

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. E-100, SUB 190

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

)	POST- HEARING BRIEF OF
In the Matter of:)	NORTH CAROLINA
Biennial Consolidated Carbon Plan)	ENVIRONMENTAL
and Integrated Resource Plans of)	JUSTICE NETWORK AND
Duke Energy Carolinas, LLC, and)	ENVIRONMENTAL
Duke Energy Progress, LLC, Pursuant to)	JUSTICE COMMUNITY
N.C.G.S. § 62-110.9 and § 62-110.1(c))	ACTION NETWORK

North Carolina Environmental Justice Network and Environmental Justice Community Action Network (collectively, “Joint Intervenors”), by and through undersigned counsel, respectfully submit this joint post-hearing brief for consideration by the North Carolina Utilities Commission (“Commission”) pursuant to the Commission’s *Notice of Due Date of Proposed Orders and/or Briefs* entered on August 19, 2024, in the above-referenced docket.

SUMMARY

N.C. Gen. Stat. § 62-110.9 directs the Commission to take all reasonable steps to achieve a seventy percent reduction in carbon emissions from 2005 levels by 2030 and carbon neutrality by 2050 through the development of a Carbon Plan and associated biennial updates.¹ This path to carbon neutrality, proposed by Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP”) (together, “the Companies” or “Duke”) must “[c]omply with current law and practice with respect to the least cost planning for

¹ N.C. Gen. Stat. § 62-110.9(1).

generation, pursuant to G.S. 62(a)(3a), in achieving the authorized carbon reduction goals and determining generation and resource mix for the future.”²

N.C. Gen. Stat. § 62-2(a)(3a) states that, in achieving these least cost emissions reduction requirements, it is the policy of North Carolina to “include use of the entire spectrum of demand-side options, including but not limited to conservation, load management and efficiency programs, as additional sources of energy supply and/or energy demand reductions.”³

As part of this pathway, North Carolina requires any electricity-generating facility to obtain “a certificate that public convenience and necessity requires, or will require, such construction” from the Commission.⁴ This Certificate of Public Convenience and Necessity (“CPCN”) “shall be granted only if the applicant demonstrates and the Commission finds that the facility is part of the *least cost* path to achieve compliance with the authorized carbon reduction goals in G.S. 62-110.9, will maintain or improve upon the adequacy and reliability of the existing grid, and that the construction and operation of the facility is *in the public interest*.”⁵

The Commission has the responsibility to ensure that least cost considerations required by HB951⁶ and CPCN issuance⁷ represent a holistic and true cost of energy generation for all North Carolinians. However, the Companies’ recommended pathway, Pathway 3, envisions an immense natural gas buildout premised on a transition to

² N.C. Gen. Stat. § 62-110.9(2).

³ N.C. Gen. Stat. § 62-2(a)(3a); *see also* N.C.U.C. Rule R8-60A.

⁴ N.C. Gen. Stat. § 62-110.1(a).

⁵ N.C. Gen. Stat. § 62-110.1(e) (emphasis added).

⁶ N.C. Gen. Stat. § 62-110.9.

⁷ N.C. Gen. Stat. § 62-110.1.

undemonstrated⁸ hydrogen-based generation, despite demand-side solutions presenting realistic opportunities to forego the need for this level of expanded fossil fuel infrastructure. Moreover, the Companies' plan does not factor in the *true* cost of the proposed natural gas infrastructure and operation as required by law.⁹ The absence of key cost considerations is most egregious in Duke's failure to incorporate any analysis of the cost of externalities to communities where natural gas infrastructure is sited. Without a comprehensive and holistic analysis of *all* costs, including externalities, Duke's proposal is not a least cost plan, and it is likewise not in the public interest.

