

**BEFORE THE NORTH CAROLINA UTILITIES COMMISSION
DOCKET NO. E-100, SUB 179**

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| In the Matter of: |) | JOINT COMMENTS OF THE |
| Duke Energy Progress, LLC, and |) | NORTH CAROLINA |
| Duke Energy Carolinas, LLC, 2022 |) | SUSTAINABLE ENERGY |
| Biennial Integrated Resource Plans |) | ASSOCIATION, SOUTHERN |
| and Carbon Plan |) | ALLIANCE FOR CLEAN |
| |) | ENERGY, SIERRA CLUB, AND |
| |) | NATURAL RESOURCES |
| |) | DEFENSE COUNCIL |

NOW COME the North Carolina Sustainable Energy Association (NCSEA), the Southern Alliance for Clean Energy (SACE), the Sierra Club, and the Natural Resources Defense Council (NRDC) (NCSEA, SACE, the Sierra Club, and NRDC, collectively, the Coalition of Low-Cost Energy And Net-Zero Intervenors or CLEAN Intervenors) pursuant to the *Order Requiring Filing of Carbon Plan and Procedural Deadlines* issued by the North Carolina Utilities Commission (NCUC or Commission) on November 19, 2021, as modified by the Commission’s November 29, 2021 *Order Granting Extension of Time*, to provide the following comments on the proposed Carbon Plan filed on May 16, 2022 by Duke Energy Carolinas, LLC (DEC) and Duke Energy Progress, LLC (DEP) (DEC and DEP, collectively, Duke or the Companies).

I. INTRODUCTION

Duke has asked the Commission to endorse a range of possible Carbon Plan portfolios, all but one of which fail to meet the law’s 2030 intermediate carbon reduction requirements. All of Duke’s portfolios rely heavily on new gas plants in the short term, even as customers are being saddled with extraordinarily high fuel prices. All of Duke’s portfolios depend on unproven new nuclear technology and a zero-carbon hydrogen

infrastructure that is not priced into its model in order to meet the law's 2050 mandates. It would be a mistake for the Commission to adopt Duke's proposed Carbon Plan as its own.

The Commission has an obligation to develop a plan to achieve the required carbon reduction requirements set forth in law. It would be difficult to hold the Companies accountable for abiding by House Bill 951's (H951)¹ carbon reduction requirements under Duke's multiple-choice proposal. The Commission should decline Duke's request to be both the author and reader of a Choose-Your-Own Adventure Carbon Plan, particularly when most of those choices result in a failure to meet the law's requirements. Duke's proposal would essentially remove the Commission from its statutory role of developing a compliance plan for the Companies.

The Commission cannot rely on Duke's proposed portfolios when establishing its initial Carbon Plan for additional reasons. First, as noted above, Duke's plans would not comply with the law. Three of Duke's four portfolios fall short of the 2030 interim carbon reduction requirement, and the one potentially compliant portfolio, P1, would itself fall short of achieving the 2030 requirements when modeled without new Appalachian gas availability.² CLEAN Intervenors fully support deploying wind as rapidly as possible, including beginning the planning process to acquire that zero-carbon resource. But there likely is a least-cost pathway for Duke to meet the 2030 carbon reduction requirement without relying on offshore wind energy or requiring a delay. And it would be irresponsible to rely on speculative, unproven technologies, such as small modular reactors (SMR), when it is not yet known whether that technology will be safe, cost-effective, or reliable. It would be particularly imprudent to rely on the future deployment of this untested technology as a

¹ S.L. 2021-165.

² Duke's proposed Carbon Plan, Appendix E at 89.

reason to delay compliance with the law's 2030 carbon reduction requirements. By the same token, it is premature at this time to rely on a future infrastructure supporting the deployment of zero-carbon hydrogen as a pathway for meeting the law's carbon reduction requirements.

CLEAN Intervenors recommend that the Commission develop a no-regrets clean energy pathway in its Carbon Plan, particularly for Duke's near-term actions. Such a pathway would avoid the unnecessary risk of relying on new fossil fuel plants that are both inherently at odds with carbon reduction requirements and will expose customers to high and increasingly volatile gas prices. Such a no-regrets pathway would also avoid relying on speculative and unproven technologies to comply with the statute's carbon reduction requirements. Building more clean energy resources and relying more heavily on energy efficiency (EE) in the near term helps to achieve both the 2030 requirements and better positions Duke to achieve the 2050 net zero requirement in a least cost manner.

II. CLEAN INTERVENORS' EXPERT REPORTS

In addition to the analysis included in Section III of these comments, the CLEAN Intervenors retained three experts to analyze Duke's proposed Carbon Plan: Synapse Energy Economics, Inc. (Synapse), RMI, and Grid Strategies LLC. Pursuant to the Commission's July 14, 2022 *Order Granting SACE et al. and NCSEA a Three-Business Day Extension to File Synapse Report and Related Comments*, the Synapse report will be filed on or before July 20, 2022. The RMI report, which provides further analysis that builds upon Duke's EnCompass modeling, is attached as **Exhibit 1**. Finally, the Grid Strategies LLC report, which analyzes Duke's transmission proposals, is attached as **Exhibit 2**.

A. SYNAPSE ENERGY ECONOMICS

CLEAN Intervenors jointly retained Synapse to review the modeling used to develop Duke's proposed portfolios, to perform its own modeling using the same EnCompass capacity expansion and production cost modeling software used by Duke, and to develop a report based on the results of its analysis. Synapse's EnCompass analysis uses modeling inputs produced by Duke as a starting point, and then makes revisions to some of Duke's inputs to better reflect current and future real-world conditions. Synapse's EnCompass analysis then develops scenarios to compare the results of varying inputs.

Synapse first developed the "*Duke Resources*" scenario to provide a baseline for comparison with Synapse's alternative scenarios. The resulting *Duke Resources* portfolio matches the portfolio of resources in Duke's proposed "Portfolio 1 – Alternate" (P1 Alt) which seeks to meet the 70 percent carbon reduction requirement by 2030 assuming no additional Appalachian firm gas transport capacity. As reported to the Commission, a software error from the vendor impacted Synapse's modeling results. Synapse's baseline scenario, *Duke Resources*, formed the basis for the analysis by RMI discussed in the following subsection. CLEAN Intervenors plan to file Synapse's report on July 20, 2022, consistent with the Commission's grant of a three-business-day extension.

B. RMI

CLEAN Intervenors retained RMI³ to provide a more detailed analysis of the potential ratepayer impacts of the *Duke Resources* scenario. RMI utilized its Optimus tool, which is a utility financial model designed by RMI to assess the full ratepayer cost of

³ RMI, formerly Rocky Mountain Institute, is an independent, non-partisan, nonprofit organization of experts across disciplines working to accelerate the clean energy transition and improve lives.

utilities' planning decisions, to quantify the distribution of economic impacts under the *Duke Resources* scenario. EnCompass provides an estimate of the revenue requirement relating to its capacity expansion and production cost modeling runs. Optimus goes farther and estimates ratepayer impacts using the full revenue requirement, including all cost components of both existing assets and incremental resources added to the portfolio by EnCompass, as well as capital and operating costs associated with non-production assets. Importantly, Optimus allows RMI to conduct a forward-looking estimate of rates and bills differentiated by customer class for the various portfolios generated by EnCompass, taking into account Duke's cost of service methodologies.

RMI used Optimus to model the *Duke Resources* scenario and found that it would likely cause disproportionately large rate increases for residential customers in DEC's territory as new resources are added under Duke's plan between 2027 and 2032. This is largely because the *Duke Resources* scenario—like all of Duke's proposed portfolios—relies heavily on new gas generating units that have the effect of driving up variable energy charges, which impact residential customers more than other customer classes. In contrast, the *Duke Resources* scenario would cause steeper rate increases for industrial customers in DEP from 2024 onwards.

RMI's analysis suggests that the *Duke Resources* scenario would not provide a useful hedge against fuel price shocks. Given recent gas price volatility, with attendant high fuel costs that are being passed directly to customers, it will be important for the Commission to consider fuel-price sensitivities. RMI's analysis indicates that an accelerated build of solar will likely help to mitigate those potential price spikes from increased gas or coal prices. Duke's reliance on new gas generation is not likely to be an

effective hedge against potential gas price spikes. Even though such newer gas plants would run more efficiently than the existing coal units that have been upgraded to be co-fired with gas, any fuel savings in a price-spike scenario would be offset by the increased capital costs of building new gas generation. Ultimately, RMI's analysis suggests that the "deployment of additional solar, storage and wind to avoid fuel utilization is likely a no-regrets solution to limit ratepayer exposure to the risks" of fuel price volatility, uncertain future costs relating to conversion to hydrogen, and the risk of accelerated depreciation of gas infrastructure.

