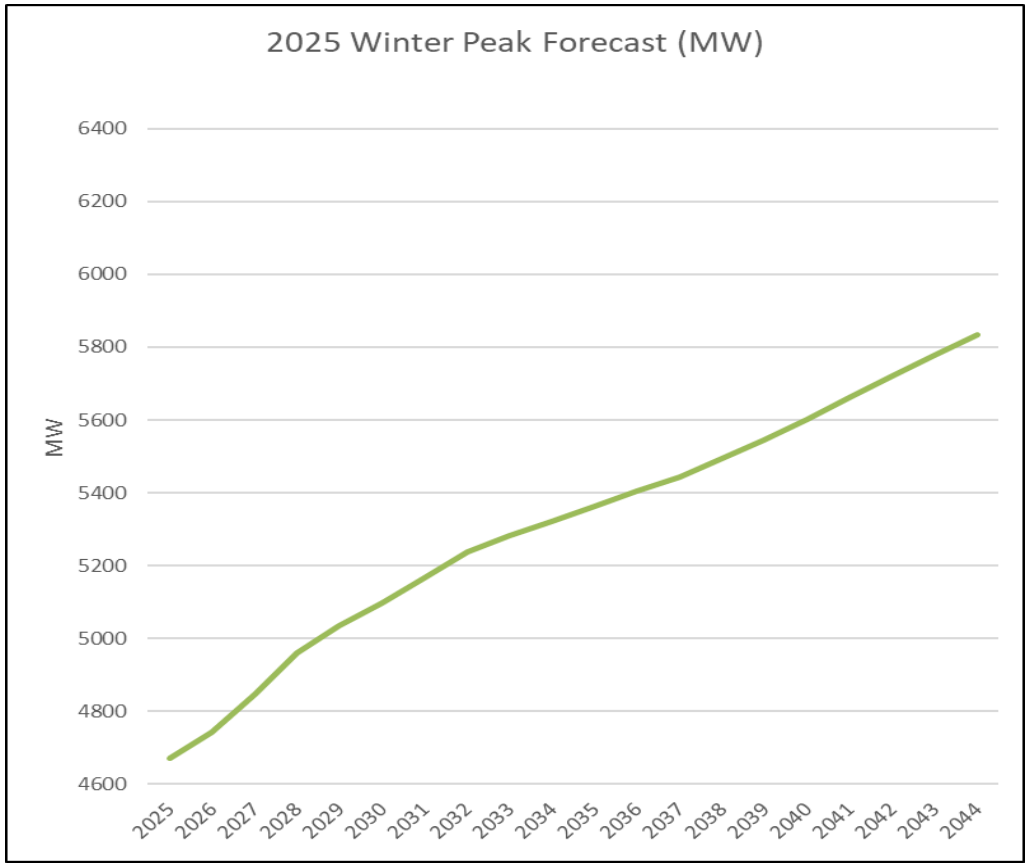


The current peak demand forecast is generally similar to the 2024 peak demand forecast.

The 2025 forecast of winter peak demand is generally consistent with the winter peak demand from 2024.

[Chart begins on following page]

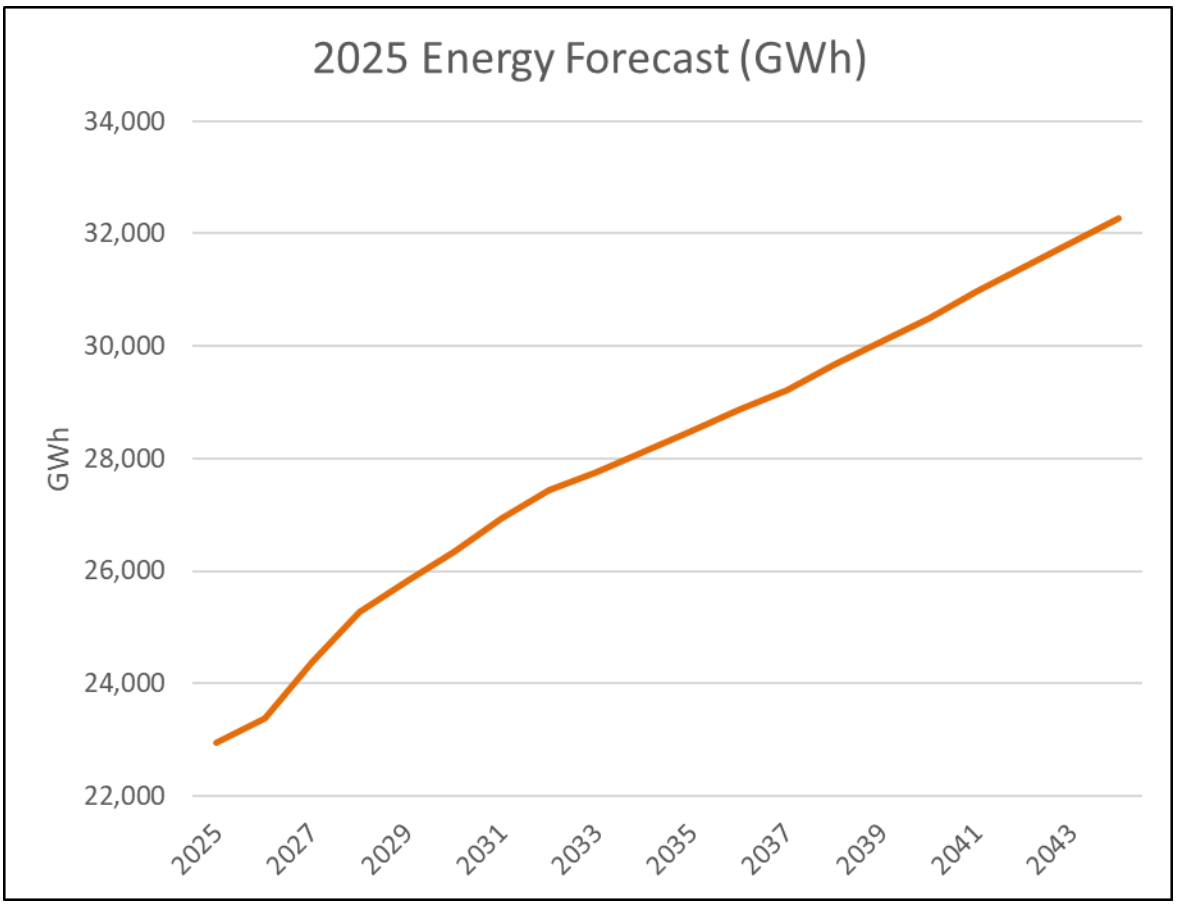
Figure 9: Winter Peak Forecast (GWh)



The compound annual rate of growth energy demand over the twenty-year planning horizon is forecasted at 1.8%. The 2025 reference energy forecast is higher than the 2024 reference energy forecast by 0.14 percentage points.

[Chart begins on following page]

Figure 10: Energy Forecast (GWh)

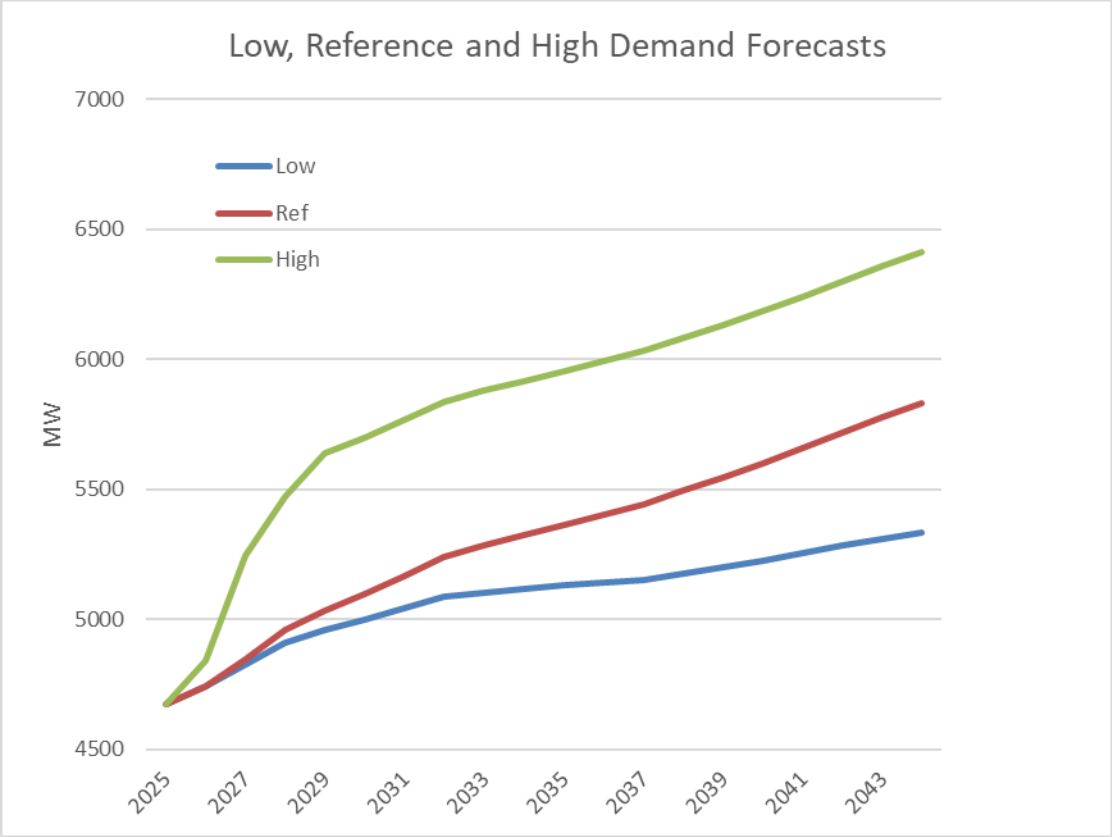


B. Analysis of Load Growth Rates under Alternative Economic Scenarios

As required by S.C. Code Ann. § 58-37-40(B)(1)(a), DESC has created high and low growth rate scenarios to assess its generation planning under alternative economic scenarios. For its high load growth scenario, DESC incorporated the results of a new electrification study (the "Electrification Study") and the addition of near-term load growth from potential economic development. Consistent with its 2024 IRP Update, DESC created its low load growth scenario by decreasing growth in demand by 0.5%. Over 20 years, these high and low load growth assumptions create a band around the reference electrical demand forecast of 498 MW on the low case and 578 MW on the high case, or 8.5% and 9.9%, respectively, of the reference forecast of

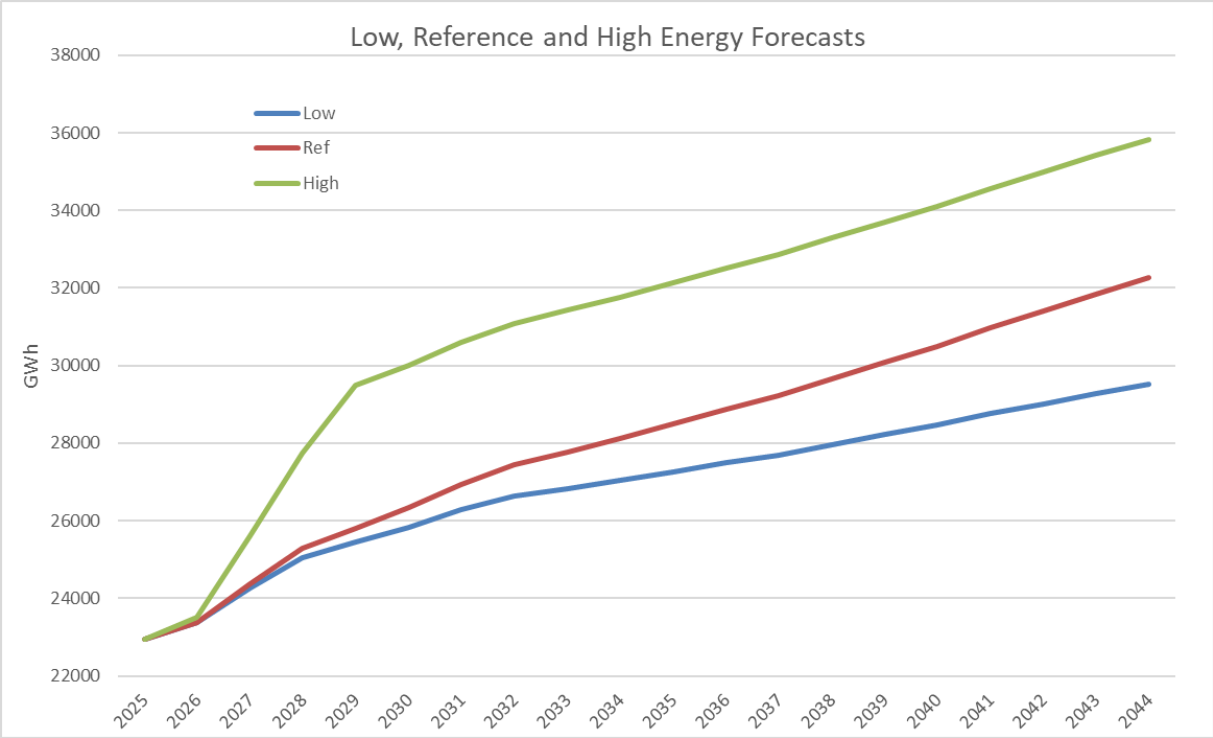
5,833 MW in 2044. The band around the reference energy forecast is between 2,737 GWh on the low load case and 3,563 GWh on the high load case, or 8.5% and 11.0% of the reference forecast, respectively. This is a reasonably broad band.

Figure 11: Low, Reference and High Demand Forecasts



[Chart begins on following page]

Figure 12: Low, Reference and High Energy Forecasts



C. Wholesale Sales

Long-term wholesale customer sales currently represent approximately 0.3% of the Company's sales as reflected in the 2025 IRP Update.

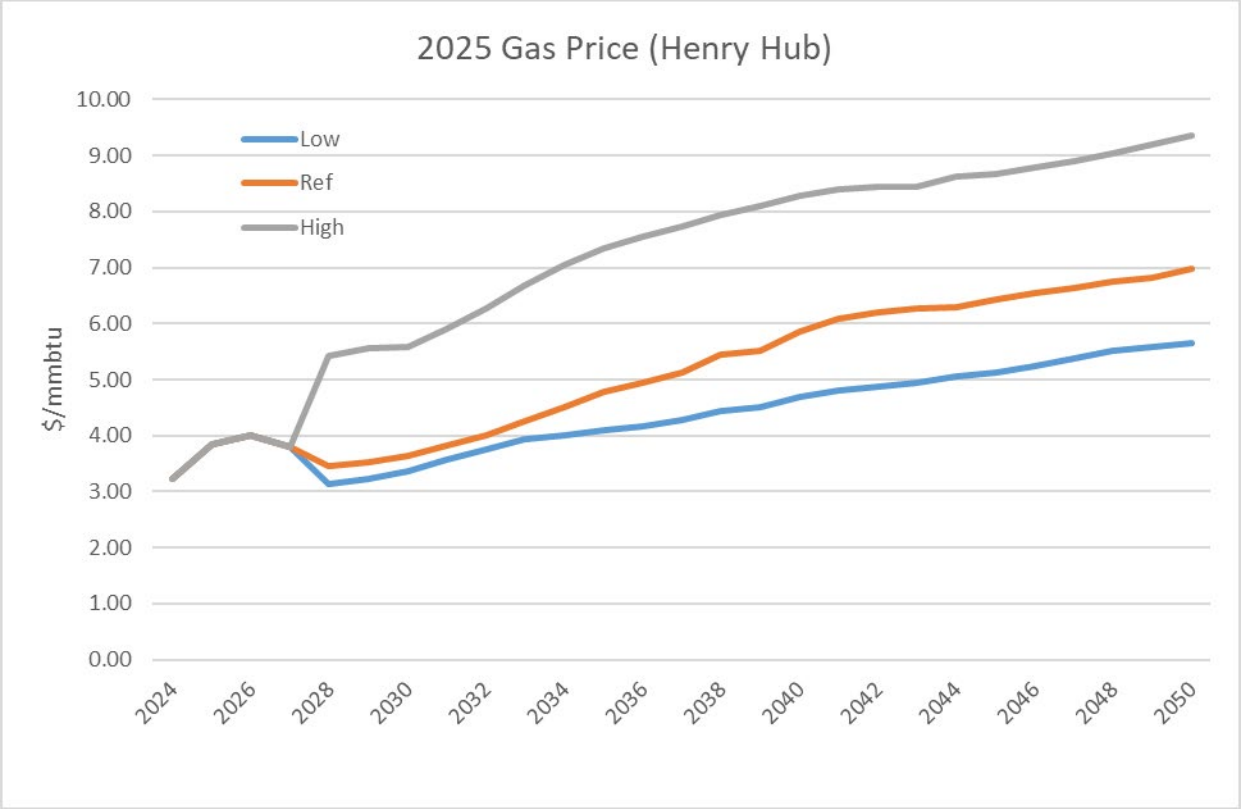
D. DSM Assumptions

As in the 2024 IRP Update, DESC modeled a High DSM, Medium DSM and a Low DSM case based on the results of the 2023 DSM Potential Study. The High DSM case assumes that DESC achieves a reduction in annual forecasted load growth (excluding opt-out customers) of 0.74% of gross energy sales, the Medium DSM case assumes that DESC can achieve a 0.51% gross energy sales reduction and the Low DSM case assumes that DESC is only able to achieve 90% of the energy reductions assumed under the Medium DSM case, or 0.46%. All of DESC's energy and demand values include marginal line losses for DSM and the forecasted benefits of demand reduction programs.

E. Natural Gas Price Forecast

As in the 2024 IRP Update, the base natural gas price forecast for the first three years of the planning horizon reflects the prices of publicly traded NYMEX Henry Hub contracts and for the following years reflects the natural gas price forecast from the EIA Annual Energy Outlook which provides the Low, Reference and High forecasts needed to model various fuel cost levels. These costs have been updated to reflect current data.

Figure 13. Gas Prices (Henry Hub)



F. Low GHG hydrogen

Low GHG hydrogen is an emerging fuel which EPA has defined as a hydrogen derived fuel that is produced through a process that results in a well-to-gate GHG emission rate of less than 0.45 kilograms of CO_2 equivalent per kilogram of hydrogen produced. Hydrogen is a versatile energy carrier that can store and transport energy, supporting the decarbonization of hard to abate

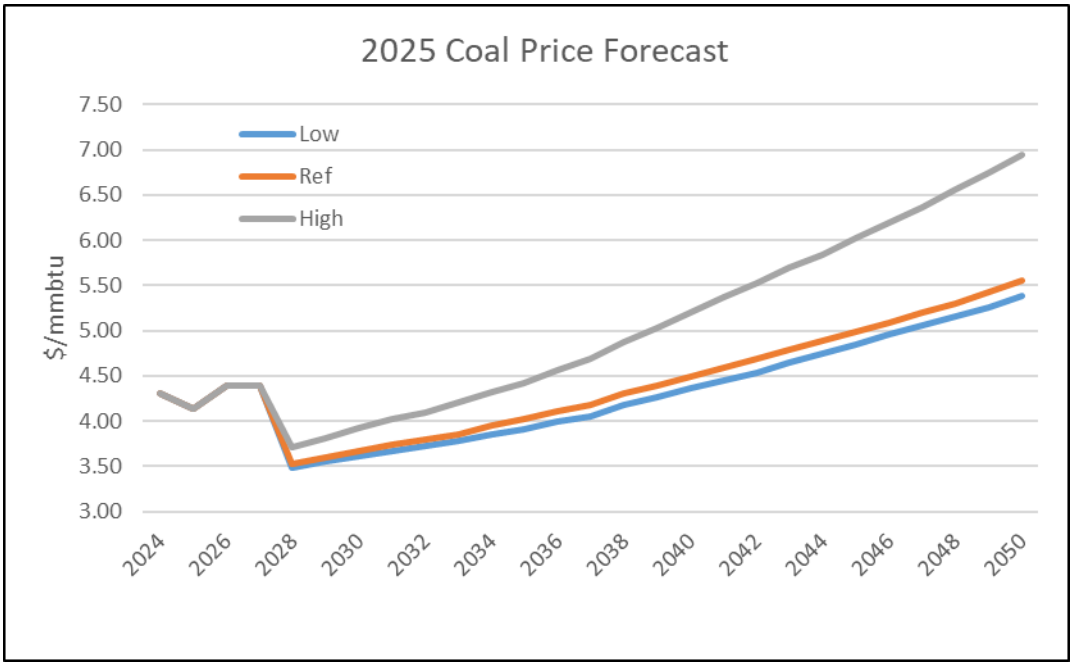
sectors of the economy. Opportunities exist in the production, transportation, and utilization of hydrogen to foster a clean energy future, particularly when produced from low- or no-carbon sources. Currently, DESC is not aware of any single authoritative forecast of low GHG hydrogen prices. DESC observed that most published sources are providing targets or goals instead of a fundamentals-based forecast with annual or monthly values. DESC intends to continue monitoring developments around hydrogen; however, it did not model hydrogen as a selectable resource in its 2025 IRP Update.

G. Coal Price Forecasts

As was the case in the 2024 IRP Update, DESC's forecasted coal prices are based on the Company's direct knowledge of Appalachian coal contract prices for the upcoming three years and EIA forecasts for later years. High and low coal price forecasts were based on the high or low-price forecast provided by the EIA in its Annual Energy Outlook, all as updated with current data.

[Figure begins on following page]

Figure 14. Coal Price Forecasts



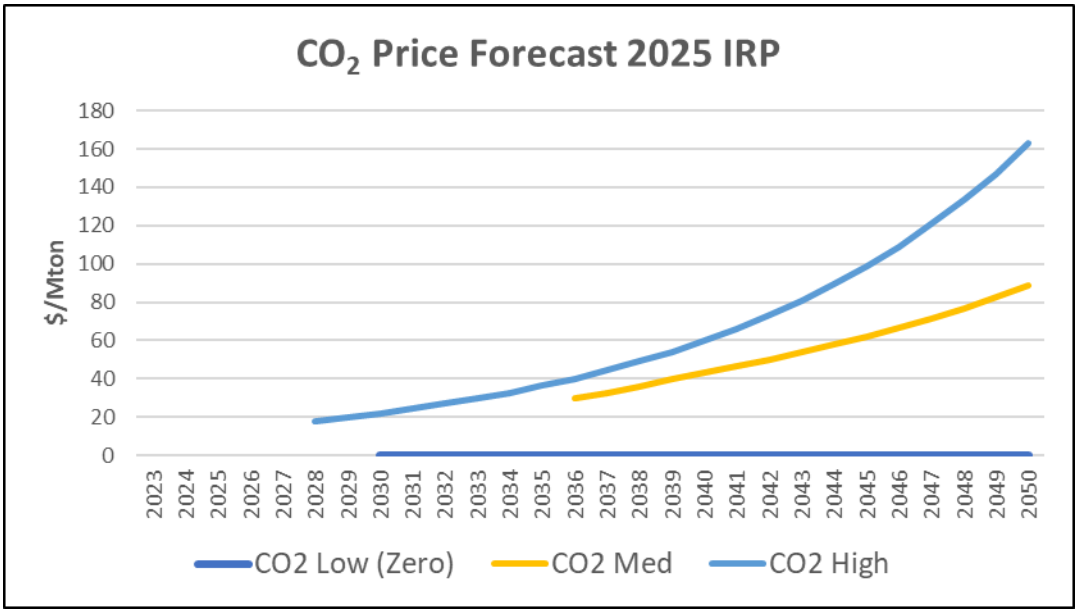
H. CO_2 Price Forecasts

As was the case in the 2024 IRP Update, DESC based its medium CO_2 price forecast on the IHS "US Power Sector" forecast, which increases from $29.52/Mton in 2036 to more than $88.85/Mton by 2050. DESC assumes that a CO_2 price is imposed beginning in 2036.

For the high view of CO_2 prices, DESC assumed that CO_2 prices would be 150% of the medium CO_2 price forecast starting in 2028. The price escalates to $162.81/Mton by 2050. The low view of CO_2 prices assumes that they remain at zero.