While the Companies are obligated to pursue the least cost pathway to compliance, this least cost calculation must reflect the true cost of natural gas facility siting and operations within and near low-income communities and communities of color that face the burdens of cumulative impacts from structural, governmental, and societal environmental discrimination ("impacted communities"). This holistic economic analysis should leverage modern scientific and data-driven understandings of the costs to communities in terms of health care, lost productivity associated with chronic illnesses, neighborhood property value impacts, and other hidden costs imposed on impacted communities to achieve a compliance pathway that is truly least cost, as required by HB951,¹⁰ and in the public interest, as required by N.C. Gen. Stat. § 62-110.1.

Moreover, natural gas cannot represent the "least cost" pathway for North Carolina where the infrastructure buildout is premised on the future development of hydrogen-based generation capability. The Companies' plan does not account for the difficulty (indeed,

⁸ See Tr. Vol. 16, p. 176 (Duke referring to hydrogen as "not yet adequately demonstrated").

⁹ See N.C. Gen. Stat. § 62-110.9(1); N.C. Gen. Stat. § 62-110.1(e).

¹⁰ N.C. Gen. Stat. § 62-110.9.

current impossibility) and cost of transporting hydrogen or producing it on-site via electrolysis. This plan could lead to stranded assets that ratepayers will be involuntarily financially responsible for, further evincing that the Companies' plan cannot reasonably be considered the least cost pathway for North Carolina.

Finally, the Companies have failed to meaningfully explore Grid Edge programs, particularly Demand Side Management strategies, to reduce the anticipated load increase, including from massive data centers. The Companies' Supplemental Planning Analysis indicates a massive expansion of supply-side natural gas resources without a corresponding strategy on the demand-side; noticeably, there is no exploration of how Virtual Power Plants can reduce load. Instead, the Companies opt for expanding natural gas infrastructure to pad their profits at the expense of ratepayers. Overall, this pathway cannot meet HB951's least cost requirement.

DISCUSSION

I. Natural Gas Facility Externalities Must Be Part of a True Least Cost Analysis that Proactively Considers the Public Interest.

The pathway to meet HB951's carbon reduction goals must be least cost.¹¹ This "least cost" analysis, however, needs to leverage scientific understandings and available data analyses of known and suspected externalities to properly quantify and consider the *true cost* of natural gas infrastructure to impacted communities. Additionally, each generating facility in this carbon reduction plan must obtain a CPCN to operate.¹² To obtain a CPCN, these applicant facilities must contribute to the least cost pathway to carbon

¹¹ N.C. Gen. Stat. § 62-110.9.

¹² N.C. Gen. Stat. § 62-110.1(a).

neutrality, maintain or improve adequacy and reliability of the grid, and be in the public interest.¹³ While the scope of this proceeding is limited to attainment of the carbon reduction goals listed in HB951, the Commission should proactively consider that each individual combustion turbine (“CT”) and combined cycle (“CC”) plant in North Carolina must be in the public interest to obtain a CPCN.¹⁴ This public interest assessment requires consideration of the externalities created when siting and operating fossil fuel facilities in impacted communities. In other words, because N.C. Gen. Stat. § 62-2 requires a “well-planned and coordinated” grid,¹⁵ the Commission should proactively consider whether the proposed gas plants, and the externalities they impose on impacted communities, are least cost *and* in the public interest.

The Companies’ pathway to carbon neutrality shows a massive natural gas buildout in Person County, Catawba County, and other parts of North Carolina.¹⁶ A buildout of natural gas, however, imposes significant concerns for impacted communities that are already overburdened by fossil fuel infrastructure and other environmental injustices. While we support the retirement of coal-fired generation, the siting and operation of new natural gas CTs and CCs creates additional yet avoidable health costs for impacted

¹³ N.C. Gen. Stat. § 62-110.1(e).

¹⁴ N.C. Gen. Stat. § 62-110.1(e).

¹⁵ N.C. Gen. Stat. § 62-2 (“It is hereby declared to be the policy of the State of North Carolina . . . [t]o foster the continued service of public utilities on a well-planned and coordinated basis”); *see also* N.C.U.C. Rule R8-60A (“The purpose of this rule is to implement the provisions of G.S. 62-2(a)(3a), G.S. 62-110.1 and G.S. 62-110.9.”) (emphasis added); *see generally* N.C. Gen. Stat. § 62-110.9.

