NC Electric Membership Corporation

A Touchstone Energy® Cooperative

October 24, 2022

FILED VIA ELECTRONIC MAIL

A. Shonta Dunston, Chief Clerk
North Carolina Utilities Commission
430 North Salisbury Street
Dobbs Building
Raleigh, North Carolina 27603-5918

Re: ***Docket No. E-100, Sub 179***
Partial Proposed Order of North Carolina Electric Membership Corporation ("NCEMC")

Dear Ms. Dunston:

Pursuant to the Notice of Due Date for Proposed Orders and/or Briefs issued on by the Commission on October 4, 2022, in the above-captioned docket regarding the proposed Carbon Plan of Duke Energy Progress, LLC and Duke Energy Carolinas, LLC (collectively, "Duke"), enclosed for electronic filing in the above-referenced docket is the partial proposed order on behalf of NCEMC.

Should you have any questions, please do not hesitate to contact me at (919) 875-3111.

Sincerely,

/s/ Tim Dodge

Tim Dodge
Regulatory Counsel

TD/sc
cc: Parties of Record *(via email)*
Enclosures

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 179

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	)	
Duke Energy Progress, LLC, and	)	PARTIAL PROPOSED ORDER OF
Duke Energy Carolinas, LLC,	)	NORTH CAROLINA ELECTRIC
2022 Biennial Integrated Resource	)	MEMBERSHIP CORPORATION
Plan and Carbon Plan	)	

HEARD: Tuesday, September 13, 2022, to Thursday, September 29, 2022, in Commission Hearing Room 2115, Dobbs Building, 430 North Salisbury Street, Raleigh, North Carolina

PREFACE

This Partial Proposed Order contains findings of fact, summaries of comments, discussion and conclusions, and ordering paragraphs pertaining to certain specific issues raised by North Carolina Electric Membership Corporation ("NCEMC") in the above-captioned proceeding. NCEMC herein adopts by reference the introduction and procedural background found in the joint proposed order submitted by Duke Energy Carolinas, LLC (DEC) and Duke Energy Progress, LLC (DEP) (collectively, "Duke").

Based upon the foregoing and the entire record in this proceeding, the Commission makes the following:

FINDINGS OF FACT

[Distributed Energy Resources / Distribution Operator]

__. Grid edge resources on Duke's wholesale customer systems, when operated in a coordinated fashion with Duke, have the potential to contribute to increased reliability and reduced costs associated with meeting the carbon reduction goals established in N.C. Gen. Stat. § 62-110.9.

__. Because of the potential reduction in carbon emission and cost savings associated with wholesale customer grid edge DER resources, Duke shall coordinate with NCEMC and other

wholesale customers, to the greatest extent possible, through its Integrated Systems and Operations Planning (ISOP) Process and future Carbon Plan proceedings, and to report on those coordination efforts in future Carbon Plan proceedings.

[RZEP / Transmission Planning]

__. Any public policy projects proposed as necessary for purposes of compliance with the carbon reduction goals established in N.C.G.S. § 62-110.9 should consider the full scope of the timing, costs, and benefits of the identified upgrades, any associated upgrades, as well as affected systems costs and coordination efforts with other load serving entities (LSEs).

__. Any transmission network upgrade projects identified as necessary for Carbon Plan compliance should not be given priority over other transmission upgrade projects needed to maintain reliability and service quality for Duke's retail and wholesale customers. Prioritizing these upgrades above other transmission projects could shift cost and reliability risk to Duke's retail and wholesale customers and is, therefore, unsustainable and incompatible with Duke's obligation to plan and operate its system in a safe and reliable manner for all customers.

[Cost Allocation of Carbon Plan compliance]

__. The costs associated with generation and transmission investments for Carbon Plan compliance on a systemwide basis will be allocated to DEC and DEP's retail and wholesale customers under traditional cost allocation principles, but the benefits of such investments made on a systemwide basis may not coincide with jurisdictional cost allocations.