[Figure begins on following page]

Figure 15. CO_2 Price Forecasts



I. Reserve Margin Requirements

Based on the 2023 Reserve Margin Study, and consistent with the 2024 IRP Update, DESC informed the PLEXOS model to maintain a single integrated minimum 20.1% winter reserve margin which enveloped the minimum 15% summer reserve margin.

J. Recently Added or Upgraded Generation Resources

The PLEXOS model includes as existing generation resources all binding solar PPAs whether already in place or contracted to enter service during the time the IRP was being modeled. They total 1,187 MWs of capacity and include one recent contract for a solar PPA representing 75 MW of Solar.

DESC has also received a number of Notice of Commitment to Sell forms from developers of Solar and Hybrid Solar & Storage facilities with a total Solar nameplate of 535 MW and Battery nameplate of 400 MW. These facilities will not be modeled in the PLEXOS model until a binding solar PPA has been executed.

K. Future Generation Resources Available to PLEXOS and Their Capital and Operating Costs

In consultation with Stakeholders, DESC identified sixteen generating resources for PLEXOS to call on in this 2025 IRP Update when optimizing generation plans to meet future demand. The 2024 IRP Update identified fourteen. The sixteen resources included stand-alone Battery, stand-alone Solar, Hybrid Solar & Storage, CT units, natural gas-fired CC units, OSW, and SMRs. Solar resources are modeled as PPA resources in addition to utility-owned resources.

The cost attributes of each of the sixteen resources available for selection by PLEXOS are listed in the table below. For candidate resources, the capital costs of the resources modeled in each plan have been escalated to the year that the generator is installed.

[Table begins on following page]

Table 12. Generation Supply Technology Costs, Escalation and Capacity Units and Supply Technology Characteristics

Available Resources	Capital Cost 2025 IRP Update ($/kW)	Escalation Rate	Capacity (MW)	Source Of Data
New 2x1 CC Greenfield	1,919	2.03%	1,309	Dominion Energy Project Construction Group
New 1x1 CC Greenfield	2,086	2.03%	665	Dominion Energy Project Construction Group
New (3) 1x1 Combined Cycle 50% Shared Brownfield	1,827	2.03%	998	Dominion Energy Project Construction Group
New 1x0 Adv-Class Frame CT Greenfield	1,333	2.03%	450	Dominion Energy Project Construction Group
New 2x0 F-Class CT Greenfield	1,473	2.03%	402	Dominion Energy Project Construction Group
New 4x0 Aero CT Greenfield	3,330	2.03%	210	Dominion Energy Project Construction Group
New 2x0 Aero CT Greenfield	4,021	2.03%	105	Dominion Energy Project Construction Group
New 1x0 F-Class CT Urquhart CT #8 Brownfield	2,239	2.03%	201	Dominion Energy Project Construction Group

New 1x0 Aero CT Bushy Park CT #2 Brownfield	5,980	2.03%	52	Dominion Energy Project Construction Group
New Small Modular Reactor	15,780	2.03%	274	Dominion Energy Project Construction Group
New Solar *	1,630	2.50%	100	NREL 2024 ATB
New Solar PPA *	1,630	2.50%	100	NREL 2024 ATB
New Solar Plus Storage *	2,580	2.50%	100	NREL 2024 ATB
New Battery 4 hour *	2,036	2.50%	100	NREL 2024 ATB
New Battery 8 hour *	4,079	2.50%	100	NREL 2024 ATB
New Offshore Wind *	6,907	2.50%	100	NREL 2024 ATB

* Includes Grid Interconnection

In the 2025 IRP Update, DESC has continued to follow its commitment to use the National Renewable Energy Laboratory ("NREL") cost data for forecasting the cost of renewables. All prices for renewables have been updated with nominal prices calculated from the NREL 2024 Annual Technology Baseline ("ATB"). DESC modeled the Solar Production Tax Credits ("PTCs") consistent with the ATB.

XVI. BUILD PLAN ANALYSIS

In preparing the 2025 IRP Update, DESC analyzed five Core Build Plans under a range of policy considerations and future conditions in the energy markets, resulting in the consideration of fifteen Core Cases. Each of the Core Build Plans represents a different generation supply plan that optimizes results for customers under different assumptions concerning fuel costs, CO_2 costs, load

growth, DSM results, and replacement resources for retired coal units. In partnership with Santee Cooper, DESC is continuing to develop the Joint Resource. The assumed 998 MW configuration and ownership of this resource is included in all Core Build Plans except the Updated 2023 Reference Build Plan which continues to reflect the Joint Resource in its earlier 662 MW size. The Updated 2023 Reference Build Plan is the highest cost of all Core Build Plans and shows the value of constructing the Joint Resource in this larger configuration.

DESC quantified the costs, CO_2 emissions, and other impacts of these Core Build Plans by creating fifteen Core Cases to evaluate alternatives for meeting customers' energy needs reliably, affordably, and responsibly. DESC added five Sensitivity Cases to this analysis to assess the effect of alternative assumptions about future fuel and CO_2 costs, market conditions and load growth. The Company also modeled one Supplemental Case to assess the types and levels of resources required for DESC to achieve a reduction in CO_2 emissions of 85% by 2050, to be accomplished in stages beginning in 2031.

A. The Five Core Build Plans

DESC selected five Build Plans for detailed analysis, based on updated inputs. They include the Updated 2023 Reference Build Plan, the 2025 Reference Build Plan, the Zero Carbon Cost Build Plan, the High Fossil Fuel Prices Build Plan, and the Alternate Reference Build Plan.

[Table begins on following page]

Table 13. The Five Core Build Plans

1. Updated 2023 Reference Build Plan	Reference Market Scenario	Includes a previously optimized build plan	This Build Plan was optimized in the 2023 IRP Reference Market Scenario, accepted as the 2023 IRP Preferred Build Plan, and is carried forward to this update as a Core Build Plan. Due to a higher load forecast, supplemental resources were added by optimizing in the Reference Market Scenario.
v2. 2025 Reference Build Plan	Reference Market Scenario	Limit capacity factors for new gas units: 40% (Advanced-Class CTs and 2x1 CCs), 20% or less (F-Class CTs)	PLEXOS crafted this Build Plan to perform best under the Reference Market Scenario, which generally reflects a middle-of-the-road outlook for key market drivers and is the expected scenario for the 2025 IRP Update.
3. High Fossil Fuel Prices Build Plan	High Fossil Fuel Prices Market Scenario	None	PLEXOS crafted Build Plan using the High Fossil Fuel Prices Market Scenario, which assumes high fossil fuel prices, moderate levels of electric demand growth, and moderate CO_2 costs.
4. Zero Carbon Cost Build Plan	Zero Carbon Cost Market Scenario	None	PLEXOS crafted this Build Plan using the Zero Carbon Cost Market Scenario, which assumes future policy makers do not prioritize decarbonizing the energy sector. CO_2 prices remain at zero, fossil fuel prices are low, and electrification does not significantly increase load growth.
5. Alternate Reference Build Plan	Reference Market Scenario	None	PLEXOS crafted this Build Plan to perform best under the Reference Market Scenario but assumes the Clean Air Act Section 111 Green House Gas Rule is repealed and Wateree and Williams retirement dates are delayed.

B. The Non-Core Build Plans

The six Non-Core Build Plans serve as sensitivities to evaluate the potential effects on DESC's generation plans of changes in fuel cost, CO_2 costs, load growth, and DSM effectiveness, and resources required to achieving higher levels of reduction in CO_2 emissions.

Table 14. The Non-Core Build Plans

The Non-Core Build Plans			
Build Plan	**Market Scenario Used for Optimization**	**Additional Constraints**	**Notes**
1. Electrification Build Plan	Electrification Market Scenario	None	PLEXOS optimized this Build Plan under the Electrification Market Scenario, which assumes that policy makers incentivize electrification while keeping fossil fuel costs low and CO_2 costs at zero.
2. Energy Conservation Build Plan	Energy Conservation Market Scenario	None	PLEXOS optimized this Build Plan under the Energy Conservation Market Scenario, which assumes future policies disfavor reliance on fossil fuel through constraints on production of fossil fuels and gas pipelines, but efficiency displaces load growth due to electrification and electric load growth is low.
3. Aggressive Regulation Build Plan	Aggressive Regulation Market Scenario	None	The Aggressive Regulation Market Scenario is the basis for this Build Plan and assumes high fossil fuel costs, high CO_2 costs, and high load growth rates. This creates strong cost pressures on fossil fuel resources while load growth puts a premium on capacity and capacity additions.

4. High DSM Build Plan	Reference Market Scenario	DSM Programs attain the Maximum Achievable Potential	This Build Plan assumes DSM programs are able to achieve their Maximum Achievable Potential as shown in the 2023 DSM Potential Study, not the expected level assumed in the Reference Market Scenario. It is otherwise optimized under the Reference Market Scenario.
5. Low DSM Build Plan	Reference Market Scenario	DSM Programs Do Not Achieve the Achievable Potential	This Build Plan assumes that DSM programs are only able to achieve 90% of their Achievable Potential as Shown in the 2023 DSM Potential Study but is otherwise optimized under the Reference Market Scenario.
6. 85% CO_2 Reduction Build Plan	Reference Market Scenario	Reduction of Carbon Emissions of approximately 85% by 2050	This Build Plan is also based on the Reference Market Scenario but requires DESC to achieve a reduction in CO_2 emissions of 85% by 2050 to be accomplished in stages beginning in 2031.

C. The Percentage of Renewable Resources Selected in Core Build Plans

In the updated evaluation, the Core Build Plans add renewable or other non-emitting resources that equal between 76.8% and 80.6% of generation additions over the planning horizon. The Updated 2023 Reference Build Plan adds the most non-emitting resources, 7,325 MW or 80.6% while the Zero Carbon Cost Plan adds the least, 4,800 MW or 76.8%. The other three Core Build Plans add relatively similar levels of non-emitting resources. The 2025 Reference Build Plan and High Fossil Fuel Prices Build Plan adds 5,200 MW of non-emitting resources or 78.2% of the total MW added under that Build Plan. The Alternate Reference Build Plan adds slightly less, 5,000 MW or 77.5%.

D. MWs Added by the Core Build Plans

For comparability purposes, the Core Build Plans have the same load growth assumptions which allows the levelized costs and CO_2 emissions of each Core Build Plan to be compared directly to the others. Of the five Core Build Plans, the Updated 2023 Reference Build Plan adds

the greatest amount of generating resources by nameplate capacity (9,085 MW) and non-emitting resources (7,325 MW). The Zero Carbon Cost Build Plan adds the least amount of generating resources (6,248 MW) and non-emitting resources (4,800 MW). The other Core Build Plans add relatively similar amounts of total generating resources – between 6,448 MW (the Alternate Reference Build Plan) and 6,648 MW (the 2025 Reference Build Plan and the High Fossil Fuel Prices Build Plan).

E. Natural Gas Resources Added by the Core Build Plans

As was the case in the 2024 IRP Update, adding dispatchable natural gas-fired generation remains an affordable solution to maintaining system reliability under each of the Core Build Plans. The amount of natural gas-fired generation added is greatest in the Updated 2023 Reference Build Plan (1,760 MW) and for the other four Core Build Plans is the same but slightly lower amount (1,448 MW). The model makes very similar selections of natural gas-fired generators where Market Scenarios reflect similar load forecasts and in high and low load scenarios selected natural gas-fired generation that is proportional to load growth.

The modeling relies on the Joint Resource regardless of the date the initial coal unit retirements. Three of the five Core Build Plans rely on the Joint Resource to support the retirement of both Wateree and Williams on December 31, 2031. One of two remaining Core Build Plans relies on the Joint Resource to support the retirement of Williams by December 31, 2030, with Williams retiring by 2032 (the Updated 2023 Reference Build Plan), and one relies on the Joint Resource to support the retirement of Wateree by December 31, 2032, with Williams retiring by 2034 (the Alternate Reference Build Plan).

Except for the Updated 2023 Reference Build Plan, the other four Core Build Plans add 500 MW of Battery beginning in 2036, 800 MW of Hybrid Solar & Storage (of which three Core Build Plans begin adding in 2032 and one in 2034), and one 450 MW natural gas advanced-class

frame combustion turbine ("Frame CT") in either 2043 or 2044 to support system reliability later in the planning period.

F. The Specific Resources Added under Each Core Build Plan

The timing and nature of resource additions and the resulting capacities and winter reserve margins for each of the years of the model horizon for all Build Plans are set forth in the full detail in the tables attached as **Appendix D** to this document.

G. The Updated 2023 Reference Build Plan Resources

The Updated 2023 Reference Build Plan builds a total of 9,085 MW of capacity over the planning horizon which puts it at the high end of the range of new capacity constructed under the Core Build Plans. It adds 5,025 MW of new Solar supplemented by a total of 2,300 MW of new Battery storage of which 500 MW is added in 2029 to support the Wateree retirement. PPA and utility solar are built on an annual basis beginning in 2026 and continuing for each year thereafter until 2049. The Updated 2023 Reference Build Plan relies on the Joint Resource, in its 662 MW configuration, as the primary asset supporting the needs of the system in 2031 when both Wateree and Williams have retired.

To support system reliability and load growth, the Updated 2023 Reference Build Plan also adds a 52 MW aeroderivative capacity in 2032, and 523 MW of new Frame CT capacity in 2040 and 2049.

[Table begins on following page]

Table 15. The Updated 2023 Reference Build Plan

Update 2023 Reference Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6295	32.7	0	150	0	0	0	0	0
2027	4848	6300	29.9	0	225	0	0	0	0	0
2028	4960	6307	27.2	0	300	0	0	0	0	0
2029	5035	6063	20.4	0	300	500	0	0	0	-684
2030	5097	6159	20.8	0	300	100	0	0	0	0
2031	5167	6225	20.5	662	300	0	0	0	0	-610
2032	5239	6301	20.3	52	300	0	0	0	0	0
2033	5283	6409	21.3	0	300	100	0	0	0	0
2034	5322	6682	25.5	0	300	300	0	0	0	0
2035	5363	6695	24.8	0	300	0	0	0	0	0
2036	5404	6854	26.8	0	300	300	0	0	0	0
2037	5442	6861	26.1	0	150	0	0	0	0	0
2038	5495	6731	22.5	0	150	0	0	0	0	0
2039	5545	6833	23.2	0	150	200	0	0	0	0
2040	5602	7358	31.4	523	150	0	0	0	0	0
2041	5660	7361	30.1	0	150	0	0	0	0	0
2042	5720	7363	28.7	0	150	0	0	0	0	0
2043	5777	7364	27.5	0	150	0	0	0	0	0
2044	5833	7026	20.5	0	150	100	0	0	0	0
2045	5890	7108	20.7	0	150	200	0	0	0	0
2046	5947	7191	20.9	0	150	100	0	0	0	0
2047	6004	7243	20.6	0	150	100	0	0	0	0
2048	6062	7306	20.5	0	150	300	0	0	0	0
2049	6121	7574	23.7	523	150	0	0	0	0	0
2050	6181	7569	22.5	0	0	0	0	0	0	0
Total				1760	5025	2300	0	0	0	-1294

H. 2025 Reference Build Plan Resources

The 2025 Reference Build Plan adds a total of 6,648 MW over the planning horizon including 3,900 MW of new Solar supported by a total of 500 MW of new Battery and 800 MW of new Hybrid Solar & Storage. This Build Plan adds Solar or Hybrid Solar & Storage on an annual basis beginning in 2029 and continuing through 2044 and again in 2047 continuing through 2049. The 2025 Reference Build Plan replaces Wateree and Williams in 2032 in part through 300 MW

of Hybrid Solar & Storage capacity and through the Joint Resource in its 998 MW configuration. To ensure system reliability, it adds 450 MW of new advanced class Frame CT in year 2044.

Table 16. The 2025 Reference Build Plan

2025 Reference Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6304	27.1	0	0	0	0	0	0	0
2029	5035	6323	25.6	0	300	0	0	0	0	0
2030	5097	6340	24.4	0	300	0	0	0	0	0
2031	5167	6361	23.1	0	300	0	0	0	0	0
2032	5239	6343	21.1	998	0	0	300	0	0	-1284
2033	5283	6365	20.5	0	300	0	0	0	0	0
2034	5322	6468	21.5	0	200	0	100	0	0	0
2035	5363	6481	20.8	0	300	0	0	0	0	0
2036	5404	6575	21.7	0	300	100	0	0	0	0
2037	5442	6582	21.0	0	300	0	0	0	0	0
2038	5495	6647	21.0	0	100	100	200	0	0	0
2039	5545	6704	20.9	0	200	0	100	0	0	0
2040	5602	6792	21.2	0	300	100	0	0	0	0
2041	5660	6880	21.6	0	200	100	0	0	0	0
2042	5720	6882	20.3	0	300	0	0	0	0	0
2043	5777	6938	20.1	0	200	0	100	0	0	0
2044	5833	7390	26.7	450	100	0	0	0	0	0
2045	5890	7391	25.5	0	0	0	0	0	0	0
2046	5947	7393	24.3	0	0	0	0	0	0	0
2047	6004	7394	23.2	0	100	0	0	0	0	0
2048	6062	7391	21.9	0	100	0	0	0	0	0
2049	6121	7445	21.6	0	0	100	0	0	0	0
2050	6181	7440	20.4	0	0	0	0	0	0	0
Total				1448	3900	500	800	0	0	-1284

I. The High Fossil Fuel Prices Build Plan

The High Fossil Fuel Prices Build Plan adds a total of 6,648 MW over the planning horizon including 3,900 MW of new Solar supported by a total of 500 MW of new Battery and 800 MW of new Hybrid Solar & Storage. This Build Plan adds Solar or Hybrid Solar & Storage on an annual

basis beginning in 2028 and continuing through 2043. The High Fossil Fuel Prices Build Plan replaces Wateree and Williams in 2032 in part through 300 MW of Hybrid Solar & Storage capacity and through the Joint Resource in its 998 MW configuration. To ensure system reliability, it adds 450 MW of new advanced class Frame CT in year 2044.

Table 17. The High Fossil Fuel Prices Build Plan

High Fossil Fuel Prices Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6305	27.1	0	300	0	0	0	0	0
2029	5035	6325	25.6	0	300	0	0	0	0	0
2030	5097	6341	24.4	0	300	0	0	0	0	0
2031	5167	6362	23.1	0	300	0	0	0	0	0
2032	5239	6344	21.1	998	0	0	300	0	0	-1284
2033	5283	6367	20.5	0	300	0	0	0	0	0
2034	5322	6469	21.6	0	200	0	100	0	0	0
2035	5363	6483	20.9	0	300	0	0	0	0	0
2036	5404	6577	21.7	0	300	100	0	0	0	0
2037	5442	6584	21.0	0	300	0	0	0	0	0
2038	5495	6618	20.4	0	0	0	300	0	0	0
2039	5545	6675	20.4	0	200	0	100	0	0	0
2040	5602	6763	20.7	0	300	100	0	0	0	0
2041	5660	6851	21.0	0	200	100	0	0	0	0
2042	5720	6938	21.3	0	300	100	0	0	0	0
2043	5777	6940	20.1	0	300	0	0	0	0	0
2044	5833	7391	26.7	450	0	0	0	0	0	0
2045	5890	7392	25.5	0	0	0	0	0	0	0
2046	5947	7394	24.3	0	0	0	0	0	0	0
2047	6004	7395	23.2	0	0	0	0	0	0	0
2048	6062	7391	21.9	0	0	0	0	0	0	0
2049	6121	7445	21.6	0	0	100	0	0	0	0
2050	6181	7440	20.4	0	0	0	0	0	0	0
Total				1448	3900	500	800	0	0	-1284

J. The Zero Carbon Cost Build Plan Resources

The Zero Carbon Cost Build Plan adds a total of 6,248 MW of capacity to the system over

the planning horizon including 3,500 MW of new Solar supported by 500 MW of new Battery and 800 MW of new Hybrid Solar & Storage. It is the least construction-intensive of the Core Build Plans. This Build Plan adds Solar or Hybrid Solar & Storage on an annual basis beginning in 2030 and continuing through 2045 and again 2047 continuing through 2049. The Zero Carbon Cost Build Plan replaces Wateree and Williams in 2032 in part through 300 MW of Hybrid Solar & Storage capacity and through the Joint Resource in its 998 MW configuration. To ensure system reliability, it adds 450 MW of new advanced class Frame CT in year 2043.

[Table begins on following page]

Table 18. The Zero Carbon Cost Build Plan

Zero Carbon Cost Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6304	27.1	0	0	0	0	0	0	0
2029	5035	6322	25.6	0	0	0	0	0	0	0
2030	5097	6338	24.3	0	300	0	0	0	0	0
2031	5167	6359	23.1	0	300	0	0	0	0	0
2032	5239	6341	21.0	998	0	0	300	0	0	-1284
2033	5283	6364	20.5	0	300	0	0	0	0	0
2034	5322	6466	21.5	0	200	0	100	0	0	0
2035	5363	6480	20.8	0	300	0	0	0	0	0
2036	5404	6574	21.6	0	300	100	0	0	0	0
2037	5442	6581	20.9	0	300	0	0	0	0	0
2038	5495	6622	20.5	0	300	200	0	0	0	0
2039	5545	6678	20.4	0	0	0	100	0	0	0
2040	5602	6734	20.2	0	100	0	100	0	0	0
2041	5660	6822	20.5	0	100	100	0	0	0	0
2042	5720	6878	20.2	0	100	0	100	0	0	0
2043	5777	7329	26.9	450	100	0	0	0	0	0
2044	5833	7331	25.7	0	300	0	0	0	0	0
2045	5890	7333	24.5	0	100	0	0	0	0	0
2046	5947	7335	23.3	0	0	0	0	0	0	0
2047	6004	7336	22.2	0	100	0	0	0	0	0
2048	6062	7334	21.0	0	300	0	0	0	0	0
2049	6121	7388	20.7	0	0	0	100	0	0	0
2050	6181	7438	20.3	0	0	100	0	0	0	0
Total				1448	3500	500	800	0	0	-1284

K. The Alternate Reference Build Plan Resources

The Alternate Reference Build Plan builds 6,448 MW of capacity over the planning horizon including 3,700 MW of new Solar supported by a total of 500 MW of new Battery and 800 MW of new Hybrid Solar & Storage. This Build Plan adds Solar or Hybrid Solar & Storage on an annual basis beginning in 2029 and continuing through 2043 and again in 2048 and 2050. The Alternate Reference Build Plan replaces Wateree and Williams in part through the 998 MW

Joint Resource built in 2033 and through 300 MW of Hybrid Solar & Storage capacity in 2035. To ensure system reliability, it adds 450 MW of new advanced class Frame CT in year 2044.

Table 19. Alternate Reference Build Plan

Alternate Reference Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6304	27.1	0	0	0	0	0	0	0
2029	5035	6323	25.6	0	200	0	0	0	0	0
2030	5097	6339	24.4	0	300	0	0	0	0	0
2031	5167	6360	23.1	0	300	0	0	0	0	0
2032	5239	6385	21.9	0	300	0	0	0	0	0
2033	5283	6721	27.2	998	300	0	0	0	0	-684
2034	5322	6824	28.2	0	200	0	100	0	0	0
2035	5363	6481	20.8	0	0	0	300	0	0	-600
2036	5404	6575	21.7	0	300	100	0	0	0	0
2037	5442	6582	20.9	0	300	0	0	0	0	0
2038	5495	6616	20.4	0	0	0	300	0	0	0
2039	5545	6704	20.9	0	300	100	0	0	0	0
2040	5602	6791	21.2	0	300	100	0	0	0	0
2041	5660	6880	21.6	0	300	100	0	0	0	0
2042	5720	6882	20.3	0	300	0	0	0	0	0
2043	5777	6938	20.1	0	200	0	100	0	0	0
2044	5833	7389	26.7	450	0	0	0	0	0	0
2045	5890	7390	25.5	0	0	0	0	0	0	0
2046	5947	7392	24.3	0	0	0	0	0	0	0
2047	6004	7393	23.1	0	0	0	0	0	0	0
2048	6062	7390	21.9	0	100	0	0	0	0	0
2049	6121	7389	20.7	0	0	0	0	0	0	0
2050	6181	7439	20.4	0	0	100	0	0	0	0
Total				1448	3700	500		0	0	-1284

L. The Core Analysis

As it did in the 2024 IRP Update, DESC modeled the five Core Build Plans under the three Core Market Scenarios to create fifteen Core Cases. To allow for costs and emissions to be compared on an equal basis, all three Core Market Scenarios assume the same level of customer

demand, specifically all assume Reference Load Growth and a medium level of cost-effective DSM.