¹⁶ *See Verified Amended Petition For Approval Of 2023-2024 Carbon Plan and Integrated Resource Plans, Chapter NC Supplement: 2023-2024 Carbon Plan and Integrated Resource Plan Supplemental Planning Analysis*, at 5-6, Docket E-100, Sub 190 (Jan. 31, 2024).

communities in North Carolina who are disproportionately subjected to the impacts of natural gas facilities across the country.¹⁷

Joint Intervenors' testimony quantified some of the externalities that the proposed natural gas buildout will have on impacted communities in North Carolina.¹⁸ This testimony of PhD Environmental Economist Dr. Andrew Yates uses the AP3 Modeling platform to quantify the level of sulfur dioxide ("SO₂") and nitrogen oxides ("NO_x") emitted from these proposed plants and their likely health impacts.¹⁹ This analysis modeled various scenarios to capture the different costs that may be imposed based on siting decisions and emissions levels of the natural gas facilities.²⁰

Measured based on 2020 dollars, this analysis showed that North Carolina's natural gas buildout will cause approximately \$9 to 15 million in total health damages per year,²¹ but this assessment was "fairly conservative."²² Emissions rates chosen for the natural gas plants were in the tenth percentile, "[b]ecause we expect that the proposed plants will be very clean relative to the existing set of plants."²³ Of note, site placements were shown to have a drastic effect on the impact of externalities released, with the understanding that externalities imposed great costs regardless of placement.²⁴ Despite the extreme costs shown through this modeling, quantification of harm from this analysis is limited only to

¹⁷ Official Exhibits for Hearing Held in Durham, NC on Tuesday, April 30, 2024. Volume 5, at 34, Docket No. E-100, Sub 190 (June 28, 2024) (citing Paul Arbaje, *Gas Malfunction*, Union of Concerned Scientists, at 10) ("Across the country, gas plants are disproportionately located in communities of color.").

¹⁸ See Verified Amended Petition For Approval Of 2023-2024 Carbon Plan and Integrated Resource Plans, *Chapter NC Supplement: 2023-2024 Carbon Plan and Integrated Resource Plan Supplemental Planning Analysis*, at 5-6, Docket E-100, Sub 190 (Jan. 31, 2024).

¹⁹ Tr. Vol. 21, p. 378.

²⁰ *Id.* (the health cost of these impacts is based on 2010 EPA guidelines valuing a statistical life at \$9.6 million).

²¹ Tr. Vol. 21, pp. 380-82.

²² Tr. Vol. 21, p. 383.

²³ Tr. Vol. 21, p. 379.

²⁴ Tr. Vol. 21, pp. 380-81.

the emissions of NO_x and SO₂.²⁵ The analysis did not account for direct emissions of particulate matter, other facility pollutants, or associated pollution from natural gas pipeline construction and operation.²⁶ The costs of water pollution, wildlife resource impacts, and other effects from this natural gas buildout were also not quantified for the purpose of this analysis.²⁷ Thus, in actuality, the externality costs associated with these proposed facilities are likely to be significantly higher. This analysis clearly shows these gas plants will incur substantial expenses for impacted communities in North Carolina, and further analysis, if the Companies were to undertake the whole cost analysis required in their least cost planning, would show even greater costs than those presented here.

The expansive increase in natural gas infrastructure shown in the Supplemental Planning Analysis necessitates a consideration of externality costs in all potential pathways to compliance. The Companies are “recommending Pathway 3 as the most reasonable, least cost and least risk pathway,”²⁸ but P3 shows approximately 30,700 tons more sulfur oxide pollution and 60,000 tons more nitrogen oxide than P1.²⁹ Accordingly, reevaluation of this pathway with a holistic analysis of costs is paramount.