The ratemaking tools and securitization of retiring coal plants established in H951 provide additional levers for mitigating costs to ratepayers. Duke's artificially slow coal retirement plan risks leaving substantial securitization benefits untapped, which, if leveraged sooner, would realize significant savings for ratepayers, helping to offset some of the energy transition costs. RMI's modeling of a multi-year rate plan (MYRP) and residential decoupling in Optimus shows that the *Duke Resources* scenario exposes customers to particular risks of steep rate hikes in a scenario with quicker than expected load growth (for example, from faster adoption of EVs or building electrification than Duke anticipates) coupled with higher-than-expected gas prices. RMI hypothesizes that this risk would be mitigated under an alternative resource scenario with a higher penetration of solar, battery storage, and wind resources "because a greater portion of demand would be satisfied with capital assets that are essentially fixed in cost and independent of the generation output."

In addition, RMI modeled the consequences of supportive federal carbon regulations, which have the potential to reduce the rate impacts of Carbon Plan scenarios

that rely more heavily on clean energy resources over Duke Resources that rely heavily on new gas.

Given the opportunity, RMI has expressed readiness to run other resource scenarios generated from Encompass through Optimus to compare them to the *Duke Resources* portfolio.

C. GRID STRATEGIES

CLEAN Intervenors retained Jay Caspary, Vice President of Grid Strategies LLC, to review the transmission-related aspects of Duke's proposed Carbon Plan and to offer any recommendations for improvement. Mr. Caspary has 40 years of experience in transmission planning and related fields, detailed in the curriculum vitae attached to his report.

Mr. Caspary made four specific recommendations for the Commission's final Carbon Plan and for Duke's future proposed Carbon Plans. First, Carbon Plans should rely on proactive, scenario-based, multi-value portfolios of transmission expansion projects to identify bulk transmission upgrades. The actual value of transmission expansion typically is much larger than is projected in economic planning assessments which rely on production cost modeling. The quantified benefits not revealed through production cost modeling can exceed—and sometimes more than double—the benefits identified through standard production cost modeling, revealing much higher benefit-to-cost ratios for transmission projects. FERC has recognized this phenomenon and in its notice of proposed rulemaking in Docket No. RM21-17 identified twelve benefit metrics that could be used in prudent transmission planning. As related recommendations, transmission upgrades should accelerate integrating the DEC and DEP balancing areas, and projects should be

“rightsized” to anticipate future needs. Mr. Caspary opined that the Red-Zone Transmission Expansion Plan (RZEP) projects are an important first step towards resolving transmission constraints but will not address long-term needs and some may be very good candidates for rightsizing.

Second, Carbon Plans should incorporate the results of improved collaborative planning efforts with neighboring systems, such as the ongoing Southeastern Regional Transmission Planning (SERTP) efforts and North Carolina Transmission Planning Collaborative (NCTPC) studies, as well as the Atlantic Offshore Wind Transmission Study. In addition, Carbon Plans should incorporate affected system studies, which can identify “backbone” transmission upgrades that will benefit the system as a whole, rather than only the generators that are assigned cost responsibilities based on tariff processes. The Commission should consider using the Joint Transfer Interconnection Queue (JTIQ) study currently being finalized by the Midcontinent Independent System Operator (MISO) and Southwest Power Pool (SPP) as a good example.

Third, Carbon Plans should rely on transmission upgrades that leverage existing transmission corridors for future transmission needs, which will require transparency regarding Duke’s asset management planning practices and consideration of proven advanced transmission technologies. Grid-enhancing technologies (GETs) can improve the utilization of existing assets through new sensors and software to accelerate integration of renewables without adversely impacting reliability. More transparency and adoption of new approaches to expand transmission capacity will benefit customers across Duke’s system as the utility replaces aging transmission assets. Upgrades should be rightsized for future needs and may be candidates for “advanced conductors.” Where existing towers

have significant useful life remaining, “reconductoring” with advanced conductors can accelerate integration of renewable energy. And where existing structures need replacement, advanced conductors can allow replacement with fewer and shorter towers, saving money on the project overall.

Finally, Carbon Plans should rely on rigorous analysis of potential regional projects that would support future resource needs, in particular imports of Midwest wind and offshore wind developments that may be best addressed in partnership with neighboring systems. Duke’s proposed Carbon Plan gives very little consideration to the interfaces between power systems—or “seams”—even though exchanges between systems can save customers money, improve reliability, and take advantage of seasonal and resource diversity.

Mr. Caspary also made one overarching recommendation: the Commission should synchronize the development of its Carbon Plan with transmission planning processes, and direct Duke to plan resource and transmission additions at the same time for future proposed Carbon Plans. Mr. Caspary made a number of subsidiary recommendations detailed in his report, including that the Commission should participate in the FERC rulemaking proceedings discussed in his report to the extent feasible.

III. CLEAN INTERVENORS’ RESPONSES TO DUKE’S REQUESTS FOR RELIEF

A. DUKE’S CARBON PLAN MODELING IS NOT REASONABLE FOR PLANNING PURPOSES

Duke’s first request for relief is that the Commission “Affirm that the Companies’ Carbon Plan modeling is reasonable for planning purposes and presents a reasonable plan

for achieving HB 951’s authorized CO₂ emissions reductions targets in a manner consistent with HB 951’s requirements and prudent utility planning[.]”⁴

As a threshold matter, H951 directed the Commission to develop a plan, not merely to approve a plan offered by Duke or another party. In directing the Commission to “[d]evelop a plan . . . for the utilities to achieve the authorized reduction goals,” the General Assembly clearly charged and empowered the Commission itself with development of the Carbon Plan. Although the law stipulates that the Commission is to develop the plan “with the electric public utilities, including stakeholder input,” the obligation to develop the plan remains with the Commission—as is appropriate given the Commission’s role in regulating public utilities. Had the legislature wanted the Commission simply to approve one of the plans proposed by Duke or a stakeholder, it could have so stated.⁵

For the reasons set forth below, Duke’s modeling is not reasonable for planning purposes and the Commission should deny this request for relief.

1. DUKE’S PROPOSED PORTFOLIOS THAT DELAY ACHIEVEMENT OF THE 70 PERCENT INTERIM REDUCTION DO NOT MEET H951’S LEGAL REQUIREMENTS

H951 provides that the Commission “shall take all reasonable steps to achieve a seventy percent (70%) reduction in emissions of carbon dioxide (CO₂) emitted in the State from electric generating facilities owned or operated by electric public utilities from 2005 levels by the year 2030 and carbon neutrality by the year 2050. . . .”⁶ The law further provides that “[i]n achieving the authorized carbon reduction goals, the Utilities Commission shall[.]” among other things,

⁴ Verified Petition for Approval of Carbon Plan, p. 15 (hereinafter Petition).

⁵ See G.S. § 62-133.2 (fuel clause).

⁶ H951, Pt. I, Sec.1.

Retain discretion to determine optimal timing and generation and resource-mix to achieve the least cost path to compliance with the authorized carbon reduction goals, including discretion in achieving the authorized carbon reduction goals by the dates specified in order to allow for implementation of solutions that would have a more significant and material impact on carbon reduction⁷

The General Assembly empowered the Commission with significant discretion in executing its statutory charge to “take all reasonable steps” to achieve the law’s carbon reduction goals. The Commission retains discretion with regard to the timing of compliance where implementation would have a “more significant and material impact on carbon reduction;” *i.e.*, result in faster or deeper carbon reductions.

Once the threshold “more significant and material impact” criteria are met, though, the law is not unbounded with regard to the timing of meeting its carbon reduction requirements—it also includes an important proviso that establishes the outer limits of any extension of time in meeting the requirements, and also sets forth the criteria that must be met to trigger an extension:

. . . Provided, however, the Commission shall not exceed the dates specified to achieve the authorized carbon reduction goals by more than two years, except in the event the Commission authorizes construction of a nuclear facility or wind energy facility that would require additional time for completion due to technical, legal, logistical, or other factors beyond the control of the electric public utility, or in the event necessary to maintain the adequacy and reliability of the existing grid.⁸

Reading the above-quoted provisions together, it is clear that the General Assembly empowered the Commission to extend the deadlines for compliance with the law’s carbon reduction requirements for up to two years only if doing so would obtain faster or deeper carbon reductions. The law allows the Commission to extend the compliance deadline by

⁷ H951, Pt. I, Sec.1(4).