The Reference Market Scenario and the Zero Carbon Cost Market Scenario include medium expectations for fuel prices, while the High Fossil Fuel Prices Market Scenario assumes high fuel prices. The Reference Market Scenario and High Fossil Fuel Prices Market Scenario both assume medium expectations for CO_2 prices (a price of $30 per metric ton imposed in 2036 and escalating at 8.2%), while the Zero Carbon Cost Market Scenario assumes zero CO_2 prices.

DESC has measured the results of the five Core Build Plans across the fifteen Core Cases to show their relative performance in levelized cost, CO_2 emissions, incorporation of clean energy, fuel cost resiliency, generation diversity, reliability factors, mini-max regret factors, and a cost range analysis.

1. Levelized Cost

The Levelized Cost metric measures the costs to customers of each of the Core Build Plans based on the thirty-year levelized net present value ("LNPV") of the incremental costs of each Build Plan. The Levelized Cost Comparison of all twenty-one cases is attached as **Appendix H**. The following table shows the Levelized Cost Comparison of the Core Build Plans. The results are color coded: 1. Green = Least Cost, 2. Light Green = Second, 3. Yellow = Third, 4. Orange = Fourth and 5. Red = Highest Cost.

[Table begins on following page]

Table 20. Levelized Cost Comparison of the Core Build Plans (30-Year LNPV in Thousands of Dollars)

Core Build Plans 30 Yr Level NPV ($M)			
	Market Scenario		
Build Plans	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	2,630	2,852	2,393
2025 Reference Build Plan	2,393	2,625	2,145
High Fossil Fuel Prices Build Plan	2,407	2,634	2,159
Zero Carbon Cost Build Plan	2,399	2,640	2,140
Alternate Reference Build Plan	2,303	2,519	2,060

The LNPV cost rankings of the Core Build Plans are generally consistent among the Core Market Scenarios. The Alternate Reference Build Plan is the most cost-effective Core Build Plan in all cases. The 2025 Reference Build Plan, the High Fossil Fuel Cost Build Plan, and the Zero Carbon Cost Build Plan are either the second or third most cost-effective Core Build Plans in all cases. The Updated 2023 Reference Build Plan is consistently the highest cost plan across all Core Market Scenarios.

[Table begins on following page]

Table 21. Percentage Difference in NPV from Reference Build Plan

Updated 2023 Reference %△			
	Market Scenario		
Build Plans	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	0.0%	0.0%	0.0%
2025 Reference Build Plan	-9.0%	-8.0%	-10.4%
High Fossil Fuel Prices Build Plan	-8.5%	-7.7%	-9.8%
Zero Carbon Cost Build Plan	-8.8%	-7.4%	-10.6%
Alternate Reference Build Plan	-12.4%	-11.7%	-13.9%

The LNPV costs of the four optimized Core Build Plans show significant savings in all three Market Scenarios as compared to the Updated 2023 Reference Build Plan. The Alternate Reference Build Plan is the lowest cost in the three Market Scenarios due to the assumed delayed retirement dates for Wateree and Williams as well as the removal of operating constraints imposed on new thermal units to comply with the GHG Rules. The other three Core Build Plans were closely aligned in their savings compared to the Updated 2023 Reference Build plan due to the improved selection and timing of candidate resources from optimizing a new reference Build Plan under the updated load forecast and other inputs.

The following table summarizes the rankings of the Core Build Plans under the three Core Market Scenarios.

[Table begins on following page]

Table 22. Levelized Cost Ranking of the Core Build Plans

Core Build Plans			
30 Yr LNPV			
	Market Scenario		
Build Plans	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	5	5	5
2025 Reference Build Plan	2	2	3
High Fossil Fuel Prices Build Plan	4	3	4
Zero Carbon Cost Build Plan	3	4	2
Alternate Reference Build Plan	1	1	1

2. CO_2 Emissions

The Core Build Plans resulted in DESC reducing its CO_2 emissions between 52.5% and 56.8% compared to emissions in 2005.

[Table begins on following page]

Table 23. 2050 CO_2 Reductions for the Core Build Plans Compared to 2005 Levels

Core Build Plans 2050 CO_2 Reductions Compared to 2005 Levels			
	Market Scenario		
Build Plan	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	56.8%	56.8%	56.4%
2025 Reference Build Plan	54.3%	54.3%	54.0%
High Fossil Fuel Prices Build Plan	54.3%	54.3%	54.0%
Zero Carbon Cost Build Plan	52.8%	52.7%	52.5%
Alternate Reference Build Plan	54.9%	55.0%	54.8%

The following table provides annual CO_2 emissions in thousands of tons for the Core Build Plans as forecasted in 2050 at the end of the planning horizon:

Table 24. 2050 CO_2 Emissions (Ktons) of the Core Build Plans

Core Build Plans 2050 CO_2 Emissions (Ktons) of the Core Build Plans			
	Market Scenario		
Build Plan	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	8,195	8,200	8,274
2025 Reference Build Plan	8,671	8,669	8,721
High Fossil Fuel Prices Build Plan	8,666	8,664	8,726
Zero Carbon Cost Build Plan	8,966	8,970	9,020
Alternate Reference Build Plan	8,551	8,539	8,577

The following table shows the percentage variation in CO_2 emissions of the Core Build Plans as forecasted at the end of 2050 using the Updated 2023 Reference Build Plan as the point of comparison.

Table 25. 2050 CO_2 Emissions Variation in the Core Build Plans from the Updated 2023 Reference Build Plan

Core Build Plans 2050 CO_2 Emissions Variation from the Updated 2023 Reference Build Plan			
	Market Scenario		
Build Plan	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	0.0%	0.0%	0.0%
2025 Reference Build Plan	5.8%	5.7%	5.4%
High Fossil Fuel Prices Build Plan	5.7%	5.7%	5.5%
Zero Carbon Cost Build Plan	9.4%	9.4%	9.0%
Alternate Reference Build Plan	4.3%	4.1%	3.7%

DESC also compared the cumulative CO_2 emissions under the Core Build Plans over the planning horizon (2025 to 2050). The lowest cumulative emissions come under the Updated 2023 Reference Build Plan in the Zero Carbon Cost Market Scenario and the highest comes under the Alternate Reference Build Plan in the High Fossil Fuel Prices Market Scenario.

[Table begins on following page]

Table 26. Cumulative CO_2 Emissions (Ktons) of the Core Build Plans

Core Build Plans Cumulative CO_2 Emissions (Ktons)			
	Market Scenario		
Build Plan	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	192,014	197,744	191,851
2025 Reference Build Plan	207,357	216,543	207,226
High Fossil Fuel Prices Build Plan	204,258	213,456	204,075
Zero Carbon Cost Build Plan	215,956	225,029	215,971
Alternate Reference Build Plan	210,880	232,327	210,018

But due to the timing of resource additions and varying retirement dates, the scope of the variation in cumulative emissions is much less than the variation in 2050 emissions for the GHG Rules-compliant Build Plans as shown in the following table that shows percentage variation in cumulative emissions for each Build Plan compared to the Updated 2023 Reference Build Plan. CO_2 emissions data for all twenty-one cases is attached as **Appendix I**.

[Table begins on following page]

Table 27. Cumulative CO_2 Emissions Variation in the Core Build Plans from the Updated 2023 Reference Build Plan

Core Build Plans Cumulative CO_2 Variation from the Updated 2023 Reference Build Plan			
	Market Scenario		
Build Plan	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	0.0%	0.0%	0.0%
2025 Reference Build Plan	8.0%	9.5%	8.0%
High Fossil Fuel Prices Build Plan	6.4%	7.9%	6.4%
Zero Carbon Cost Build Plan	12.5%	13.8%	12.6%
Alternate Reference Build Plan	9.8%	17.5%	9.5%

3. Clean Energy

The Clean Energy metric compares the Core Build Plans based on how much energy they produce from nuclear, wind, solar, and hydro facilities. The Build Plan with the largest component of Clean Energy generation in 2050 is the Updated 2023 Reference Build Plan, at 51.6%, followed by the High Fossil Fuels Build Plan and the 2025 Reference Build Plan at 46.9%, and finally the Alternate Reference Build Plan at 46.0%. The Zero Carbon Cost Build Plan had the lowest component of Clean Energy in 2050 at 45.0%.

Measuring cumulative Clean Energy generated over the planning horizon (2025-2050) shows a similar result, with the Updated 2023 Reference Build Plan having the highest levels of cumulative Clean Energy production during that period, and the High Fossil Fuel Prices Build Plan taking second place.

[Table begins on following page]

Table 28. Clean Energy Produced by the Core Build Plans

Core Build Plans Clean Energy					
Optimized Plan	2050 Clean Energy (GWh)	Percentage of 2050 Clean Energy	Cumulative Clean Energy (GWh)	Percentage of Cumulative Clean Energy	2050 Clean Energy Rank
Updated 2023 Reference Build Plan	18,158	51.6%	368,525	48.1%	1
2025 Reference Build Plan	16,501	46.9%	339,685	44.3%	3
High Fossil Fuel Prices Build Plan	16,509	46.9%	345,951	45.1%	2
Zero Carbon Cost Build Plan	15,822	45.0%	320,053	41.7%	5
Alternate 2025 Reference Build Plan	16,203	46.0%	335,611	43.8%	4

4. Fuel Cost Resiliency

Each of the Core Build Plans will result in a different mix of generating assets and fuel costs over the planning horizon. Fuel costs are a major component of the costs evaluated in the Levelized Cost analysis, but the variation in the level of fuel costs between Build Plans can be a rough measure of the degree to which Build Plans are susceptible to fuel cost risk.

[Table begins on following page]

Table 29. Levelized Net Present Value of Fuel Costs

Core Build Plan Levelized Net Present Value of Fuel Costs ($M)			
	Market Scenario		
Build Plan	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	$697	$919	$622
2025 Reference Build Plan	$733	$963	$654
High Fossil Fuel Prices Build Plan	$723	$949	$645
Zero Carbon Cost Build Plan	$760	$999	$678
Alternate Reference Build Plan	$718	$932	$641

The Updated 2023 Reference Build Plan has the lowest fuel cost in all three Core Market Scenarios. This is largely due to that Build Plan's reliance on renewables as well as earlier modeled retirement dates for Wateree and Williams which are being replaced with Battery and the more fuel-efficient Joint Resource. The Alternate Reference Build Plan had the second lowest fuel cost of all the Core Build Plans, followed by the High Fossil Fuels Prices Build Plan and then the 2025 Reference Build Plan. The Zero Carbon Cost Build Plan has the highest fuel cost in all three Market Scenarios reflecting the fact that the assumption of cheap and plentiful natural gas supplies on which that Build Plan is based results in higher levels of natural gas utilization compared to other Build Plans.

5. Generation Diversity

Because all Build Plans concentrate at least 37.5% of system assets in Solar resources, the percentage of Solar added drives the diversity score and the higher the percentage of Solar, the

lower the level of generation diversity. The Updated 2023 Reference Build Plan has the highest concentration of solar-related resources (40.6%) and the lowest diversity score. The Zero Carbon Cost Build Plan had the lowest concentration of solar (37.5%) and the highest diversity score. The MW of each generation type added by year for each Build Plan is provided in **Appendix D**.

Table 30. Generation Diversity (Diversity Score and Rank Order)

Core Build Plans Generation Diversity				
Market Scenario	**Build Plan**	**Highest Concentration**	**Most Concentrated Type of Generation**	**Ranking**
Reference	**Updated 2023 Reference Build Plan**	40.6%	Solar	5
Reference	**2025 Reference Build Plan**	39.5%	Solar	3
High Fossil Fuel Prices	**High Fossil Fuel Prices Build Plan**	39.5%	Solar	3
Zero Carbon Cost	**Zero Carbon Cost Build Plan**	37.5%	Solar	1
Reference	**Alternate Reference Build Plan**	38.5%	Solar	2

6. Reliability Analysis

The modeling software is configured to ensure that all Build Plans meet a common reliability standard and that the resources included in each Build Plan collectively meet the systems' seasonal planning reserve margin, including allowances for forced and scheduled outages and other reliability considerations. To provide an additional measure of reliability, and to support comparative evaluation of Build Plans, DESC has also devised a means of scoring the reliability contribution of each generation technology that is included in the Build Plans. To preclude double-counting, and in consultation with Stakeholders, DESC limited the reliability analysis to factors

that are not otherwise considered in the generation and transmission models, specifically blackstart, fast start, geographic diversity, and proximity to load factors.

Table 31. Reliability Factors Considered in the Metric

Reliability Factor	Able to generate or shift energy and complement renewables.
Fast Start	The unit can respond from an offline condition and serve load in less than 10 minutes.
Geographic Diversity	The unit can be located in diverse locations and is not restricted by fuel infrastructure.
Proximity to Load	The unit has a compact footprint and low impact outside of the fence. It can often be sited near load centers.
Blackstart	A generating unit which has the ability to be started quickly, without support from the system or is designed to remain energized without connection to the remainder of the system, with the ability to energize a bus, meeting the transmission operator's restoration plan needs for real and reactive power capability, frequency and voltage control, and that has been included in the transmission operator's restoration plan.

Under this analysis, the reliability contribution of each generation resource is as follows:

Table 32. Reliability Contributions of Generation Technologies

	Reliability Contributions of Generation Technologies								
Potential Reliability Attribute[5]	**CC**	**Aero CT**	**Frame CT**	**Solar**	**Battery**	**Hybrid Solar & Storage**	**SMR**	**Offshore Wind**	**Coal Units**
Blackstart	No	Yes	Yes	No	No	No	No	No	No
Fast Start	No	Yes	Yes	No	Yes	Yes	No	No	No
Geographic Diversity	No	No	No	No	Yes	Yes	No	No	No
Proximity to Load	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes[6]

[5] PPA terms, as-built specifications, or operational use case could impact each.
[6] Williams Station's location is near a major load center and provides essential reliability attributes in the Charleston metroplex. Wateree is not credited.

The results of the scoring show that each Build Plan makes a positive contribution to system reliability.

Table 33. Reliability Scores

Build Plans	Total Change in Reliability Factor (MW equivalent)	Rank
Updated 2023 Reference Build Plan	**8146**	**1**
2025 Reference Build Plan	**4848**	**2**
High Fossil Fuel Prices Build Plan	**4848**	**2**
Zero Carbon Cost Build Plan	**4848**	**2**
Alternate Reference Build Plan	**4848**	**2**

Under this analysis, the Updated 2023 Reference Build Plan scored the highest. The 2025 Reference Build Plan, the High Fossil Fuel Prices Build Plan, the Zero Carbon Cost Build Plan and the Alternate Reference Build Plan all tied with the second lowest score due to the similarity in the Build Plans.

7. Mini-Max Regret

The Mini-Max Regret metric assesses the potential under each Core Build Plan to incur higher costs than other Build Plans under the same Core Market Scenario. In this analysis, the Alternate Reference Build Plan received the best Mini-Max Regret score with zero regrets score under all three Core Market Scenarios. The 2025 Reference Build Plan had the second lowest regrets score ranking in two of the Core Market Scenarios and ranked third in another.

[Table begins on following page]

Table 34. Mini-Max Regret Comparison, Core Build Plans in $ Millions

Core Build Plans Mini-Max Regrets LNPV ($million)			
	Market Scenario		
Build Plans	Reference	High Fossil Fuel Prices	Zero Carbon Cost
Updated 2023 Reference Build Plan	$327	$333	$332
2025 Reference Build Plan	$90	$106	$84
High Fossil Fuel Prices Build Plan	$104	$115	$99
Zero Carbon Cost Build Plan	$96	$121	$80
Alternate Reference Build Plan	$0	$0	$0

The Alternative Reference Build Plan is the lowest cost plan in all three Core Market Scenarios as would be expected given that the costs associated with compliance with the GHG Rules are not included as well as the effects of delayed retirements of Wateree and Williams at alternative dates. Compared to that Build Plan, the 2025 Reference Build Plan has the lowest regret score across the three Core Market Scenarios. The Updated 2023 Reference Build Plan presented the greatest financial risk to customers with the highest level of maximum regrets under each of the Core Market Scenarios. Its regret potential is an additional $333 million per year under the High Fossil Fuel Prices Market Scenario. The Zero Carbon Cost Build Plan had the second highest level of maximum regrets under one of the Core Market Scenarios with a regret potential of $121 million per year under the High Fossil Fuel Prices Market Scenario. As shown in the tables, the Max Regret for the Updated 2023 Reference Build Plan is a $333 million annual increase in LNPV which is the highest Max Regret score by a wide margin. [Table begins on following page]

Table 35. Comparison of the Regret Levels of the Core Build Plans

Core Build Plans Mini_Max Regret Analysis			
Build Plans	**Max Regret ($M)**	**Percent Greater than Reference 2025**	**Ranking**
Updated 2023 Reference Build Plan	$333	215%	5
2025 Reference Build Plan	$106	0%	2
High Fossil Fuel Prices Build Plan	$115	9%	3
Zero Carbon Cost Build Plan	$121	14%	4
Alternate Reference Build Plan	$0	-100%	1

8. Cost Range Analysis

The Cost Range Analysis calculates the spread between the lowest and highest cost for each Build Plan across the three Core Market Scenarios. It indicates the degree that a Build Plan is sensitive to changes in the assumptions that vary between each of the Core Market Scenarios. It does not compare Build Plans against each other and so does not indicate whether a Build Plan is either more or less cost effective or beneficial than any other. Of the five Core Build Plans, the Zero Carbon Cost Build Plan has the highest cost range reflecting the fact that it is optimized to generate low costs when fuel costs are low and no CO_2 costs are imposed but incurs higher costs when these assumptions are changed.

[Table begins on following page]

Table 36. Cost Range Analysis (Rank Order and Cost Spread, Minimum to Maximum)

Core Build Plans Cost Range Analysis		
	Max Difference Between Scenarios ($M)	**Ranking**
Updated 2023 Reference Build Plan	459	2
2025 Reference Build Plan	480	4
High Fossil Fuel Prices Build Plan	474	3
Zero Carbon Cost Build Plan	500	5
Alternate Reference Build Plan	458	1

9. Core Build Plans Ranked Across All Metrics

Ranking each of the Core Build Plans against all nine metrics shows that the Alternate Reference Build Plan scores quite well in metrics related to cost to customers, specifically it scores the lowest in the 30-Year LNPV of generation costs under all three Core Market Scenarios. It also scores first in the Mini-Max Regrets metric, indicating that it is resilient under divergent market conditions. In total, the Alternative Reference Build Plan scored first or second in six of the nine metrics.

The Updated 2023 Reference Build Plan scores well on measures related to environmental concerns, specifically 2050 CO_2 Emissions, Cumulative CO_2 Emissions, and 2050 Clean Energy. This Build Plan retires coal units earlier than the other four Core Build Plans replacing them with non-emitting resources and the smaller configuration for the Joint Resource.

[Table begins on following page]

Table 37. Rankings of the Core Build Plans Against all Nine Metrics

Core Build Plans									
Rankings within All Metrics, Reference Case Where Applicable									
Core Build Plans	**30-Year LNPV**	**2050 CO_2**	**Cum. CO_2**	**2050 Clean Energy**	**Fuel Cost**	**Gen. Diversity**	**Reliability**	**Mini-Max Regret**	**Cost Range**
Updated 2023 Reference Build Plan	5	1	1	1	1	5	1	5	2
2025 Reference Build Plan	2	4	3	3	4	4	4	2	4
High Fossil Fuel Prices Build Plan	4	3	2	2	3	4	4	3	3
Zero Carbon Cost Build Plan	3	5	5	5	5	1	4	4	5
Alternate Reference Build Plan	1	2	4	4	2	2	4	1	1

Although the Updated 2023 Reference Build Plan has the best ratings related to CO_2 emissions, clean energy, fuel cost, and reliability, it is also the highest cost Build Plan with an annual LNPV cost to customers that is between $327 million and $333 million more than the lowest cost plan under each Core Market Scenario.

XVII. THE SUPPLEMENTAL CASE

Three of the five Core Build Plans and all five Sensitivity Cases assume that DESC retires Wateree and Williams by December 31, 2031, provided that the Company can resolve all regulatory, procurement, construction, and funding related requirements in time to ensure reliable replacement generation capacity is available by those dates.

As a sensitivity analysis, DESC modeled the 85% CO_2 Reduction Build Plan as a Supplemental Build Plan to assess the types and levels of resource, based on the Reference Market

Scenario, to achieve a reduction in CO_2 emissions of 85% by 2050 to be accomplished in stages beginning in 2031.

Table 38. 85% CO_2 Reduction Supplemental Case

Build Plans	30 Yr Level NPV ($M)	Reference 2025 % Diff	Cumulative CO_2 (Ktons)	2050 CO_2 (Ktons)	CO_2 Reduction From 2005 Levels %
2025 Reference Build Plan	2,393	0.0%	207,357	8,671	54%
Alternate Reference Build Plan	2,303	-3.8%	210,880	8,551	55%
85% CO2 Reduction Build Plan	3,528	47.4%	136,088	2,327	88%

A. 85% CO_2 Reduction Build Plan

DESC modeled the 85% CO_2 Reduction Build Plan under the Reference Market Scenario, making the results directly comparable to the 2025 Reference Build Plan and the Alternate Reference Build Plan. The 85% CO_2 Reduction Build Plan builds 8,968 MW of capacity over the planning horizon making it the second most construction-intensive of the Core Build Plans behind the Updated 2023 Reference Build Plan. From 2028 until 2040, it adds new Solar or Hybrid Solar & Storage each year for a total of 2,900 MW of Solar and 1,000 MW of Hybrid Solar and Storage by 2050. The 85% CO_2 Reduction Build Plan replaces Wateree and Williams in 2032 in part through 200 MW of Hybrid Solar & Storage, 100 MW of Battery and through the Joint Resource in its 998 MW configuration. It envisions adding no gas-fired generation after 2032 and instead envisions adding 2,000 MW of OSW beginning in 2036 and 1,370 MW of SMRs beginning in 2040.

[Table begins on following page]

Table 39. 85% CO_2 Reduction Build Plan

85% Co_2 Reduction Build Plan										
Year	**Peak (MW)**	**Firm Capacity (MW)**	**Winter Reserve Margin (%)**	**Gas (MW)**	**Solar (MW)**	**Storage (MW)**	**Hybrid Solar & Storage (MW)**	**Wind (MW)**	**SMR (MW)**	**Retirements (MW)**
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6305	27.1	0	300	0	0	0	0	0
2029	5035	6325	25.6	0	300	0	0	0	0	0
2030	5097	6341	24.4	0	300	0	0	0	0	0
2031	5167	6362	23.1	0	300	0	0	0	0	0
2032	5239	6345	21.1	998	100	100	200	0	0	-1284
2033	5283	6536	23.7	0	100	0	200	0	0	0
2034	5322	6718	26.2	0	0	0	300	0	0	0
2035	5363	7245	35.1	0	0	600	300	0	0	0
2036	5404	7554	39.8	0	300	0	0	500	0	0
2037	5442	7861	44.4	0	300	0	0	500	0	0
2038	5495	7982	45.3	0	300	0	0	500	0	0
2039	5545	8234	48.5	0	300	0	0	500	0	0
2040	5602	8511	51.9	0	300	0	0	0	274	0
2041	5660	8787	55.2	0	0	0	0	0	274	0
2042	5720	9062	58.4	0	0	0	0	0	274	0
2043	5777	9336	61.6	0	0	0	0	0	274	0
2044	5833	9611	64.8	0	0	0	0	0	274	0
2045	5890	9612	63.2	0	0	0	0	0	0	0
2046	5947	9614	61.7	0	0	0	0	0	0	0
2047	6004	9560	59.2	0	0	0	0	0	0	0
2048	6062	9556	57.6	0	0	0	0	0	0	0
2049	6121	9555	56.1	0	0	0	0	0	0	0
2050	6181	9100	47.2	0	0	0	0	0	0	0
Total				998	2900	700	1000	2000	1370	-1284

XVIII. UPDATED SENSITIVITY BUILD PLANS

Data from the Sensitivity Build Plans allow generation planners to identify the changes that would be required to respond effectively to Market Scenarios which are less likely or less representative of the range of possible conditions than the Core Market Scenarios. The 2025

Reference Build Plan is the suitable point of comparison for these Sensitivity Build Plans because it is optimized for the most likely set of future market conditions and it is the Preferred Plan as identified in this 2025 IRP Update.