North Carolina ratepayers expressed their overwhelming disapproval of Pathway 3 at public hearings earlier this year, offering information about negative natural gas externalities and the real-life effects these pollutants have on their livelihood. One concerned Wilmington ratepayer noted that “the air pollutants associated with gas plants are detrimental to the lung health of surrounding residents, especially those with chronic

²⁵ Tr. Vol. 21, p. 378.

²⁶ Tr. Vol. 21, p. 383.

²⁷ *Id.*

²⁸ Tr. Vol. 6, p. 42.

²⁹ Tr. Vol. 7, pp. 67-68.

conditions. These pollutants can not only exacerbate the symptoms of various lung diseases but actively contribute to the irreversible deterioration of lung health.”³⁰ Ratepayers also noted that gas facilities release particulate matter³¹ and methane, amongst other pollutants, which pose additional health concerns for impacted communities.³²

The Companies’ proposed natural gas buildout would impose additional burdens and exacerbate the harms that North Carolina’s most vulnerable ratepayers already face. Impacted communities where gas plants and pipelines are often sited in North Carolina are typically low-income communities of color who already face burdens from the cumulative impacts of polluting and extractive industries like concentrated animal feeding operations and co-located slaughterhouses, industrial manufacturing and the air and water pollution that occurs with such activities, other fossil fuel infrastructure, rare minerals extraction, and social burdens of a lack of reliable transportation infrastructure, food insecurity, low wages, and other injustices with their historical roots in redlining and discriminatory policies. Approving a pathway that plans to release additional pollutants into these impacted communities would build upon the harms they face daily and perpetuate a cycle of sacrificing lower income neighborhoods and communities of color for the economic benefit of large corporations and wealthier regions of the state. Additionally, this expensive natural gas buildout (for which Duke is guaranteed cost recovery from ratepayers) threatens to exacerbate the regressive energy burdens borne by impacted communities, as low-

³⁰ Transcript of Hearing Held in Wilmington, NC on Monday, April 29, 2024. Volume 4, at 30-31, Docket No. E-100, Sub 190 (May 16, 2024).

³¹ Official Exhibits for Hearing Held in Durham, NC on Tuesday, April 30, 2024. Volume 5, at 34, Docket No. E-100, Sub 190 (June 28, 2024).

³² Transcript of Hearing Held in Durham, NC on Tuesday, April 30, 2024. Volume 5, at 117-18, Docket No. E-100, Sub 190 (June 12, 2024).

income ratepayers typically must pay a greater proportion of their net income on utility costs.

Additionally, the Commission must find that a gas facility is in the public interest for the facility to receive a CPCN for operation.³³ CPCN decisions for natural gas plants “can significantly influence the planning and location of these facilities.”³⁴ These siting decisions are not just “critical to the development of future power generation infrastructure”³⁵ but also have significant costs and consequences for real people in North Carolina. Because the North Carolina Utilities Commission must weigh these siting decision costs when determining whether a facility should receive a CPCN,³⁶ a well-planned and coordinated grid—as required by law—necessitates consideration of the true cost of fossil fuel infrastructure upfront.³⁷ Therefore, it is critical and necessary for the Commission to proactively consider whether these natural gas plants, and their associated externalities, are in the public interest.

II. Duke’s Proposed Natural Gas Buildout Relies on an Improbable Transition to Hydrogen Energy, Causing Impacted Communities to Shoulder an Array of Stranded Assets Across the State.

The Companies’ proposed natural gas expansion does not represent the least cost pathway for North Carolina as required by HB951, in part because the proposed buildout is premised on the future development of undemonstrated hydrogen-based electricity generation. The Companies assume 100% hydrogen blending by 2050 at their natural gas

³³ N.C. Gen. Stat. § 62-110.1(e).

³⁴ *Id.*

³⁵ Tr. Vol. 14, p. 111.

³⁶ N.C. Gen. Stat. § 62-110.1(e) (part of the “public interest” analysis).

³⁷ N.C. Gen. Stat. § 62-2.

plants, and “[w]hile this blend level may be a partial placeholder for 25-year planning for carbon neutrality, it is worth noting that the carbon neutrality goals of HB951 are met due to this assumption.”³⁸ Simply put, the Companies’ adherence to the requirements of HB951 is premised on the unlikely transition to clean hydrogen.