⁸ *Id.*

more than two years only under certain specifically enumerated circumstances. The first is “in the event the Commission authorizes construction of a nuclear facility or wind energy facility that would require additional time for completion due to technical, legal, logistical, or other factors beyond the control of the electric public utility[.]” Here, the term “authorizes construction of” clearly refers to a Certificate of Public Convenience and Necessity, the type of Commission authorization required for such a facility. The second circumstance is “in the event necessary to maintain the adequacy and reliability of the existing grid.” The legislature’s use of the phrase “in the event” makes clear that an extension pursuant to one of these triggering circumstances is to be granted only if (“in the event”) such a circumstance arises—not prospectively, or at any rate not a decade or more prior to the extended compliance date proposed by the utility.

Three out of the four base portfolios Duke presents in its proposed Carbon Plan would fail to achieve the interim 70% reduction requirement by the default statutory deadline of 2030. Yet Duke has not made a showing that any of the portfolios would meet the statutory criteria required to justify an extension of the compliance deadline.

As shown in Duke’s Figure E-15, Portfolio 1 (P1) achieves deeper and faster carbon reductions than either Portfolio 2 (P2), Portfolio 3 (P3) or Portfolio 4 (P4). First, P1 is the only portfolio that Duke projects would achieve the interim 70% reduction requirement on time, by 2030. Further, as Duke explains, “Portfolio 1 emits 69 million short tons less and Portfolio 2 emits 32 million short tons less over the planning horizon on a combined DEC and DEP systems basis, relative to Portfolio 3 [and P4].”⁹ Thus, neither P2, P3 or P4 has

⁹ Duke’s proposed Carbon Plan, Appendix E at 80-81.

“a more significant and material impact on carbon reduction” than P1, and as a result, not one of those portfolios qualifies for a delay of even two years.

Even if P2, P3 or P4 did qualify for a two-year delay, Duke has made no showing that would enable any of those portfolios to qualify for a further delay. First, Duke makes no claim that the delays in compliance under any of those portfolios would be necessary to maintain the adequacy and reliability of the existing grid. And not one of those portfolios would qualify for an extension under the “escape clauses” for an authorized wind or nuclear facility.

P2 (“70% by 2032 OSW”) is projected to meet the interim requirement by 2032, but does not meet the criteria that would allow for such a delay. First, as mentioned above, its impact on carbon reduction is not “more significant and material”: P2 would achieve a CO2 reduction of 66% in 2030 and 77% in 2035, compared to P1’s CO2 reduction of 71% in 2030 and 80% in 2035. In addition, Duke admits in describing the portfolio that P2 is designed not to meet the 70% requirement until 2032, stating that “Portfolio 2 (P2) is developed to achieve the 70% interim target in 2032 based on projected availability of offshore wind resources.”¹⁰ Duke explains that it made offshore wind available for selection by its capacity expansion model beginning in 2030. Although this means that it is virtually a foregone conclusion that Duke’s portfolios relying on offshore wind to help meet the 70% reduction requirement will fail to meet the requirement by 2030, it is nonetheless improper for Duke to try to avail itself of the “escape hatch” prospectively, in a proposal submitted in 2022. This is particularly true in light of the statutory language referring to “technical, legal, logistical, or other factors beyond the control of the electric

¹⁰ Duke’s proposed Carbon Plan, Appendix E at 51.

public utility,” some of which may be foreseeable, but none of which Duke has encountered yet.

P3 (“70% by 2034 SMR”) and P4 (“70% by 2034 OSW+SMR”) likewise fail to meet the statutory criteria that would trigger a delay in the compliance date. First, neither of those portfolios would have a “more significant and material” impact on carbon reduction relative to Portfolio 1: P3 would achieve a CO₂ reduction of 65% in 2030 and 74% in 2035, while P4 would achieve a CO₂ reduction of 64% in 2030 and 74% in 2035. Moreover, Duke assumes the first year that SMRs are available for selection by the model (that is, the year in which an SMR could come online) is 2033.¹¹ For Advanced Nuclear with Integrated Storage, Duke assumes the first year the resource is available for selection is 2038. As a result, it appears that Duke forecasts that its proposed portfolios that include new nuclear will not be able to meet the 70% requirement on time.¹² And again, Duke admits that the portfolios are designed to fail to meet the requirement on time: “Portfolio 3 (P3) is developed to achieve the 70% interim target in 2034 based on projected availability of new nuclear resources.”¹³ Similarly, Duke explains that “Portfolio 4 (P4) is developed to achieve the interim CO₂ reduction target in 2034” and that because offshore (OSW) was not selected by the model, Duke “prescribed” OSW in P4. Further, even if it grants the Companies’ request to approve initial project development activities for offshore wind and/or SMRs, the Commission will not “authorize construction” of nuclear/wind facility until it grants a CPCN. Again, Duke is seeking to avail itself of an extension prospectively, without triggering the statutory criteria necessary to authorize such an extension. To be

¹¹ Duke’s proposed Carbon Plan, Appendix E at 34.

¹² *Id.*

¹³ Duke’s proposed Carbon Plan, Appendix E at 52.

clear, CLEAN Intervenors strongly support development of OSW off the North Carolina coast and believe that it could play an important role in meeting H951's carbon reduction requirements. But the Commission should not allow Duke to avail itself of the extension allowed by H951 when it has not satisfied the criteria that are expressly set forth in the law.

2. DUKE'S MULTI-PATHWAY APPROACH IS NOT SUPPORTED BY H951

Section 1 of Part 1 of H951 directs the Commission to develop "a plan," in the singular, to achieve the law's carbon reduction requirements. As with any plan, updates and revisions will be required by the Commission as the Companies implement that plan. Some degree of operational flexibility will be required to adjust to unforeseen circumstances. All long-term plans require revision, as the statute itself allows by providing for revisions every two years. But recognizing that changes will need to be made to the initial plan finalized by the Commission at the end of this year does not justify Duke's request not to be held accountable to a plan that gives clear guidance for how the Companies should proceed with meeting their carbon pollution reduction targets. Duke should not be allowed to coach and referee a game in which it is a player, at once designing multiple play options, acting as quarterback to execute those options, and deciding whether a range of possible play options fall within the rules of the game.

B. DUKE’S REQUEST TO APPROVE NEAR-TERM SUPPLY-SIDE DEVELOPMENT AND PROCUREMENT

Duke’s second request for relief is that the Commission approve near-term supply-side development and procurement activities, as identified in Table 3 of the executive summary of its proposed Carbon Plan.¹⁴

1. DEEMING RESOURCES AS SELECTED IN THE CARBON PLAN

The first of Duke’s requested near-term supply-side development and procurement activities is the following:

Deeming the following resources as being selected in this initial Carbon Plan for purposes of HB 951, Section 1.(2), in all cases subject to the obligation to obtain a CPCN (where applicable) and to keep the Commission apprised of material changes in assumed pricing or schedule:

- (i) 3,100 MW of solar generation (including 750 MW requested to be procured through the 2022 Solar Procurement Program), of which a substantial portion is assumed to include paired storage;
- (ii) 1,600 MW of battery storage (1,000 MW stand-alone storage, 600 MW storage paired with solar);
- (iii) 600 MW of onshore wind;
- (iv) 800 MW of CTs; and
- (v) 1,200 MW of CC¹⁵

Duke presents this list of proposed supply-side resources as the near-term collection of new supply-side resources common to all of its portfolios,¹⁶ in effect a sort of near-term mini-portfolio. Although Duke correctly states that actual procurement would remain subject to the requirement to obtain a CPCN, where applicable, its request for approval of certain near-term activities such as applying for a CPCN for two 800 MW CTs and for one 1,200

¹⁴ Petition at 15. The Petition refers to a Table 3 “above,” but there are no tables in the Petition and the supply-side resources listed in Table 3 of the executive summary appear to match Duke’s request for relief. Table 3 is included on page 23 of the executive summary in Duke’s proposed Carbon Plan.

¹⁵ Petition at. 15-16.

¹⁶ Duke’s proposed Carbon Plan, Executive Summary at 22.

MW CC, all in 2023, and potentially for a second 1,200 MW CC in 2024 depending on fuel supply,¹⁷ is akin to requesting that the Commission grease the skids for this massive expansion of new gas resources.

