

**FACTUAL BACKGROUND IN SUPPORT OF SACE, ET AL.'s MOTION FOR  
DECLARATORY JUDGMENT**

As required by governing law, the following factual background demonstrates the actual controversy that is caused by the differing interpretations of the legal requirements of H951. *N. Carolina Consumers Power, Inc. v. Duke Power Co.*, 285 N.C. 434, 449 (1974) (the movant must set forth all facts showing the actual controversy). As set forth in more detail below, much of the factual dispute in this case turns on whether Duke has taken all reasonable steps to meet the interim 2030 carbon emissions reduction requirements and whether the statutory deadline is firm or merely advisory.

- a. Duke's proposed plans are designed to not meet the 2030 Requirement on time.

Following two rounds of power sector modeling (filed in August of 2023 and January of 2024) under two different load forecasts (Spring 2023 and Fall 2023), including a number of variants and sensitivities, it would appear that Duke has presented the Commission with a wide range of options to consider. But this apparent variety is illusory. SACE, et al. Testimony of Roumpani at 10-13. All three main Pathways employ the same basic assumptions—with the exception of expanded resource availability for P1 and P2 Fall Supplemental. The second round of modeling was a response to the “substantial, material changes” to Duke’s load forecast that it argued justified departing from the traditional “snapshot in time” approach to identifying the assumptions used for long-term resource planning, driven by the practical reality that continual updating would be impossible. Supplemental Direct Testimony of Glen A. Snider at 2-3 (Nov. 30, 2023). The

Commission agreed that the Fall 2023 updated load forecast qualified as “extraordinary circumstances” that necessitated supplemental modeling and additional portfolio analysis. Order Scheduling Public Hearings, Establishing Interventions and Testimony Due Dates and Discovery Guidelines, Requiring Public Notice, and Providing Direction Regarding Duke’s Supplemental Modeling, *In the Matter of Biennial Consolidated Carbon Plan and Integrated Resource Plans of Duke Energy Carolinas, LLC, and Duke Energy Progress LLC, Pursuant to N.C.G.S. § 62-110.9 and § 62-110.1(c)*, Docket No. E-100, Sub 190 (N.C.U.C. Jan. 17, 2024) (January 17 Scheduling Order).

The key difference between the Pathways is the time when Duke would reach the interim carbon reduction requirement: in 2030 (P1), 2033 (P2), or 2035 (P3). 30(b)(6) Deposition of Duke Energy at 93-98 (excerpted pages attached as Exhibit 3). For those supplemental Pathways designed to meet the updated Fall 2023 load forecast, Duke’s sensitivities and variants are built off P3, including its supplemental modeling described in Rebuttal testimony to evaluate compliance with the EPA’s Final CAA Rule. *Id.*; IRP and Near-Term Actions Panel Rebuttal Panel at 59. Despite Duke’s observation that the three pathways converge by the end of the base planning period and ultimately result in a very similar mix of resources over the long term, it asks the Commission to put all of our eggs in the P3 basket. Carolinas Resource Plan, Executive Summary at 16 (Aug. 2023).

Duke’s initial modeling, based on the Spring 2023 load forecast, found a \$10 billion increase for the Carolinas combined present value revenue requirement (PVRR) for P1 versus P3 by 2038. Carolinas Resource Plan, Chapter 3, Portfolios,

at 26. But a significant portion of that increased PVRR is driven by Duke’s decision to include a 20% capital cost adder to all resources only in P1 over the entire planning horizon. *Id.* Removing that adder shrinks the PVRR difference between P1 Spring Base and P3 Spring Base from \$20 billion to \$8 billion by 2050. *Id.* This 20% adder was not a “precise analysis,” but instead a projection of how Duke thinks market factors would lead to increased capital costs under P1. 30(b)(6) Deposition Tr. at 103-04. The anticipated capacity factor of fossil resources, including new gas plants, drop when additional carbon-free resources are brought online to meet the net-zero requirement of 2050. 30(b)(6) Deposition Tr. at 147-48; Roumpani at 47-49. All of Duke’s pathways involve building new gas plants that serve anticipated loads in the early to late 2030s and replace significant amounts of that new gas generation with offshore wind and new nuclear beginning in the mid-2030s. As a result, in each of Duke’s Pathways, ratepayers would be asked to pay for replacement generation for retiring coal plants, largely in the form of new gas plants, and pay again for replacement generation for those new gas plants starting within the same decade. Accelerating the deployment of clean resources—resources that show up a few years later in Duke’s Pathways P2 and P3—at a larger scale could displace the need for new combined cycle plants, saving ratepayers significant money in both capital and operating costs over the long term. Roumpani at 93: 9-19.