Beyond this lack of certainty, the choice to prioritize hydrogen significantly reduces the percentage of renewables selected for later years in the Companies’ plans.³⁹ In fact, removing hydrogen from the model results in higher levels of resource deployment and lower utilization rates of natural gas resources in later years.⁴⁰ This is critical, because if hydrogen generation capability does not materialize or if there are significant and costly delays, which is to be expected given the complete uncertainty surrounding the development of this technology, other replacement technologies will be relied upon to achieve carbon neutrality, and these facilities may become stranded assets.⁴¹

The risks presented by new natural gas plants potentially becoming stranded assets shows the importance of carefully considering the true cost of these facilities.⁴² These assets could become stranded for economic or policy reasons; regardless, the Companies would get a large rate of return on these investments while ratepayers and impacted communities would need to foot the bill.⁴³

Massive investment in natural gas infrastructure based upon speculative developments in hydrogen is an unreliable and fiscally irresponsible plan that cannot be in

³⁸ Tr. Vol. 16, p. 235.

³⁹ *Id.*

⁴⁰ Tr. Vol. 14, p. 290.

⁴¹ Tr. Vol. 16, p. 235.

⁴² Tr. Vol. 14, p. 107.

⁴³ Tr. Vol. 21, p. 290; *see generally* Attorney General’s Office Notice of Appeal and Exceptions, Docket No. E-7, Sub 1276 (Feb. 13, 2024) (listing the Companies’ return on equity).

the public interest. Currently, hydrogen is not a viable energy source, and there is no foreseeable way to produce or transport the volume of hydrogen required to justify this fossil fuel expansion. Accordingly, disingenuous reliance on a hydrogen transition used to justify natural gas infrastructure will force North Carolina's most vulnerable communities to pay for these eventual stranded assets through rates and unaccounted for health costs.

The Companies' proposed plan disingenuously relies on the transition to 100% hydrogen blending by 2050.⁴⁴ At present "[t]here are no CCs in commercial operation that run on 100% hydrogen fuel."⁴⁵ "They're not offered in the marketplace, and they're not available."⁴⁶

However, "partial hydrogen firing of those . . . combustion turbines is available, and it's offered."⁴⁷ In a research setting, a 20% hydrogen blend was successfully demonstrated on an advanced class turbine, for example.⁴⁸ However, this test was conducted using 4,000kg of hydrogen via truck-trailer without the use of any existing natural gas infrastructure,⁴⁹ as "there's not one pipeline in this country that currently moves and transports natural gas that is going to be capable of transporting hydrogen."⁵⁰ The volume of hydrogen transport required to replicate this on a statewide level via trucking, along with the associated pollution from that trucking, exemplifies the unexplored issues associated with this reliance on hydrogen.

⁴⁴ Tr. Vol. 16, p. 235.

⁴⁵ Tr. Vol. 16, p. 224.

⁴⁶ Tr. Vol. 20, p. 143.

⁴⁷ *Id.*

⁴⁸ Tr. Vol. 16, pp. 224-25.

⁴⁹ Tr. Vol. 16, p. 225.

⁵⁰ Transcript of Technical Conference Held in Raleigh on Monday, June 17, 2024, at 118, Docket No. E-100, Sub 190 (July 2, 2024).

With these concerns about hydrogen transport in mind, Duke Energy Florida announced a project to construct an end-to-end hydrogen facility that would use solar power to produce hydrogen via on-site electrolyzers.⁵¹ While the hydrogen produced would be moved to storage and eventually become available for use as fuel, it would take three days of running the electrolyzers to run the CT unit for just thirty minutes.⁵² This underscores the primary issue—that there is no reliable plan to generate or transport enough hydrogen to justify this level of natural gas expansion.