The Commission should not approve Duke's request as proposed. To begin, the problems with Duke's approach to modeling discussed above make its results unreliable. Duke manually replaced battery storage selected by the economic optimization model with additional CTs. It manually removed between 1.6 and 2 GW of battery storage that had been selected by the EnCompass model from its portfolios and added between 1.5 and 1.9 GW of natural gas CTs.¹⁸ In addition, Duke's primary portfolios rely on the unfounded assumption that firm Appalachian gas transport capacity will manifest itself, whereas its alternative portfolios--which it proposes to use only if additional Appalachian gas transport capacity does not appear--include far fewer MW of CC units deployed.¹⁹ As the Commission recognized in the 2020 IRP proceeding, it is not wise to assume that additional Appalachian gas transport capacity will appear.²⁰ The result of these modeling decisions is a near-term action plan in which large gas expansion appears to be the result more of deliberate choice than economic optimization.²¹

A near-term action plan designed to make the best use of cheap zero-carbon resources and start the least-cost path to H951's carbon reduction requirements would rely more heavily on solar, storage, wind, and if possible, regional integration.

¹⁷ Duke's proposed Carbon Plan, Executive Summary at 23 (Table 3).

¹⁸ Duke's proposed Carbon Plan, Appendix E at 60.

¹⁹ Duke's proposed Carbon Plan, Ch. 3 at 12.

²⁰ 2020 IRP Order at 10-11.

²¹ *Order Accepting Integrated Resource Plans, Repts and CPRE Program Plans with Conditions and Providing Further Direction for Future Planning*, Docket No. E-100, Sub 165 (Nov. 19, 2021).

The General Assembly explicitly recognized that additional solar would be necessary to meet the H951 carbon reduction requirements, beginning in 2022. The Commission has properly exercised this authority and established a 2022 solar procurement, with a minimum procurement of 700 MW.²² The Commission has not established the final procurement volume, which under H951 should be based on the need for new solar as shown in the Carbon Plan proceeding. The Commission must ensure that the final target procurement volume for the 2022 solar procurement is sufficiently high to put Duke on-track to follow the least-cost path to the 2030 carbon limit. As discussed by parties in that proceeding, to avoid the serious risk of interconnection logjams in later years the Commission should seek to front-load solar procurement in earlier years to the greatest extent possible. This is all the more true when, as here, Duke's proposed Carbon Plan appears to under-deploy solar between now and 2030.

Storage deployment has suffered in Duke's proposed near-term mini-portfolio as a result of deliberate replacement with CTs. But battery storage in particular will complement the massive solar deployment required under any least-cost path to the H951 carbon reduction requirements, shifting energy delivery from times of peak solar generation to times of peak demand.²³ Storage also offers multiple additional grid values besides energy arbitrage, including providing ancillary services and functioning as a transmission asset (SATA). The value of storage to integrating low-cost zero-emitting

²² *Order Authorizing a Competitive Procurement of Solar Resources Pursuant to House Bill 951 and Establishing Further Procedures*, Docket Nos. E-2, Sub 1297 & E-7, Sub 1268 (May 26, 2022).

²³ See, e.g., E. Minear, Elec. Power Res. Inst., *Solar Plus Storage Cost Assessment and Design Considerations: Executive Summary slides 18-19* (2019), <https://www.epri.com/research/products/00000003002016637> (explaining that primary objective of adding storage usually is to shift the time for providing energy to the grid or to provide firm capacity outside of solar production hours); *Levelized Cost of Solar Plus Storage (Text Version)*, Nat'l Renewable Energy Labs., <https://www.nrel.gov/news/video/lcoss-text.html> (last visited Feb. 11, 2022) (explaining fundamentals of cost and value of solar-plus-storage facility).

resources including solar and wind, as well as its other values difficult to capture using traditional methods, have allowed it to out-compete gas economically²⁴ and it should form a cornerstone of the least-cost path to 2030.

Finally, as discussed in more detail in Mr. Caspary’s report, regional integration can improve reliability and save money in a variety of ways, including by allowing neighboring systems to take advantage of seasonal and resource diversity. Improved interconnection can allow neighboring systems to share reserves, lowering costs in each. And it facilitates “geographic smoothing” of the output of intermittent and variable renewable resources including solar and wind. The Commission should seek to rely on regional integration in the final Carbon Plan if possible and, recognizing it takes time, seek to foster regional integration as part of the least-cost path in future Carbon Plans.

The final Carbon Plan’s near-term supply-side development and procurement must chart a clear course to H951’s 2030 and 2050 requirements. Duke’s proposed near-term activities would not do that, due to overreliance on new gas generation and too little deployment of cheap zero-carbon generation resources. The Commission should not approve Duke’s requested near-term supply-side development and procurement activities as proposed.

²⁴ See Bloomberg NEF, *How PV-Plus-Storage Will Compete With Gas Generation in the U.S.* (2020), <https://assets.bbhub.io/professional/sites/24/BloombergNEF-How-PV-Plus-Storage-Will-Compete-With-Gas-Generation-in-the-U.S.-Nov-2020.pdf> (finding solar-plus-storage a “zero-emissions threat to gas”); Xi Lu, et al., *Combined solar power and storage as cost-competitive and grid-compatible supply for China’s future carbon-neutral electricity system*, Proc. of the Nat’l Academy of Sci. of the U.S. of Am. (Oct. 19, 2021), <https://www.pnas.org/content/118/42/e2103471118>; Colleen Leuken, *Beyond Peaker Replacement: Solar+Storage Finds a New Job*, Fluence (Apr. 18, 2019), <https://blog.fluenceenergy.com/fluence-energy-storage-solar-storage-mid-merit-utility-scale-asset>.

2. INITIAL DEVELOPMENT ACTIVITIES FOR OFFSHORE WIND, SMRS, AND PUMPED STORAGE HYDRO

Duke also requests that the Commission “Approv[e] the Companies’ plans to pursue initial development activities to support the future availability of offshore wind, SMRs and new pumped storage hydro at Bad Creek[.]”²⁵ Offshore wind and pumped storage hydro technologies are proven to be commercially operable in the United States. Conversely, SMR and other advanced nuclear reactor technologies are unproven, with subsidized projects at various stages of the licensing and approval process nationwide.²⁶ At this early stage in the state’s Carbon Plan process, the Commission should focus on developing those resources most likely to be a part of the long-term carbon reduction strategy and taking the steps necessary to decarbonize the energy system. For example, making necessary transmission system upgrades and enabling interconnection for offshore wind will provide valuable system improvements as stand-alone investments. Up-front investment in technologies that may not be practically or commercially viable in the future is not part of a “no-regrets” early development strategy.

3. DETERMINATIONS REGARDING REASONABLENESS AND PRUDENCE, DEFERRAL ACCOUNTING, AND RATE-BASE RECOVERY

Duke makes three additional requests of the Commission with respect to its near-term project development activities. The first is that the Commission determine it is reasonable and prudent for the Companies to engage in the initial project development activities summarized in Table 3.²⁷ Determining the reasonableness and prudence of a cost

²⁵ Petition at 16.

²⁶ Duke’s proposed Carbon Plan, Appendix L at 8-9.

²⁷ Petition at 16. In paragraph 18 of its Petition, Duke states that it is requesting the Commission approve “as reasonable and prudent initial project development activities on three longer-lead time resources—offshore

or expense is the appropriate standard for the Commission when authorizing recovery in a rate case. This determination is not necessary at the least-cost resource planning stage, making Duke's request premature and inappropriate at this time. Determining the reasonableness and prudence of project development activities that incur expenses sets the stage for future recovery in a rate case. The Commission need not make such a determination or approve of any costs related to project development activities in order to develop a Carbon Plan that charts a course towards H951's carbon reduction requirements.

Second, Duke requests to defer project development costs for recovery in a future rate case, subject to the Commission's review of the reasonableness and prudence of incurred costs in future proceedings.²⁸ The Commission need not address Duke's request for deferral accounting in this docket to develop its least-cost Carbon Plan. The Companies should seek Commission approval to establish a regulatory asset for deferred project development costs by filing a petition in a separate docket.

