STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 190

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

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)

DIRECT TESTIMONY OF KYLE DAVIS ON BEHALF OF CLEAN ENERGY BUYERS ASSOCIATION

May 28, 2024

Table of Contents

I. Introduction and Summary of Recommendations.

Q: Please state your name.

A: My name is Kyle Davis.

Q: By whom are you employed and in what position?

A: I am Senior Director, Federal Affairs, at Clean Energy Buyers Association (CEBA). In my role, I assist CEBA in designing and executing its legislative and regulatory strategy with a focus on clean energy procurement. I describe my prior experience in my CV which is attached to this testimony as Exhibit 1.0.

Q: Have you previously provided testimony before the North Carolina Utilities Commission (the Commission)?

A: No, I have not.

Q: Please describe CEBA.

A: CEBA is a business trade association that activates a community of energy customers and partners to deploy market and policy solutions for a carbon-free energy system. CEBA's more than 400 members represent more than $7.5 trillion in annual revenues and 18.5 million employees and include institutional energy customers of every type and size – corporate and industrial companies, universities, and cities, as well as project developers and service providers. CEBA's membership includes one-fifth of the Fortune 500 companies and some of the largest buyers of renewable energy that conduct business operations across the United States and North Carolina, including customers of Duke Energy Carolinas, LLC (DEC) and Duke Energy Progress, LLC (DEP) (collectively Duke or DEC/DEP or the Companies). CEBA's corporate and industrial members include

companies across a variety of sectors including information technology, data centers, auto manufacturing, clean energy manufacturing, heavy industry, food and beverage manufacturers, financial institutions, fast food restaurants, hotels, retail chains, and more.

Q: What is the purpose of your Direct Testimony?

A: Many of Duke's commercial and industrial (C&I) customers need access to clean energy to meet their sustainability commitments. Any utility with ambitious economic development goals, such as those stated by the Companies in this proceeding, should understand that it must invest in clean energy to meet the needs of its customers. My Direct Testimony explains why it is critical for Duke to meet its new load growth and replace its coal generation with clean generation resources and not the carbon-intensive gas resources Duke has proposed to procure. My Direct Testimony also urges the Commission to approve a Near-Term Action Plan (NTAP) that achieves the carbon reduction requirements established by the North Carolina General Assembly in House Bill (HB) 951. Supported by CEBA's other witnesses, Dr. Jennifer Chen and the panel of Mr. R. Brent Alderfer and Mr. Ivan Urlaub, my Direct Testimony supports specific recommendations for how the Commission should resolve Duke's 2023-2024 Carbon Plan and Integrated Resource Plan (CPIRP or the Plan) to ensure that North Carolina can continue to support the clean energy needs of the businesses that power its economy.

Q: Please summarize your recommendations to the Commission.

A: I recommend that the Commission:

1. Keep commercial, industrial, and institutional customers' clean energy requirements in mind by approving a resource portfolio and NTAP that will allow Duke to achieve the interim target set forth in HB 951 to reduce carbon emissions by 70 percent by 2030.
2. Find that Duke's P3 Fall Base portfolio will impose unacceptably high price risks on Duke's ratepayers that outweigh the purported savings of the P3 Fall Base portfolio compared to other portfolios.
3. Find that resource portfolios that rely heavily on solar, wind, and storage impose fewer risks on ratepayers than resource portfolios that rely heavily on gas combined-cycle (CC) and combustion turbine (CT) generation.
4. To mitigate the price risks that reliance on gas generation impose on ratepayers, approve a preferred portfolio and NTAP for Duke that relies on fixed-cost, clean energy resources and de-emphasizes gas generation.
5. Find that Duke has not justified its proposal to increase its target reserve margin from 17 percent to 22 percent.
6. Direct Duke to undertake all cost-effective strategies to enhance reliability that do not require an increase to the target reserve margin.
7. Direct Duke to investigate opportunities to share reserves with neighboring balancing areas, including, but not limited to, participating in engagement opportunities on resource adequacy led by the National Association of State Energy Officials (NASEO) and investigating potential RTO membership.
8. Direct Duke to investigate the viability of meeting peak loads using battery storage capacity.

II. CEBA's Priorities and Goals.

Q: What will you address in this section of your testimony?

A: In this section of my testimony, I will provide more background on CEBA and its members' priorities and goals to help the Commission understand why CEBA intervened in this docket. This background provides context for CEBA's specific recommendations with respect to Duke's requests.

Q: Please describe why CEBA was created.

A: CEBA, formerly named the Renewable Energy Buyers Alliance (REBA), started as a collaboration between four nonprofit organizations in 2014 to identify and address the challenges and common needs faced by energy customers seeking to utilize clean energy to achieve their sustainability goals, and to educate and collaborate with key stakeholders in finding solutions to meet them. What started as a discussion with 12 companies, grew to a community of over 200 members, so REBA was "spun-off" as an independent stand-alone membership organization in 2019. REBA has pursued a vision of a resilient, carbon-free electricity system since its inception, and it was rebranded as the Clean Energy Buyers Association (CEBA) in 2021 to better align with that broader vision. CEBA is a 501(c)(6) business association that activates a community of energy customers and partners to deploy market and policy solutions for a carbon-free energy system. CEBA was founded based on a simple idea: energy customers pursuing clean energy should have one organization to go to for the resources necessary to achieve their clean energy goals. CEBA focuses on unlocking markets for energy customers, catalyzing communities of customers for deployment, and decarbonizing the grid for all.