__. Duke should identify and make efforts to ensure that the costs associated with least cost Carbon Plan compliance are allocated in an equitable manner to the customers receiving the benefits of these investments.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NO. __ TO __

[Distributed Energy Resources / Distribution Operator]

The evidence supporting these findings of fact is found in the May 15, 2022, recommended Carbon Plan presented by Duke; the testimony and exhibits of Duke Grid Edge Resources Panel witnesses Duff and Huber, Duke Reliability Panel witnesses Holeman and Roberts, Duke Near-Term Modeling Panel Kalemba, McMurry, Quinto, and Snider, and NCEMC Witness Ragsdale; and the entire record in this proceeding.

Summary of the Evidence

In its recommended Carbon Plan, Duke indicated that it was taking a "multi-pronged approach" to maintaining reliable service while also meeting the emissions reduction targets established in N.C.G.S. § 62-110.9. (Tr. Vol. 7 Exhibits, pp. 9-10) Duke recognized that one of the first steps in this energy transition process was to "shrink the challenge" by reducing energy requirements and modifying load patterns through grid edge customer programs, as well as allowing more tools to respond to fluctuating energy supply and demand. (*Id.*) Duke acknowledged the role that new and expanded opportunities for distributed energy resources ("DER") across the Carolinas could play to help achieve the authorized carbon reduction goals, including energy efficiency ("EE") programs, clean energy customer programs, net metering programs, system voltage optimization programs, as well as modernization of telecommunications infrastructure required to support large-scale DER. (*Id.* at p. 92).

Duke witnesses Duff and Huber in their testimony further expanded on this topic, defining the Grid Edge as "technologies, programs, and investments that advance a decentralized, distributed, and two-way grid," with the "edge" referring to the edge of the electricity network, or grid, where the electricity reaches customers' homes and businesses. Witnesses Duff and Huber

also recognized that load reduction and management for customers of load serving entities ("LSEs"), including NCEMC and the municipal electric power suppliers, may also present an opportunity for reducing carbon emissions in a cost-effective manner. (Tr. Vol. 13, pp. 63-7). Mr. Duff and Huber noted that Duke's wholesale contracts are solely under the jurisdiction of the Federal Energy Regulatory Commission ("FERC"), and due to the complexity associated with contract negotiations with wholesale customers and the necessity of subsequent FERC approval, the concept was not included in its initial Carbon Plan filing, but that Duke would continue to explore these opportunities in future wholesale contract negotiations. (*Id.* at 63-4) Mr. Duff in response to questions from Chair Mitchell regarding the potential for the energy and demand management programs of wholesale customers to contribute to carbon plan reductions further recognized that Duke had discussed such programs as potential enablers to further reduce carbon emissions from the system, and Duke's willingness to continue discussions on. (Tr. Vol. 14, pp. 108-9).

Duke witness Roberts acknowledged that DER and demand-side resources will continue to play a growing role in decarbonization pathways, and that system operations must more fully consider the impact of DER in their operational forecasts to ensure reliability is maintained. (Tr. Vol. 19, pp. 181-2.) Mr. Roberts further noted that Duke is investing in new tools and programs such as its DER Dispatch Project that will allow it to better forecast the projected outputs and impacts from DERs for consideration in near-term operational plans, and to control DERs when needed to ensure system reliability is maintained. Mr. Roberts indicated that the same cannot be said for demand-side resources, which will generally vary with seasonality and customer usage patterns. (*Id.*)