Duke also requests that costs incurred developing long lead time resources that are ultimately not included in subsequent adjustments to the Commission's Carbon Plan "be recoverable through base rates over a period of time to be determined by the Commission."²⁹ This risk, that project development costs will be incurred for projects that are later cancelled or removed from subsequent Carbon Plans, is precisely why CLEAN Intervenors stress the importance of a "no-regrets" strategy for early project investments. Resources that rely on unproven technologies, like SMRs, pose the greatest risk that a

wind, SMRs, and new pumped storage hydro." Whether the Companies' request is for the Commission to determine all initial project development activities summarized in Table 3 are reasonable and prudent, or just those activities related to offshore wind, SMRs, and pumped storage hydro, CLEAN Intervenors maintain the request should be denied for the above-stated reasons.

²⁸ Petition at 16.

²⁹ *Id.*

project will not be deployable in the necessary timeframe to achieve the energy transition, to say nothing of nuclear energy’s history of project cost overruns and lengthy delays.³⁰ Investing in the transmission network upgrades that would enable offshore wind or additional pumped storage hydro would enable the deployment of alternative supply-side resources if future adjustments to the Commission’s Carbon Plan require a shift in direction or if long lead time resources ultimately cannot be deployed in the required timeframe.

C. CHANGES TO EXISTING RESOURCES

Next, Duke requests that the Commission “Approve the Companies’ proposed actions with respect to existing supply-side resources, including through expanding flexibility of the existing gas fleet and continued disciplined pursuit of SLRs for the Companies’ existing nuclear fleet[.]”³¹ These actions include modifying existing CC and CT units, seeking regulatory approval for changes to operational and air permits, and pursuing subsequent license renewals (SLRs) for existing nuclear facilities.³² CLEAN Intervenors do not take a position on Duke’s request at this time, but note that other aspects of Duke’s proposed Carbon Plan could dramatically impact the need for Duke to modify existing CC and CT units and seek regulatory approval for changes to operational and air permits, namely the combining of the DEC and DEP balancing areas.

The Companies assert that consolidating system operations³³ will allow for (i) economically efficient sharing of operating reserves, reducing the number of combustion

³⁰ In 2018, Dec sought recovery of \$347 million in project development costs from the Lee Nuclear Project after the project was cancelled. *See Order Accepting Stipulation, Deciding Contested issues, and Requiring Revenue Reduction*, pg. 50, Docket Nos. E-7, Sub 1146; E-7, Sub 819; E-7, Sub 1152; E-7, Sub 1110 (June 22, 2018).

³¹ Petition at 16.

³² Petition at 10-11.

³³ The Companies plan to consolidate system operations includes consolidating the three balancing authorities, transmission operator and transmission service provider operating functions, and consolidating

turbine peaker starts³⁴ and (ii) a lower planning reserve margin, reducing the need for additional capacity resources, which should help lower customer costs,³⁵ as well as improving reliability, “resource portfolio flexibility, production cost savings, simplifications with NERC compliance, and transmission service provision[.]”³⁶ However, Duke warns the Commission that any delay in its “aggressive” timeline for achieving consolidated system operations will hinder its ability to achieve the carbon reduction requirements in H951.³⁷ Delay in the regulatory process is not one of the enumerated circumstances under which the Commission may extend the statutory compliance deadline. If, at a future date, circumstances arise that indicate an extension of the statutory deadline is “necessary to maintain the adequacy and reliability of the existing grid,”³⁸ due in some part to a regulatory delay or barrier to executing Duke’s consolidated system operations plan, the Commission may decide to extend the timeframe for meeting the statutory carbon reduction requirements.

The Companies are also considering a full merger of both the DEC and DEP utilities. Such a merger would allow for joint ownership of the utilities’ generation facilities and submittal of a single unit commitment plan, which may create savings for customers.³⁹ Unlike consolidating system operations, merging the DEP and DEC utilities would result in shifting some costs from the wholesale jurisdiction to the retail jurisdiction.⁴⁰ The Companies still need to assess how rate differences between the two utilities and shifts in

the Companies’ transmission service zones in the current open-access transmission tariff into one zone, as detailed in Appendix R of Duke’s proposed Carbon Plan.

³⁴ Duke’s proposed Carbon Plan, Appendix R at 2.

³⁵ Duke’s proposed Carbon Plan, Appendix R at 4.

³⁶ Duke’s proposed Carbon Plan, Appendix R at 2.

³⁷ Duke’s proposed Carbon Plan, Appendix R at 5.

³⁸ H951, Pt. I, Sec.1(4).

³⁹ Duke’s proposed Carbon Plan, Appendix R at 5.

⁴⁰ See Duke Response to Public Staff Data Request 13-9.

cost allocations would impact customers. The Commission should require the Companies to evaluate the costs and benefits to customers of a potential merger of the DEP and DEC utilities to determine whether the proposed merger would provide benefits beyond those likely to result from consolidating system operations and what costs, if any, would be borne by customers.

D. GRID EDGE AND CUSTOMER PROGRAMS

Duke next requests that the Commission “Approve the Companies’ plans to advance Grid Edge and Customer Programs and to update the underlying determination of the utility system benefits in the Companies’ approved EE/DSM Cost Recovery Mechanism[.]”⁴¹ CLEAN Intervenors support increased reliance on grid edge and customer programs as key components in a least-cost Carbon Plan. But Duke can do more than it proposed in its Carbon Plan.

Putting rhetoric relating to an “ambitious” or “aggressive” target to the side,⁴² Duke is not proposing a sufficient amount of energy efficiency savings in its plan. One percent of eligible load is less than DEC has already achieved in recent years and about what DEP has already achieved—without the policy driver of HB 951’s carbon reduction mandate. In its proposed Carbon Plan, Duke provides a graphic (Figure G-1) comparing itself to other utilities regarding energy savings delivery. However, while those other utilities in Figure G-1 are in the Southeast, the Companies precede that chart with a statement that suggests that Duke is a national leader in energy savings.⁴³ Instead, in the American Council for an Energy Efficient Economy’s (ACEEE) 2020 Scorecard, which ranks the 52

⁴¹ Petition at 17.

⁴² Duke’s proposed Carbon Plan, Appendix G at 5.

⁴³ Duke’s proposed Carbon Plan, Appendix G at 7.

largest electric public utilities in the country on a range of efficiency metrics, DEC falls in the middle of the pack when it comes to savings as a percentage of annual sales, ranked 26 out of 52 (falling just shy of 1% savings) and DEP ranked 32 (with .76% savings).⁴⁴ Industry leading savings are in the 2 to 3.75% range, in states with supportive policies such as energy efficiency resource standards. When ranked against their peer utilities, DEC and DEP do not substantially exceed the national average for energy savings.⁴⁵ H951 provides the Commission with the authority to drive higher savings as integral to a least-cost pathway for achieving long-term carbon reductions.

Instead, Intervenors request that the Commission require Duke to ramp up to 1.5% savings of total load as a reasonable utility efficiency target as it develops its least-cost Carbon Plan. Duke has experience successfully managing a diverse portfolio of utility efficiency programs, can take advantage of supportive state policy that allows for full cost recovery, and can reach additional savings with the aid of new programs and adjusted cost-effectiveness frameworks. The Commission itself has ordered the Duke DSM/EE Collaborative to consider “ways to implement a step approach to the incentive/penalty structure adopted” in the most recent cost-recovery mechanism docket to “achieve even greater annual energy savings.”⁴⁶ If the Commission were to mandate 1.5% savings of total retail load as part of the Carbon Plan that it develops, CLEAN Intervenors are confident that Duke could achieve that target, especially given that 13 of Duke’s peer utilities already achieve 1.5% savings or more.⁴⁷

⁴⁴ ACEEE 2020 Utility Scorecard at p. 26, (https://www.aceee.org/sites/default/files/pdfs/u2004%20rev_0.pdf).

⁴⁵ Duke’s proposed Carbon Plan, Appendix G at 7.

⁴⁶ *Order Approving Revisions to DSM/EE Cost Recovery Mechanisms*, Docket Nos. E-2, Sub 931 & E-7, Sub 1032 at 14 (Oct. 20, 2020).

⁴⁷ ACEEE 2020 Utility Scorecard at p. 26 (https://www.aceee.org/sites/default/files/pdfs/u2004%20rev_0.pdf).