CEBA coordinates closely with the Clean Energy Buyers Institute (CEBI), which is a 501(c)(3) public good charity that works to solve the toughest market and policy barriers to achieve a carbon-free energy system. Together, the Clean Energy Buyers Association and the Clean Energy Buyers Institute form the Clean Energy Buyers Alliance and share a collective vision of customer-driven clean energy for all, with an aspiration to achieve a 90 percent carbon-free U.S. electric system by 2030, and to cultivate a global community of energy customers driving expanded demand for clean energy.

Q: In addition to participating in proceedings before state utility regulatory commissions, how does CEBA support its members?

A: CEBA provides a variety of educational resources and tools to help end-use energy customers learn how to procure clean energy in the U.S. and across global markets. This includes primers on procurement mechanisms, data on C&I clean energy procurement, a comprehensive report on utility green tariff programs across the U.S., and resources around decarbonizing supply chains, to name a few. CEBA also provides peer-to-peer learning opportunities for members to share challenges, industry best practices, and to collaborate on solutions through industry conferences, monthly member calls, workshops, and procurement boot camps for companies that are new to procuring clean energy. In addition, CEBA advocates for federal and state legislative and regulatory policies that advance reliable, cost-effective clean energy, increase customer access to clean energy, expand and improve energy markets, and improve transmission planning.

Q: Please describe the role that large voluntary energy customers have had in clean energy development in the U.S.

A: Since 2014, more than 200 C&I energy customers have voluntarily procured over 77 gigawatts (GW) of clean energy, equivalent to approximately 40 percent of all wind and solar capacity added to the U.S. grid during that time.[1] This represents publicly announced procurement of clean energy by C&I customers through power purchase agreements (PPAs), green tariffs, bilateral deals with utilities, energy customer tax equity investments, and direct project ownership in the U.S. In 2022, C&I customers announced a record-breaking 16.9 GW of new clean energy deals, equivalent to 70 percent of the carbon-free energy capacity added to the U.S. electric grid in 2022. C&I customers procured another 12.9 GW of clean energy in 2023.

CEBA's members have ambitious clean energy goals, and many of these members now consider, if not prioritize, their ability to access clean energy when determining where to locate new facilities and which existing facilities to expand.

Q: Why did CEBA intervene in this docket?

A: CEBA intervened in this docket because we are concerned that Duke has proposed to disregard the clear statutory directive in HB 951 to achieve a 70 percent reduction in carbon emissions by 2030 or, at the latest, 2032.[2] Specifically, Duke's Supplemental Planning Analysis proposes to delay achieving the 70 percent carbon emission reduction target until 2035 – five years later than directed by the General Assembly and three years later than

[1] Clean Energy Buyers Association, *CEBA Deal Tracker*, available at https://cebuyers.org/deal-tracker/.
[2] N.C. Gen. Stat. § 62-110.9.

the extension to the deadline that the Commission is authorized to approve.[3] CEBA is also concerned that Duke's proposal to rely heavily on new gas-fired generation, particularly new CC plants, places unacceptably high price and supply risks on Duke's customers. Finally, CEBA is concerned that Duke has proposed a nearly 30 percent increase to its target reserve margin (from 17 percent to 22 percent),[4] which will increase Duke's costs and emissions without any demonstrable increase in reliability.

I also note that some of the new load that Duke is forecasting may not materialize if Duke increases the carbon intensity of its resource mix as it has proposed to do in this docket, since some of the customers bringing new load, including some CEBA members, have clean energy targets. If this load does not materialize and Duke overbuilds with fossil fuel capacity, it would result in higher costs for existing customers and make it more difficult for existing customers to meet their sustainability targets.

Q: With this background, what do you recommend?

A: In addition to the specific recommendations I provide for resolving this docket, I urge the Commission to keep customers' clean energy requirements in mind as it evaluates Duke's and the parties' proposals. Many of Duke's commercial, industrial, and institutional customers depend in part on Duke and the Commission to achieve their clean energy targets. Many other prospective customers have choices for where to locate or expand their operations and the Commission's decision in this proceeding will be a critical, if not

[3] Verified Amended Petition for Approval of 2023-2024 Carbon Plan and Integrated Resource Plans (hereinafter, Amended Petition), Supplemental Planning Analysis at 30.
[4] Direct Testimony of Richard Nichols Wintermantel and Cole Michael Benson (the Resource Adequacy Panel Direct Testimony), Exhibit 3 at 53.

determining, factor in whether they choose North Carolina to locate or expand. Simply put, clean energy customers are counting on the Commission faithfully implementing the General Assembly's carbon emission reduction targets.

Q: Why do large energy customers like CEBA's members care about the amount of clean energy resources in a utility's resource mix?