In its initial filing, Duke asserted that achieving compliance with the interim carbon reduction requirement in 2030, as modeled for P1, was “no longer attainable while maintaining or improving reliability, and pursuing it further is not in

the best interest of customers.” IRP and Near-Term Actions Panel Rebuttal Panel Testimony at 29 (July 1, 2024) (quoting CPIRP Chapter NC (2023-24 CPIRP Update) at 11). Duke contends that achieving the interim requirement in 2030 would exceed Duke’s resource availability assumptions. *Id.* As noted above, Duke did not alter any of its assumptions, other than resource availability, for P1, so it did not consider any other options, like increased energy efficiency or demand response or an alternative winter planning reserve margin when modeling pathways to 2030 compliance. 30(b)(6) Deposition of Duke at 93-96. In rebuttal testimony, Duke witnesses also assert that consideration of the resources that it developed for P2 Fall Supplemental are likewise not reasonable for planning purposes. IRP and Near-Term Actions Panel Rebuttal Panel Testimony at 32.

By ruling out consideration of P1 or P2, and Duke’s consideration of achieving compliance with EPA’s CAA Rule based solely on P3 Fall Base, Duke is essentially telling the Commission that there is only one option: a resource pathway designed to delay meeting the interim carbon emissions reduction requirement by at least five, if not eight years. This conclusion is in stark contrast to Duke’s confident assertion in the fall of 2022 during the inaugural carbon plan proceeding that its proposed near-term action plan—the same plan approved by the Commission—would place Duke “on a trajectory that would allow for achievement of the 70% interim carbon emissions reduction target . . . by 2030.” Post-Hearing Brief of Duke Energy, Docket No. E-100, Sub 179 at 6 (Oct. 24, 2022).

SACE, et al., along with several other intervening parties, have provided

substantial evidence of shortcomings with key elements of Duke's proposed CPIRP that relate to achievement of the legally binding interim carbon emissions reduction requirement. Taken together, this evidence demonstrates that it is not yet time to abandon efforts to comply with the law's 2030 requirement on schedule, which can include compliance by 2032 in service of deeper carbon reductions.

b. Load Forecast and Resource Adequacy Assumptions

Several parties offer critiques of the Companies' Fall 2023 load forecast and resource adequacy assumptions, which together are responsible for a significant amount of the additional fossil fuel resources Duke indicates that it needs over the coming decade. See SACE, et al. and NCSEA Direct Testimony and Report of James Wilson at 5–10, Exhibit JFW-2 (Report) at 24–30, 40–48; CEBA Testimony of Jennifer Chen at 3–7, 24–28; AGO Burgess Testimony at 68-78; 30(b)(6) Deposition at 174-75. Duke systemically overestimates the reliability of fossil resources, like gas plants, compared to solar plus storage and wind resources and does not take full advantage of resource sharing with neighboring utilities. Roumpani at 33-42; Chen at 15-20; Burgess at 61. Duke has manually added potential large new loads on top of its load forecast, introducing a high likelihood for double counting, and plans to make significant investments in resource additions based on these potentially speculative load additions. Public Staff Joint Testimony of John Hinton and Patrick Fahey at 16-26; AGO witness Burgess at 68–77; SACE et al. witness Wilson, Exhibit JFW-2 (Report) at 24–30.

c. Solar and Battery Limits

Witnesses have identified the central role that Duke's artificial limits on the

model's ability to select carbon free resources, particularly low-cost solar, storage, and solar paired with storage, have played in Duke's belief that timely compliance with the carbon emissions requirements of G.S. 62-110.9 is not practicable. AGO Witness Burgess at 41-53. Witnesses recommend greatly increasing or eliminating those solar and battery interconnection limits and taking proactive steps to facilitate the interconnection of larger volumes of low-cost solar and storage in the years ahead. Goggin Direct Testimony at 9–34. CCEBA witness Hagerty likewise calls for proactive transmission planning that would result in the ability to interconnect larger volumes of solar and storage resources. Hagerty at 16–36. CCEBA witness Newell and SACE, et al. witness Goggin note additional options for increasing solar interconnection and reducing attrition from solar procurement, including employing provisional service, ERIS, limited curtailment, and potential market adjustments. Newell at 1-21, Goggin at 9–34. The Public Staff also put forward ideas for increasing solar interconnection and recommended higher amounts of solar plus storage than was included in Duke's near-term action plan. Public Staff witness Thomas at 9–10, 67–74. In rebuttal, Duke emphasizes that its solar interconnection limits are just a "forecast" based on its understanding of current conditions. IRP and Near-Term Actions Panel Rebuttal Panel Testimony at 131 (July 1, 2024). By failing to consider alternative pathways with increased levels of adoption of these low-cost, carbon-free resources, Duke would lock its customers into a pathway that is ever more dependent on fossil fuels.