A. The Electrification Build Plan and Market Scenario

The Electrification Market Scenario is a sensitivity that measures the effect on costs and CO_2 emissions of a major change in regulatory policy and societal pressure which drives the electrification of transportation and other end uses for energy while expanding fossil fuel supplies and not imposing CO_2 costs on electricity.

In total, the Electrification Build Plan adds 7,848 MW of new or replacement generation over the planning horizon which is 18% (1,200 MW) more than the amount added by the 2025 Reference Build Plan. As it did in the 2024 IRP Update, the Electrification Build Plan favors new natural gas generation and adds 62% more gas-fired generation (900 MW) than the 2025 Reference Build Plan.

Energy from gas generation limits reliance on Solar under this Build Plan. The amount of Solar added (3,200 MW) represents only 41% of the generation resources added under this Build Plan compared to 59% under the 2025 Reference Build Plan (3,900 MW). Both Build Plans add significant amounts of Battery and Hybrid Solar & Storage, 1,300 MW for the 2025 Reference Build Plan and 2,300 MW for the Electrification Build Plan.

[Table begins on following page]

Table 40. The Electrification Build Plan

Electrification Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4818	6294	30.6	0	0	0	0	0	0	0
2027	5167	6298	21.9	0	0	0	0	0	0	0
2028	5516	6644	20.4	0	0	400	0	0	0	0
2029	5833	7027	20.5	0	0	200	300	0	0	0
2030	5940	7182	20.9	0	100	0	200	0	0	0
2031	6053	7313	20.8	0	300	200	0	0	0	0
2032	6167	7492	21.5	1448	300	0	0	0	0	-1284
2033	6250	7514	20.2	0	300	0	0	0	0	0
2034	6328	7612	20.3	0	300	100	0	0	0	0
2035	6406	7735	20.7	0	100	0	200	0	0	0
2036	6483	7798	20.3	0	200	0	100	0	0	0
2037	6554	8255	26.0	450	300	0	0	0	0	0
2038	6640	8126	22.4	0	300	0	0	0	0	0
2039	6722	8129	20.9	0	300	0	0	0	0	0
2040	6809	8581	26.0	450	300	0	0	0	0	0
2041	6896	8585	24.5	0	300	0	0	0	0	0
2042	6984	8586	22.9	0	100	0	0	0	0	0
2043	7068	8531	20.7	0	0	300	0	0	0	0
2044	7150	8587	20.1	0	0	300	0	0	0	0
2045	6465	8588	32.8	0	0	0	0	0	0	0
2046	6520	8480	30.1	0	0	0	0	0	0	0
2047	6575	8481	29.0	0	0	0	0	0	0	0
2048	6631	8477	27.8	0	0	0	0	0	0	0
2049	6687	8396	25.6	0	0	0	0	0	0	0
2050	6744	8392	24.4	0	0	0	0	0	0	0
Total				2348	3200	1500	800	0	0	-1284

In the near- to mid-term (2025-2032), the Electrification Build Plan and the 2025 Reference Build Plan are similar in that both add Solar, Battery, Hybrid Solar & Storage and Gas resources but differ in that:

- The 2025 Reference Build Plan does not add Hybrid Solar & Storage until 2032 and the Electrification Build Plan begins adding Battery in 2028 and adds 800 MW of Hybrid Solar & Storage by 2036, and

- The Electrification Build Plan adds 450 MW of Frame CT along with the 998 MW Joint Resource in 2032 while the 2025 Reference Build Plan adds only the 998 MW Joint Resource.

Beyond 2032, both Build Plans add more than 4,000 MW of a variety of resources. The similarities between these plans support the conclusion that DESC can shift from the 2025 Reference Build Plan to a Build Plan like the Electrification Build Plan with little disruption if future market and policy considerations so indicated.

As a result, the sensitivity analysis provided by the Electrification Build Plan supports the representative nature of the Core Build Plans, and specifically the resiliency the 2025 Reference Build Plan if environmental policies seek to promote electrification. It also tests the resiliency of the 2025 Reference Build Plan in a carbon friendly scenario where data centers and building electrification drive electric demand growth.

B. The Energy Conservation Build Plan and Market Scenario

DESC agreed to model the assumptions embedded in Energy Conservation Market Scenario as a concession to certain Stakeholders but does not believe those assumptions to be foreseeable or achievable. The Energy Conservation Market Scenario assumes that policy makers limit investments in new fossil fuel supplies and pipeline capacity in a way that significantly increases fuel prices, but without creating demand for electrification of transportation and building electrification at a level that would exceed the ability of conservation efforts to forestall load growth. The Energy Conservation Market Scenario is based on the lowest load growth projection of any Market Scenario and assumes levels of DSM savings levels specific to DESC's service territory that are many times greater than any that the 2023 Potential Study determined to be obtainable. It also ignores the potential impact on demand of transportation and building electrification.

Under these assumptions, the Energy Conservation Build Plan adds 4,998 MW of capacity which is 25% less than the 2025 Reference Build Plan. Of this amount, 3,300 MW or 66% is Solar capacity. The only gas-fired generation added under the Energy Conservation Build Plan is the 998 MW Joint Resource built to replace Wateree and Williams and the amount of total Gas resources added is 31% less than under the 2025 Reference Build Plan. Both Plans involve adding Battery and Hybrid Solar & Storage resources, but the Energy Conservation Build Plan includes 300 MW less Battery and 300 MW less Hybrid Solar & Storage resources than the 2025 Reference Build Plan reflecting lower assumptions concerning demand growth.

[Table begins on following page]

Table 41. The Energy Conservation Build Plan

Energy Conservation Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4824	6298	30.6	0	0	0	0	0	0	0
2028	4911	6305	28.4	0	200	0	0	0	0	0
2029	4961	6324	27.5	0	300	0	0	0	0	0
2030	4997	6341	26.9	0	300	0	0	0	0	0
2031	5041	6362	26.2	0	300	0	0	0	0	0
2032	5086	6175	21.4	998	200	0	100	0	0	-1284
2033	5103	6197	21.4	0	300	0	0	0	0	0
2034	5115	6215	21.5	0	300	0	0	0	0	0
2035	5129	6229	21.4	0	300	0	0	0	0	0
2036	5143	6238	21.3	0	300	0	0	0	0	0
2037	5153	6245	21.2	0	300	0	0	0	0	0
2038	5178	6285	21.4	0	100	0	200	0	0	0
2039	5199	6286	20.9	0	100	0	0	0	0	0
2040	5226	6287	20.3	0	0	0	0	0	0	0
2041	5254	6374	21.3	0	0	0	100	0	0	0
2042	5284	6376	20.7	0	200	0	0	0	0	0
2043	5310	6431	21.1	0	0	0	100	0	0	0
2044	5335	6433	20.6	0	100	0	0	0	0	0
2045	5360	6519	21.6	0	0	100	0	0	0	0
2046	5385	6521	21.1	0	0	0	0	0	0	0
2047	5410	6522	20.5	0	0	0	0	0	0	0
2048	5436	6603	21.5	0	0	100	0	0	0	0
2049	5461	6602	20.9	0	0	0	0	0	0	0
2050	5487	6597	20.2	0	0	0	0	0	0	0
Total				998	3300	200	500	0	0	-1284

Despite the differences referenced above, the two Build Plans add similar resources from 2025 until 2032 but in differing amounts. From 2025 to 2032 the Energy Conservation Build Plan adds 1300 MW of Solar, and 100 MW Hybrid Solar & Storage resources while the 2025 Reference Build Plan adds 900 MW Solar, and 300 MW Hybrid Solar & Storage resources.

C. The Aggressive Regulation Build Plan and Market Scenario

The Aggressive Regulation Build Plan assumes that policy makers move aggressively to reduce CO_2 emissions by limiting fossil fuel supplies and pipeline access while imposing high costs on electric CO_2 emissions. At the same time, electric loads experience high growth as policy mandates and the high cost of alternative energy sources drive electrification.

To maintain affordability and reliability in the face of high electric demand, high fossil fuel prices and high CO_2 emissions costs, the Aggressive Regulation Build Plan requires 31% more generation capacity be added to the system than the 2025 Reference Build Plan (8,553 MW) and trails only the 85% CO_2 Reduction Build Plan (9,968 MW) and the Updated 2023 Reference Build Plan (9,084 MW) in this regard. Of the total generation added in the Aggressive Regulation Build Plan, 4,200 MW or 45% is Solar capacity which is 11% more Solar than is added by the 2025 Reference Build Plan. However, integrating this level of Solar capacity requires a significant amount of new natural gas generation and the Aggressive Regulation Build Plan adds 2,453 MW of gas fired generation, which is the largest amount of gas fired generation additions of any Build Plan. It adds 1,100 MW of Battery and 800 MW of Hybrid Solar & Storage while the 2025 Reference Build Plan adds 500 MW of Battery and 800 MW of Hybrid Solar & Storage.

As a result of high fuel costs and high load growth, the Aggressive Regulation Build Plan has the second highest retail rate impact of any Build Plan with a CAGR in retail rates that is 62% higher than the 2025 Reference Build Plan (4.41% vs 2.75%). But aggressive regulation results in only a marginal decrease in the cumulative percentage of clean energy generated over the planning horizon (43% vs 44%) and clean energy capacity added in 2050 is 1% higher (47% vs 46%) compared to the 2025 Reference Build Plan.

During the period 2025-2032, the construction program under Aggressive Regulation Build Plan diverges from the 2025 Reference Build Plan in all respects. The Aggressive Regulation

Build Plan adds 800 MW more Battery capacity, 100 MW less Solar, 700 MW more Hybrid Solar & Storage and 555 MW more Gas by 2032 than the 2025 Reference Build Plan.

Table 42. The Aggressive Regulation Build Plan

Aggressive Regulation Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4818	6294	30.6	0	0	0	0	0	0	0
2027	5167	6298	21.9	0	0	0	0	0	0	0
2028	5516	6645	20.5	0	300	400	0	0	0	0
2029	5833	7023	20.4	105	0	0	300	0	0	0
2030	5940	7179	20.9	0	100	0	200	0	0	0
2031	6053	7309	20.7	0	100	0	200	0	0	0
2032	6167	7487	21.4	1448	300	0	0	0	0	-1284
2033	6250	7510	20.2	0	300	0	0	0	0	0
2034	6328	7638	20.7	0	300	200	0	0	0	0
2035	6406	7761	21.2	0	300	200	0	0	0	0
2036	6483	7825	20.7	0	200	0	100	0	0	0
2037	6554	8282	26.4	450	300	0	0	0	0	0
2038	6640	8153	22.8	0	300	0	0	0	0	0
2039	6722	8155	21.3	0	300	0	0	0	0	0
2040	6809	8178	20.1	0	300	100	0	0	0	0
2041	6896	8631	25.2	450	300	0	0	0	0	0
2042	6984	8634	23.6	0	300	0	0	0	0	0
2043	7068	8505	20.3	0	300	100	0	0	0	0
2044	7150	8587	20.1	0	200	100	0	0	0	0
2045	6465	8588	32.8	0	0	0	0	0	0	0
2046	6520	8590	31.8	0	0	0	0	0	0	0
2047	6575	8591	30.7	0	0	0	0	0	0	0
2048	6631	8587	29.5	0	0	0	0	0	0	0
2049	6687	8476	26.8	0	0	0	0	0	0	0
2050	6744	8302	23.1	0	0	0	0	0	0	0
Total				2453	4200	1100	800	0	0	-1284

D. The DSM Build Plans

As was the case in the 2024 IRP Update, all Core Build Plans modeled here are based on the Medium DSM forecast which assumes that DESC can achieve of a 0.51% energy sales reduction (the Achievable Potential) through offering a revised and expanded portfolio of DSM

programs with the revised measures and marketing plans identified in the 2023 Potential Study. The High DSM Build Plan assumes DSM programs achieve their Maximum Achievable Potential as shown in the 2023 DSM Potential Study, which was determined by ICF to be 0.74% reduction in energy sales. The Low DSM Build Plan assumes that DSM programs are only able to achieve 90% of the Achievable Potential as shown in the 2023 DSM Potential Study, which was determined to be 0.46% reduction in energy sales but is otherwise optimized under the Reference Market Scenario. To support comparability, both DSM Build Plans are optimized under the Reference Market Scenario apart from the different assumptions concerning load growth.

The updated analysis shows that the 2025 Reference Build Plan has similar LNPV cost to the Low and High DSM Build Plan. The resulting difference in the CAGR in retail rates among the DSM Sensitivities is very small (a CAGR of 2.73% for the High DSM Build Plan and 2.83% for the Low DSM Build Plan compared to 2.75% for the 2025 Reference Build Plan).

Table 43. DSM Build Plan Sensitivities, LNPV of Costs and Retail CAGR Compared Under the Reference Market Scenario

DSM Sensitivities LNPV ($M); CAGR %					
DSM Sensitivity Build Plans	**30-Year LNPV**	**Difference in 30 Year LNPV**	**LNPV Percentage Difference**	**Retail CAGR over 15 Years**	**CAGR Percentage Difference**
Medium DSM	$2,393	$0	0	2.75%	0
High DSM	$2,391	($3)	-0.1%	2.73%	-0.5%
Low DSM	$2,394	$1	0.0%	2.83%	3.0%

The differences between the three DSM cases were too small to create meaningful results. The small increase in loads in the Low DSM case produced a lower cumulative CO_2. While these

results are not intuitive, they highlight the fact that very small changes in the model can produce unexpected results.

Table 44. DSM Sensitivities, Cumulative and 2050 CO_2 Emissions Compared Under the Reference Market Scenario

DSM Sensitivity Build Plans (M short tons)					
DSM Sensitivity Build Plans	**30-Year Cumulative Emissions**	**Difference from Reference**	**Percentage Difference**	**2050 Emissions**	**Percentage Difference**
Medium DSM	207,357	0	0	8,671	0
High DSM	209,137	1,780	0.9%	8,743	0.8%
Low DSM	205,799	-1,559	-0.8%	8,599	-0.8%

The Low DSM Build Plan adds slightly more Solar than the High DSM Build Plan (3,900 MW versus 3,700 MW) and the Low DSM Build Plan adds slightly more Battery than the High DSM Build Plan (500 MW versus 400) and the same for Hybrid Solar & Storage (800 MW). All three Build Plans, including the 2024 Reference Build Plan, add the same amount of Gas resources (1448 MW). The 2024 Reference Build Plan adds slightly more Solar than the High DSM Build Plan (3,900 MW versus 3,700 MW) and the same Battery as the Low DSM Build Plan (500 MW).

As in the 2024 IRP, the updated analysis shows that effective level of DSM programs over the planning horizon, from best to worst case scenario, will have very minor impacts on costs, CO_2 emissions, and the generation resources needed over the planning horizon.

XIX. EVALUATION OF A RANGE OF DEMAND FORECASTS

The DSM analysis provides an important data point concerning how different assumptions about load growth affect the resulting Build Plans. In addition, the 2025 Reference Build Plan, the Electrification Build Plan and the Energy Conservation Build Plan provide three Build Plans

incorporating the Reference, High and Low load growth forecasts. These Build Plans assume different levels of fuel costs and CO_2 costs in addition to different assumptions as to base load growth since these factors are not independent variables but reflect certain policy choices and economic conditions that are to some degree interrelated. As discussed in the sections concerning the Non-Core Build Plans, an updated analysis of these three Build Plans affirms that DESC's present approach to replacing the Wateree and Williams capacity, and other near term generation supply decisions including the amount of Solar capacity to add beginning in 2028, remains sound and appropriate under a range of load growth assumptions. The variation that they reflect in short to near-term Build Plans is fully considered in this analysis.

Because the 2025 IRP Update is a planning document based on a snapshot in time, DESC will continue to evaluate these decisions as timely information concerning load growth generally and the scope and effectiveness of DSM programs become available.

XX. THE PREFERRED PLAN

Based on a careful review of the needs of the electric system, the refreshed modeling contained in this 2025 IRP Update, and consideration of the latest guidance available at the time the modeling performed, DESC has determined that the 2025 Reference Build Plan is the preferred Build Plan to guide its resource planning decisions at this time. There remain significant reasons to believe that the current GHG Rules may be subject to revision based on legal challenges and or changes in Executive Branch policy. Should that occur, DESC is well positioned to then adopt the Alternate Reference Build Plan or a similar build plan to guide its planning going forward. The Alternate Reference Build Plan:

- Is the lowest cost option under any of the three Core Market Scenarios as would be expected due to the delayed retirement dates for Wateree and Williams and given that compliance costs associated with the GHG Rules are not modeled in this

scenario. Based on the similarities in Build Plans for the 2025 Reference Build Plan, the High Fossil Fuel Prices Build Plan, and the Zero Carbon Cost Build Plan, these three Build Plans resulted in either the second or third low-cost option under the three Core Market Scenarios.

- Has the lowest Mini-Max Regrets score of any plan with the 2025 Reference Build Plan scoring second, and
- Fares well in comparison to the Sensitivity Cases that assume markedly different future market conditions and policy choices as does the 2025 Reference Build Plan.

This indicates that both the 2025 Reference Build Plan and the Alternate Reference Build Plan are robust and resilient plans that can protect customers' interests under a range of future market conditions.

The Updated 2023 Reference Build Plan outperforms the 2025 Reference Build Plan and the Alternate Reference Build Plan on most measures of CO_2 emissions reductions, clean energy, fuel cost, and reliability but its total costs are higher than all of the other four Core Build Plans. The Updated 2023 Reference Build Plan also has the highest Mini-Max Regret scores, indicating that it is not robust across the current range of future market conditions and customers could be hurt significantly under some future market conditions. The other four Core Build Plans add similar resources and show only minor differences, and this provides flexibility for DESC to adjust as future fuel and CO_2 costs, generating technologies and technology costs, and policy mandates evolve.

The Updated Reference 2023 Build Plan is the successor to the Build Plan that was selected as the preferred plan in the 2023 IRP. It scored the best under six of the nine metrics driven by the earlier retirement dates for Wateree and Williams; however, considering the magnitude of the

current (and evolving) needs, the pathway to constructing replacement generation of the magnitude of capacity required, and the schedule for associated electric transmission interconnection studies and subsequent construction, the Company's current planning assessment indicates it could create undue risk to grid reliability to assume that Wateree and Williams can be retired and replaced in 2028 and 2030, respectively. Continuing to provide reliable service to customers will require a different approach.

Under the 2025 Reference Build Plan, the resource additions needed in the near to medium term are not fundamentally different from those envisioned under the High Fossil Fuel Prices Build Plan, the Zero Carbon Cost Build Plan, or the Alternate Reference Build Plan. For this reason, if the future environment changes, this plan would provide an appropriate base for adapting to those changes. The 2025 Reference Build Plan is preferable because that plan embodies the most likely, middle-of-the-road assumptions as to fuel costs and other inputs, meaning that it is the plan most closely aligned with current forecasts of future market conditions, and is compliant with Federal requirements that are relevant at the time of the filing.

In some cases, it may be advisable during an annual IRP update not to change from one preferred plan to another, if for example, the change is driven by a forecasted input that is highly volatile at the time or otherwise seems unstable or unreliable. In some circumstances too, changing preferred plans may be ill advised because it would disrupt on-going design, engineering, or procurement activities. However, that is not the case here. Here, the remaining competing four Core Build Plans all result in the addition of similar thermal and storage resources in the near-term to medium-term, so planning is not disrupted by selecting any as a new preferred plan. Accordingly, in this 2025 IRP Update, DESC adopts the 2025 Reference Build Plan as the Preferred Plan to guide its planning decisions at the present time.

XXI. FORECAST OF RENEWABLE GENERATION

All Core Build Plans include a significant amount of renewable energy - between 55% and 71% of total generation added by the end of the forecast period. The values in the table below show the total renewable generation by resource plan by five-year period under three market scenarios for the Core Build Plans. Similar data for the sensitivity and supplemental cases are provided in **Appendix E**.

Table 45. Energy from Renewable Generation by Five-Year Period

Energy from Renewable Generation by Five-Year Period (GWh)							
Build Plan	2025 - 2029	2030 - 2034	2035 - 2039	2040 - 2044	2045 - 2049	2050	Total
Reference Market Scenario							
Reference 2023 Build Plan	17,740	32,925	46,952	55,203	60,381	12,197	225,398
Reference 2024 Build Plan	13,471	25,486	40,864	53,357	57,169	11,175	201,521
High Fossil Fuel Prices Build Plan	14,838	28,601	41,814	54,075	57,277	11,182	207,787
Zero Carbon Cost Build Plan	12,787	22,092	37,519	46,794	52,201	10,496	181,889
Alternate Reference Build Plan	13,243	24,340	39,900	53,046	56,041	10,876	197,447
High Fossil Fuel Prices Market Scenario							
Reference 2023 Build Plan	17,738	32,948	46,960	55,262	60,438	12,217	225,562
Reference 2024 Build Plan	13,472	25,483	40,884	53,370	57,238	11,176	201,624
High Fossil Fuel Prices Build Plan	14,840	28,583	41,838	54,116	57,310	11,179	207,865
Zero Carbon Cost Build Plan	12,788	22,097	37,536	46,825	52,248	10,489	181,981
Alternate Reference Build Plan	13,244	24,318	39,917	53,076	56,069	10,894	197,516
Zero Carbon Cost Market Scenario							
Reference 2023 Build Plan	17,739	32,915	46,925	55,118	60,158	12,129	224,984
Reference 2024 Build Plan	13,472	25,489	40,833	53,271	57,065	11,149	201,279
High Fossil Fuel Prices Build Plan	14,835	28,592	41,772	53,998	57,177	11,144	207,519
Zero Carbon Cost Build Plan	12,787	22,093	37,512	46,779	52,178	10,479	181,828
Alternate Reference Build Plan	13,243	24,340	39,900	53,046	56,041	10,876	197,447

XXII. RATE AND BILL IMPACTS

To show the impact of changes in levelized cost on customers, DESC has taken the levelized cost for each Core Build Plan and combined it with rate data to show the resulting changes in retail rates ("Retail Rates"), and changes in the monthly bill of a typical residential customer ("Customer Bills"). The typical residential customer for DESC is a Rate 8 customer using 1,000 kWh per month.

This rate and bill impact analysis incorporates changes in fuel costs, including CO_2 and other emissions costs from burning fuel, and the capital and operating cost of generation assets. But it does not attempt to model other factors that would change Retail Rates or Customer Bills over time and so is not a forecast of future rates and is not a comprehensive rate forecast. It covers a fifteen-year period and incorporates the annual costs of generation supply for each year of that period.

Fuel costs, CO_2 costs, and new generation projects are important drivers of both Retail Rates and Customer Bills. As was the case in the 2024 IRP Update, in most cases, the changes in fuel costs and CO_2 costs between the Market Scenarios drive Retail Rates and Customer Bills up or down in a consistent fashion, and Build Plans often maintain similar or same relative positions across the Market Scenarios. The factors that vary between Market Scenarios impact the cost to customers of Build Plans so strongly that comparing different Build Plans under different Market Scenarios does not provide meaningful information.