A: CEBA's members have ambitious sustainability commitments that require them to reduce the carbon emissions profile of their electricity consumption. Many of these companies have goals to match 100 percent of their electricity consumption with renewable energy. For example, approximately 60 CEBA members have committed to RE100, which is a global corporate renewable energy initiative bringing together hundreds of large and ambitious businesses committed to 100 percent renewable electricity.[5] In addition, 131 members have set science-based emissions reduction targets through the Science Based Targets initiative (SBTi).[6] CEBA members purchase clean energy through a variety of procurement mechanisms including virtual PPAs, physical power purchase agreements, retail contracts, onsite clean energy, and utility green tariffs, depending on the market structure in a specific area. Many C&I customers prefer to purchase energy from clean energy projects in the same state or region as their operations and directly from their utility, rather than sign virtual PPAs for projects located in other states, for example.

[5] *See* RE100, https://www.there100.org/.
[6] *See* SBTi, https://sciencebasedtargets.org/.

Q: Do Duke's customers have access to market options to procure clean energy?

A: In Duke's North Carolina service territory, customers do not have access to retail choice or organized wholesale markets and are therefore more restricted in the ways in which they can procure clean energy. In vertically integrated service territories like Duke's, CEBA members' ability to meet their clean energy commitments is largely tied to the emissions profile of their utility's resource mix and availability of customer clean energy programs offered by the utility that they may be eligible for. As a result, the ability of CEBA members that are Duke customers to meet their clean energy commitments is dependent on the Commission approving a resource mix for Duke's CPIRP that is as clean as possible while ensuring least-cost principles, economic development goals, and reliable service requirements are achieved, consistent with the directives of HB 951. Alternatively, utilities in vertically integrated markets must provide C&I customers with the ability to procure large amounts of clean energy to otherwise accomplish their clean energy objectives.

Simply put, the ability of CEBA members that are Duke customers to meet their clean energy commitments depends in large part on how clean Duke's resource mix is. To ensure that Duke's resource mix is as clean as reasonably possible, the Commission should only approve a resource portfolio and NTAP in this docket that will allow Duke to achieve the interim target set forth in HB 951 to reduce carbon emissions by 70 percent by 2030.

Q: What do you recommend with respect to this issue?

A: I recommend that the Commission:

- Keep in mind the clean energy requirements of many of Duke's current and prospective customers by approving a resource portfolio and NTAP that will

allow Duke to achieve the interim target set forth in HB 951 to reduce carbon emissions by 70 percent by 2030.

III. Duke's gas cost risks.

Q: What will you address in this section of your testimony?

A: In this section of my testimony, I will address the conclusions reached by CEBA's witnesses Mr. Alderfer and Mr. Urlaub in their testimony addressing the gas cost risks that would result from Duke's preferred portfolio, the P3 Fall Base portfolio.

Q: What risks do Mr. Alderfer and Mr. Urlaub identify with the P3 Fall Base portfolio?

A: Mr. Alderfer and Mr. Urlaub provide a detailed analysis of the price risks that Duke's customers would face as a result of Duke's proposed overreliance on natural gas for electricity generation. As explained in their testimony, these risks arise primarily from:

- Other utilities in the Southeast increasing their reliance on natural gas for electricity generation, which increases demand at a time that prices are already rising;[7]
- The domestic natural gas market's rapidly increasing exposure to global markets driven by increasing overseas exports of natural gas, which increases volatility and exposes Duke's customers to greater competition from global customers; and[8]

[7] Direct Testimony of R. Brent Alderfer and Ivan Urlaub on behalf of Clean Energy Buyers Association at 39-40 (hereinafter, Alderfer/Urlaub Direct Testimony).
[8] *Id.* at 29-36.

- Regional gas supply constraints and disruptions, which can be expected to lead to price spikes and lasting ratepayer impacts.[9]

The more gas generation in Duke's resource portfolio, the greater these risks will be.

Q: Who bears these risks?

A: Ratepayers bear all of these risks, not Duke nor its shareholders. As Mr. Alderfer and Mr. Urlaub point out, fuel costs are pass-through costs paid directly by ratepayers. It is ratepayers, not Duke, that bear the burden when gas prices rise and occasionally spike.[10]

Q: Are there inherent biases in the resource planning process that contribute to Duke's proposal to rely so heavily on gas generation?

A: Yes. Mr. Alderfer and Mr. Urlaub address two planning biases. The first is the issue just mentioned: ratepayers pay for the cost of fuel as pass-through charges and bear the risk of price spikes while Duke collects a return on the construction of its generation facilities and has no downside risk.[11] The fact that Duke does not bear any of the risk of gas price increases or spikes creates a bias in favor of natural gas generation in comparison to fuel-free resources such as solar and wind. Said another way, if Duke bore *any* of the price risks of natural gas, it would be reasonable to expect Duke to propose resource portfolios that mitigate these risks, such as through increased fixed-cost wind, solar, and storage. Instead, the Commission has the duty to mitigate these risks for customers.