NCEMC witness Ragsdale testified that NCEMC and its 26 member-distribution

cooperatives[1] have developed and implemented the NCEMC Distribution Operator, or "DO," a single entity that monitors and coordinates DER and DR resources across the State, bringing operational benefits to the distribution system, and positive system reliability impacts on the transmission systems upstream, including DEC, DEP, and Virginia Electric and Power Company, d/b/a Dominion Energy North Carolina ("Dominion"). (Tr. Vol. 26, pp. 207-8) Mr. Ragsdale indicated that the DO currently monitors and coordinates over a half a gigawatt of DER and DR resources, including solar, storage, microgrids, consumer devices, and behind-the-meter generation, and indicated that this amount will continue to grow as additional resources are integrated into the DO system and processes become more automated. (*Id.*) In addition, Mr. Ragsdale testified that the integration of DER and DR programs into NCEMC's distributed energy aggregation platform ("DERMS") has enabled visibility and control capabilities of these edge of grid assets by the DO. This operational data is then shared upstream with the transmission operators to which NCEMC's member distribution cooperatives connect, providing greater certainty of the operational capabilities of these resources for deployment during reliability events. Mr. Ragsdale noted that the Commission has previously recognized the value of the DO in contributing reliability benefits to Duke's system, and that coordination of such efforts between Duke and NCEMC were consistent with least cost planning. (*Id.*) Mr. Ragsdale further testified that NCEMC will continue to work with Duke to coordinate DO capabilities and seek to further integrate them into the operation and planning of the transmission system. (*Id.*)

In response to Commission questions regarding Duke's ability to control DER when needed to ensure system reliability, Duke witness Roberts indicated that Duke's initial efforts in

[1] For clarity, NCEMC notes that its 25 participating and independent members, as well as French Broad EMC, a member of the North Carolina Association of Electric Cooperatives, Inc., participate in the DO platform.

controlling DER had largely been limited to emergency situations and potential violations of NERC standards, and that such curtailment efforts followed more of a "butcher knife than a scalpel approach." (Tr. Vol. 20, pp. 116-7) Mr. Roberts further said that as the amount of DER on the system grows, the ability to control more granularly with respect to balancing and managing power flows becomes more important. Mr. Roberts indicated that, provided you have sufficient communications and control, Duke envisions that its energy management system (EMS) would be able to more fully optimize the DERs that are connected to distribution on its system. (*Id.* at p. 118)

Duke witness Holeman further stated that:

> [Duke is] moving to more sophisticated methods, we're working towards this DER dispatch. And it's all pointing towards an aggregation function. Providing the operators who are ultimately responsible for the real-time operation of the grid, but providing them with an aggregation function and a degree of control over those resources to do what we need them to do. I'm confident we're moving in the right direction. (*Id.* at p. 119)

Mr. Roberts further described Duke's coordination with NCEMC and its DO platform. He indicated that Duke included in its General Load Reduction Plans that it is able to coordinate operating instructions to utilize NCEMC's DO capabilities for emergency purposes, and that Duke continues to have collaborative meetings with NCEMC to coordinate the utilization of the DO function from a reliability perspective. (Id. at p. 120-21) Mr. Roberts indicated NCEMC has established very good communications with respect to sharing data such as the output of solar facilities connected to their system, as well the implementation of other DER programs on the systems of NCEMC's member distribution cooperatives, and that Duke is able to utilize that information to enhance the reliability of its system, as well. (*Id.*) Mr. Roberts also indicated that, through the DO, Duke already has more real-time control in place for peaking emergency purposes,

but their ability to manage other conditions on their system will be dependent on where the collaboration between NCEMC and Duke leads.

Duke witness Snider also recognized the important role of electric cooperatives and other LSEs in the State and region, and the continued opportunities for Duke and NCEMC in both the ISOP Process and other levels to learn from each other and coordinate their programs. (Tr. Vol. 27, pp. 226-9) Mr. Snider stated that NCEMC is engaged with Duke on both the generation and transmission & distribution side to better coordinate operations and planning. He further acknowledged the potential for Duke and NCEMC through contractual structures to better align incentives between the FERC jurisdictional wholesale contracts in place between Duke and NCEMC, as well as to align NCEMC's resource capabilities with Duke's overall system needs. (*Id.)*

Discussion and Conclusions

As noted by NCEMC witness Ragsdale, the Commission has previously recognized the growing relationship between resource and distribution planning between the electric public utilities and their LSE customers. In its April 6, 2020, *Order Accepting Filing of 2019 IRP Update Reports and Accepting 2019 REPS Compliance Plans* in Docket No. E-100, Sub 157, the Commission stated the:

> significant benefits to involving North Carolina's electric membership cooperatives and municipally owned and operated electric utilities in this effort. One stated goal of the [Integrated Systems and Operations Planning, or ISOP] process is to improve coordination of load forecasting, project and systems planning, and operational effectiveness between the transmission system operator and the distribution system operator. In North Carolina the transmission system operator is, in the main, either DEC and DEP, but in many parts of the State the distribution system operator will be an EMC or a municipally owned utility. The Commission views the ISOP program and stakeholder involvement in that program as an important opportunity to strengthen effective communication and interaction both in planning and in NCEMC's operation of the DO in coordination with Duke is consistent with least

> cost planning, will provide additional flexibility, and enhance the reliability of the grid when utilized in a coordinated and efficient manner.(Order at p. 13)

Further, the Commission emphasized the importance of this collaboration between the transmission and distribution operators as necessary "in order to promote greater alignment of resources and distribution system planning across the entire grid network in North Carolina" in its April 18, 2021, *Order Scheduling Technical Conference and Requiring Filing of Report* in Docket No. E-100, Sub 165.

HB 951 brings this issue to the forefront. The Act's establishment of significant carbon reduction goals over the next three decades in a manner consistent with least cost planning and that ensures the reliability of the grid is maintained will highlight the critical role of DER and the importance of efforts to effectively coordinate and utilize DER on Duke's system and the systems of other LSEs in the State. The Commission reiterates its prior positions on these matters and finds that the evidence presented in this docket supports a greater role for collaboration and coordination between Duke and other LSEs may be appropriate to ensure that the DER resources are given full consideration as part of the Carbon Plan process.

The Commission recognizes that any contractual arrangements between Duke and its wholesale customers associated with the operation of DER and any compensation mechanisms associated with such resources on are wholly FERC-jurisdictional, but acknowledges that greater recognition and encouragement of coordinated use of these resources can contribute to the development of lower-cost pathways towards Carbon Plan compliance in a manner that maintains or improves the reliability of the grid. To ignore such potential benefits, particularly if they may be achieved in a cost-effective manner relative to other resource options, would not be consistent with the General Assembly's mandate in N.C.G.S. § 62-110.9 that the Commission take all

reasonable steps to achieve these emissions reduction goals. The Commission cannot direct Duke or its wholesale customers to contract for such services, but to the extent those wholesale customers have expressed a willingness to engage in these discussions with Duke, as evidenced in this proceeding, the Commission can and does direct Duke to evaluate the full utilization and coordination of the capabilities such programs, relative to other resource options, including the ability of coordinated DER resources to help maintain or improve reliability, reduce or offset transmission and distribution investments, and provide greater operational flexibility.

Therefore, the Commission directs Duke to continue to coordinate with NCEMC and other LSEs in both its ISOP process and the Carbon Plan stakeholder process regarding the utilization of the capabilities of their DER programs and the ability of such programs to contribute to Duke's ability to comply with the carbon reduction goals established in H951 in a least cost manner that at a minimum maintains or improves the reliability of the entire grid network in North Carolina. Duke in it 2023 update and in its 2024 biennial review shall include a report on the discussions between it and the other LSEs in the State, provide an estimate of the future potential of those coordinated DER resources to contribute to future carbon plan compliance, and make reasonable efforts to incorporate those measures in its 2024 Carbon Plan filings. Duke shall also include a discussion of progress with the wholesale customers, as well as any impediments it identifies regarding the capability of these coordinated DER resources to contribute to low cost, reliable Carbon Plan compliance in such filings.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NO. __ TO __

[RZEP/Transmission Planning]

The evidence supporting these findings of fact is found in the May 15, 2022, recommended Carbon Plan presented by Duke; the testimony and exhibits of Duke Transmission Panel witnesses

Farver and Roberts and NCEMC witness Ragsdale; and the entire record in this proceeding.