CLEAN Intervenors support the idea of updating the inputs underlying the benefits to the utility system in the EE/DSM cost-recovery mechanism so that those customer-sited programs are evaluated on par with zero-carbon supply-side alternatives.⁴⁸ Higher gas prices themselves are likely to increase the avoided cost value of the Company's EE programs. Duke's proposal to compare the value of EE investments to zero-carbon supply-side alternatives is a sensible way to ensure that those efficiency programs are not undervalued going forward. NCSEA and SACE have also called for including a carbon price in the avoided cost calculation.⁴⁹ Similarly, Intervenors support moving to an "as found" savings baseline for certain programs,⁵⁰ such as tariffed on-bill financing, which have the promise to unlock significant capital to finance deep retrofits at scale for residential customers who otherwise would not have been able to invest in such upgrades.

There are other elements of Duke's Grid Edge and Customer Programs proposals, however, that have not been sufficiently vetted at this time. For example, Duke proposes to expand the definition of low-income eligibility to include "moderately low-income customers," going up to 300% of the federal poverty level (FPL).⁵¹ Notably, this expanded definition of low-income eligibility was never broached in the Low-Income Affordability Collaborative.⁵² CLEAN Intervenors have serious reservations about expanding the definition of low-income while there remains so much work to be done to reach those

⁴⁸ Duke's proposed Carbon Plan, Appendix G at 12-13.

⁴⁹ See, *Joint Proposed Partial Order of the Carolinas Clean Energy Business Association and the North Carolina Sustainable Energy Association*, Docket No. E-100, Sub 175 (July 1, 2022) and *Partial Proposed Order of the Southern Alliance for Clean Energy*, Docket No. E-100, Sub 175 (July 1, 2022).

⁵⁰ Duke's proposed Carbon Plan, Appendix G at 13.

⁵¹ Duke's proposed Carbon Plan, Appendix G at 9-10.

⁵² The Companies note that they will leverage input from Low-Income Affordability Collaborative (LIAC) elsewhere in Appendix G, but yet in the year-long LIAC process, this idea of substantially expanding the definition of who qualifies as income eligible was not ever broached. Duke's proposed Carbon Plan, Appendix G at 21.

existing income-eligible customers who are most energy-burdened (those at or below 200% of the FPL). Duke's preliminary estimates show that raising the threshold of eligibility to 300% of the FPL would add about 300,000 additional customers to the pool of income-eligible households, a pool that already includes over 990,000 customers, many of whom have never been reached by Duke's existing low-income offerings.⁵³ CLEAN Intervenors are supportive of the other initiatives listed for better reaching income-eligible households and will continue to work in the Duke EE/DSM Collaborative and other venues for continuing to expand the reach and effectiveness of the Companies' income-qualified efficiency offerings.

Similarly, CLEAN Intervenors are skeptical that there is a need for the Companies to offer a new program that would target replacement of existing appliances with minimum code standard appliances.⁵⁴ Assuming the Companies successfully launch a new tariffed on-bill financing program,⁵⁵ that mechanism may prove well-suited to unlocking the market for replacing aging, inefficient appliances with above-code, more efficient appliances. In any event, it would be premature for the Commission to endorse an incentive for code-standard equipment when that idea has not yet been thoroughly vetted.

As more solar is integrated on the grid, both utility scale and customer-sited net metered solar, it will become increasingly important to integrate demand response programs and time varying electricity rates on a larger scale. For certain appliances, like water heaters and electric vehicles, this can often be accomplished with little to no inconvenience to customers. As such, making those the default option, rather than requiring

⁵³ Duke response to NCSEA & SACE, et al. Data Request 4-10(e)

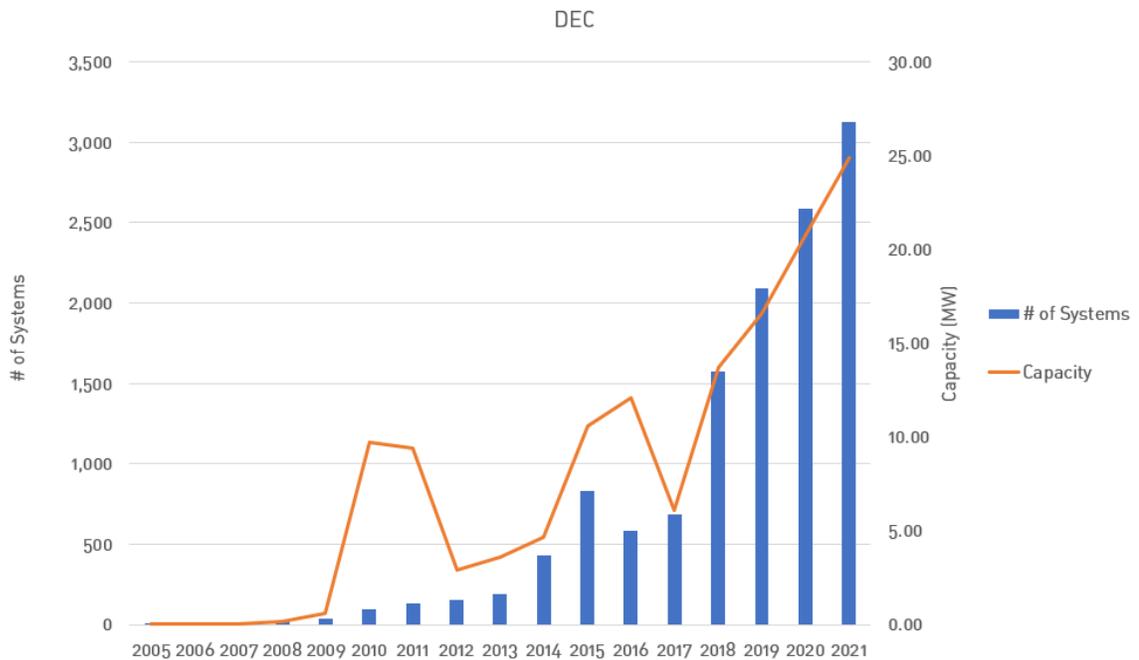
⁵⁴ Duke's proposed Carbon Plan, Appendix G at 14.

⁵⁵ See Duke's proposed Carbon Plan, Appendix G at 11-12.

customers to sign up, may increasingly be necessary, and would be one way to address Duke’s understandable concerns about being able to attract a sufficient number of customers to these DR programs and more innovative rate designs. Duke could also experiment with third-party aggregators to recruit customers to participate in demand-response programs.

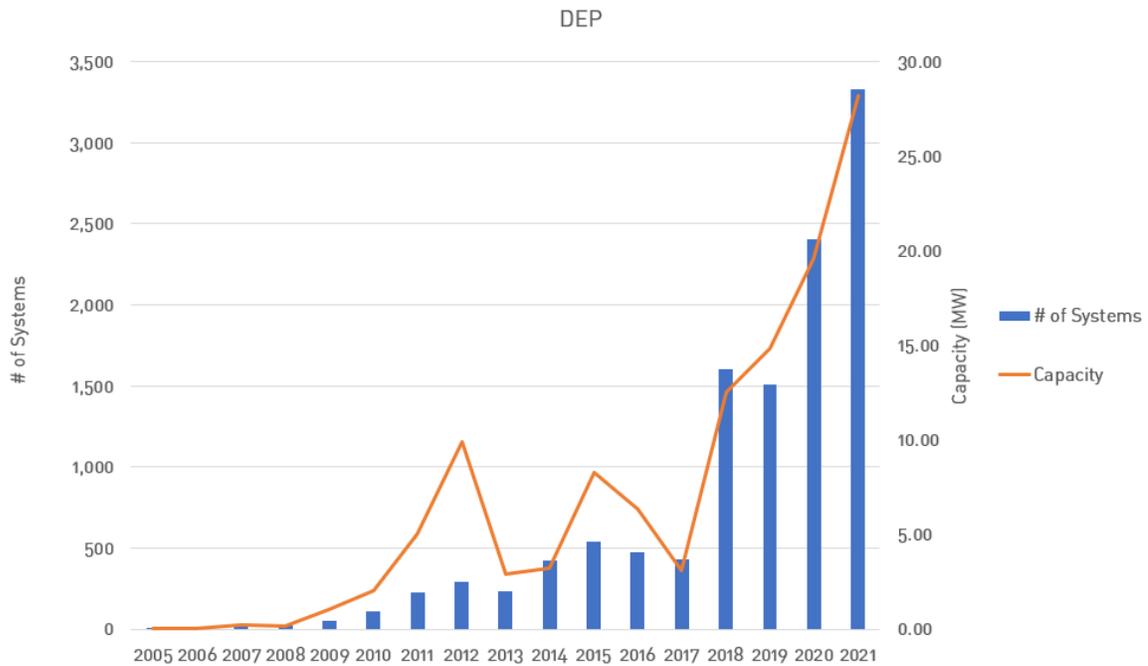
Duke Energy’s projections for future net metering (NEM) adoption are too conservative. The projections for both North and South Carolina included in Appendix G show an additional 2,027 NEM customers for DEC per year and an additional 850 NEM customers for DEP per year from 2022 to 2030. These numbers are below recent trends. There were more than 3,000 new NEM customers for DEC and DEP each in North Carolina 2021.