Second, Duke's risk tolerance is much greater for natural gas infrastructure and supply than it is for clean energy resources. Mr. Alderfer and Mr. Urlaub point out that

[9] *Id.* at 40-42.
[10] *Id.* at 47.
[11] *Id.*

Duke is willing to rely on third-party, out-of-state gas suppliers and non-existent gas pipeline infrastructure that will be built by other third-parties to generate the power necessary to meet its projected load.[12] Duke's utility-owned gas generators will be completely dependent on these third parties over which Duke has no direct control. By contrast, Duke complains that relying on out-of-state clean energy developers and transmission lines in various stages of development is too risky for planning purposes. This bias doubtless arises from the first bias; that is, Duke is willing to tolerate greater amounts of risk with respect to natural gas infrastructure and supply because ratepayers pay the cost of natural gas.

Q: What is the primary implication of Mr. Alderfer's and Mr. Urlaub's testimony?

A: The primary implication of their testimony is that the purported cost savings of Duke's P3 Fall Base portfolio compared to other potential portfolios evaporate when the Commission accounts for the risks to ratepayers inherent in Duke's over-reliance on natural gas. Duke's proposal to invest heavily in CC and CT capacity is in no way consistent with the least-cost planning requirements contained in HB 951.

Q: How should the Commission mitigate the risks Duke proposes to impose on ratepayers through its over-reliance on natural gas generation?

A: The Commission should evaluate the cost of all portfolios presented in this docket with the substantial cost risks of natural gas in mind. Resource portfolios that disfavor gas generation and emphasize fuel-free, fixed-cost solar, wind, and storage resources are far

[12] *Id.*

less risky than portfolios like P3 Fall Base that rely heavily on natural gas. Solar, wind, and storage resources, in addition to being emission-free, do not have fuel costs. Rather, the cost of these clean energy and capacity resources are known upfront and are fixed for the life of the asset. Once procured, the generation costs of these fixed-cost resources will never increase unpredictably and will certainly never spike. By relying more on fixed-cost solar, wind, and storage resources and relying less on gas generation, Duke can significantly reduce risks to ratepayers, and can also reduce electricity price uncertainty and attract customers to North Carolina with robust clean energy goals.

Q: Please summarize your recommendations with respect to gas cost risk.

A: Based on Mr. Alderfer's and Mr. Urlaub's testimony, the Commission should:

- Find that Duke's P3 Fall Base portfolio will impose unacceptably high price risks on Duke's ratepayers that outweigh the purported savings of the P3 Fall Base portfolio compared to other portfolios.
- Find that resource portfolios that rely heavily on solar, wind, and storage impose fewer risks on ratepayers than resource portfolios that rely heavily on gas CC and CT generation.
- To mitigate the price risks natural gas imposes on ratepayers, approve a preferred portfolio and NTAP for Duke that relies on fixed-cost, clean energy resources and de-emphasizes natural gas generation.

IV. Duke's inflated reserve margin proposal.

Q: What will you address in this section of your testimony?

A: In this section of my testimony, I will discuss the implications of CEBA witness Dr. Chen's testimony regarding Duke's proposed target reserve margin and provide recommendations.

Q: Did Duke present a reserve margin analysis in this docket?

A: Yes, Duke hired Astrapé Consulting (Astrapé) to conduct a resource adequacy study, which is described in and attached to the direct testimony of Duke's Resource Adequacy Panel, which is comprised of two employees of Astrapé: Richard Nichols Wintermantel and Cole Michael Benson. The resource adequacy study appears as Exhibit 3 to the Resource Adequacy Panel's direct testimony and I will also refer to it as the Astrapé Study.

Q: What did Duke propose with respect to reserve margin?

A: The Astrapé Study recommends that Duke increase its winter target reserve margin from 17 percent, which is the level Astrapé recommended in 2020 and its current reserve margin, to 22 percent.[13] The reserve margin is expressed as a percentage of extra resources needed on top of the forecasted demand to meet resource adequacy targets. To satisfy a reserve margin, a utility takes its existing forecasted load and multiplies it by the reserve margin percentage (which produces a MW total) and then procures additional capacity commensurate with the MW total. Even if Duke kept its reserve margin at 17 percent, it would need to procure additional capacity because it projects greater load in this CPIRP than in its current load forecast. However, by also increasing the reserve margin to 22

[13] Resource Adequacy Panel Direct Testimony at 11-13; Resource Adequacy Panel Direct Testimony, Exhibit 3 at 9-10.

percent, Duke would need to procure an additional 1,831 MW of capacity, or roughly 366 MW for each percentage point increase in the reserve margin. In terms of the capacity needed to achieve this new target reserve margin, this is an increase of nearly 30 percent.

Duke reflects Astrapé's recommended 22 percent target reserve margin in the technical appendix of its January 2024 Amended Petition in the load, capacity, and reserves tables it provides for DEC and DEP.[14] Specifically, Duke provides load, capacity, and reserves tables that reflect its preferred portfolio, P3 Fall Base, including reserve margins that hover near 22 percent for the years 2024-2038 (though the actual projected reserve margin fluctuates from a low of 18.5 percent in 2027 to a high of 36.81 percent in 2035 for DEC and from a low of 18.53 percent in 2027 to a high of 32.25 percent in 2036 for DEP).[15]

Q: How does Astrapé purport to justify its recommended 30 percent increase (5 percentage points) to the target reserve margin?