Summary of the Evidence

In Appendix P (Transmission System Planning and Grid Transformation) of its recommended Carbon Plan, Duke discussed that the influx of solar into the eastern Carolinas that has created a need for significant transmission system upgrades on portions of both the DEC and DEP system to allow for additional resource interconnections. (Tr. Vol. 7 Exhibits, pp. 454-5) Duke indicated that these "red zones" are generally flat, open spaces that are attractive for solar development, and due to the likely increases in solar growth resulting from compliance with the carbon reduction goals in N.C.G.S. § 62-110.9, will continue to be areas targeted for additional solar development. (*Id.* at 386) Duke further stated that it is working with other stakeholders to evaluate how best to solve these constraints through the North Carolina Transmission Planning Collaborative ("NCTPC") Local Transmission Planning process and has proposed $560 million in transmission network upgrades for consideration by the NCTPC as needed to achieve the near-term energy transition and carbon emissions reductions targets called for in N.C.G.S. § 62-110.9. (*Id.* at 455)

Duke Transmission Panel witnesses Farver and Roberts in their testimony stated that compliance with the Carbon Plan "will require significant investment in the transmission system on an aggressive timeline to interconnect the significant amounts of [new] resources identified as needed in the Carbon Plan and to reliably retire the coal units that currently support the grid." (Tr. Vol.17, pp. 64-5). Mr. Roberts further described the extensive outage coordination efforts that would be involved in implementing the RZEP upgrades, and the need to coordinate those with other outages for ongoing asset management and maintenance purposes required to maintain reliability for customers, potentially over multiple outage seasons, as well as responding to

unplanned outages resulting from storms. (*Id.* at 165).

Included as exhibits to the Duke Transmission Panel testimony were supplemental planning studies developed to assess the need for constructing the Red-Zone Transmission Expansion Plan ("RZEP") projects to interconnect new solar generation necessary for compliance with the carbon emissions reduction targets called for in N.C.G.S. § 62-110.9. These supplemental studies were based on agreed-upon planning assumptions through engagement with the Public Staff and were designed to "provide substantial evidence to support the need for the RZEP projects," consistent with the Commission's June 10, 2022, *Order Approving Request for Proposals and Pro Forma Power Purchase Agreement Subject to Amendments* in Docket Nos. E-2, Sub 1297, and E-7, Sub 1268. (Tr. Vol. 16, pp. 72-3).

Duke witness Roberts further stated that the initial RZEP projects would be "the first phase" with respect to executing the Carbon Plan, but that there would likely be the need for more upgrades in the future on top of the initial RZEP projects. (Tr. Vol. 17, pp. 37-8).

NCEMC witness Ragsdale testified that Duke indicated in the supplemental studies that it did not conduct an analysis of affected systems. Mr. Ragsdale therefore concluded that there may be additional costs and potential execution risks associated with the RZEP projects that should be considered and recommended that the Commission require Duke to not only coordinate with other transmission providers, but also with LSEs in North Carolina to ensure that all affected systems are considered. (Tr. Vol. 26, pp. 204-5) These efforts should include both an evaluation of any costs associated with equipment upgrades on the LSE systems resulting from the RZEP upgrades, as well as increased coordination of the outages and other scheduled maintenance work on NCEMC delivery points. Mr. Ragsdale noted that NCEMC's members have 45 delivery points within the DEP RZEP areas located in North Carolina that would potentially be impacted by the

proposed upgrades. (*Id.* at 219). These could include impacts on substation equipment at those delivery points that should also be considered in the timing and costs in evaluating the systems affected by the RZEP projects. (*Id.*)

In addition, NCEMC witness Ragsdale testified that NCEMC currently has multiple delivery point repairs and upgrade requests to service its member-consumers being coordinated with Duke that, if delayed, could result in impacts to the reliability and service quality to electric cooperative member-consumers. Therefore, Mr. Ragsdale stressed that Duke's expedited timeline for RZEP projects should not result in the RZEP projects being prioritized over other transmission or distribution projects needed for reliability and maintaining service quality for retail and wholesale customers. (*Id.* at 205). To the extent that Duke seeks to accelerate the RZEP project timelines, there should be no delays to Duke's traditional transmission provider obligations, including managing the network reliably, serving current load, and expanding the network to meet load growth and long-term service requests.