d. Offshore Wind

Likewise, several intervenors have pointed out how Duke has not done

enough to consider the potential of offshore wind, a mature technology, to come online sooner—as long as Duke moves faster to acquire the resource—and to be a central component of a more diversified energy mix that contributes to compliance with state and federal mandates and could aid in achieving the interim carbon emissions requirement on schedule. See Avangrid witness Bower at 12–17, 20–30; Avangrid witnesses Nobel and Andrews at 7–9, 12–14, 25–26; EDF witness Kaplowitz at 5–6, 17–21, 22–37; Total witness Tanner at 3–5, Ex. B at 6–14; NCSEA witnesses O’Brien and Moor at 11–16. The Public Staff likewise supports accelerating work with offshore wind developers to evaluate project costs and potentially begin development actions. Public Staff witness Thomas at 78, 90–93, 111–114; Public Staff witness Lawrence at 15–30. There is a sharp contrast between Duke’s plan to engage in costly near-term actions to develop small modular nuclear reactors—an untested technology not currently licensed and operational in the United States—and offshore wind, a proven technology that will require procurement decisions in the near term in order to come online in time to help meet any potential load growth and carbon emissions reduction requirements. NCSEA witnesses O’Brien and Moor at 14–18.

e. Virtual Power Plants, Demand Response, Customer Programs

Other witnesses highlighted the missing pieces of virtual power plants, behind the meter energy storage, managed electric vehicle charging, taking advantage of distributed resources, and the need for expanded customer programs to more cost-effectively meet our energy needs. See SACE et al. witness Duncan at 10–44; AGO witness Burgess at 77–84; Walmart witness Perry at 6–7,

19–23.

f. Risks of Relying so Heavily on Gas Resources

Many parties raised concerns that Duke has discounted the substantial risks inherent in relying so heavily on new and existing methane gas resources at a time when state and federal law require a shift away from these carbon-emitting resources. Duke’s plans to build nearly 6,800 MW of new CCs by 2033 (in addition to about 2,125 MW of new CTs) fail to comply with EPA’s CAA Rule; are based on unrealistic assumptions about the reliability of thermal resources (the very resources that failed to perform during Winter Storm Elliott); underestimate the costs of relying on a growing fleet of gas plants; and do not sufficiently account for gas supply risk. Burgess at 58-68; Roumpani at 13-14 & 44-69; Alderfer and Urlaub at 38-49. Duke has come forward with this kind of gas-heavy resource plan before. In the Companies’ 2018 IRPs, Duke’s preferred portfolios called for building a combined 9,534 MW of new gas plants by 2033 (5,912 new CCs and 3,622 MW of new CTs).<sup>1</sup> When it last presented the Commission with this kind of gas-heavy resource plan, however, Duke was not under the state and federal legal requirements to reduce carbon emissions that are at issue in this motion.

Despite Duke’s oft-repeated rhetoric that it is pursuing an “all of the above” strategy or that it is important to have a “balanced, diversified” energy mix, its plans would see North Carolina customers rely on gas for substantially more than half of all of Duke’s electricity in the next decade. See IRP and Near-Term Actions Panel Rebuttal Panel Testimony at 8-9; 117 (July 1, 2024); Carolinas Resource Plan,

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<sup>1</sup> DEP 2018 Integrated Resource Plan at 12 & 69 and DEC 2018 Integrated Resource Plan at 12 & 67, Docket No. E-100, Sub 157 (Sept. 5, 2018).



Supplemental Planning Analysis, Technical Appendix, Tables SPA T-10, DEC Winter Load, Capacity, and Reserves Tables (P3 Fall Base) & T-11, DEP Winter Load, Capacity, and Reserves Tables (P3 Fall Base) at 11 and 12 (Jan. 31, 2024). Not counting any coal powerplants that would run in part or in whole on gas, Duke's preferred P3 Fall Base existing and new gas combined cycle (CC) and combustion turbine (CT) plants make up more than 50% of Duke's anticipated winter production capacity by 2033. When adding coal to those gas resources, which include coal converted to dual-fuel operation, Duke anticipates about 61% of its total winter production capacity will come from gas, coal, or dual-fuel resources in 2033 (while achieving a winter reserve margin of about 27%).

This heavy reliance on fossil fuels demonstrates how far Duke is planning to stray from the energy transition mandated under state law and how much it would expose its customers to volatile fuel cost risk. As many intervenors pointed out, Duke's plans to rely so heavily on new combined cycle plants over the next decade make little sense in the face of the final CAA Rule, which will either limit the operation of those supposedly baseload power plants to 40% or lower capacity factors or require carbon capture and sequestration (CCS) of 90% of the carbon pollution by 2032. Burgess at 58-60; Roumpani at 50-57; Appalachian Voices witness Hansen at 12-14. The Public Staff also raised concerns about greenlighting additional new combined cycle plants before understanding how the CAA Rule will impact their viability. Public Staff witness Metz at 15-18; Public Staff witness Nader at 18.