A: The Astrapé Study identifies three major categories driving the recommended increase to the target reserve margin: updated generator performance assumptions, correcting an economic forecasting error, and reduction in neighbor assistance.[16] Specifically, the Astrapé Study:

- Increases the target reserve margin by 2.5 percentage points because of updated assumptions about generator outages and winter weather capacity risk;[17]

[14] Amended Petition, Technical Appendix at 11-12 (Tables SPA T-10 and SPA-T-11).
[15] *Id*.
[16] Resource Adequacy Panel Direct Testimony at 13: 10-14.
[17] *Id.* at 15: 16-19.

- Increases the target reserve margin by 0.75 percentage points due to a change in how load forecasts are performed;[18]
- Increases the target reserve margin by 1.75 percentage points due to an expected decrease in assistance from neighboring utilities.[19]

Q: Does CEBA agree that Astrapé's recommended increase to the target reserve margin is justified?

A: No. CEBA's witness Dr. Chen provides an exhaustive analysis of the Astrapé Study in her testimony. My testimony addresses the implications of Dr. Chen's testimony and provides recommendations. I conclude based on Dr. Chen's testimony that the Astrapé Study fails to adequately support the need for a 5 percentage point increase to Duke's target reserve margin.

Q: Please explain.

A: Dr. Chen makes the following criticisms of the Astrapé Study and Duke's reliance on it:

- The Astrapé Study uses historical outage rates for its generation fleet and ignores the improvements to reliability that will be realized by implementing FERC and NERC's winter preparedness recommendations and by replacing older plants with newer generators.[20]
- The Astrapé Study assumes that Duke's neighbors have minimum reserve margins, which does not reflect the reality that most neighboring utilities have

[18] *Id.* at 17: 1-5.
[19] *Id.* at 18: 4-13.
[20] Direct Testimony of Jennifer Chen on Behalf of Clean Energy Buyers Association at 11-12 (hereinafter, Chen Direct Testimony).

reserve margins higher than what they need to meet the 1-in-10 loss of load expectation (LOLE) threshold.[21]

- The Astrapé Study assumes that DEC and DEP are largely islanded from one another and have limited connections to their neighbors, which is not how the grid operates in the real world.[22]
- The Astrapé Study did not account for the reliability benefits of improving forecasts and avoiding scheduling planned outages during potential peak demand events.[23]

Q: Does Dr. Chen identify other concerns with Duke's reliance on the Astrapé Study?

A: Yes. Dr. Chen also points out that the Astrapé Study, like most reserve margin studies, did not consider the cost of procuring the capacity needed to achieve its recommended target reserve margin of 22 percent.[24] Though Dr. Chen was not expecting Astrapé to perform a cost analysis, Duke does not appear to have evaluated other strategies for improving reliability that might be more cost effective than simply procuring extra capacity. Rather, Duke appears to have simply adopted Astrapé's reserve margin recommendation without thinking critically about whether there might be more cost-effective ways for it to improve reliability rather than simply procuring additional capacity.

As Dr. Chen notes, the reserve margin simply measures how much extra capacity is on a utility's system above its expected system peak. In other words, the reserve margin

[21] *Id.* at 15-18.
[22] *Id.* at 23-24.
[23] *Id.* at 20-23.
[24] *Id.* at 3.

measures quantity (*i.e.* the amount of capacity) and not the quality (*i.e.* the reliability) of the utility's generation fleet.[25] Dr. Chen's testimony demonstrates that a higher reserve margin does not necessarily translate to greater reliability and should not be thought of as a simple proxy for the level of reliability a utility can be expected to provide.

Indeed, Dr. Chen concludes based on FERC and NERC's report on Winter Storm Elliott[26] that resource adequacy planning was not a contributing factor to the firm load shed that occurred during that storm. Rather, the primary causes of the firm load shed event were inaccurate short-term load forecasting, power plant failures, and gas pipeline interruptions.[27] She also notes that the Astrapé Study does not acknowledge that fuel-free resources, such as solar, wind, and storage, coming online as part of DEC/DEP's proposed new resource portfolios would not suffer from the same fuel-delivery outage problems as its current fleet and would likely reduce historical outage rates and mitigate the need to increase the reserve margin.[28]

Q: What are the implications of Dr. Chen's analysis?

A: Based on Dr. Chen's testimony, I conclude that Duke's proposal to increase its target reserve margin by 5 percentage points may be excessive and unnecessary. Duke has not demonstrated that Astrapé's recommended target reserve margin of 22 percent will enhance reliability more than other strategies that are likely more cost effective. Nor did

[25] *Id.* at 4-6.
[26] FERC, NERC, and Regional Entity Staff Report, Inquiry into Bulk-Power System Operations During December 2022 Winter Storm Elliott. Available at: https://www.ferc.gov/media/winter-storm-elliott-report-inquiry-bulk-power-system-operations-during-december-2022.
[27] Chen Direct Testimony at 6.
[28] *Id.* at 12.

Duke demonstrate that its costs to procure the additional capacity were reasonable given that the Companies did not provide estimates for how much it would cost for them to procure the additional generation needed to increase its reserve margin from 17 percent to 22 percent.

Q: What implications does Duke's proposal to merge DEC and DEP in 2027 have on your recommendation to reduce the reserve margin?