[Table begins on following page]

Table 46. Compound Annual Growth Rate and Total Change in a Typical Customers' Bill Under the Core Analysis Due to Generation Costs

Typical Residential Bill @1000 kWh/month			
Market Scenario	**Build Plan**	**CAGR**	**Total Change**
Reference	Updated 2023 Reference Build Plan	3.25%	56.5%
Reference	2025 Reference Build Plan	2.81%	47.3%
Reference	High Fossil Fuel Prices Build Plan	2.85%	48.2%
Reference	Zero Carbon Cost Build Plan	2.80%	47.3%
Reference	Alternate Reference Build Plan	2.51%	41.6%
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	3.64%	65.0%
High Fossil Fuel Prices	2025 Reference Build Plan	3.24%	56.2%
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	3.28%	57.1%
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	3.25%	56.5%
High Fossil Fuel Prices	Alternate Reference Build Plan	2.93%	49.7%
Zero Carbon Cost	Updated 2023 Reference Build Plan	2.81%	47.4%
Zero Carbon Cost	2025 Reference Build Plan	2.32%	37.8%
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	2.36%	38.6%
Zero Carbon Cost	Zero Carbon Cost Build Plan	2.29%	37.3%
Zero Carbon Cost	Alternate Reference Build Plan	2.01%	32.2%

Under the three Core Market Scenarios, the Alternate Reference Build Plan results in the lowest compound annual rate of growth in Customer Bills and the 2025 Reference Build Plan

ranked second. The Updated 2023 Reference Build Plan produces the highest CAGR in all of the Core Market Scenarios. The Updated 2023 Reference Build Plan results in CAGRs that are between 11% and 17% higher than the 2025 Reference Build Plan and between 20% and 28% higher than the Alternate Reference Build Plan.

[Table begins on following page]

Table 47. Variation in Compound Annual Growth Rate in a Typical Customers' Bill Under the Core Analysis Due to Generation Costs Between the Reference Build Plan and the Other Build Plans.

CAGR and % Variation of the Typical Residential Bill @1000 kWh/month			
Market Scenario	**Build Plan**	**CAGR Variation from the Updated 2023 Reference Build Plan**	**Percentage Variation from the Updated 2023 Reference Build Plan**
Reference	Updated 2023 Reference Build Plan	0.00%	0.0%
Reference	2025 Reference Build Plan	-0.45%	-13.7%
Reference	High Fossil Fuel Prices Build Plan	-0.40%	-12.3%
Reference	Zero Carbon Cost Build Plan	-0.45%	-13.8%
Reference	Alternate Reference Build Plan	-0.74%	-22.7%
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	0.00%	0.0%
High Fossil Fuel Prices	2025 Reference Build Plan	-0.40%	-11.1%
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	-0.36%	-9.9%
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	-0.39%	-10.7%
High Fossil Fuel Prices	Alternate Reference Build Plan	-0.71%	-19.6%
Zero Carbon Cost	Updated 2023 Reference Build Plan	0.00%	0.0%
Zero Carbon Cost	2025 Reference Build Plan	-0.49%	-17.5%
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	-0.45%	-16.0%
Zero Carbon Cost	Zero Carbon Cost Build Plan	-0.52%	-18.5%
Zero Carbon Cost	Alternate Reference Build Plan	-0.79%	-28.3%

The corresponding figures for Retail Rates show a similar pattern but lower impact due to how costs are allocated between customer classes based on cost-of-service data. A principal driver of these allocations is contribution to system peak demand, which varies among customer classes. The Alternate Reference Build Plan has the lowest rate impact under all three Core Market Scenarios with the 2025 Reference Build Plan as the second or tied for second lowest.

[Table begins on following page]

Table 48. Compound Annual Growth Rate and Total Change in a Retail Rates Under the Core Analysis Due to Generation Costs

CAGR and % Change in the Retail Rate			
Market Scenario	**Build Plan**	**CAGR**	**Total Change**
Reference	Updated 2023 Reference Build Plan	3.13%	54.0%
Reference	2025 Reference Build Plan	2.75%	46.1%
Reference	High Fossil Fuel Prices Build Plan	2.79%	47.0%
Reference	Zero Carbon Cost Build Plan	2.77%	46.5%
Reference	Alternate Reference Build Plan	2.47%	40.7%
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	3.60%	64.2%
High Fossil Fuel Prices	2025 Reference Build Plan	3.26%	56.8%
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	3.31%	57.7%
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	3.30%	57.6%
High Fossil Fuel Prices	Alternate Reference Build Plan	2.96%	50.5%
Zero Carbon Cost	Updated 2023 Reference Build Plan	2.59%	43.1%
Zero Carbon Cost	2025 Reference Build Plan	2.15%	34.8%
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	2.19%	35.5%
Zero Carbon Cost	Zero Carbon Cost Build Plan	2.14%	34.5%
Zero Carbon Cost	Alternate Reference Build Plan	1.87%	29.5%

Retail rate impacts of the Core Build Plans are provided in the table below in dollar terms. The retail rate impacts for the Non-Core Build Plans are provided in **Appendix G**.

Table 49. Retail Rate Impact under Core Build Plans (Reference Market Scenario, dollars/kWh)

	Retail Rate Impact (dollars/kWh)							
Market Scenario	**Optimized Plan**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Reference	Updated 2023 Reference Build Plan	0.1196	0.1215	0.1246	0.1213	0.1239	0.1316	0.1456
Reference	2025 Reference Build Plan	0.1196	0.1212	0.1236	0.1193	0.1188	0.1252	0.1283
Reference	High Fossil Fuel Prices Build Plan	0.1196	0.1212	0.1236	0.1199	0.1193	0.1258	0.1289
Reference	Zero Carbon Cost Build Plan	0.1196	0.1212	0.1236	0.1193	0.1183	0.1247	0.1278
Reference	Alternate Reference Build Plan	0.1196	0.1212	0.1236	0.1194	0.1186	0.1200	0.1231
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	0.1196	0.1217	0.1249	0.1289	0.1324	0.1402	0.1560
High Fossil Fuel Prices	2025 Reference Build Plan	0.1196	0.1213	0.1239	0.1275	0.1271	0.1337	0.1373
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	0.1196	0.1213	0.1239	0.1278	0.1274	0.1339	0.1375
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	0.1196	0.1213	0.1239	0.1275	0.1270	0.1336	0.1372
High Fossil Fuel Prices	Alternate Reference Build Plan	0.1196	0.1213	0.1239	0.1275	0.1271	0.1281	0.1315
Zero Carbon Cost	Updated 2023 Reference Build Plan	0.1196	0.1217	0.1249	0.1198	0.1225	0.1303	0.1443
Zero Carbon Cost	2025 Reference Build Plan	0.1196	0.1213	0.1239	0.1177	0.1174	0.1239	0.1270
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	0.1196	0.1213	0.1239	0.1183	0.1179	0.1245	0.1277
Zero Carbon Cost	Zero Carbon Cost Build Plan	0.1196	0.1213	0.1239	0.1177	0.1169	0.1233	0.1266
Zero Carbon Cost	Alternate Reference Build Plan	0.1196	0.1213	0.1239	0.1177	0.1172	0.1186	0.1218

Market Scenario	**Optimized Plan**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Reference	Updated 2023 Reference Build Plan	0.1515	0.1548	0.1603	0.1628	0.1745	0.1769	0.1804	0.1843
Reference	2025 Reference Build Plan	0.1483	0.1514	0.1537	0.1554	0.1648	0.1676	0.1724	0.1748
Reference	High Fossil Fuel Prices Build Plan	0.1488	0.1518	0.1545	0.1562	0.1657	0.1683	0.1731	0.1758
Reference	Zero Carbon Cost Build Plan	0.1481	0.1511	0.1531	0.1551	0.1647	0.1675	0.1725	0.1753
Reference	Alternate Reference Build Plan	0.1293	0.1457	0.1483	0.1492	0.1579	0.1608	0.1654	0.1683
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	0.1629	0.1666	0.1726	0.1750	0.1865	0.1891	0.1922	0.1964
High Fossil Fuel Prices	2025 Reference Build Plan	0.1607	0.1643	0.1663	0.1686	0.1778	0.1806	0.1851	0.1875
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	0.1606	0.1643	0.1668	0.1692	0.1782	0.1810	0.1856	0.1886
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	0.1609	0.1644	0.1665	0.1687	0.1781	0.1808	0.1855	0.1885
High Fossil Fuel Prices	Alternate Reference Build Plan	0.1389	0.1559	0.1589	0.1610	0.1701	0.1728	0.1771	0.1800
Zero Carbon Cost	Updated 2023 Reference Build Plan	0.1503	0.1532	0.1579	0.1595	0.1650	0.1663	0.1684	0.1712
Zero Carbon Cost	2025 Reference Build Plan	0.1469	0.1496	0.1511	0.1518	0.1547	0.1563	0.1597	0.1612
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	0.1474	0.1501	0.1519	0.1527	0.1556	0.1572	0.1604	0.1621
Zero Carbon Cost	Zero Carbon Cost Build Plan	0.1467	0.1493	0.1505	0.1515	0.1541	0.1558	0.1600	0.1609
Zero Carbon Cost	Alternate Reference Build Plan	0.1279	0.1440	0.1458	0.1460	0.1480	0.1498	0.1531	0.1549

Residential Customer Bill impacts of the Core Build Plans are provided in the table below in dollar terms for a typical residential Rate 8 customer using 1,000 kWh per month. The corresponding bill impacts for the Non-Core Build Plans are provided in **Appendix F**.

Table 50. Typical Residential Bill under Core Build Plans (Reference Market Scenario, 1,000 kWh/month)

	Typical Residential Bill @1000 kWh/month							
Market Scenario	**Optimized Plan**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**
Reference	Updated 2023 Reference Build Plan	147.81	149.83	153.73	149.95	153.41	163.95	182.99
Reference	2025 Reference Build Plan	147.81	149.23	152.08	146.62	145.85	154.54	158.44
Reference	High Fossil Fuel Prices Build Plan	147.81	149.23	152.08	147.70	146.88	155.61	159.51
Reference	Zero Carbon Cost Build Plan	147.81	149.23	152.08	146.62	144.96	153.59	157.52
Reference	Alternate Reference Build Plan	147.81	149.24	152.10	146.64	145.55	147.32	151.22
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	147.81	149.96	154.03	157.63	162.10	172.71	193.62
High Fossil Fuel Prices	2025 Reference Build Plan	147.81	149.35	152.38	154.96	154.41	163.23	167.64
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	147.81	149.35	152.38	155.73	155.12	163.94	168.37
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	147.81	149.35	152.38	154.96	153.86	162.66	167.11
High Fossil Fuel Prices	Alternate Reference Build Plan	147.81	149.35	152.39	154.96	154.22	155.65	159.84
Zero Carbon Cost	Updated 2023 Reference Build Plan	147.81	149.96	154.02	148.39	151.96	162.62	181.67
Zero Carbon Cost	2025 Reference Build Plan	147.81	149.35	152.37	144.94	144.41	153.15	157.16
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	147.81	149.35	152.38	146.07	145.47	154.26	158.27
Zero Carbon Cost	Zero Carbon Cost Build Plan	147.81	149.35	152.38	144.96	143.49	152.18	156.24
Zero Carbon Cost	Alternate Reference Build Plan	147.81	149.35	152.39	144.94	144.09	145.93	149.93

Market Scenario	**Optimized Plan**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Reference	Updated 2023 Reference Build Plan	191.24	195.46	202.74	205.72	219.71	222.48	226.36	231.35
Reference	2025 Reference Build Plan	186.20	189.78	192.73	194.88	205.44	208.64	214.72	217.77
Reference	High Fossil Fuel Prices Build Plan	187.18	190.69	194.02	196.17	206.88	209.88	215.69	219.09
Reference	Zero Carbon Cost Build Plan	185.51	189.04	191.66	194.15	204.84	208.09	214.49	217.70
Reference	Alternate Reference Build Plan	159.02	182.50	185.80	186.69	196.51	199.87	205.43	209.24
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	202.87	207.58	215.33	218.27	232.03	235.03	238.43	243.84
High Fossil Fuel Prices	2025 Reference Build Plan	198.93	203.10	205.76	208.55	218.85	222.06	227.87	230.91
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	199.32	203.53	206.77	209.60	219.69	223.00	228.62	232.26
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	198.68	202.74	205.47	208.21	218.71	221.86	227.91	231.36
High Fossil Fuel Prices	Alternate Reference Build Plan	168.91	193.08	196.75	198.79	209.09	212.21	217.50	221.34
Zero Carbon Cost	Updated 2023 Reference Build Plan	189.92	193.77	200.19	202.38	209.87	211.53	213.89	217.84
Zero Carbon Cost	2025 Reference Build Plan	184.67	187.94	190.05	191.21	194.92	196.93	201.58	203.70
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	185.75	188.93	191.37	192.59	196.34	198.35	202.57	204.86
Zero Carbon Cost	Zero Carbon Cost Build Plan	184.09	187.18	188.98	190.37	193.95	195.98	201.49	202.89
Zero Carbon Cost	Alternate Reference Build Plan	157.64	180.81	183.25	183.33	186.19	188.45	192.75	195.42

XXIII. THE SHORT-TERM ACTION PLAN

A. Wateree and Williams Replacement Capacity, the Joint Resource, and ELG/GHG Compliance

DESC's current generation reserves are sufficient to meet customers' demands through approximately 2030, but that calculus changes significantly in the next decade with the anticipated future retirements of Wateree and Williams and the resulting loss to the system of approximately 1,294 MW of fully dispatchable capacity. DESC remains committed to retiring Wateree and Williams as soon as suitably reliable and dispatchable replacement generation is constructed and available for service commensurate with the upgraded electric transmission and fuel supply assets needed to support it. The following steps will be taken to support the retirement planning for these units:

1. In the period leading up to the triennial 2026 IRP, DESC will monitor and refine the schedule for regulatory, procurement and construction activities needed to acquire generation, transmission, and fuel resources to replace Wateree and Williams as required or influenced by the prevailing laws, regulations, and public policy.
2. DESC will complete ELG upgrades at Williams and continue to advance development and requisite approvals for constructing ELG upgrades at Wateree to ensure that both Wateree units can continue to remain available to operate beyond 2028 if required under then-current regulations.
3. DESC will continue establishing the configuration for the Joint Resource and working in partnership with Santee Cooper in so far as the Law allows. Certain assumptions have been made in the 2025 IRP Update concerning the ability to cost-effectively source the necessary capital as well as cost information, construction

schedules, size, plant configuration, and ownership percentages. Some assumptions have also been utilized to begin securing the natural gas transportation to support the facility's fuel supply and to support long-lead electric transmission interconnection studies and subsequent upgrade projects. The generation plant siting and construction, electric transmission interconnection and any subsequent construction projects, and the natural gas transportation agreements and associated pipeline upgrades are three critical paths for the proposed Joint Resource and the ability for that generation to be constructed to support the eventual retirement of the aforementioned coal units.

4. DESC will continue through its Transmission Planning Department, and in coordination with Santee Cooper and neighboring utilities, to evaluate the transmission upgrades and estimated costs and schedule to interconnect the proposed Joint Resource to the transmission grid. DESC will incorporate results, as available, from its 2024 DISIS cluster study process in its 2026 IRP and future filings under the Siting Act.
5. DESC will continue, in coordination with Santee Cooper, to contract with FERC-jurisdictional interstate natural gas pipeline companies regarding the long-lead time expansion and growth projects necessary to deliver firm natural gas transportation to support the fueling of the Joint Resource.
6. DESC will continue to monitor and evaluate the planned retirement dates for Wateree and Williams based on the outcome of the actions and evaluations listed above. The goal of this monitoring will be to determine a definitive retirement and replacement plan for Wateree and Williams, the ability of DESC to support which

will be subject to Commission review in Siting Act proceedings for the required assets and updates to DESC's future IRPs.

7. The Company will also continue to monitor changes affecting generation cost and needs including natural gas prices, regulatory and legislative requirements regarding CO_2 emissions and other regulatory reviews by the EPA and other agencies, the costs of renewable and energy storage technologies, access to fuel supplies and delivery options, governmental incentives, changing environmental policies and the emergence of novel generating technologies.

At the core of this short-term action plan is the Company's intention to monitor changing market conditions and state or federal environmental laws and regulations and update its planning to reflect those changes. DESC will continue to pursue regular and meaningful dialogues with ORS and Stakeholders to receive comments and information, and to work toward achieving as great a level of consensus around these matters as is possible given the sometimes-divergent interests and perspectives of the parties. As always, DESC's guiding commitment is to provide reliable, affordable and increasingly clean energy that powers its customers every day.

B. Peaking Modernization Program

In November 2021, the Company entered into a Partial Settlement Agreement in Docket 2021-93-E that allows for the retirement of nine CT units to proceed and for their replacements with three modern units at the Bushy Park and Parr sites. In accordance with the Partial Settlement, the Company conducted its Urquhart RFP, which included a collaborative stakeholder process to design the first-of-its-kind all-sources RFP process, filed its Request with the Commission for "Like Facility" Determination pursuant to S.C. Code Ann. § 58-33-110(1), and received Commission approval in January 2025 for a "Like Facility" determination regarding the construction of the proposed construction of a 200 MW Frame CT generating unit at Urquhart.

The specific short-term actions that the Company intends to take in 2025 to accomplish its peaking modernization goals are to:

1. Continue to execute the construction of the replacement units at Parr;
2. Following the commercial operation of the replacement units at Parr, retire the Coit CT units and proceed with the decommissioning and demolition of those units;
3. Proceed with the engineering, procurement, and construction activities for the new Frame CT unit at Urquhart and provide updates to the Commission and ORS as required by Order No. 2025-69.

C. The 2023 DSM Potential Study

The specific short-term actions related to the 2023 DSM Potential Study results are to:

1. Implement the Demand Side Management Portfolio based on the 2023 DSM Potential Study as identified within the Comprehensive DSM 5-year Program Plan for Program Years 15-19.

D. AMI Education and Residential Demand Response Program

The specific short-term actions that the Company intends to take to accomplish Advanced Metering Infrastructure ("AMI") education and Residential Demand Response include the following:

1. Incorporate AMI data into DSM targeting, customer education and specific DSM programs, as appropriate, to expand customer knowledge and use of AMI data.
2. Implement the Residential Demand Response Program as part of the DSM portfolio. Developed to primarily address DESC's winter system peak, the residential demand response (DR) program will provide customers with education and a variety of flexible offerings to manage the timing of their energy usage as follows:
    i. **Time-of-Use Education** (Rate Coaching) offering is designed to recruit, educate, and enroll new DESC residential customers in a Time-of-Use energy rate, while motivating current TOU customers to shift usage to off-peak hours, stagger their energy use, and achieve maximum bill savings.

ii. **Smart Thermostat Rewards** offering will be available to residential customers through a variety of thermostat manufacturers representing the most purchased smart thermostat models.

iii. **Peak-Time Rebate** (Events Rewards) offering will provide residential customers with opportunities to earn incentives for reducing energy use during event periods defined by DESC.

3. Continue to timely report to stakeholders the development of the residential DR program and access to AMI data within DSM programs.

E. Continue the IRP Stakeholder Advisory Group Process

The specific short-term actions that the Company intends to take to accomplish its Stakeholder goals are to:

1. Review the results of the 2025 IRP Update with the advisory group in the second half of 2025.
2. Conduct a minimum of two advisory group meetings annually to prepare for the future updates and triennial plans.

XXIV. CONCLUSION

In this 2025 IRP Update, DESC has updated the modeling done in the 2024 IRP Update for current inputs and has modified Build Plans related to emerging issues. The 2025 IRP Update appropriately identifies the 2025 Reference Build Plan as the preferred plan to guide DESC's generation planning at present. It sets out a reasonable and prudent approach of planning for the next steps in the development of DESC's generation portfolio and the retirement of Wateree and Williams in compliance with the latest guidance and consistent with reliability and affordability.

DESC's fundamental objectives remain to protect safety, maintain reliability, and deliver affordable energy to its customers. Achieving these objectives, while providing increasingly clean energy to its customers, will require investment by the Company, support from the Commission, and coordination and consensus-building across all stakeholder groups. DESC submits that this

2025 IRP Update provides a sound and appropriate basis for this investment, regulatory decision making and public engagement.

Appendix A: Glossary of Terms

Table of Abbreviations	
Abbreviation	**Name**
ADVANCE Act	Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024
Aero	Aeroderivative Natural Gas-Fired Combustion Turbine Generating Unit
AFR	Accident Frequency Rate
AGP	Advanced Gas Path
AMI	Advanced Metering Infrastructure
ATB	Annual Technology Baseline
BESS	Battery Energy Storage System
BSER	Best System of Emission Reduction
CAA	Clean Air Act
CAGR	Compound Annual Growth Rate
CASAC	Chartered Clean Air Scientific Advisory Committee
CC	Combined Cycle Power Plant

Table of Abbreviations	
CCS	Carbon Capture and Storage
CO_2	Carbon Dioxide
CRA	Charles River Associates
CT	Combustion Turbine
CTG	Combustion Turbine Generator
DART	Days Away from Work Rate
DEV	Dominion Energy Virginia
DESC	Dominion Energy South Carolina
DISIS	Definitive Interconnection System Impact Study
DOE	Department of Energy
DR	Demand Response
DSM	Demand Side Management
EE	Energy Efficiency
EEAG	Energy Efficiency Advisory Group
EIA	Energy Information Administration
ELCC	Effective Load Carrying Capacity

Appendix A: Glossary of Terms

Table of Abbreviations	
ELG	Effluent Limitation Guidelines
EPA	Environmental Protection Agency
EV	Electric Vehicle
FERC	Federal Energy Regulatory Commission
FOR	Forced Outage Rate
FT	Firm Transportation
GENCO	South Carolina Generation Company
GWh	Gigawatt Hour
GHG	Greenhouse Gas
GRIP	Grid Resilience and Innovation Partnerships
GSUs	Generator step-up transformers
ICT	Internal Combustion Turbine
IIJA	Infrastructure Investment and Jobs Act
INPO	Institute of Nuclear Power Operations
IRA	Inflation Reduction Act of 2022
IRP	Integrated Resource Plan

Table of Abbreviations	
IRS	Internal Revenue Service
ITC	Investment Tax Credits
Ktons	Thousand Tons
kV	Kilovolt
kW	Kilowatt
kWh	Kilowatt Hour
LFP	Lithium Iron Phosphate
LGIA	Large Generator Interconnection Agreement
LNPV	Levelized Net Present Value
MATS	Mercury and Air Toxics Standards
MMBtu	Metric Million British Thermal Unit
Mton	Metric Ton
MW	Megawatt
MW-ac	Megawatt, Alternating Current
MWh	Megawatt Hour
MSX	Mississippi Crossing
NAAQS	National Ambient Air Quality Standards
NERC	North American Electric Reliability Corporation

Appendix A: Glossary of Terms

Table of Abbreviations	
NGCC	Natural Gas-fired Combined Cycle Unit
NPV	Net Present Value
NRC	Nuclear Regulatory Commission
NREL	National Renewable Energy Laboratory
NSPS	New Source Performance Standards
OATT	Open Access Transmission Tariff
ORS	South Carolina Office of Regulatory Staff
OSW	Offshore Wind
PA	Policy Assessment
PAs	Precedent Agreements
$PM_{2.5}$	Particulate Matter Two- and One-Half Microns or Less in Width
PM NAAQS	National Ambient Air Quality Standards for Particulate Matter
PPA	Power Purchase Agreement
PSD	Prevention of Significant Deterioration
PTC	Production Tax Credit
RFI	Request for Information

Table of Abbreviations	
RFP	Request for Proposal
SAIDI	System Average Interruption Duration Index
SCC	Virginia State Corporation Commission
SCRTP	South Carolina Regional Transmission Planning
SEE	Southeastern Electric Exchange
SEPA	Southeastern Power Administration
SERC	Southeastern Reliability Council
SERTP	Southeastern Regional Transmission Planning
SMR	Small Modular Reactor
SSE4	South System Expansion 4
STAP	Short-Term Action Plan
STG	Steam turbine-generator
TIA	Transmission Impact Analysis
TOU	Time of Use
VIP	Voluntary Incentive Program