In response to Commission questions, Mr. Roberts and Ms. Farver indicated that it was their understanding that the RZEP projects by themselves should not cause an affected system upgrade, and that any affected system costs resulting from the RZEP projects would not result until new generation was interconnecting to those upgrades. (Tr. Vol. 29, pp. 82-3). Mr. Roberts further stated his understanding that the upgrades that Mr. Ragsdale was referring to was short-circuit availability, and that as more inverter-based resources are added and more synchronous generation is retired, you would likely see less fault current and short-circuit availability. Therefore, it is likely there would be fewer issues or upgrades resulting to EMC points of delivery than anticipated by the EMCs as a result of the RZEP upgrades themselves. (*Id.* at 84)

Discussion and Conclusions

As noted by NCEMC witness Ragsdale, H951 requires that any resource changes "maintain or improve upon the adequacy and reliability of the existing grid." This provision does not apply solely to Duke's transmission grid or the grids of other transmission providers, and Duke must as a primary step ensure that any transmission or distribution upgrades it undertakes to interconnect the significant amounts of new resources called for in its recommended Carbon Plan pathways do not in any way negatively impact the adequacy or reliability of the existing grid across the Carolinas. Affected systems studies for these projects will confirm the impact these projects have on LSE facilities and maintain the adequacy of the grid. Prioritizing these upgrades could shift cost and reliability risk to the Duke's retail and wholesale customers and is, therefore, unsustainable and incompatible with Duke's obligation to plan and operate its system in a safe and reliable manner for all customers.

As noted by Duke's witnesses, the goal of the RZEP projects is to facilitate an aggressive timeline for the interconnection of significant amounts of new resources for Carbon Plan compliance, and those additional resources will potentially result in impacts on the transmission and distribution systems of other LSEs in the State. The Commission finds that Duke in any future transmission upgrades proposed as necessary for Carbon Plan compliance must ensure that it has fully evaluated the potential affected system impacts of all LSEs in North Carolina, from both a cost and coordination perspective, and appropriately consider those efforts in its evaluation of the necessity for those upgrades, as well as the potential for execution risk associated with those projects. This also includes the coordination with affected systems both at the time transmission upgrades are being considered, as well as when new generation requests to interconnect to the upgraded facilities to ensure that the additional generation would not negatively impact delivery

substations or other equipment operated by the LSEs in the State. Duke shall include a discussion of its efforts to coordinate the timing, cost, and scheduling of those resources in its future Carbon Plan biennial filings.

EVIDENCE AND CONCLUSIONS FOR FINDINGS OF FACT NO. __ TO __

[Cost Allocation and Rate Disparities of Carbon Plan compliance]

The evidence supporting these findings of fact is found in the May 15, 2022, recommended Carbon Plan presented by Duke; the testimony and exhibits of Duke Consolidated System Operations panel witnesses Bateman and Peeler, Public Staff witnesses McLawhorn and Metz, and NCEMC witness Fall; and the entire record in this proceeding.

Summary of the Evidence

In its recommended Carbon Plan, Duke noted that HB 951 establishes statewide CO2 emissions reductions targets that are applicable to the combined power supply portfolios of DEC and DEP. In evaluating the addition of generation resources and T&D investments by both utilities on a systemwide basis, Duke noted that the recommended plan is anticipated to result in different levels of spending across the DEP and DEC systems, as well as differential impacts on customer bills. (Tr. Vol. 7 Exhibits, pp. 274-276) On the transmission planning side, Duke's estimated transmission network upgrade cost for each of the draft Carbon Plan portfolios through 2030 for DEP were more than double those anticipated for DEC. (*Id.* at pp. 472-5) In particular, a disproportionate amount of the new solar resources anticipated to be added in the DEC and DEP systems to assist with Duke's Carbon Plan compliance with the interim emissions reduction goals will likely be sited in the eastern portions of North and South Carolina, and primarily in the DEP service territory due to land availability, lower development costs, increased solar insolation, and other factors. (*Id.* at pp. 385-6).