Chief among the concerns for this hydrogen transition is how the hydrogen will be transported to or produced at the planned natural gas facilities.⁵³ The Companies' failure to address how they will obtain the hydrogen fuel required for the transition of natural gas facilities to hydrogen presents substantial risks of stranded assets and failure to meet carbon reduction goals, yet there is no concrete plan in place and the Companies do not seem to even acknowledge the problems inherent in this deficiency.⁵⁴ “The Companies did not include assumptions around hydrogen creation, transportation, and storage in their forecasts. Instead, they assume that hydrogen will be purchased from an open marketplace that will exist when the fuel is needed.”⁵⁵ Currently, however, there is no utility-scale hydrogen marketplace or distribution network available.⁵⁶

If hydrogen is produced off-site, it must be transported, but there is no precedent for hydrogen transport via pipeline.⁵⁷ “[T]he issue really is a material issue, not so much

⁵¹ Tr. Vol. 16, p. 226.

⁵² Tr. Vol. 16, pp. 232-33.

⁵³ Tr. Vol. 16, p. 246.

⁵⁴ Tr. Vol. 16, p. 244.

⁵⁵ Tr. Vol. 16, p. 229.

⁵⁶ Tr. Vol. 16, pp. 229-30.

⁵⁷ Tr. Vol. 16, p. 225.

whether there's a pipeline or not there.”⁵⁸ The Companies concede that these pipelines are susceptible to hydrogen embrittlement,⁵⁹ where the hydrogen can cause pipeline cracks.⁶⁰ These cracks can lead to extremely catastrophic results, due to hydrogen’s explosive and volatile nature.⁶¹ “[T]here’s really nothing that can be done about it.”⁶²

The Companies have argued within the past year that there is a lack of suitable infrastructure available for hydrogen. In the Companies’ comments on the proposed EPA Clean Air Act regulations, they stated that hydrogen is “not yet adequately demonstrated” and the lack of transportation infrastructure poses difficulties for its implementation.⁶³ If the Companies themselves are not confident in hydrogen as a proven energy source, it cannot be relied upon to carry the grid to carbon neutrality, as doing so fails the reliability requirements of HB951.

The alternative option, producing hydrogen on-site, presents a different set of equally insurmountable issues. Production of hydrogen on-site for North Carolina facilities would depend on the source of the electric power used for its production; this production would need to be included in the emissions limits to meet HB951’s goals.⁶⁴ To meet these limits, there would be a need for the significant addition of renewable resources that are not accounted for in the Companies’ plans. If this pathway is pursued, it will result in “costs and losses at every step of this process.”⁶⁵

⁵⁸ Tr. Vol. 20, p. 146.

⁵⁹ Tr. Vol. 21, p. 333.

⁶⁰ Tr. Vol. 20, p. 146.

⁶¹ *Id.*

⁶² *Id.*

⁶³ Tr. Vol. 16, p. 176.

⁶⁴ Tr. Vol. 20, p. 113.

⁶⁵ Tr. Vol. 21, p. 334.

Transporting hydrogen to facilities or producing hydrogen on-site both involve substantial roadblocks and high costs that are not accounted for in the Companies' plans. The Companies rely on this hydrogen transition to justify their natural gas buildout, but if the hydrogen required for this transition is not available, North Carolina ratepayers will have to pay for these stranded assets on top of the health costs they already incur from natural gas facilities. As always, these costs will inevitably be disproportionately borne by lower income ratepayers as a greater proportion of their income.

III. Unexplored Grid Edge and Energy Efficiency Programs Could Reduce the Need for Additional Utility-Scale Resources and Particularly Benefit Lower-Income North Carolinians.

It is the policy of North Carolina “[t]o assure that resources necessary to meet future growth through the provision of adequate, reliable utility service include the use of the entire spectrum of demand-side options, including but not limited to conservation, load management and efficiency programs, as additional sources of energy supply and/or energy demand reductions.”⁶⁶ Furthermore, Commission Rule R8-60A repeatedly underscores the importance and necessity of evaluating Grid Edge,⁶⁷ energy efficiency, and demand-side management throughout CPIRP planning.⁶⁸ However, the Supplemental Planning Analysis shows a massive expansion of supply-side resources without a corresponding demand-side increase.⁶⁹ Alignment with North Carolina policy necessitates a greater consideration of demand-side resources to reduce the load and, therefore, reduce the need for a costly utility-

⁶⁶ N.C. Gen. Stat. § 62-2.