Appendix B: Report on Completed, Deferred, and Cancelled Transmission Projects

Planned Project	Tentative Completion Date	Status Update	Explanation
Queensboro – Ft Johnson 115kV Tap	Dec-25	In Service Dec-24	
Emory 230-23kV Distribution Sub: Construct	July-24	In Service Dec-24	
Okatie – Bluffton 115kV: Rebuild	June-25	On Schedule	
Eastover – Square D 115kV: Rebuild	June-24	In Service May-24	
Hopkins – Square D 115kV: Rebuild	Sept-24	In Service Sept-24	
Burton – St Helena 115kV: Rebuild Burton – Frogmore Transmission Section	Dec-24	Delayed to Completion Mar-25	Delayed due to constructability constraints
Burton – St Helena 115kV: Frogmore Distribution – St Helena	Dec-25	Delayed to Completion Dec-27	Delayed due to budget constraints
Jasper – Okatie 230kV #2, Okatie – Riverport 230kV: Construct	Dec-25	Delayed to Completion Dec-26	Delayed due to permitting delays
VCS1 – Denny Terrace 230kV: Rebuild Single Circuit Section	Dec-26	Delayed to Completion Dec-27	Delayed due to budget constraints
VCS1 – Pineland 230kV: Rebuild Single Circuit Section	Dec-26	Delayed Completion to Dec-27	Delayed due to budget constraints
Wateree – Hopkins 230kV Line #1: Rebuild	Dec-29	Accelerated Completion to Dec-27	Accelerated due to condition of the existing line noted during inspection
Coit – Gills Creek 115kV Line: Construct	Dec-24	Delayed to Completion Dec-25	Delayed due to right-of-way issues

Union Pier 115–13.8kV Substation and 115kV Tap Construct	Dec-27	On Schedule	
Cainhoy – Hamlin 115kV: Rebuild Line and Cainhoy – Hamlin 115kV #2: Construct New 115kV Line	Dec-25	Delayed Completion to Dec-26	Delayed due to permitting delays
Hopkins – CIP 230kV: Rebuild	Dec-25	On Schedule	
Faber Place – Bayfront 115kV: Rebuild North Bridge Terrace to Bayfront Section	Dec-28	On Schedule	
Wateree – Killian 230kV: Rebuild	Dec-28	Delayed Completion to Dec-29	Delayed due to budget constraints
Canadys – Ritter 115kV: Rebuild as 230/115kV Double Circuit	Jun-26	Delayed Completion to June-28	Delayed due to changes in project scope
Ritter – Yemassee 230kV and 115kV Transmission System Expansion	Jun-26	Delayed Completion to June-27	Delayed due to permitting delays
Okatie 230–115kV Sub and the Jasper – Yemassee Fold In	Dec-24	Delayed Completion to Dec-26	Delayed due to permitting delays
Clements Ferry 115–23kV Sub: Construct; Jack Primus–Cainhoy 115kV with Clements Ferry Tap Construct	Dec-27	Delayed Completion to Dec-28	Delayed due to budget constraints
Ridgeville Commerce Park 115-23kV Substation and 115kV Line	Dec-25	On Schedule	
Coosawhatchie 115-23kV Substation and 115kV Line	Jul-24	In Service May-24	
Bushy Park 115kV Substation for New Turbine	Mar-24	In Service Mar-24	
Scout: Construct 230-23.9kV Substation and 230kV Transmission Line	Mar-26	On Schedule	
Watson Hill 230/23/13.8kV Substation and Transmission Line Tap Construction	Dec-26	On Schedule	

Cedar Grove 115-23kV Substation and 115kV Transmission Line Tap Construction	June-25	On Schedule	
South Dorchester 115-23kV Substation and 115kV Transmission Line Tap Construction	Aug-25	Delayed Completion to Dec-25	Delayed due to permitting delays
Edenwood Substation: Replace Autobanks with new 336MVA Transformers	Mar-25	On Schedule	
Adams Run – Red House Road 46kV: Replace Dawhoo River Crossing and Additional Rebuild Phase 2	Dec-26	On Schedule	
Batesburg-Saluda County 115kV: Rebuild	Dec-25	On Schedule	
Church Creek – Charleston Transmission 230kV and Associated Projects	May-27	On Schedule	
Dawson 230kV Substation and Transmission Line Fold-in Construction Phase 1	Oct-25	On Schedule	
Dawson 230kV Substation and Transmission Line Fold-in Construction Phase 2	Oct-26	On Schedule	

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

Update 2023 Reference Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6295	32.7	0	150	0	0	0	0	0
2027	4848	6300	29.9	0	225	0	0	0	0	0
2028	4960	6307	27.2	0	300	0	0	0	0	0
2029	5035	6063	20.4	0	300	500	0	0	0	-684
2030	5097	6159	20.8	0	300	100	0	0	0	0
2031	5167	6225	20.5	662	300	0	0	0	0	-610
2032	5239	6301	20.3	52	300	0	0	0	0	0
2033	5283	6409	21.3	0	300	100	0	0	0	0
2034	5322	6682	25.5	0	300	300	0	0	0	0
2035	5363	6695	24.8	0	300	0	0	0	0	0
2036	5404	6854	26.8	0	300	300	0	0	0	0
2037	5442	6861	26.1	0	150	0	0	0	0	0
2038	5495	6731	22.5	0	150	0	0	0	0	0
2039	5545	6833	23.2	0	150	200	0	0	0	0
2040	5602	7358	31.4	523	150	0	0	0	0	0
2041	5660	7361	30.1	0	150	0	0	0	0	0
2042	5720	7363	28.7	0	150	0	0	0	0	0
2043	5777	7364	27.5	0	150	0	0	0	0	0
2044	5833	7026	20.5	0	150	100	0	0	0	0
2045	5890	7108	20.7	0	150	200	0	0	0	0
2046	5947	7191	20.9	0	150	100	0	0	0	0
2047	6004	7243	20.6	0	150	100	0	0	0	0
2048	6062	7306	20.5	0	150	300	0	0	0	0
2049	6121	7574	23.7	523	150	0	0	0	0	0
2050	6181	7569	22.5	0	0	0	0	0	0	0
Total				1760	5025	2300	0	0	0	-1294

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

2025 Reference Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6304	27.1	0	0	0	0	0	0	0
2029	5035	6323	25.6	0	300	0	0	0	0	0
2030	5097	6340	24.4	0	300	0	0	0	0	0
2031	5167	6361	23.1	0	300	0	0	0	0	0
2032	5239	6343	21.1	998	0	0	300	0	0	-1284
2033	5283	6365	20.5	0	300	0	0	0	0	0
2034	5322	6468	21.5	0	200	0	100	0	0	0
2035	5363	6481	20.8	0	300	0	0	0	0	0
2036	5404	6575	21.7	0	300	100	0	0	0	0
2037	5442	6582	21.0	0	300	0	0	0	0	0
2038	5495	6647	21.0	0	100	100	200	0	0	0
2039	5545	6704	20.9	0	200	0	100	0	0	0
2040	5602	6792	21.2	0	300	100	0	0	0	0
2041	5660	6880	21.6	0	200	100	0	0	0	0
2042	5720	6882	20.3	0	300	0	0	0	0	0
2043	5777	6938	20.1	0	200	0	100	0	0	0
2044	5833	7390	26.7	450	100	0	0	0	0	0
2045	5890	7391	25.5	0	0	0	0	0	0	0
2046	5947	7393	24.3	0	0	0	0	0	0	0
2047	6004	7394	23.2	0	100	0	0	0	0	0
2048	6062	7391	21.9	0	100	0	0	0	0	0
2049	6121	7445	21.6	0	0	100	0	0	0	0
2050	6181	7440	20.4	0	0	0	0	0	0	0
Total				1448	3900	500	800	0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

High Fossil Fuel Prices Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6305	27.1	0	300	0	0	0	0	0
2029	5035	6325	25.6	0	300	0	0	0	0	0
2030	5097	6341	24.4	0	300	0	0	0	0	0
2031	5167	6362	23.1	0	300	0	0	0	0	0
2032	5239	6344	21.1	998	0	0	300	0	0	-1284
2033	5283	6367	20.5	0	300	0	0	0	0	0
2034	5322	6469	21.6	0	200	0	100	0	0	0
2035	5363	6483	20.9	0	300	0	0	0	0	0
2036	5404	6577	21.7	0	300	100	0	0	0	0
2037	5442	6584	21.0	0	300	0	0	0	0	0
2038	5495	6618	20.4	0	0	0	300	0	0	0
2039	5545	6675	20.4	0	200	0	100	0	0	0
2040	5602	6763	20.7	0	300	100	0	0	0	0
2041	5660	6851	21.0	0	200	100	0	0	0	0
2042	5720	6938	21.3	0	300	100	0	0	0	0
2043	5777	6940	20.1	0	300	0	0	0	0	0
2044	5833	7391	26.7	450	0	0	0	0	0	0
2045	5890	7392	25.5	0	0	0	0	0	0	0
2046	5947	7394	24.3	0	0	0	0	0	0	0
2047	6004	7395	23.2	0	0	0	0	0	0	0
2048	6062	7391	21.9	0	0	0	0	0	0	0
2049	6121	7445	21.6	0	0	100	0	0	0	0
2050	6181	7440	20.4	0	0	0	0	0	0	0
Total				1448	3900	500	800	0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

Zero Carbon Cost Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6304	27.1	0	0	0	0	0	0	0
2029	5035	6322	25.6	0	0	0	0	0	0	0
2030	5097	6338	24.3	0	300	0	0	0	0	0
2031	5167	6359	23.1	0	300	0	0	0	0	0
2032	5239	6341	21.0	998	0	0	300	0	0	-1284
2033	5283	6364	20.5	0	300	0	0	0	0	0
2034	5322	6466	21.5	0	200	0	100	0	0	0
2035	5363	6480	20.8	0	300	0	0	0	0	0
2036	5404	6574	21.6	0	300	100	0	0	0	0
2037	5442	6581	20.9	0	300	0	0	0	0	0
2038	5495	6622	20.5	0	300	200	0	0	0	0
2039	5545	6678	20.4	0	0	0	100	0	0	0
2040	5602	6734	20.2	0	100	0	100	0	0	0
2041	5660	6822	20.5	0	100	100	0	0	0	0
2042	5720	6878	20.2	0	100	0	100	0	0	0
2043	5777	7329	26.9	450	100	0	0	0	0	0
2044	5833	7331	25.7	0	300	0	0	0	0	0
2045	5890	7333	24.5	0	100	0	0	0	0	0
2046	5947	7335	23.3	0	0	0	0	0	0	0
2047	6004	7336	22.2	0	100	0	0	0	0	0
2048	6062	7334	21.0	0	300	0	0	0	0	0
2049	6121	7388	20.7	0	0	0	100	0	0	0
2050	6181	7438	20.3	0	0	100	0	0	0	0
Total				1448	3500	500	800	0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

Alternate Reference Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6304	27.1	0	0	0	0	0	0	0
2029	5035	6323	25.6	0	200	0	0	0	0	0
2030	5097	6339	24.4	0	300	0	0	0	0	0
2031	5167	6360	23.1	0	300	0	0	0	0	0
2032	5239	6385	21.9	0	300	0	0	0	0	0
2033	5283	6721	27.2	998	300	0	0	0	0	-684
2034	5322	6824	28.2	0	200	0	100	0	0	0
2035	5363	6481	20.8	0	0	0	300	0	0	-600
2036	5404	6575	21.7	0	300	100	0	0	0	0
2037	5442	6582	20.9	0	300	0	0	0	0	0
2038	5495	6616	20.4	0	0	0	300	0	0	0
2039	5545	6704	20.9	0	300	100	0	0	0	0
2040	5602	6791	21.2	0	300	100	0	0	0	0
2041	5660	6880	21.6	0	300	100	0	0	0	0
2042	5720	6882	20.3	0	300	0	0	0	0	0
2043	5777	6938	20.1	0	200	0	100	0	0	0
2044	5833	7389	26.7	450	0	0	0	0	0	0
2045	5890	7390	25.5	0	0	0	0	0	0	0
2046	5947	7392	24.3	0	0	0	0	0	0	0
2047	6004	7393	23.1	0	0	0	0	0	0	0
2048	6062	7390	21.9	0	100	0	0	0	0	0
2049	6121	7389	20.7	0	0	0	0	0	0	0
2050	6181	7439	20.4	0	0	100	0	0	0	0
Total				1448	3700	500		0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

Electrification Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4818	6294	30.6	0	0	0	0	0	0	0
2027	5167	6298	21.9	0	0	0	0	0	0	0
2028	5516	6644	20.4	0	0	400	0	0	0	0
2029	5833	7027	20.5	0	0	200	300	0	0	0
2030	5940	7182	20.9	0	100	0	200	0	0	0
2031	6053	7313	20.8	0	300	200	0	0	0	0
2032	6167	7492	21.5	1448	300	0	0	0	0	-1284
2033	6250	7514	20.2	0	300	0	0	0	0	0
2034	6328	7612	20.3	0	300	100	0	0	0	0
2035	6406	7735	20.7	0	100	0	200	0	0	0
2036	6483	7798	20.3	0	200	0	100	0	0	0
2037	6554	8255	26.0	450	300	0	0	0	0	0
2038	6640	8126	22.4	0	300	0	0	0	0	0
2039	6722	8129	20.9	0	300	0	0	0	0	0
2040	6809	8581	26.0	450	300	0	0	0	0	0
2041	6896	8585	24.5	0	300	0	0	0	0	0
2042	6984	8586	22.9	0	100	0	0	0	0	0
2043	7068	8531	20.7	0	0	300	0	0	0	0
2044	7150	8587	20.1	0	0	300	0	0	0	0
2045	6465	8588	32.8	0	0	0	0	0	0	0
2046	6520	8480	30.1	0	0	0	0	0	0	0
2047	6575	8481	29.0	0	0	0	0	0	0	0
2048	6631	8477	27.8	0	0	0	0	0	0	0
2049	6687	8396	25.6	0	0	0	0	0	0	0
2050	6744	8392	24.4	0	0	0	0	0	0	0
Total				2348	3200	1500	800	0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

Energy Conservation Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4824	6298	30.6	0	0	0	0	0	0	0
2028	4911	6305	28.4	0	200	0	0	0	0	0
2029	4961	6324	27.5	0	300	0	0	0	0	0
2030	4997	6341	26.9	0	300	0	0	0	0	0
2031	5041	6362	26.2	0	300	0	0	0	0	0
2032	5086	6175	21.4	998	200	0	100	0	0	-1284
2033	5103	6197	21.4	0	300	0	0	0	0	0
2034	5115	6215	21.5	0	300	0	0	0	0	0
2035	5129	6229	21.4	0	300	0	0	0	0	0
2036	5143	6238	21.3	0	300	0	0	0	0	0
2037	5153	6245	21.2	0	300	0	0	0	0	0
2038	5178	6285	21.4	0	100	0	200	0	0	0
2039	5199	6286	20.9	0	100	0	0	0	0	0
2040	5226	6287	20.3	0	0	0	0	0	0	0
2041	5254	6374	21.3	0	0	0	100	0	0	0
2042	5284	6376	20.7	0	200	0	0	0	0	0
2043	5310	6431	21.1	0	0	0	100	0	0	0
2044	5335	6433	20.6	0	100	0	0	0	0	0
2045	5360	6519	21.6	0	0	100	0	0	0	0
2046	5385	6521	21.1	0	0	0	0	0	0	0
2047	5410	6522	20.5	0	0	0	0	0	0	0
2048	5436	6603	21.5	0	0	100	0	0	0	0
2049	5461	6602	20.9	0	0	0	0	0	0	0
2050	5487	6597	20.2	0	0	0	0	0	0	0
Total				998	3300	200	500	0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

Aggressive Regulation Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4818	6294	30.6	0	0	0	0	0	0	0
2027	5167	6298	21.9	0	0	0	0	0	0	0
2028	5516	6645	20.5	0	300	400	0	0	0	0
2029	5833	7023	20.4	105	0	0	300	0	0	0
2030	5940	7179	20.9	0	100	0	200	0	0	0
2031	6053	7309	20.7	0	100	0	200	0	0	0
2032	6167	7487	21.4	1448	300	0	0	0	0	-1284
2033	6250	7510	20.2	0	300	0	0	0	0	0
2034	6328	7638	20.7	0	300	200	0	0	0	0
2035	6406	7761	21.2	0	300	200	0	0	0	0
2036	6483	7825	20.7	0	200	0	100	0	0	0
2037	6554	8282	26.4	450	300	0	0	0	0	0
2038	6640	8153	22.8	0	300	0	0	0	0	0
2039	6722	8155	21.3	0	300	0	0	0	0	0
2040	6809	8178	20.1	0	300	100	0	0	0	0
2041	6896	8631	25.2	450	300	0	0	0	0	0
2042	6984	8634	23.6	0	300	0	0	0	0	0
2043	7068	8505	20.3	0	300	100	0	0	0	0
2044	7150	8587	20.1	0	200	100	0	0	0	0
2045	6465	8588	32.8	0	0	0	0	0	0	0
2046	6520	8590	31.8	0	0	0	0	0	0	0
2047	6575	8591	30.7	0	0	0	0	0	0	0
2048	6631	8587	29.5	0	0	0	0	0	0	0
2049	6687	8476	26.8	0	0	0	0	0	0	0
2050	6744	8302	23.1	0	0	0	0	0	0	0
Total				2453	4200	1100	800	0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

High DSM Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4742	6294	32.7	0	0	0	0	0	0	0
2027	4845	6298	30.0	0	0	0	0	0	0	0
2028	4950	6304	27.4	0	0	0	0	0	0	0
2029	5021	6322	25.9	0	100	0	0	0	0	0
2030	5077	6339	24.8	0	300	0	0	0	0	0
2031	5144	6360	23.6	0	300	0	0	0	0	0
2032	5211	6342	21.7	998	0	0	300	0	0	-1284
2033	5248	6364	21.3	0	300	0	0	0	0	0
2034	5283	6382	20.8	0	300	0	0	0	0	0
2035	5319	6396	20.2	0	300	0	0	0	0	0
2036	5355	6490	21.2	0	300	100	0	0	0	0
2037	5388	6497	20.6	0	300	0	0	0	0	0
2038	5442	6537	20.1	0	200	100	100	0	0	0
2039	5492	6625	20.6	0	300	100	0	0	0	0
2040	5548	6682	20.4	0	200	0	100	0	0	0
2041	5607	6739	20.2	0	100	0	100	0	0	0
2042	5666	6827	20.5	0	300	100	0	0	0	0
2043	5724	6883	20.2	0	200	0	100	0	0	0
2044	5780	7335	26.9	450	200	0	0	0	0	0
2045	5836	7336	25.7	0	0	0	0	0	0	0
2046	5893	7338	24.5	0	0	0	0	0	0	0
2047	5951	7339	23.3	0	0	0	0	0	0	0
2048	6009	7335	22.1	0	0	0	0	0	0	0
2049	6068	7389	21.8	0	0	0	100	0	0	0
2050	6127	7384	20.5	0	0	0	0	0	0	0
Total				1448	3700	400	800	0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

Low DSM Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4850	6298	29.9	0	0	0	0	0	0	0
2028	4963	6304	27.0	0	0	0	0	0	0	0
2029	5037	6323	25.5	0	300	0	0	0	0	0
2030	5100	6340	24.3	0	300	0	0	0	0	0
2031	5174	6361	22.9	0	300	0	0	0	0	0
2032	5247	6343	20.9	998	0	0	300	0	0	-1284
2033	5291	6365	20.3	0	300	0	0	0	0	0
2034	5331	6468	21.3	0	200	0	0	0	0	0
2035	5373	6481	20.6	0	300	0	0	0	0	0
2036	5415	6575	21.4	0	300	100	0	0	0	0
2037	5455	6582	20.7	0	300	0	0	0	0	0
2038	5508	6617	20.1	0	0	0	100	0	0	0
2039	5558	6704	20.6	0	300	100	0	0	0	0
2040	5615	6792	21.0	0	300	100	100	0	0	0
2041	5673	6849	20.7	0	100	0	100	0	0	0
2042	5733	6936	21.0	0	200	100	0	0	0	0
2043	5790	6993	20.8	0	300	100	100	0	0	0
2044	5846	7445	27.4	450	300	0	0	0	0	0
2045	5903	7446	26.1	0	0	0	0	0	0	0
2046	5960	7448	25.0	0	0	0	0	0	0	0
2047	6017	7449	23.8	0	0	0	0	0	0	0
2048	6075	7446	22.6	0	100	0	0	0	0	0
2049	6134	7445	21.4	0	0	0	100	0	0	0
2050	6194	7440	20.1	0	0	0	0	0	0	0
Total				1448	3900	500	800	0	0	-1284

Appendix C: Timing and Nature of Resource Additions and Resulting Capacities and Reserve Margins

85% Co2 Reduction Build Plan										
Year	Peak (MW)	Firm Capacity (MW)	Winter Reserve Margin (%)	Gas (MW)	Solar (MW)	Storage (MW)	Hybrid Solar & Storage (MW)	Wind (MW)	SMR (MW)	Retirements (MW)
2025	4672	6291	34.7	0	0	0	0	0	0	0
2026	4743	6294	32.7	0	0	0	0	0	0	0
2027	4848	6298	29.9	0	0	0	0	0	0	0
2028	4960	6305	27.1	0	300	0	0	0	0	0
2029	5035	6325	25.6	0	300	0	0	0	0	0
2030	5097	6341	24.4	0	300	0	0	0	0	0
2031	5167	6362	23.1	0	300	0	0	0	0	0
2032	5239	6345	21.1	998	100	100	200	0	0	-1284
2033	5283	6536	23.7	0	100	0	200	0	0	0
2034	5322	6718	26.2	0	0	0	300	0	0	0
2035	5363	7245	35.1	0	0	600	300	0	0	0
2036	5404	7554	39.8	0	300	0	0	500	0	0
2037	5442	7861	44.4	0	300	0	0	500	0	0
2038	5495	7982	45.3	0	300	0	0	500	0	0
2039	5545	8234	48.5	0	300	0	0	500	0	0
2040	5602	8511	51.9	0	300	0	0	0	274	0
2041	5660	8787	55.2	0	0	0	0	0	274	0
2042	5720	9062	58.4	0	0	0	0	0	274	0
2043	5777	9336	61.6	0	0	0	0	0	274	0
2044	5833	9611	64.8	0	0	0	0	0	274	0
2045	5890	9612	63.2	0	0	0	0	0	0	0
2046	5947	9614	61.7	0	0	0	0	0	0	0
2047	6004	9560	59.2	0	0	0	0	0	0	0
2048	6062	9556	57.6	0	0	0	0	0	0	0
2049	6121	9555	56.1	0	0	0	0	0	0	0
2050	6181	9100	47.2	0	0	0	0	0	0	0
Total				998	2900	700	1000	2000	1370	-1284

Appendix D: Generation Added by Type for each Resource Plan by Year

Updated 2023 Reference Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	150	-	-	-
2027	-	-	-	-	-	75	150	-	-	-
2028	-	-	-	-	-	150	150	-	-	-
2029	-	-	-	-	-	150	150	-	-	400
2030	-	-	-	-	-	150	150	-	-	-
2031	662	-	-	-	-	150	150	-	-	-
2032	-	-	52	-	-	150	150	-	-	-
2033	-	-	-	-	-	150	150	-	-	100
2034	-	-	-	-	-	150	150	-	-	300
2035	-	-	-	-	-	150	150	-	-	-
2036	-	-	-	-	-	150	150	-	-	300
2037	-	-	-	-	-	-	150	-	-	-
2038	-	-	-	-	-	-	150	-	-	-
2039	-	-	-	-	-	-	150	-	-	200
2040	-	-	-	523	-	-	150	-	-	-
2041	-	-	-	-	-	-	150	-	-	-
2042	-	-	-	-	-	-	150	-	-	-
2043	-	-	-	-	-	-	150	-	-	-
2044	-	-	-	-	-	-	150	-	-	-
2045	-	-	-	-	-	-	150	-	-	-
2046	-	-	-	-	-	-	150	-	-	-
2047	-	-	-	-	-	-	150	-	-	100
2048	-	-	-	-	-	-	150	-	-	200
2049	-	-	-	523	-	-	150	-	-	-
2050	-	-	-	-	-	-	-	-	-	-
Total MW	662	-	52	1,046	-	1,425	3,600	-	-	1,600