A: From Dr. Chen's testimony, it is my understanding that the Astrapé Study assumes that DEC and DEP are allowed to assist one another but that it is not clear the extent to which Duke jointly dispatches the two systems.[29] Even if they are somewhat or fully jointly dispatched, joint dispatch is different from planning the two systems as a single system. It stands to reason that there would be substantial benefits that would result from conducting resource planning for DEC and DEP as a single system as a result of the larger geographic area and increased diversity of resources across the merged service territory. I expect that merging DEC and DEP would increase reliability without adding any additional resources and without needing to increase the target reserve margin. The Commission should consider Duke's planned merger of DEC and DEP as another reason not to allow Duke to increase its target reserve margin from its current 17 percent.

[29] *Id.* at 23-24.

Q: Are CEBA and its members not concerned about Duke's ability to provide safe and reliable service?

A: Of course we are. Reliable electric service is critical to the business operations of CEBA's members as well as the health and safety of our communities. However, given that much of the additional capacity that Duke would procure to achieve a 22 percent reserve margin would increase Duke's rate base, and therefore Duke's profits, the Commission should view this proposal skeptically. The Commission should not reward the failures that led to Duke shedding firm load during Winter Storm Elliott by allowing Duke to pad its rate base with generation capacity that will likely be unused – especially gas generation capacity. Instead, the Commission should direct Duke to undertake other strategies to enhance reliability.

Q: What strategies should Duke undertake to enhance reliability?

A: It is my understanding that the Commission has already directed Duke to undertake a variety of actions to enhance reliability in response to Winter Storm Elliott in its December 22, 2023 order in Docket No. M-100, Sub 163, based in large part on the recommendations in FERC and NERC's report assessing Winter Storm Elliott.[30] While I am only familiar with the Commission's order and the FERC/NERC report at a high level, CEBA supports Duke taking all reasonable, cost-effective actions to enhance reliability that do not involve building unnecessary gas generation capacity that is likely to go unused. However, given that the Commission issued its order in Docket No. M-100, Sub 163 just this past

[30] Inquiry into Bulk-Power System Operations at 103-105, 131-136, 146-151.

December, it would be imprudent to approve Duke's proposed increase to its target reserve margin prior to Duke completing the reliability-enhancing measures the Commission directed it to implement.

Q: What other strategies should the Commission investigate to enhance reliability for Duke customers?

A: Dr. Chen's testimony also demonstrates that one of the most effective ways to enhance reliability is through resource sharing mechanisms. Dr. Chen points to the Western Resource Adequacy Program (WRAP) as an example and states that initial estimates for the reserve margins members will need to carry to meet the 1-in-10 LOLE threshold are 9-15 percent in summer and 13-19 percent in winter.[31] Rather than allow Duke to simply invest in additional rate base generation capacity, the Commission should direct Duke, in coordination with the Commission and other stakeholders, to investigate opportunities to develop a resource sharing mechanism in the Carolinas. She notes as well that many of Duke's neighboring utilities have excess capacity they could supply to the Companies provided there was a mechanism to transfer this generation.[32] To that end, as Dr. Chen notes, NASEO recently received $3 million in funding from the U.S. Department of Energy to work with state energy officials on resource adequacy and regional coordination.[33] The Commission should ensure that Duke is involved in these efforts to the extent possible.

---

[31] Chen Direct Testimony at 18-19.
[32] *Id.* at 12-19.
[33] Grid Deployment Office, *Biden-Harris Administration Announces more than $10 Million to Support State Engagement and Analysis in Wholesale Electricity Markets, Reducing Costs for Consumers*, Department of Energy (Apr. 11, 2024), https://www.energy.gov/gdo/articles/biden-harris-administration-announces-more-10-million-support-state-engagement-and?auHash=yIq0PsIfO6awQSoS-klIYxAGEevWEBXgo0GfAk-PS6s&utm_medium=email&utm_source=govdelivery.

Duke should also investigate the resiliency benefits of joining PJM. As Dr. Chen notes, PJM did not shed firm load during Winter Storm Elliott.[34] Moreover, Dominion Energy, Inc. is already a member of PJM. One of the primary benefits of RTO membership is that generation and load are balanced over a wider footprint, which provides opportunities for increasing reliability with lower reserve margins and lower cost.

Reserve sharing, whether through an RTO or another arrangement analogous to the WRAP, should be a key part of Duke's and the Commission's strategies to preserve and enhance reliability in a manner consistent with least-cost planning. The Commission should not increase Duke's reserve margin above 17 percent before the Companies first explore all options to share resources across state boundaries.

Q: Does CEBA have a position on which generation technologies should be used to satisfy its proposed target reserve margin of 17 percent?