Figure 1: Annual NEM Installations in DEC⁵⁶



⁵⁶ The data underlying Figures 1 and 2 was compiled from Reports of Proposed Construction filed with the Commission in various dockets.

Figure 2: Annual NEM Installations in DEP



Considering recent trends, the possibility of projected rate increases, and the potential of a new NEM incentive,⁵⁷ it is not reasonable to expect residential solar adoption rates to decline over the intermediate Carbon Plan planning horizon. The Commission will also have an important role to play in providing a supportive framework for customer adoption of rooftop solar, which allows for private investments in renewable energy that further carbon reduction requirements.

E. TRANSMISSION SYSTEM PLANNING PROCESS

Duke next requests that the Commission “Acknowledge that HB 951 establishes new public policy goals requiring new generation and other resources that will necessarily inform the Companies’ transmission system planning processes as outlined in the Open Access Transmission Tariff and direct the Companies to continue to study future

⁵⁷ Duke Energy’s proposed Smart Saver Solar incentive, pending Commission review in Docket Nos. E-2, Sub 1287 and E-7, Sub 1261.

transmission needs to reliably implement the Carbon Plan through the NCTPC and other appropriate forums[.]”⁵⁸ CLEAN Intervenors agree that H951 establishes new public policy goals, including to develop a Carbon Plan “which may, at a minimum, consider power generation, transmission and distribution, grid modernization, storage, energy efficiency measures, demand-side management, and the latest technological breakthroughs to achieve the least cost path consistent with this section to achieve compliance with the authorized carbon reduction goals[.]”⁵⁹ However, as discussed in Mr. Caspary’s Report, Duke has not shown that its proposed Carbon Plan considers transmission to achieve the least-cost path towards the required carbon reductions. As such, it is premature for the Commission to conclude that the existing transmission planning process through the North Carolina Transmission Planning Collaborative is the most appropriate way for transmission to be utilized in decarbonization. Duke’s request is also premature given the ongoing work of the Joint Federal-State Task Force on Electric Transmission.⁶⁰ While CLEAN Intervenors agree that H951 establishes new public policy goals for Duke’s transmission system, they disagree with Duke that doubling-down on the current, flawed policy process is appropriate. Thus, CLEAN Intervenors request that the Commission deny Duke’s request for relief or defer ruling on it until the Joint Federal-State Task Force on Electric Transmission has completed its work.

F. CO₂ TRACKING

Duke requests that the Commission “Approve the Companies’ methodologies outlined in Appendix A (Carbon Baseline and Accounting) for tracking compliance with

⁵⁸ Petition at 17.

⁵⁹ H951, Pt. I, Sec.1(1).

⁶⁰ See, FERC Docket AD21-15-000. See also, <https://www.ferc.gov/TFSOET>.

HB 951's CO₂ emissions reductions requirements and confirm the Commission's accounting requirements for emissions from new out-of-state resources selected by the Commission (if any) as described above[.]”⁶¹ Intervenor support Duke's request that the Commission confirm Duke's approach to accounting for the emissions from new out-of-state resources. H951 refers to carbon emission “emitted in the State” as what must be reduced.⁶² This over-simplification fails to account for the intricacies and nuances of how DEP and DEC's systems operate in North Carolina. Both H951 and the Commission's initial order⁶³ in this proceeding required including stakeholder input in development of the Carbon Plan, and during the stakeholder meetings convened by Great Plains Institute stakeholders alerted Duke to the potential perverse effect of interpreting this language too narrowly. Were the Companies to build a fleet of carbon-intensive new generation resources directly over the North Carolina state line in order to serve the load needs of in-state consumers, that would clearly contradict the intent of the law. Wherever the resources on which Duke relies to meet North Carolinian's electricity needs happen to be located, reducing emission of carbon dioxide by the Companies will also reduce risk to ratepayers.

The remainder of the request should be denied for the following reasons. Duke's methodology used to determine CO₂ emissions reductions requirements is not disputed at this time. However, Duke has not provided sufficient means for tracking compliance with these requirements, citing a lack of reporting requirement in H951.⁶⁴

⁶¹ Petition at 17.

⁶² H951, Pt. I, Sec.1(1).

⁶³ *Order Requiring Filing of Carbon Plan and Establishing Procedural Deadlines* at 2(Nov. 19, 2021).

⁶⁴ Duke's proposed Carbon Plan, Appendix A at 7-8.

Though implemented to reduce emissions of nitrogen (NOx) and sulfur dioxide (SO2), the North Carolina Clean Smokestacks Act⁶⁵ may serve as a basis for tracking compliance. Under this act, investor-owned public utilities are required to submit an annual report that includes information related to compliance with NOx and SO2 reduction requirements.⁶⁶ This information includes the number of tons of emissions accumulated in the past year, the total amount of environmental compliance costs, and any anticipated construction related to compliance.⁶⁷ In its annual update, Duke should provide similar information, along with statistical data that illustrates any progress made towards meeting carbon reduction requirements to effectively track compliance.

Thus, CLEAN Intervenors request that the Commission deny Duke's request for relief until Duke further develops a method for tracking compliance and enforcement.

G. DELAY NEXT INTEGRATED RESOURCE PLAN FILING TO 2024

Duke requests that the Commission "Affirm that the first biennial Carbon Plan update proceeding should be held in 2024 and that the Companies' next biennial IRPs will be held in abeyance to 2024 to align with the Carbon Plan update[.]"⁶⁸ CLEAN Intervenors support this request for relief.

H. REVISIONS TO COMMISSION RULE R8-60

Duke's eighth request for relief is for the Commission to "Direct the Companies and the Public Staff to develop and propose for comment by January 31, 2023, revisions to the Commission's IRP Rule R8-60 and related rules for certificating new generating

⁶⁵ N.C. Gen. Stat. § 143-215.107D ("Clean Smokestacks Act").

⁶⁶ *Id.*

⁶⁷ N.C. Gen. Stat. § 62-133.6(i) ("Clean Smokestacks Act").

⁶⁸ Petition at 17.

facilities to support execution of the Carbon Plan[.]”⁶⁹ Duke’s request should be denied for several reasons.

First, the Commission has already stated its intent to “initiate, by separate order and subsequent to undertaking the development of the initial Carbon Plan, a rulemaking proceeding to revise Commission Rule R8-60 to reflect the approach of syncing the Carbon Plan with the IRP proceedings.”⁷⁰ The Commission need not grant Duke’s request for relief because the Commission has already signaled its intent to address revisions to Rule R8-60. Moreover, Duke’s request directly contradicts the Commission’s previous order. Despite the fact that the Commission announced its intent to revisit Rule R8-60 “subsequent to undertaking the development of the initial Carbon Plan,” which is required to be completed by December 31, 2022, Duke proposes that it and the Public Staff propose amendments to Rule R8-60 “by January 31, 2023,” meaning that revisions to Rule R8-60 would be developed contemporaneously with the development of the Commission’s initial Carbon Plan.

Second, Duke’s request should be denied because it is inappropriate for Duke and the Public Staff to develop changes to Rule R8-60 behind closed doors and without input of other stakeholders. The Commission’s orders in this proceeding have consistently emphasized “collaborative work[.]”⁷¹ “consensus[.]”⁷² and a “meaningful stakeholder process[.]”⁷³ Duke’s request for only the Companies and the Public Staff to be involved in

⁶⁹ Petition at 17.

⁷⁰ *Order Requiring Filing of Carbon Plan and Establishing Procedural Deadlines*, pp. 1-2 (November 19, 2021) (internal footnotes omitted).

⁷¹ *Order Requiring Filing of Carbon Plan and Establishing Procedural Deadlines*, p. 2 (November 19, 2021).

⁷² *Order Requiring Filing of Carbon Plan and Establishing Procedural Deadlines*, p. 2 (November 19, 2021).

⁷³ *Order Regarding Data Inputs and Assumptions, and Scheduling Additional Update on Stakeholder Process Sufficiency*, p. 2 (March 22, 2022).

proposing modifications to Rule R8-60 is directly contradictory to the Commission's oft-repeated direction that these proceedings should be inclusive and collaborative.