⁶⁷ Tr. Vol. 13, p. 47 (“technologies, programs, and investments that advance a centralized, distributed, and two-way grid”).

⁶⁸ See N.C.U.C. Rule R8-60A.

⁶⁹ Tr. Vol. 17, p. 250.

scale natural gas buildout. In light of the Commission’s obligation to find the least cost pathway to carbon reduction, the Commission should consider whether asking ratepayers to front the cost for energy infrastructure—to support massive industrial data centers that have not made firm commitments to North Carolina—is equitable.

The projected increase in demand, as shown in the Supplemental Planning Analysis,⁷⁰ does not justify the Companies’ level of investment in utility-scale natural gas and marginalization of distributed resources.⁷¹ In the Companies’ Supplemental Planning Analysis, they propose significant additions of utility-scale natural gas. However, the Companies’ consideration of demand-side solutions for the grid failed to improve beyond some minor demand response additions.⁷² The Companies’ sense of urgency used to justify the natural gas expansion, through the prioritization of undemonstrated hydrogen, needs to be applied to Grid Edge programs that are proven to reduce anticipated load.

Notably, proportional demand-side investment is in alignment with HB951’s requirement for a least cost pathway to carbon neutrality.⁷³ Distributed energy resources⁷⁴ “simultaneously benefit the system and reduce customer bills” while also reducing the need for fossil-fuel generation.⁷⁵ Accordingly, the Companies’ Supplemental Planning Analysis needs to include a proportionate amount of demand-side additions to its planned supply-side buildout to rise to HB951’s least cost requirement.⁷⁶

⁷⁰ Verified Amended Petition For Approval Of 2023-2024 Carbon Plan and Integrated Resource Plans, *Supplemental Planning Analysis*, at 4, Docket E-100, Sub 190 (Jan. 31, 2024).

⁷¹ Tr. Vol. 21, p. 447.

⁷² Tr. Vol. 17, p. 249.

⁷³ N.C. Gen. Stat. § 62-110.9(1).

⁷⁴ Tr. Vol. 17, p. 98 (explaining that Grid Edge programs are also referred to as Distributed Energy Resources).

⁷⁵ Tr. Vol. 21, p. 501.

⁷⁶ Tr. Vol. 17, p. 249.

Demand response is one viable method of reducing the massive load imposed by data centers by incentivizing customers to turn off at moments of peak demand, serving as a viable alternative to CTs.⁷⁷ The Companies opt for CTs instead of demand response due to “customer technical characteristics and adoption willingness for these programs.”⁷⁸ However, there is robust evidence suggesting that ratepayers are willing to reduce usage in grid emergencies.⁷⁹ Accordingly, the potential of demand response to reduce the need for a natural gas buildout is both immense and untapped.⁸⁰

Noticeably absent from the CPIRP are Virtual Power Plants, except for a minor pilot program.⁸¹ A Virtual Power Plant (“VPP”) is an aggregation of distributed energy resources that coordinate to deliver resources to the grid similarly to a power plant.⁸² VPPs improve grid resilience and are more cost-effective than CTs.⁸³ Although the Companies currently have the PowerPair VPP pilot program, the Companies have “not yet scaled [the program] for a significant number of customers or considered VPPs in [their] CPIRP modeling.”⁸⁴ For comparison, California’s VPP program is estimated to provide 7,500 MW by 2038.⁸⁵ The Companies should build the VPP initiatives to the maximum extent possible, thereby reducing the need for a massive natural gas buildout, to truly achieve least cost.⁸⁶

⁷⁷ Tr. Vol. 20, p. 165.