A: It is my understanding that the target reserve margin simply measures the amount of total capacity that exceeds a utility's expected system peak demand. In other words, all generation assets serve the system based on their dispatch profile and there are not certain generators designated exclusively as reserves. However, it is clear that Duke's overall proposed strategy favors gas CC and CT generation. In looking at Duke's load, capacity, and reserves tables in the technical appendix I referenced earlier, Duke satisfies the increases to DEC's and DEP's reserve margins that begin in 2028 and 2029 with large new CC and CT capacity additions and in small part by new battery additions.[35] For the reasons

[34] Chen Direct Testimony at 6.
[35] Amended Petition, Technical Appendix at 11-12 (Tables SPA T-10 and SPA-T-11).

discussed in Mr. Urlaub's and Mr. Alderfer's testimony, the Commission should find that Duke's emphasis on gas is not consistent with least-cost planning principles. Moreover, cost issues aside, gas generators experienced significant problems and outages during Winter Storm Elliott.[36] New CCs and CTs are simply not a viable strategy for enhancing reliability during critical periods. Instead, the Commission should direct Duke to investigate the viability of relying on larger procurements of battery storage than what it has proposed to meet peak loads.

Q: Please summarize your recommendations with respect to resource adequacy and Duke's proposed target reserve margin.

A: Based on Dr. Chen's testimony, I recommend that the Commission:

- Find that Duke has not justified it proposal to increase its target reserve margin from 17 percent to 22 percent.
- Direct Duke to undertake all cost-effective strategies to enhance reliability that do not require an increase to the target reserve margin.
- Direct Duke to investigate opportunities to share reserves with neighboring balancing areas, including, but not limited to, participating in engagement opportunities on resource adequacy led by NASEO and investigating potential RTO membership.
- Direct Duke to investigate the viability of meeting peak loads using battery storage capacity.

[36] Chen Direct Testimony at 6, 9-11.

V. Conclusion and Recommendations.

Q: Please summarize your recommendations to the Commission.

A: I recommend that the Commission:

1. Keep commercial, industrial, and institutional customers' clean energy requirements in mind by approving a resource portfolio and NTAP that will allow Duke to achieve the interim target set forth in HB 951 to reduce carbon emissions by 70 percent by 2030.
2. Find that Duke's P3 Fall Base portfolio will impose unacceptably high price risks on Duke's ratepayers that outweigh the purported savings of the P3 Fall Base portfolio compared to other portfolios.
3. Find that resource portfolios that rely heavily on solar, wind, and storage impose fewer risks on ratepayers than resource portfolios that rely heavily on gas CC and CT generation.
4. To mitigate the price risks that reliance on gas generation impose on ratepayers, approve a preferred portfolio and NTAP for Duke that relies on fixed-cost, clean energy resources and de-emphasizes gas generation.
5. Find that Duke has not justified its proposal to increase its target reserve margin from 17 percent to 22 percent.
6. Direct Duke to undertake all cost-effective strategies to enhance reliability that do not require an increase to the target reserve margin.
7. Direct Duke to investigate opportunities to share reserves with neighboring balancing areas, including, but not limited to, participating in engagement opportunities on resource adequacy led by NASEO and investigating potential RTO membership.

8. Direct Duke to investigate the viability of meeting peak loads using battery storage capacity.

Q: Does this conclude your testimony at this time?

A: Yes.

KYLE L. DAVIS

43728 Biddle Lane, Chantilly VA 20152 • daviswashdc@gmail.com • LinkedIn

~ ENVIRONMENTAL/ENERGY ADVOCACY EXECUTIVE ~

Seasoned executive with over twenty-five years of experience advocating for renewable energy and environmental protection at the state and federal levels. Well versed in building coalitions in the Executive and Legislative branches of government with significant success in seeing various bills allowing for greater transparency, reporting and protection into law. Successful history in preparing strategies, public remarks and briefing materials, managing political action committees and leading environmental policy and strategy teams. *Proven expertise in:*

- Legislative Advocacy
- Governmental Task Forces
- Public Remarks and Briefings
- Written and Verbal Testimony
- Coalition Building
- Environmental Strategy/Policy
- Renewable Energy Policies
- Electricity Market Policies
- Transportation Electrification Policies
- Trade/Supply Chain Policy

PROFESSIONAL EXPERIENCE

CLEAN ENERGY BUYERS ASSOCIATION – Washington, DC

Senior Director of Federal Affairs, March 2024 to present

Provides strategic leadership focused primarily on clean energy procurement and advocates for legislative and regulatory policies that improve energy markets.

ENEL NORTH AMERICA – Washington, DC

Head, Federal Policy & Eastern Region (USA and Canada), 2023 to 2024

Director, U.S. Federal Policy, 2016 to 2023

Tracked federal legislation and rulemaking, informed and coordinated with business, prepared advocacy strategies, built coalitions and drafted written and verbal testimony.

Key Contributions:

- Lead US Congress, White House and federal agency advocacy, including FERC, US Dept of Energy, US Dept of Commerce (SelectUSA), US Dept of Homeland Security (CBP), US Dept of Interior (BLM, and FWS), US Dept of Transportation (FHWA, FTA), US Dept of Treasury (IRS), US Dept of State (UNFCCC) and the General Services Administration.
- Positive changes to and enactment of the Infrastructure Investment and Jobs Act (2021) and the Inflation Reduction Act (2022).
- Focused on policies benefiting the utility-scale and behind-the-meter renewable energy businesses; stand-alone energy storage/microgrids; demand response; electric vehicle chargers; and domestic manufacturing, specifically solar cell and panel manufacturing.
- Tracked and lead regular internal briefings on political developments; clean energy- or carbon-related federal regulation; extensions of and changes to federal tax incentives; availability of new federal

agency grant funding; and trade- and supply chain-related risks (i.e., UFLPA; AD/CVD; Section 201; Section 232; Section 301; Section 337; etcetera).