Finally, Duke's request for the Commission to order it to propose amendments to the Commission's CPCN rules should be summarily denied. Early versions of H951 included the following language:

If a replacement resource requires a certificate of public convenience and necessity under G.S. 62-110.1 or otherwise, and is approved by the Commission under this section, such replacement resource shall be deemed consistent with the public convenience and necessity and public interest for purposes of G.S. 62-110.1, and the Commission shall issue a certificate of public convenience and necessity for such replacement resources at the time of its approval, and no further process shall be required under G.S. 62-110.1 except as otherwise addressed herein.⁷⁴

However, this language relieving utilities from the CPCN requirements did not become law.⁷⁵ Given that there has been no change to the laws governing CPCNs, there need not be any changes to the Commission's rules governing CPCNs. As such, Duke's request for the Commission to direct Duke to work with the Public Staff to develop new CPCN rules should be summarily rejected. Instead, the Commission should proceed with its previously announced plan to initiate a rulemaking proceeding subsequent to the completion of the initial Carbon Plan; CLEAN Intervenors submit that this proceeding should consider revisions to the CPCN rules as well as the IRP rules.

⁷⁴ N.C. House Bill 951, 3rd Ed., p. 5, lines, 26-34, available at <https://www.ncleg.gov/Sessions/2021/Bills/House/PDF/H951v3.pdf>.

⁷⁵ In the still-open PBR rulemaking in Docket No. E-100, Sub 178, the Commission solicited comments from intervenors on a number of questions relating to the interplay between the CPCN process and capital projects proposed in a PBR Application. Most commenters similarly stressed that H951 did not amend the CPCN process and that utilities are not relieved from seeking a CPCN as required by law.

I. CLEAN INTERVENORS' REQUESTS FOR RELIEF

CLEAN Intervenors respectfully request that the Commission grant each of the following requests for relief:

1. Deny Duke's request to find its proposed Carbon Plan is reasonable for planning purposes. In developing its own Carbon Plan as H951 directs, the Commission may rely on the information submitted in proposed plans by the parties, however, the Commission should not adopt Duke's proposed Carbon Plan wholesale as the Commission's own.
2. Deny Duke's request that the megawatts of gas generation specified in Table 3 of the Executive Summary be deemed selected in the Commission's initial Carbon Plan.⁷⁶
3. Deny Duke's request for approval of initial development activities to facilitate new nuclear development in the near-term. Grant Duke's request to approve initial development activities that facilitate offshore wind and pumped storage hydro development.
4. Decline to make any finding with respect to the reasonableness or prudence of Duke's initial project development activities, either for long lead time resources such as offshore wind, SMRs, and pumped storage hydro or the additional resources included in Table 3 of the executive summary of Duke's proposed Carbon Plan.

⁷⁶ CLEAN Intervenors may make additional requests for relief regarding near-term procurement and other issues that depend on the Synapse report in cover comments filed concurrently with the report.

5. Deny Duke's request for approval of deferral accounting, absent additional procedural review.
6. Deny Duke's request to recover through base rates any project development costs for long lead time resources ultimately not necessary to the energy transition.
7. Direct the Companies to evaluate the costs and benefits to customers of a potential merger of the DEP and DEC utilities.
8. Ramp up utility energy efficiency savings to 1.5% of total retail load in the Commission's Carbon Plan.
9. Deny Duke's request for adopting changes to the definition of low-income customers for purposes of its income-qualified EE programs, for an energy efficient program that offers incentives for code-standard appliances, and for related EE modifications that have not been properly vetted.
10. Adopt more reasonable assumptions for customer adoption of NEM for carbon planning purposes and continue to offer reasonable support for private investments in distributed renewable energy resources.
11. Revise the inputs underlying the benefits to the utility system in the EE/DSM cost-recovery mechanism so that those customer-sited programs are evaluated on par with zero-carbon supply-side alternatives and support "as found" savings baseline as appropriate for new efficiency programs.
12. Develop a Carbon Plan that relies on proactive multi-value portfolios of transmission expansion planning, incorporates the results of existing collaborative planning efforts, leverages existing transmission corridors using

advanced transmission technologies, and relies to the extent possible on regional projects that can reduce costs and improve reliability.

13. Open a docket to synchronize grid planning and transmission planning processes with Carbon Plan process and direct Duke to synchronize the two in its future proposed Carbon Plans.
14. Confirm Duke’s approach to accounting for the emissions from new out-of-state resources.
15. Order that Duke provide an annual update, along with statistics, that illustrate any progress made towards meeting carbon reduction requirements to effectively track compliance.
16. Affirm that the Companies’ next biennial IRPs are held in abeyance to 2024.
17. Deny Duke’s request that it and the Public Staff alone develop revisions to the Commission’s IRP Rule R8-60.
18. Deny Duke’s request that it and the Public Staff develop revisions to the Commission’s rules for certificating new generating facilities.

III. CONCLUSION

A. ISSUES FOR EVIDENTIARY HEARING

In its April 1, 2022 *Order Establishing Additional Procedures and Requiring Issues Report*, the Commission directed “intervenor parties to identify in their July 15, 2022 filings the substantive issues, if any, that should be the subject of an expert witness hearing.” As discussed previously, under H951 the Commission holds the power and obligation to develop the Carbon Plan. Accordingly, the Commission may decide to proceed with development of that plan—either by using its own EnCompass license or by

retaining a consultant—based on the filings made by the parties, as well as any workpapers and/or modeling files the Commission may require the parties to supply. Rather than entertaining a “battle of the experts” hearing, the Commission could exercise its own expert judgment in determining which inputs and assumptions are most reasonable for purposes of discharging its statutory obligation. Such an approach could allow the Commission to bypass an evidentiary hearing altogether, and instead spend the remaining months of 2022 in crafting its Carbon Plan.

In the event that the Commission does not adopt this approach and elects to convene an expert witness hearing, the CLEAN Intervenors identify the following substantive issues that should be the subject of that hearing:

1. The appropriate inputs for EnCompass modeling, including but not limited to:
 - a. Assumptions regarding the potential for energy efficiency, demand response and behind-the-meter customer generation, including rooftop solar;
 - b. Assumptions regarding the availability and cost of different resources;
 - c. Assumptions regarding the price of fuel;
 - d. Assumptions regarding the cost of transmission upgrades;
 - e. Whether cost inputs should be publicly available information or proprietary;
 - f. Whether modeling should include firm, out-of-state clean energy generation as a selectable resource; and
 - g. The appropriate role of non-commercialized technologies, such as SMRs and hydrogen resources, in the Carbon Plan;
2. The role of transmission upgrades, planning, and strategy in the Carbon Plan;

3. The appropriate schedule for retirement of Duke’s coal-fired units;
4. Whether any of the statutory criteria justifying delay in meeting the interim 70% reduction requirement have been met;
5. The near-term supply-side development and procurement activities necessary to implement the plan;
6. Scope of initial development activities for long-lead-time resources, such as OSW; and
7. Costs and benefits of consolidating DEC and DEP system operations, including but not limited to combining balancing authority areas and/or merger of the two utilities.

Respectfully submitted, this the 15th day of July 2022.

/s/ Taylor M. Jones

Taylor M. Jones
N.C. State Bar No. 58831
Peter H. Ledford
N.C. State Bar No. 42999
NC Sustainable Energy Association
4800 Six Forks Road, Suite 300
Raleigh, NC 27609
919-832-7601
taylor@energync.org
peter@energync.org

*Attorneys for North Carolina
Sustainable Energy Association*

/s/ Gudrun Thompson

Gudrun Thompson
N.C. Bar No. 28829
David L. Neal
N.C. Bar No. 27992
Nicholas Jimenez
N.C. Bar No. 53708

SOUTHERN ENVIRONMENTAL
LAW CENTER

601 W. Rosemary Street, Suite 220

Chapel Hill, NC 27516

Telephone: (919) 967-1450

Fax: (919) 929-9421

*Attorneys for Southern Alliance for
Clean Energy, Sierra Club, and
Natural Resources Defense Council*

CERTIFICATE OF SERVICE

I hereby certify that all persons on the docket service list have been served true and accurate copies of the foregoing filing by hand delivery, first class mail deposited in the U.S. mail, postage pre-paid, or by email transmission with the party's consent.

This the 15th day of July 2022.

/s/ Gudrun Thompson