Appendix D: Generation Added by Type for each Resource Plan by Year

2025 Reference Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	300	-	-	-
2030	-	-	-	-	-	-	300	-	-	-
2031	-	-	-	-	-	-	300	-	-	-
2032	998	-	-	-	-	-	-	300	-	-
2033	-	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	200	100	-	-
2035	-	-	-	-	-	-	300	-	-	-
2036	-	-	-	-	-	-	300	-	-	100
2037	-	-	-	-	-	-	300	-	-	-
2038	-	-	-	-	-	-	100	200	-	100
2039	-	-	-	-	-	-	200	100	-	-
2040	-	-	-	-	-	-	300	-	-	100
2041	-	-	-	-	-	-	200	-	-	100
2042	-	-	-	-	-	-	300	-	-	-
2043	-	-	-	-	-	-	200	100	-	-
2044	-	-	-	450	-	-	100	-	-	-
2045	-	-	-	-	-	-	-	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	100	-	-	-
2048	-	-	-	-	-	-	100	-	-	-
2049	-	-	-	-	-	-	-	-	-	100
2050	-	-	-	-	-	-	-	-	-	-
Total MW	998	-	-	450	-	-	3,900	800	-	500

Appendix D: Generation Added by Type for each Resource Plan by Year

High Fuel Cost Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	300	-	-	-
2029	-	-	-	-	-	-	300	-	-	-
2030	-	-	-	-	-	-	300	-	-	-
2031	-	-	-	-	-	-	300	-	-	-
2032	998	-	-	-	-	-	-	300	-	-
2033	-	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	200	100	-	-
2035	-	-	-	-	-	-	300	-	-	-
2036	-	-	-	-	-	-	300	-	-	100
2037	-	-	-	-	-	-	300	-	-	-
2038	-	-	-	-	-	-	-	300	-	-
2039	-	-	-	-	-	-	200	100	-	-
2040	-	-	-	-	-	-	300	-	-	100
2041	-	-	-	-	-	-	200	-	-	100
2042	-	-	-	-	-	-	300	-	-	100
2043	-	-	-	-	-	-	300	-	-	-
2044	-	-	-	450	-	-	-	-	-	-
2045	-	-	-	-	-	-	-	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	-	-	-	-
2048	-	-	-	-	-	-	-	-	-	-
2049	-	-	-	-	-	-	-	-	-	100
2050	-	-	-	-	-	-	-	-	-	-
Total MW	998	-	-	450	-	-	3,900	800	-	500

Appendix D: Generation Added by Type for each Resource Plan by Year

Zero Carbon Cost Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-	-	-
2030	-	-	-	-	-	-	300	-	-	-
2031	-	-	-	-	-	-	300	-	-	-
2032	998	-	-	-	-	-	-	300	-	-
2033	-	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	200	100	-	-
2035	-	-	-	-	-	-	300	-	-	-
2036	-	-	-	-	-	-	300	-	-	100
2037	-	-	-	-	-	-	300	-	-	-
2038	-	-	-	-	-	-	300	-	-	200
2039	-	-	-	-	-	-	-	100	-	-
2040	-	-	-	-	-	-	100	100	-	-
2041	-	-	-	-	-	-	100	-	-	100
2042	-	-	-	-	-	-	100	100	-	-
2043	-	-	-	450	-	-	100	-	-	-
2044	-	-	-	-	-	-	300	-	-	-
2045	-	-	-	-	-	-	100	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	100	-	-	-
2048	-	-	-	-	-	-	300	-	-	-
2049	-	-	-	-	-	-	-	100	-	-
2050	-	-	-	-	-	-	-	-	-	100
Total MW	998	-	-	450	-	-	3,500	800	-	500

Appendix D: Generation Added by Type for each Resource Plan by Year

Alternate Reference Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	200	-	-	-
2030	-	-	-	-	-	-	300	-	-	-
2031	-	-	-	-	-	-	300	-	-	-
2032	-	-	-	-	-	-	300	-	-	-
2033	998	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	200	100	-	-
2035	-	-	-	-	-	-	-	300	-	-
2036	-	-	-	-	-	-	300	-	-	100
2037	-	-	-	-	-	-	300	-	-	-
2038	-	-	-	-	-	-	-	300	-	-
2039	-	-	-	-	-	-	300	-	-	100
2040	-	-	-	-	-	-	300	-	-	100
2041	-	-	-	-	-	-	300	-	-	100
2042	-	-	-	-	-	-	300	-	-	-
2043	-	-	-	-	-	-	200	100	-	-
2044	-	-	-	450	-	-	-	-	-	-
2045	-	-	-	-	-	-	-	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	-	-	-	-
2048	-	-	-	-	-	-	100	-	-	-
2049	-	-	-	-	-	-	-	-	-	-
2050	-	-	-	-	-	-	-	-	-	100
Total MW	998	-	-	450	-	-	3,700	800	-	500

Appendix D: Generation Added by Type for each Resource Plan by Year

Electrification Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	400
2029	-	-	-	-	-	-	-	300	-	200
2030	-	-	-	-	-	-	100	200	-	-
2031	-	-	-	-	-	-	300	-	-	200
2032	998	-	-	450	-	-	300	-	-	-
2033	-	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	300	-	-	100
2035	-	-	-	-	-	-	100	200	-	-
2036	-	-	-	-	-	-	200	100	-	-
2037	-	-	-	450	-	-	300	-	-	-
2038	-	-	-	-	-	-	300	-	-	-
2039	-	-	-	-	-	-	300	-	-	-
2040	-	-	-	450	-	-	300	-	-	-
2041	-	-	-	-	-	-	300	-	-	-
2042	-	-	-	-	-	-	100	-	-	-
2043	-	-	-	-	-	-	-	-	-	300
2044	-	-	-	-	-	-	-	-	-	300
2045	-	-	-	-	-	-	-	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	-	-	-	-
2048	-	-	-	-	-	-	-	-	-	-
2049	-	-	-	-	-	-	-	-	-	-
2050	-	-	-	-	-	-	-	-	-	-
Total MW	998	-	-	1,350	-	-	3,200	800	-	1,500

Appendix D: Generation Added by Type for each Resource Plan by Year

Energy Conservation Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	200	-	-	-
2029	-	-	-	-	-	-	300	-	-	-
2030	-	-	-	-	-	-	300	-	-	-
2031	-	-	-	-	-	-	300	-	-	-
2032	998	-	-	-	-	-	200	100	-	-
2033	-	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	300	-	-	-
2035	-	-	-	-	-	-	300	-	-	-
2036	-	-	-	-	-	-	300	-	-	-
2037	-	-	-	-	-	-	300	-	-	-
2038	-	-	-	-	-	-	100	200	-	-
2039	-	-	-	-	-	-	100	-	-	-
2040	-	-	-	-	-	-	-	-	-	-
2041	-	-	-	-	-	-	-	100	-	-
2042	-	-	-	-	-	-	200	-	-	-
2043	-	-	-	-	-	-	-	100	-	-
2044	-	-	-	-	-	-	100	-	-	-
2045	-	-	-	-	-	-	-	-	-	100
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	-	-	-	-
2048	-	-	-	-	-	-	-	-	-	100
2049	-	-	-	-	-	-	-	-	-	-
2050	-	-	-	-	-	-	-	-	-	-
Total MW	998	-	-	-	-	-	3,300	500	-	200

Appendix D: Generation Added by Type for each Resource Plan by Year

Aggressive Regulation Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	300	-	-	400
2029	-	-	105	-	-	-	-	300	-	-
2030	-	-	-	-	-	-	100	200	-	-
2031	-	-	-	-	-	-	100	200	-	-
2032	998	-	-	450	-	-	300	-	-	-
2033	-	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	300	-	-	200
2035	-	-	-	-	-	-	300	-	-	200
2036	-	-	-	-	-	-	200	100	-	-
2037	-	-	-	450	-	-	300	-	-	-
2038	-	-	-	-	-	-	300	-	-	-
2039	-	-	-	-	-	-	300	-	-	-
2040	-	-	-	-	-	-	300	-	-	100
2041	-	-	-	450	-	-	300	-	-	-
2042	-	-	-	-	-	-	300	-	-	-
2043	-	-	-	-	-	-	300	-	-	100
2044	-	-	-	-	-	-	200	-	-	100
2045	-	-	-	-	-	-	-	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	-	-	-	-
2048	-	-	-	-	-	-	-	-	-	-
2049	-	-	-	-	-	-	-	-	-	-
2050	-	-	-	-	-	-	-	-	-	-
Total MW	998	-	105	1,350	-	-	4,200	800	-	1,100

Appendix D: Generation Added by Type for each Resource Plan by Year

High DSM Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	100	-	-	-
2030	-	-	-	-	-	-	300	-	-	-
2031	-	-	-	-	-	-	300	-	-	-
2032	998	-	-	-	-	-	-	300	-	-
2033	-	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	300	-	-	-
2035	-	-	-	-	-	-	300	-	-	-
2036	-	-	-	-	-	-	300	-	-	100
2037	-	-	-	-	-	-	300	-	-	-
2038	-	-	-	-	-	-	200	100	-	100
2039	-	-	-	-	-	-	300	-	-	100
2040	-	-	-	-	-	-	200	100	-	-
2041	-	-	-	-	-	-	100	100	-	-
2042	-	-	-	-	-	-	300	-	-	100
2043	-	-	-	-	-	-	200	100	-	-
2044	-	-	-	450	-	-	200	-	-	-
2045	-	-	-	-	-	-	-	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	-	-	-	-
2048	-	-	-	-	-	-	-	-	-	-
2049	-	-	-	-	-	-	-	100	-	-
2050	-	-	-	-	-	-	-	-	-	-
Total MW	998	-	-	450	-	-	3,700	800	-	400

Appendix D: Generation Added by Type for each Resource Plan by Year

Low DSM Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	300	-	-	-
2030	-	-	-	-	-	-	300	-	-	-
2031	-	-	-	-	-	-	300	-	-	-
2032	998	-	-	-	-	-	-	300	-	-
2033	-	-	-	-	-	-	300	-	-	-
2034	-	-	-	-	-	-	200	100	-	-
2035	-	-	-	-	-	-	300	-	-	-
2036	-	-	-	-	-	-	300	-	-	100
2037	-	-	-	-	-	-	300	-	-	-
2038	-	-	-	-	-	-	-	300	-	-
2039	-	-	-	-	-	-	300	-	-	100
2040	-	-	-	-	-	-	300	-	-	100
2041	-	-	-	-	-	-	100	100	-	-
2042	-	-	-	-	-	-	200	-	-	100
2043	-	-	-	-	-	-	300	-	-	100
2044	-	-	-	450	-	-	300	-	-	-
2045	-	-	-	-	-	-	-	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	-	-	-	-
2048	-	-	-	-	-	-	100	-	-	-
2049	-	-	-	-	-	-	-	-	-	-
2050	-	-	-	-	-	-	-	-	-	-
Total MW	998	-	-	450	-	-	3,900	800	-	500

Appendix D: Generation Added by Type for each Resource Plan by Year

85% Carbon Constrained Build Plan										
Year	CC 50% Shared	Other CC	CT Aero	CT Frame	SMR	Solar	Solar PPA	Hybrid Solar & Storage	Off Shore WInd	Battery
2025	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	300	-	-	-
2029	-	-	-	-	-	-	300	-	-	-
2030	-	-	-	-	-	-	300	-	-	-
2031	-	-	-	-	-	-	300	-	-	-
2032	998	-	-	-	-	-	100	200	-	100
2033	-	-	-	-	-	-	100	200	-	-
2034	-	-	-	-	-	-	-	300	-	-
2035	-	-	-	-	-	-	-	300	-	600
2036	-	-	-	-	-	-	300	-	500	-
2037	-	-	-	-	-	-	300	-	500	-
2038	-	-	-	-	-	-	300	-	500	-
2039	-	-	-	-	-	-	300	-	500	-
2040	-	-	-	-	274	-	300	-	-	-
2041	-	-	-	-	274	-	-	-	-	-
2042	-	-	-	-	274	-	-	-	-	-
2043	-	-	-	-	274	-	-	-	-	-
2044	-	-	-	-	274	-	-	-	-	-
2045	-	-	-	-	-	-	-	-	-	-
2046	-	-	-	-	-	-	-	-	-	-
2047	-	-	-	-	-	-	-	-	-	-
2048	-	-	-	-	-	-	-	-	-	-
2049	-	-	-	-	-	-	-	-	-	-
2050	-	-	-	-	-	-	-	-	-	-
Total MW	998	-	-	-	1,370	-	2,900	1,000	2,000	700

Appendix E: Energy from Renewable Generation Summed by Five-year Period for the Twenty-Four Cases

Energy from Renewable Generation by Five-Year Period (GWh)								
Market Scenario	Build Plan	2025 - 2029	2030 - 2034	2035 - 2039	2040 - 2044	2045 - 2049	2050	Total
Reference	Updated 2023 Reference Build Plan	17,741	33,126	47,451	56,116	63,096	12,832	230,362
Reference	2025 Reference Build Plan	13,471	25,486	40,864	53,357	57,169	11,175	201,521
Reference	High Fossil Fuel Prices Build Plan	14,838	28,601	41,814	54,075	57,277	11,182	207,787
Reference	Zero Carbon Cost Build Plan	12,787	22,092	37,519	46,794	52,201	10,496	181,889
Reference	Alternate Reference Build Plan	13,243	24,340	39,900	53,046	56,041	10,876	197,447
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	17,738	33,128	47,470	56,146	63,135	12,831	230,447
High Fossil Fuel Prices	2025 Reference Build Plan	13,472	25,483	40,884	53,370	57,238	11,176	201,624
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	14,840	28,583	41,838	54,116	57,310	11,179	207,865
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	12,788	22,097	37,536	46,825	52,248	10,489	181,981
High Fossil Fuel Prices	Alternate Reference Build Plan	13,244	24,318	39,917	53,076	56,069	10,894	197,516
Zero Carbon Cost	Updated 2023 Reference Build Plan	17,740	33,129	47,440	56,079	62,924	12,783	230,095
Zero Carbon Cost	2025 Reference Build Plan	13,472	25,489	40,833	53,271	57,065	11,149	201,279
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	14,835	28,592	41,772	53,998	57,177	11,144	207,519
Zero Carbon Cost	Zero Carbon Cost Build Plan	12,787	22,093	37,512	46,779	52,178	10,479	181,828
Zero Carbon Cost	Alternate Reference Build Plan	13,243	24,340	39,900	53,046	56,041	10,876	197,447
Sensitivity	Electrification Build Plan	13,486	25,546	41,697	53,926	53,358	9,945	197,959
Sensitivity	Energy Conservation Build Plan	14,384	27,530	40,476	46,236	48,206	9,192	186,025
Sensitivity	Aggressive Regulation Build Plan	14,852	28,956	45,031	58,906	61,954	11,659	221,357
Sensitivity	High DSM Build Plan	13,015	23,230	38,720	51,522	55,472	10,798	192,756
Sensitivity	Low DSM Build Plan	13,470	25,487	40,724	53,104	57,609	11,204	201,597
Sensitivity	85% Carbon Constrained Build Plan	14,836	28,864	60,524	83,963	84,012	16,008	288,208

Appendix F: Residential Bill Impacts for the Twenty-One Cases

Typical Residential Bill @1000 kWh/month under Reference Market Scenario															
Build Plan	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Updated 2023 Reference Build Plan	147.81	149.83	153.73	149.95	153.41	163.95	182.99	191.24	195.46	202.74	205.72	219.71	222.48	226.36	231.35
2025 Reference Build Plan	147.81	149.23	152.08	146.62	145.85	154.54	158.44	186.20	189.78	192.73	194.88	205.44	208.64	214.72	217.77
High Fossil Fuel Prices Build Plan	147.81	149.23	152.08	147.70	146.88	155.61	159.51	187.18	190.69	194.02	196.17	206.88	209.88	215.69	219.09
Zero Carbon Cost Build Plan	147.81	149.23	152.08	146.62	144.96	153.59	157.52	185.51	189.04	191.66	194.15	204.84	208.09	214.49	217.70
Alternate Reference Build Plan	147.81	149.24	152.10	146.64	145.55	147.32	151.22	159.02	182.50	185.80	186.69	196.51	199.87	205.43	209.24

Typical Residential Bill @1000 kWh/month under High Fossil Fuel Market Scenario															
Build Plan	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Updated 2023 Reference Build Plan	147.81	149.96	154.03	157.63	162.10	172.71	193.62	202.87	207.58	215.33	218.27	232.03	235.03	238.43	243.84
2025 Reference Build Plan	147.81	149.35	152.38	154.96	154.41	163.23	167.64	198.93	203.10	205.76	208.55	218.85	222.06	227.87	230.91
High Fossil Fuel Prices Build Plan	147.81	149.35	152.38	155.73	155.12	163.94	168.37	199.32	203.53	206.77	209.60	219.69	223.00	228.62	232.26
Zero Carbon Cost Build Plan	147.81	149.35	152.38	154.96	153.86	162.66	167.11	198.68	202.74	205.47	208.21	218.71	221.86	227.91	231.36
Alternate Reference Build Plan	147.81	149.35	152.39	154.96	154.22	155.65	159.84	168.91	193.08	196.75	198.79	209.09	212.21	217.50	221.34

Typical Residential Bill @1000 kWh/month under Zero Carbon Cost Market Scenario															
Build Plan	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Updated 2023 Reference Build Plan	147.81	149.96	154.02	148.39	151.96	162.62	181.67	189.92	193.77	200.19	202.38	209.87	211.53	213.89	217.84
2025 Reference Build Plan	147.81	149.35	152.37	144.94	144.41	153.15	157.16	184.67	187.94	190.05	191.21	194.92	196.93	201.58	203.70
High Fossil Fuel Prices Build Plan	147.81	149.35	152.38	146.07	145.47	154.26	158.27	185.75	188.93	191.37	192.59	196.34	198.35	202.57	204.86
Zero Carbon Cost Build Plan	147.81	149.35	152.38	144.96	143.49	152.18	156.24	184.09	187.18	188.98	190.37	193.95	195.98	201.49	202.89
Alternate Reference Build Plan	147.81	149.35	152.39	144.94	144.09	145.93	149.93	157.64	180.81	183.25	183.33	186.19	188.45	192.75	195.42

Typical Residential Bill @1000 kWh/month under Sensitivity Cases															
Build Plan	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Electrification Build Plan	147.81	149.68	154.68	154.44	161.80	171.36	178.81	217.31	219.29	222.47	224.31	228.48	242.07	244.18	245.80
Energy Conservation Build Plan	147.81	149.38	152.19	155.08	154.19	162.71	166.79	195.84	199.70	201.85	204.08	212.04	214.96	218.01	220.30
Aggressive Regulation Build Plan	147.81	150.12	154.95	174.20	184.21	195.79	203.78	241.29	248.02	251.86	258.35	265.67	277.57	282.77	284.88
High DSM Build Plan	147.81	149.21	152.11	146.60	145.18	153.90	157.76	185.74	189.31	191.36	193.77	204.81	207.61	213.22	217.35
Low DSM Build Plan	147.81	149.17	152.95	146.36	145.53	154.75	158.16	186.19	189.34	193.37	194.56	205.22	208.67	214.27	219.73
85% CO2 Reduction Build Plan	147.81	149.23	152.10	147.67	146.87	155.64	159.50	186.79	191.92	195.68	209.77	234.40	255.69	276.57	298.13

Appendix G: Retail Rate Impacts for the Twenty-One Cases

Retail Rate Impacts (dollars/kWh) under Reference Market Scenario															
Build Plan	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Updated 2023 Reference Build Plan	0.1196	0.1215	0.1246	0.1213	0.1239	0.1316	0.1456	0.1515	0.1548	0.1603	0.1628	0.1745	0.1769	0.1804	0.1843
2025 Reference Build Plan	0.1196	0.1212	0.1236	0.1193	0.1188	0.1252	0.1283	0.1483	0.1514	0.1537	0.1554	0.1648	0.1676	0.1724	0.1748
High Fossil Fuel Prices Build Plan	0.1196	0.1212	0.1236	0.1199	0.1193	0.1258	0.1289	0.1488	0.1518	0.1545	0.1562	0.1657	0.1683	0.1731	0.1758
Zero Carbon Cost Build Plan	0.1196	0.1212	0.1236	0.1193	0.1183	0.1247	0.1278	0.1481	0.1511	0.1531	0.1551	0.1647	0.1675	0.1725	0.1753
Alternate Reference Build Plan	0.1196	0.1212	0.1236	0.1194	0.1186	0.1200	0.1231	0.1293	0.1457	0.1483	0.1492	0.1579	0.1608	0.1654	0.1683

Retail Rate Impacts (dollars/kWh) under High Fossil Fuel Market Scenario															
Build Plan	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Updated 2023 Reference Build Plan	0.1196	0.1217	0.1249	0.1289	0.1324	0.1402	0.1560	0.1629	0.1666	0.1726	0.1750	0.1865	0.1891	0.1922	0.1964
2025 Reference Build Plan	0.1196	0.1213	0.1239	0.1275	0.1271	0.1337	0.1373	0.1607	0.1643	0.1663	0.1686	0.1778	0.1806	0.1851	0.1875
High Fossil Fuel Prices Build Plan	0.1196	0.1213	0.1239	0.1278	0.1274	0.1339	0.1375	0.1606	0.1643	0.1668	0.1692	0.1782	0.1810	0.1856	0.1886
Zero Carbon Cost Build Plan	0.1196	0.1213	0.1239	0.1275	0.1270	0.1336	0.1372	0.1609	0.1644	0.1665	0.1687	0.1781	0.1808	0.1855	0.1885
Alternate Reference Build Plan	0.1196	0.1213	0.1239	0.1275	0.1271	0.1281	0.1315	0.1389	0.1559	0.1589	0.1610	0.1701	0.1728	0.1771	0.1800

Retail Rate Impacts (dollars/kWh) under Zero Carbon Cost Market Scenario															
Build Plan	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Updated 2023 Reference Build Plan	0.1196	0.1217	0.1249	0.1198	0.1225	0.1303	0.1443	0.1503	0.1532	0.1579	0.1595	0.1650	0.1663	0.1684	0.1712
2025 Reference Build Plan	0.1196	0.1213	0.1239	0.1177	0.1174	0.1239	0.1270	0.1469	0.1496	0.1511	0.1518	0.1547	0.1563	0.1597	0.1612
High Fossil Fuel Prices Build Plan	0.1196	0.1213	0.1239	0.1183	0.1179	0.1245	0.1277	0.1474	0.1501	0.1519	0.1527	0.1556	0.1572	0.1604	0.1621
Zero Carbon Cost Build Plan	0.1196	0.1213	0.1239	0.1177	0.1169	0.1233	0.1266	0.1467	0.1493	0.1505	0.1515	0.1541	0.1558	0.1600	0.1609
Alternate Reference Build Plan	0.1196	0.1213	0.1239	0.1177	0.1172	0.1186	0.1218	0.1279	0.1440	0.1458	0.1460	0.1480	0.1498	0.1531	0.1549

Retail Rate Impacts (dollars/kWh) under Sensitivity Cases															
Build Plan	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**
Electrification Build Plan	0.1196	0.1217	0.1260	0.1255	0.1308	0.1369	0.1421	0.1668	0.1681	0.1700	0.1709	0.1740	0.1829	0.1845	0.1855
Energy Conservation Build Plan	0.1196	0.1213	0.1237	0.1273	0.1266	0.1329	0.1361	0.1577	0.1611	0.1628	0.1646	0.1718	0.1743	0.1766	0.1786
Aggressive Regulation Build Plan	0.1196	0.1221	0.1263	0.1427	0.1501	0.1579	0.1637	0.1876	0.1930	0.1953	0.1999	0.2056	0.2132	0.2173	0.2188
High DSM Build Plan	0.1196	0.1212	0.1236	0.1193	0.1184	0.1248	0.1279	0.1480	0.1511	0.1526	0.1546	0.1644	0.1668	0.1713	0.1745
Low DSM Build Plan	0.1196	0.1211	0.1245	0.1191	0.1185	0.1254	0.1281	0.1484	0.1510	0.1543	0.1551	0.1647	0.1677	0.1722	0.1768
85% CO2 Reduction Build Plan	0.1196	0.1212	0.1236	0.1199	0.1193	0.1258	0.1289	0.1483	0.1525	0.1552	0.1658	0.1844	0.1995	0.2142	0.2295