- Prepared and filed public testimony, trade questionnaires, public comments or statements of support; current advocacy is focused on federal siting and permitting reforms, including interconnection queue reform; FERC transmission planning and cost allocation reforms; and Basel III rules.
- Board member for the Americans for a Clean Energy Grid (ACEG); past Board member of the Zero Emissions Transportation Association (ZETA); past Chair of the American Wind Energy Association's Federal Policy Committee.

BERKSHIRE HATHAWAY ENERGY – Washington, DC

Director, Congressional Relations, 2010 to 2016

Tracked federal legislation and rulemaking, informed and coordinated with business, prepared advocacy strategies, built coalitions and drafted written and verbal testimony.

Key Contributions:

- Extension of renewable energy production and investment tax credits.
- Participation in the Obama Administration's White House Climate Pledge.
- Co-chaired the Edison Electric Institute's Global Climate Change subcommittee.
- Prepared and filed public comment on the Environmental Protection Agency's Cross-State Air Pollution Rule (CASPR) and the Clean Power Plan.
- Advocacy before the Bureau of Land Management on permitting of interstate transmission line projects, specifically PacifiCorp's participation in the Rapid Response Transmission Team (RRTT) projects.
- Advocacy before the US Dept of Interior regarding the Klamath settlement agreements calling for the removal of PacifiCorp's six Klamath dams.

PACIFICORP/PACIFICORP ENVIRONMENTAL REMEDIATION COMPANY, Portland, Oregon

Director, Environmental Policy and Strategy/President (PERCo), 2006 to 2010

Oversaw western utility division of Berkshire Hathaway Energy operating in California, Idaho, Oregon, Utah, Washington and Wyoming. Collaborated with state agencies to enact federal rules and utility regulations on integrated resource plans and testify on state legislation.

Key Contributions:

- Lead the company's engagement on the Western Climate Initiative.
- Prepared testimony on various federal legislative proposals seeking to regulate power plant greenhouse gas emissions, include HR2454 (Waxman-Markey).
- 2008 EPRI Sector Technology Transfer Award recipient (for modeling the impact of greenhouse gas prices on western electricity markets).
- Prepared written and verbal testimony on California's landmark AB 32 greenhouse gas rules.
- Advocated on state legislation or regulations establishing or modifying the California, Oregon, Utah or Washington renewable portfolio standards.
- Prepared and filed public comment on the Environmental Protection Agency's Regional Haze State Implementation Plans.

- Facilitated the "environmental policy" Integrated Resources Plan (IRP) stakeholder dialogue.
- Participated on various Governor-sponsored committees or task forces recommending global climate change, environmental, renewable energy, or alternative fuel vehicle policies.
- Managed the clean-up of PacifiCorp Environmental Remediation Company (PERCo) projects.

MIDAMERICAN ENERGY COMPANY – Urbandale, Iowa

Manager, Environmental Policy and Strategy 2003 to 2006

Successfully oversaw operations of Berkshire Hathaway Energy's Midwestern utility company with operation in Iowa, Illinois, Nebraska and South Dakota. Collaborated with various state agencies to enact federal mandates, particularly new EPA power plant emissions rules.

Key Contribution:

- Prepared and filed public comment on the Environmental Protection Agency's Clean Air Interstate Rule, Clean Air Mercury Rule and the cooling water intake structure "316(b)" rule.
- Supported the successful permitting of a new super critical coal unit, a natural gas combined cycle power plant and the utility's first two utility-scale wind farms.
- Participated in multiple Berkshire Hathaway due diligence projects such as the PacifiCorp acquisition.

EDISON MISSION ENERGY – Costa Mesa, California

Manager, Environmental Policy and Strategy 2000 to 2003

Oversaw the environmental policies for the portfolio, including tracking and filing of comments on the United Nations Framework Convention on Climate Change, European countries' participation in the Kyoto protocol, and Australia's Generator Efficiency Standards Program.

Key Contribution:

- Monitored environmental regulatory developments that had the potential to impact the economics of the European Union- and Australian-based thermal power plants and renewable energy projects.
- Participated in multiple due diligence projects, including the eventual sale of Edison Mission Energy's overseas portfolio.

Additional experience as Manager, Corporate Communications and Manager, Electric Transportation (Edison International/Southern California Edison, 1996-2000), as well as Technology Advancement Office analyst (South Coast Air Quality Management District, 1990-1996). In both of these I worked primarily on transportation electrification and other lower-polluting mobile and stationary technologies.

EDUCATION AND CERTIFICATION

Juris Doctorate
Whittier Law School, Whittier, CA

Bachelor of Science, Political Science
California State University Fullerton, Fullerton, CA

CERTIFICATE OF SERVICE

The undersigned for Clean Energy Buyers Association hereby certifies that she served the foregoing Direct Testimony and Exhibit upon the parties of record in this proceeding by electronic mail as set forth in the Service List for such docket maintained by the NCUC Chief Clerk's Office.

This 28th day of May, 2024.

/s/ Alicia Zaloga
Alicia Zaloga