Duke witnesses Bateman and Peeler testified regarding the existing and potential future rate differences between DEC and DEP that may be further impacted by compliance with the carbon reduction goals in N.C.G.S. § 62-110.9, and expressed their position that a merger of DEC and DEP would be both the most straightforward solution to resolving those issues and would also be in the long-term best interest of customers of both utilities from an overall efficiency perspective. (Tr. Vol. 15, p. 23). They described the resolution of cost shifts resulting from the merger, as well as the multiple regulatory approvals that will be needed as two primary hurdles that must be addressed. Ms. Bateman and Mr. Peeler provided a timeline for the merger, including consolidated system operation efforts to create a single combined Balancing Authority Area, Transmission Operator, and combine the Companies' respective Open Access Transmission Tariff ("OATT") rates, among others. (*Id.* at p. 27). They further provided a timeline for such efforts, including providing updated information in the 2024 Carbon Plan proceeding, to allow sufficient runway to continue to evaluate these issues and allow for modifications, as needed. (*Id.* at p. 23)

NCEMC witness Fall testified that Carbon Plan compliance will require significant investments in generation and transmission & distribution investments by both DEC and DEP, the costs of which will be allocated to their retail and wholesale customers under currently applicable cost allocation re. (Tr. Vol. 23, pp. 309-310) However, the jurisdiction receiving the benefits of such investments will in many cases not coincide in a proportional manner with the costs that are incurred. As an example, Mr. Fall referenced the proposed RZEP public policy transmission projects that would be located across the DEP and DEC service areas, with the larger number of projects and costs being proposed in the DEP service area, while the resulting solar generation projected to be interconnected as a result of the RZEP projects would provide Carbon Plan compliance benefits on a systemwide basis. (*Id.* at p. 310). Mr. Fall further noted that while such

an outcome could provide lower overall Carbon Plan compliance costs for Duke on a systemwide basis, and help achieve least-cost compliance with HB 951, it may result in a disproportionate increase in transmission and grid operations investments on the DEP system to support these additional resources. Mr. Fall therefore noted that adjustments to the governing cost allocation framework will be necessary at State (in general rate cases, interconnection procedures, and other proceedings) and at FERC (through changes to Duke's Joint OATT), as well as in other contractual or regulatory agreements to assign the costs, including affected systems costs, to each respective utility in a proportional manner to the benefits being received by the utility's customers resulting from the investments being made. (*Id.*)

Mr. Fall further testified that N.C.G.S. § 62-110.9 calls for the Commission to develop a plan to meet the carbon reduction goals across DEC and DEP's combined systems in a least cost manner, and does not assign or limit any of the resources or investments to a utility's service area. He stated that to the extent resources being identified are being selected consistent with least cost planning principles, it is appropriate to consider mitigation measures to address the cost allocation concerns where they arise, until such time as such as consolidated system operations and potential merger can be investigated and approved, if found to be feasible and in the public interest. (*Id.*)

Public Staff witness Metz testified that to the extent the Commission finds the need for proactive transmission upgrades such as the RZEP projects for Carbon Plan compliance, the Commission should require and approve a cost allocation or cost sharing mechanism for DEC and DEP to share the cost of the proactive upgrades. Mr. Metz noted that the Public Staff is concerned with the export of power from DEP's system to serve DEC load, and that "DEC's customers should pay their fair share of the DEP transmission and plant investments that serve DEC's load so that DEP customers do not disproportionately bear the burden of statewide carbon reduction." (Tr. Vol.

21, pp. 150-51).

Public Staff witness Mclawhorn in his testimony discussed issues related to existing rate disparities between DEC and DEP, the impacts of the recommended Carbon Plan on those disparities, and actions that can be taken to address the disparities. He noted that DEP's current residential rates are approximately 19% higher than those of DEC, and that this disparity could increase as a result of Carbon Plan compliance. (Tr. Vol. 23, pp. 92-3) He testified that the most efficient way to achieve a least cost Carbon Plan would be for a full merger of DEC and DEP, but that in the interim that costs incurred by one utility to meet the statewide carbon reduction goals in N.C.G.S. § 62-110.9 should be proportionately allocated between the utilities. (*Id.* at p. 94)