Appendix H: Levelized Cost and Fuel Cost Comparison for the Twenty-One Cases

Market Scenario	Build Plan	Fuel ($000)	CO2 ($000)	LNPV ($000)
Reference	Updated 2023 Reference Build Plan	$697,327	$160,100	$2,629,814
Reference	2025 Reference Build Plan	$732,830	$168,022	$2,393,372
Reference	High Fossil Fuel Prices Build Plan	$723,325	$167,487	$2,406,974
Reference	Zero Carbon Cost Build Plan	$760,010	$176,336	$2,399,077
Reference	Alternate Reference Build Plan	$718,160	$164,804	$2,303,000
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	$918,925	$160,016	$2,852,047
High Fossil Fuel Prices	2025 Reference Build Plan	$962,782	$167,805	$2,624,528
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	$949,043	$167,207	$2,633,665
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	$999,477	$176,125	$2,639,756
High Fossil Fuel Prices	Alternate Reference Build Plan	$931,848	$166,833	$2,518,609
Zero Carbon Cost	Updated 2023 Reference Build Plan	$622,174	$0	$2,392,817
Zero Carbon Cost	2025 Reference Build Plan	$653,891	$0	$2,144,896
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	$644,794	$0	$2,159,310
Zero Carbon Cost	Zero Carbon Cost Build Plan	$678,469	$0	$2,140,005
Zero Carbon Cost	Alternate Reference Build Plan	$641,286	$0	$2,060,440
Sensitivity Case	Electrification Build Plan	$791,318	$0	$2,660,551
Sensitivity Case	Energy Conservation Build Plan	$882,688	$149,574	$2,413,999
Sensitivity Case	Aggressive Regulation Build Plan	$1,094,795	$395,409	$3,410,745
Sensitivity Case	High DSM Build Plan	$740,579	$169,377	$2,376,068
Sensitivity Case	Low DSM Build Plan	$735,549	$166,982	$2,396,449
Supplemental Case	85% CO2 Reduction Plan	$517,176	$55,621	$3,527,990

Appendix I: Summary of CO2 Emissions for all Twenty-One Cases

Market Scenario	Build Plan	2050 CO_2 Emissions	2050 Reduction from 2005 CO_2	2050 Cumulative CO_2
Reference	Updated 2023 Reference Build Plan	8,195	56.8%	192,014
Reference	2024 Reference Build Plan	8,671	54.3%	207,357
Reference	High Fossil Fuel Prices Build Plan	8,666	54.3%	204,258
Reference	Zero Carbon Cost Build Plan	8,966	52.8%	215,956
Reference	Alternate Reference Build Plan	8,551	54.9%	210,880
High Fossil Fuel Prices	Updated 2023 Reference Build Plan	8,200	56.8%	197,744
High Fossil Fuel Prices	2024 Reference Build Plan	8,669	54.3%	216,543
High Fossil Fuel Prices	High Fossil Fuel Prices Build Plan	8,664	54.3%	213,456
High Fossil Fuel Prices	Zero Carbon Cost Build Plan	8,970	52.7%	225,029
High Fossil Fuel Prices	Alternate Reference Build Plan	8,539	55.0%	232,327
Zero Carbon Cost	Updated 2023 Reference Build Plan	8,274	56.4%	191,851
Zero Carbon Cost	2024 Reference Build Plan	8,721	54.0%	207,226
Zero Carbon Cost	High Fossil Fuel Prices Build Plan	8,726	54.0%	204,075
Zero Carbon Cost	Zero Carbon Cost Build Plan	9,020	52.5%	215,971
Zero Carbon Cost	Alternate Reference Build Plan	8,577	54.8%	210,018
Sensitivity Case	Electrification Build Plan	9,541	49.7%	247,419
Sensitivity Case	Energy Conservation Build Plan	7,501	60.5%	201,290
Sensitivity Case	Aggressive Regulation Build Plan	8,771	53.8%	238,198
Sensitivity Case	High DSM Build Plan	8,743	53.9%	209,137
Sensitivity Case	Low DSM Build Plan	8,599	54.7%	205,799
Supplemental Case	85% CO2 Reduction Build Plan	2,327	87.7%	136,088

Appendix J: Generator Level Performance Data

Availability factor					
Generator	**2020**	**2021**	**2022**	**2023**	**2024**
COLUMBIA CT1	78.2%	86.2%	64.7%	76.6%	90.4%
COLUMBIA CT2	77.3%	72.9%	89.0%	61.0%	89.1%
COLUMBIA ST1	80.1%	88.6%	89.5%	77.2%	92.0%
COPE STATION #1	47.5%	92.5%	81.4%	72.3%	87.4%
FAIRFIELD PS #1	90.5%	98.7%	77.8%	97.5%	93.6%
FAIRFIELD PS #2	90.5%	98.8%	77.6%	97.4%	93.6%
FAIRFIELD PS #3	88.4%	99.5%	92.4%	95.8%	92.3%
FAIRFIELD PS #4	88.1%	99.4%	92.1%	95.7%	94.4%
FAIRFIELD PS #5	99.8%	94.2%	96.4%	88.9%	98.5%
FAIRFIELD PS #6	99.7%	94.3%	97.0%	88.9%	98.5%
FAIRFIELD PS #7	97.6%	92.4%	84.4%	88.9%	99.5%
FAIRFIELD PS #8	97.6%	91.7%	86.2%	88.7%	99.4%
HAGOOD GT #4	94.8%	97.4%	98.8%	95.5%	97.3%
HAGOOD GT #5	99.2%	80.8%	99.6%	99.0%	97.5%
HAGOOD GT #6	99.8%	98.8%	99.6%	97.0%	97.6%
JASPER #1	92.2%	86.3%	83.3%	90.9%	79.9%
JASPER #2	89.5%	81.7%	87.3%	92.9%	81.0%
JASPER #3	89.4%	78.6%	87.5%	91.9%	80.2%
JASPER #4	94.0%	88.3%	86.1%	94.6%	82.6%
MCMEEKIN #1	96.2%	82.6%	81.4%	82.4%	71.4%
MCMEEKIN #2	90.0%	87.9%	87.1%	84.9%	89.6%
PARR GT #3	99.7%	97.9%	97.9%	22.0%	n/a
PARR GT #4	100.0%	97.0%	100.0%	24.6%	n/a
SALUDA HYDRO #1	68.8%	98.8%	18.2%	93.7%	51.3%
SALUDA HYDRO #2	98.1%	100.0%	86.5%	98.8%	93.3%
SALUDA HYDRO #3	98.9%	100.0%	89.8%	99.2%	85.5%
SALUDA HYDRO #4	95.3%	94.5%	85.4%	90.6%	98.1%
SALUDA HYDRO #5	95.6%	91.3%	93.0%	99.9%	90.0%
URQUHART #1	87.9%	96.6%	88.8%	92.5%	0.0%
URQUHART #2	84.5%	81.2%	89.5%	95.6%	0.0%
URQUHART #3	94.6%	92.1%	98.6%	93.0%	95.1%
URQUHART CC #5	87.9%	96.7%	88.8%	92.5%	59.7%
URQUHART CC #6	87.2%	81.5%	89.8%	95.6%	88.2%
URQUHART GT #4	98.0%	89.8%	89.1%	28.5%	0.0%
V.C. SUMMER #1	91.1%	82.3%	100.0%	87.9%	86.9%
WATEREE #1	73.5%	81.5%	76.4%	37.5%	81.3%
WATEREE #2	10.8%	0.0%	58.3%	80.6%	73.4%
WILLIAMS #1	84.6%	72.2%	72.5%	75.1%	77.5%
WILLIAMS GT #1	0.0%	0.0%	0.0%	n/a	100.0%
WILLIAMS GT #2	99.8%	99.6%	66.3%	n/a	n/a

Appendix J: Generator Level Performance Data

Annual Forced Outage Rate					
Generator	**2020**	**2021**	**2022**	**2023**	**2024**
COLUMBIA CT1	0.5%	8.0%	2.6%	0.1%	0.4%
COLUMBIA CT2	1.2%	8.0%	0.8%	1.3%	0.3%
COLUMBIA ST1	0.1%	7.7%	0.4%	0.0%	0.0%
COPE STATION #1	1.2%	0.3%	10.2%	0.0%	0.2%
FAIRFIELD PS #1	0.1%	0.0%	0.0%	0.0%	0.3%
FAIRFIELD PS #2	0.1%	0.0%	0.0%	0.0%	0.3%
FAIRFIELD PS #3	0.0%	0.0%	0.0%	0.0%	0.0%
FAIRFIELD PS #4	0.3%	0.1%	0.0%	0.0%	0.0%
FAIRFIELD PS #5	0.0%	0.0%	0.1%	0.0%	0.2%
FAIRFIELD PS #6	0.0%	0.0%	0.1%	0.0%	0.2%
FAIRFIELD PS #7	1.5%	0.0%	0.1%	0.0%	0.2%
FAIRFIELD PS #8	1.5%	0.0%	0.1%	0.0%	0.2%
HAGOOD GT #4	0.1%	0.2%	0.1%	1.1%	1.9%
HAGOOD GT #5	0.1%	1.1%	0.0%	0.2%	0.1%
HAGOOD GT #6	0.1%	0.9%	0.0%	2.1%	0.0%
JASPER #1	0.0%	0.0%	0.2%	0.0%	0.0%
JASPER #2	0.0%	0.1%	0.0%	0.0%	0.2%
JASPER #3	0.0%	0.0%	0.5%	0.1%	0.2%
JASPER #4	0.0%	0.0%	1.8%	0.0%	0.0%
MCMEEKIN #1	0.0%	0.0%	3.7%	0.0%	0.0%
MCMEEKIN #2	3.0%	0.1%	0.9%	1.3%	0.0%
PARR GT #3	0.3%	0.0%	2.1%	2.6%	n/a
PARR GT #4	0.0%	0.9%	0.0%	0.0%	n/a
SALUDA HYDRO #1	31.1%	0.0%	0.0%	0.0%	0.0%
SALUDA HYDRO #2	1.8%	0.0%	0.0%	0.0%	0.0%
SALUDA HYDRO #3	0.5%	0.0%	0.0%	0.1%	0.0%
SALUDA HYDRO #4	4.2%	0.0%	0.0%	0.0%	0.0%
SALUDA HYDRO #5	4.3%	0.0%	2.5%	0.0%	0.0%
URQUHART #1	0.3%	0.8%	0.6%	0.1%	0.0%
URQUHART #2	3.4%	4.3%	1.4%	0.0%	0.0%
URQUHART #3	2.4%	0.0%	0.5%	1.1%	1.9%
URQUHART CC #5	0.3%	0.8%	0.6%	0.1%	0.2%
URQUHART CC #6	0.8%	4.1%	1.2%	0.0%	0.5%
URQUHART GT #4	0.4%	8.9%	9.9%	69.2%	100.0%
V.C. SUMMER #1	0.7%	7.5%	0.0%	3.9%	0.0%
WATEREE #1	0.1%	0.4%	2.5%	1.2%	0.2%
WATEREE #2	88.1%	100.0%	38.7%	1.6%	0.6%
WILLIAMS #1	0.1%	0.1%	0.5%	0.0%	9.3%
WILLIAMS GT #1	100.0%	0.0%	n/a	n/a	0.0%
WILLIAMS GT #2	0.2%	0.0%	0.2%	n/a	n/a

Appendix J: Generator Level Performance Data

Annual Capacity Factor					
Generator	**2020**	**2021**	**2022**	**2023**	**2024**
COLUMBIA CT1	68.6%	76.7%	60.0%	62.3%	64.7%
COLUMBIA CT2	66.2%	55.2%	77.1%	50.3%	70.8%
COLUMBIA ST1	49.3%	44.1%	44.9%	40.2%	58.9%
COPE STATION #1	26.5%	43.9%	47.4%	37.8%	46.0%
FAIRFIELD PS #1	8.9%	9.5%	3.2%	0.3%	0.4%
FAIRFIELD PS #2	8.4%	9.1%	8.9%	10.5%	13.1%
FAIRFIELD PS #3	8.0%	4.5%	10.3%	10.7%	13.0%
FAIRFIELD PS #4	8.7%	5.3%	10.4%	10.8%	12.4%
FAIRFIELD PS #5	8.3%	8.4%	11.9%	9.0%	14.0%
FAIRFIELD PS #6	8.1%	6.6%	8.2%	3.7%	8.3%
FAIRFIELD PS #7	8.5%	8.4%	7.6%	8.3%	1.4%
FAIRFIELD PS #8	8.6%	6.7%	8.3%	9.8%	12.0%
HAGOOD GT #4	2.1%	2.3%	2.5%	2.2%	1.8%
HAGOOD GT #5	2.1%	3.0%	2.6%	1.6%	0.8%
HAGOOD GT #6	2.6%	3.7%	2.9%	1.8%	1.0%
JASPER #1	74.1%	69.7%	68.6%	70.5%	55.9%
JASPER #2	74.4%	66.9%	71.8%	74.5%	56.0%
JASPER #3	74.3%	67.2%	70.3%	69.7%	59.9%
JASPER #4	58.7%	52.3%	54.1%	56.5%	44.0%
MCMEEKIN #1	45.5%	40.2%	35.0%	29.1%	26.5%
MCMEEKIN #2	47.5%	43.8%	34.1%	37.5%	48.2%
PARR GT #3	0.9%	0.6%	0.6%	0.0%	0.0%
PARR GT #4	1.0%	0.5%	1.0%	0.0%	0.0%
SALUDA HYDRO #1	3.9%	3.2%	3.8%	7.2%	3.1%
SALUDA HYDRO #2	8.3%	4.1%	2.2%	3.1%	6.6%
SALUDA HYDRO #3	24.2%	13.0%	10.5%	10.1%	8.8%
SALUDA HYDRO #4	25.8%	12.8%	4.5%	7.0%	8.4%
SALUDA HYDRO #5	17.8%	6.7%	9.9%	5.6%	11.3%
URQUHART #1	56.9%	63.7%	54.3%	53.8%	n/a
URQUHART #2	48.2%	52.4%	56.6%	53.4%	n/a
URQUHART #3	5.6%	11.2%	5.1%	11.3%	9.3%
URQUHART CC #5	46.5%	52.8%	45.5%	44.5%	24.8%
URQUHART CC #6	38.2%	43.6%	46.3%	43.0%	34.8%
URQUHART GT #4	5.2%	6.8%	4.6%	0.3%	0.0%
V.C. SUMMER #1	89.1%	82.7%	101.5%	88.8%	87.5%
WATEREE #1	27.0%	50.4%	34.6%	14.5%	47.6%
WATEREE #2	0.8%	0.0%	25.9%	43.7%	27.0%
WILLIAMS #1	50.2%	45.7%	32.7%	37.5%	36.0%
WILLIAMS GT #1	0.0%	0.0%	n/a	n/a	3.4%
WILLIAMS GT #2	0.1%	0.1%	0.0%	n/a	n/a

Appendix K: Cross Reference to the Requirements of the IRP Statute for an Annual IRP Update and Response to Commission Order No. 2024-791

This section of Appendix K lists each of the specific statutory requirements for an annual IRP update. Material responsive to these requirements is provided throughout the 2025 IRP Update and is embedded in the modeling and analysis generally. This table cross references the sections of this 2025 IRP Update that most specifically correspond to those requirements:

Act No. 62 58-37-40	Requirement	2025 IRP Update Section
(D)(1)	[A]n update to the electric utility's base planning assumptions relative to its most recently accepted integrated resource plan, including, but not limited to: energy and demand forecast, commodity fuel price inputs, renewable energy forecast, energy efficiency and demand-side management forecasts, changes to projected retirement dates of existing units, along with other inputs the commission deems to be for the public interest. The electrical utility's annual update must describe the impact of the updated base planning assumptions on the selected resource plan.	Energy and Demand forecast (p. 53); Commodity Fuel Price Inputs (p. 59); Renewable Energy Forecast (pp. 69, 109 and Appendix E); Energy Efficiency and Demand-side Management Forecasts (p. 58); Changes to Projected Retirement Dates of Existing Units (pp. 2, 21, 118); Selected Resource Plan Analysis (p. 3, 65, 72, 106)

Appendix K: Cross Reference to the Requirements of the IRP Statute for an Annual IRP Update and Response to Commission Order No. 2024-791

In Order No. 2024-791 the Commission directed DESC to review and address the comments and recommendations of ORS and intervenors as part of the Stakeholder Working Group or 2025 IRP Update. This section provides a response to those items.		
Order No. 2024-791	**Requirement/ Recommendation**	**Responses**
P. 41	The Company shall consider and address the eight (8) recommendations raised by the ORS Report, as well as the comments from all parties, by testimony or other appropriate manner in its upcoming 2025 IRP Update.	Each of these matters have been addressed in Reply Comments, Stakeholder Working Group, or the 2025 IRP Update.
ORS Recommendations		
Energy and Demand Forecasts Recommendations	B1. ORS recommends DESC monitor, track, and file annual reports related to the forecasted versus actual load consumption for economic development load in future IRPs and IRP Updates.	DESC will report forecast versus actual economic development in the 2026 IRP and subsequent IRP filings.
	B2. ORS recommends DESC further discuss the methodology for load forecasting, including economic development load, in the Stakeholder Working Group.	DESC discusses annually the load forecast methodology and economic development load with the Stakeholder Working Group. The Stakeholders and the Company collaborate to set the agendas for Stakeholder meetings based on the most timely and important issues for Stakeholders. In some case, Stakeholders have prioritized issues other than those highlighted by ORS in its 2024 Report as shown in the agendas, presentation materials and minutes filed with the Commission.

	B3. ORS recommends DESC include additional near-term load growth in the high load forecast sensitivity in the 2025 IRP Update.	For its high load growth scenario, DESC incorporated the results of a new electrification study (the "Electrification Study") and the addition of near-term load growth from potential economic development (2025 IRP Update, p. 56).
Commodity and Carbon Dioxide ("CO2") Price Recommendations	D1. ORS recommends DESC evaluate a revised or additional high CO2 price forecast case in the 2025 IRP Update. The revised CO2 modeling should include an earlier start date for CO2 costs and CO2 prices in line with peer utilities.	For the high view of CO_2 prices, DESC assumed that CO_2 prices would be 150% of the medium CO_2 price forecast starting in 2028. The price escalates to $162.81/Mton by 2050 (2025 IRP Update, p. 61).
	D2. ORS recommends DESC further evaluate hydrogen availability, blending, and price forecasting assumptions in the Stakeholder Working Group.	Green/ Low GHG hydrogen is not a selectable candidate resource in the 2025 IRP Update based on lack of commercial availability and uncertainty with cost forecasts (2025 IRP Update, p. 35). DESC intends to continue monitoring developments around hydrogen; however, it did not model hydrogen as a selectable resource in its 2025 IRP Update (2025 IRP Update, p. 60).
Renewable Energy and Energy Storage Forecast Recommendations	E1. ORS recommends DESC update its EPA Carbon Rule case modeling assumptions in the 2025 IRP Update to reflect the latest guidance available at the time the modeling is performed.	DESC did not model the Proposed GHG Rule Build Plan supplemental case in the 2025 IRP Update but included GHG compliance costs in modeling four of the five Core Build Plans. Discussion of the latest guidance regarding GHG Rules and Other Power Plant Regulations are available at pp. 36 and 50 of 2025 IRP Update.

	E2. ORS recommends DESC discuss future updates related to the Inflation Reduction Act ("IRA") and Infrastructure Investment and Jobs Act ("IIJA") incentives, including modeling Energy Infrastructure Reinvestment Loan Program opportunities, in the Stakeholder Working Group, and incorporate any modeling adjustments in the 2025 IRP Update.	See discussion of IIJA and IRA at pp. 33-35 of 2025 IRP Update.
Retirements and New Resource Decisions Recommendations	F1. ORS recommends DESC explain in Reply Comments the timeline for the Wateree replacement capacity All-Source RFP, the ELG study, transmission planning, construction of generation capacity, pipeline and transmission infrastructure, and how these activities interact.	2025 IRP Update, pp. 6-8, 118-20. *See* DESC Reply Comments, pp 4-9.
Intervenor Comments		DESC provided responses to comments filed by intervenors in its Reply Comments filed in Docket No. 2024-9-E on September 26, 2024. Intervenors made multiple inappropriate requests for the Commission to use IRP update proceedings to order changes in the scope, inputs or methodology of filings in future proceedings. DESC took issue with the suggestions and conclusions alleged by the intervenors which add unnecessary complexity and burden to the IRP processes and do not aid DESC in planning a reliable, affordable, and resilient generating system.
Joint Commenters Recommendations	DESC must conduct a transmission impact analysis ("TIA") that explores alternatives to a large combined cycle gas plant at Canadys, including BESS at the Williams site or a combination of BESS at Williams and smaller gas builds, which the Joint Commenters' analysis—the Telos TIA—demonstrates may help to avoid the costly transmission upgrades identified in the most recent DESC TIA while maintaining grid reliability	DESC Reply Comments, pp 11 – 12

	DESC must evaluate the cost of adding tranches of energy-only solar to its system using available headroom at existing interconnection points and, then compare that to the cost of adding these same resources under the existing interconnection process. If this route could provide a cost-effective route to bring cost-effective energy online, DESC should take the steps outlined in our below comments to examine how best to allow energy-only generators to bid into utility procurements	DESC Reply Comments, p. 12
	DESC must include an analysis in its 2025 IRP Update that adequately addresses the cost implications of the multiple compliance pathways and retirement scenarios under the 2024 ELG Rule and the Section 111 Rule to ensure that their customers are not continuing to pay for uneconomic coal	DESC Reply Comments, p. 13
	DESC must evaluate ELCC of all resource types and include 8-hour storage ELCCs in its analysis. Penetration of batteries should also be assessed at greater levels in its next analysis to better capture their capability as they are added to the system in the near- and long- term.	DESC Reply Comments, pp. 13 – 14
	DESC must relax its solar build limit to 600 MW/yr and remove its battery storage limits in at least one core portfolio. In addition, DESC should assume that at least a portion of new battery resources qualify for the Energy Community bonus credit under the Inflation Reduction Act.	DESC Reply Comments, pp. 14 – 15
	DESC must use its ongoing Demand Side Management ("DSM") 5-year portfolio plan proceeding to identify higher levels of energy efficiency potential that can be accomplished through better programming in its territory. Depending on the outcome of that docket, we recommend that DESC use the high DSM case from its 2023 Market Potential Study in the next IRP update's preferred portfolio.	DESC Reply Comments, p. 15
	DESC must evaluate CO2 price forecasts beginning in the late 2020s	DESC Reply Comments, pp. 15 – 16
	DESC must explicitly evaluate the impact of managed charging on EV load assumptions in its IRP. Further, DESC must proactively evaluate other DERs such as demand response and "virtual power plans" as a way to shave peak demand in its next IRP update	DESC Reply Comments, p. 16
	Joint Commenters request that the Commission require DESC to provide a clear timeline for utilizing its Competitive Procurement for Renewable Energy ("CPRE") program consistent with the resource additions in its most recently approved IRP. DESC should update its CPRE program to enable the evaluation of solar plus storage resources intended to meet the capacity needs identified in DESC's IRP	DESC Reply Comments, pp. 16 – 17
	Joint Commenters request that the Commission require DESC to initiate an all-source request for proposals ("RFP") to identify a replacement resource for the Wateree coal plant by December 2025.	DESC Reply Comments, p. 17

	Joint Commenters request that the Commission clarify to DESC that approval of the IRP does not absolve DESC of its responsibility to fully engage with stakeholders, meaningfully consider recommendations, and strive for improvements to its planning process.	DESC Reply Comments, pp. 17 – 18
Walmart Recommendations	Walmart recommends that DESC continues to explore programs that encourage customers to reduce demand through DSM/EE efforts and other opportunities such as demand response programs, where customers are compensated for curtailing usage during grid emergencies	DESC Reply Comments, p. 18
	Walmart recommends that the Commission require DESC to continue collaborating with interested stakeholders in order to develop programs that support customer investment in on-site generation and storage and seek Commission approval for such programs within a reasonable time frame	DESC Reply Comments, pp. 18 – 19