⁷⁸ Tr. Vol. 20, p. 180.

⁷⁹ *Id.*

⁸⁰ Tr. Vol. 20, p. 165 (“Duke Energy’s CPIRP includes only 179 MW of demand response in the Carolinas . . .”).

⁸¹ Tr. Vol. 21, p. 507.

⁸² Tr. Vol. 21, p. 503.

⁸³ Tr. Vol. 21, p. 523; Tr. Vol. 13, pp. 129-30.

⁸⁴ Tr. Vol. 21, p. 520.

⁸⁵ Tr. Vol. 21, p. 449.

⁸⁶ Tr. Vol. 21, p. 459; Tr. Vol. 21, p. 520.

The Companies lift up energy efficiency as an example of their efforts to reduce load.⁸⁷ However, the Companies' energy efficiency programs fall flat in the realm of net incremental low-income savings.⁸⁸ This is devastating, as impacted communities often have homes that are less energy efficient and are therefore in great need of intentional assistance from the Companies. The Companies need to put greater effort into energy efficiency programs that eliminate barriers to affordable clean energy and reduce energy burdens, as the proposed natural gas buildout already threatens to impose substantial externalities upon impacted communities.

Overall, the Companies' plan prioritizes expensive supply-side resources and capital investments over cost-effective demand-side solutions, therefore violating the least cost principles of HB951 while obtaining extraordinary profits at ratepayer expense. This gold-plating strategy to increase profits by building more expensive systems than necessary involves overreliance on costly utility-scale resources and unproven hydrogen technologies when less expensive and proven demand-side solutions are reliable and available.⁸⁹ Ratepayers will be forced to pay for these expensive resources "even if they become stranded, a highly likely scenario."⁹⁰ This approach sacrifices North Carolina's economic stability and betrays equity to ultimately benefit the Companies' bottom line.⁹¹ The Companies' profits cannot stand as the foremost priority in a least-cost pathway to carbon neutrality, especially when this pathway plans to inundate impacted communities with externality costs and regressive rates without justification.

⁸⁷ Tr. Vol. 13, pp. 50-53.

⁸⁸ Tr. Vol. 21, p. 450.

⁸⁹ Tr. Vol. 20, p. 176.

⁹⁰ Tr. Vol. 21, pp. 345-46.

⁹¹ Tr. Vol. 21, p. 457.

CONCLUSION

For the reasons described herein, Joint Intervenors respectfully request that the North Carolina Utilities Commission reject the Companies' proposal for a massive, expensive expansion of natural gas facilities in North Carolina. Duke's proposed buildout shirks proven Grid Edge programs and instead relies on a nonexistent hydrogen market to justify a vast investment in natural gas infrastructure, which will inevitably create stranded assets across North Carolina or result in a failure to meet carbon emissions reduction targets. This proposal is designed to benefit the Companies' shareholders at the expense of North Carolina's most vulnerable citizens and impacted communities who will pay the true cost of this infrastructure, beyond the regressive rates they are already paying, through externalities. Accordingly, Joint Intervenors urge the Commission to reject the Companies' natural gas buildout and order the Companies to proactively consider whether a natural gas buildout is truly least cost and within the public interest when accounting for the heavy burden that natural gas infrastructure imposes on nearby communities, as this consideration should be part of the "least cost" analysis in HB951 and the "public interest" analysis required for each facility's CPCN.

[SIGNATURES ON FOLLOWING PAGE]

Respectfully submitted this the 3rd day of September, 2024.

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CERTIFICATE OF SERVICE

I, James Huey, certify that I have on this day served a copy of the foregoing *Post-Hearing Brief of North Carolina Environmental Justice Network and Environmental Justice Community Action Network* upon each of the parties of record in these proceedings or their attorneys of record by electronic mail.

This the 3rd day of September, 2024.

SOUTHERN COALITION FOR SOCIAL JUSTICE

By: /s/ James B. Huey
James B. Huey

Counsel for North Carolina Environmental Justice Network & Environmental Justice Community Action Network