Discussion and Conclusions

The Commission recognizes that the costs associated with generation and transmission investments for Carbon Plan compliance on a systemwide basis will be allocated to DEC and DEP's retail and wholesale customers under currently applicable cost allocation requirements, but the benefits of such investments made on a systemwide basis may not coincide with jurisdictional cost allocations. The Commission agrees with intervenors that Duke should propose mitigation measures to address and reduce cost allocation issues resulting from Carbon Plan compliance where they arise, while at the same time Duke should continue to work towards long-term measures to reduce the disproportionate allocation of costs that would otherwise result, including consolidated systems operations, changes to the cost allocation provisions in its FERC-jurisdictional OATT, and the potential merger of the operating companies, if found to be in the public interest. In its 2024 biennial Carbon Plan filing and subsequent proceedings, Duke shall include an evaluation of disproportionate cost allocation issues resulting from Carbon Plan compliance, and any activities taken by Duke since the last compliance filing to mitigate such

measures. Duke shall also include an update to the timeline of measures it has taken or plans to take to mitigate or address the cost allocation issues that resulting from Carbon Plan compliance expenditures.

IT IS, THEREFORE, ORDERED as follows:

[Distributed Energy Resources / Distribution Operator]

__. That Duke shall, to the greatest extent possible, coordinate with NCEMC and other LSEs in both its ISOP process and the Carbon Plan stakeholder process regarding the capabilities of their DER programs and the ability of such programs to contribute to Duke's compliance with the carbon reduction goals established in H951 in a least cost manner that at a minimum maintains or improves the reliability of the entire grid network in North Carolina.

__. That Duke in future Carbon Plan updates and biennial reviews shall report on its efforts to coordinate with NCEMC and other wholesale customers to maximize the reliability and cost savings benefits that may be realized by better utilizing those resources in a more optimized and coordinated fashion. This shall include a report on the discussions between Duke and NCEMC on coordination of DER resources through the DO, provide an estimate of the future potential of those coordinated resources to contribute to future Carbon Plan compliance, and the specific actions taken by Duke to incorporate those measures in its 2024 Carbon Plan filings.

__. That Duke shall include in its 2023 update and 2024 biennial review a discussion of progress with the wholesale customers, as well as any impediments it identifies regarding the capability of the coordinated DER resources on the systems of its wholesale members to contribute to low cost, reliable compliance with the emissions

reduction goals called for in N.C.G.S. § 62-110.9 .

[RZEP/Transmission Planning]

__. That Duke shall make all reasonable efforts to comply with the carbon emissions reduction goals called for in N.C.G.S. § 62-110.9, but shall not alter, delay, or modify any scheduled maintenance, asset management operations, or upgrades on its system or the systems or to the delivery points of other LSEs that would negatively impact the reliability or service quality of the customers of those LSEs.

__. That to the extent Duke proposes future transmission network upgrades to support its Carbon Plan compliance for consideration by the NCTPC, Duke shall include an assessment of the timing, costs, and benefits of the network upgrades on its system as well as the systems of other LSEs, in its future Carbon Plan biennial filings and updates, and shall also include documentation of its efforts to coordinate with all LSEs in North Carolina on these upgrades.

[Cost Allocation of Carbon Plan compliance]

__. Duke shall continue to work towards long-term measures to reduce the disproportionate allocation of Carbon Plan compliance costs that would otherwise result, including consolidated systems operations, changes to the cost allocation provisions in its FERC-jurisdictional OATT, and the potential merger of the operating companies, if found to be in the public interest.

__. In its 2024 biennial Carbon Plan filing and subsequent proceedings, Duke shall include an evaluation of disproportionate cost allocation issues resulting from Carbon Plan compliance, and any activities taken by Duke since the last compliance filing to mitigate such measures. Duke shall include an update to the timeline of measures it has

taken or plans to take to mitigate or address the cost allocation issues that resulting from Carbon Plan compliance expenditures.

ISSUED BY ORDER OF THE COMMISSION.

This the ___ day of ____, 2022.

NORTH CAROLINA UTILITIES COMMISSION

A. Shonta Dunston, Chief Clerk