B Stakeholder Engagement

Stakeholder engagement is a foundational element of Duke Energy Carolinas, LLC's ("DEC") and Duke Energy Progress, LLC's ("DEP" and, together with DEC, "Duke Energy" or the "Companies") business that is especially critical to the development of the Carolinas Carbon Plan ("Carbon Plan" or "Plan"). Indeed, North Carolina Session Law 2021-165 ("HB 951") explicitly requires that the Carbon Plan is developed "with stakeholder input," and the North Carolina Utilities Commission (the "Commission" or "NCUC") emphasized the importance of this effort in its implementing orders and active oversight of the Carbon Plan stakeholder process.

More broadly, stakeholder engagement has become an integral component driving Duke Energy's business strategy and initiatives, particularly over the past several years. Underpinning recent key regulatory initiatives, such as generator interconnection queue reform and the Competitive Procurement of Renewable Energy Program, has been effective engagement with stakeholders. In initiating the development of the stakeholder process for the Carbon Plan, the Companies sought the expertise of a third-party consultant and facilitator, the Great Plains Institute[1] ("GPI"), to advise the Companies in their efforts to create a process through which robust and meaningful collaboration with stakeholders could occur. Together with GPI, the Companies dedicated significant time and attention to creating an environment that encouraged open, constructive dialogue among a diverse group of stakeholders representing all segments of the energy industry as well as local communities.

It is important to recognize that the stakeholder engagement specifically dedicated to the Carbon Plan represents only a portion of the Companies' holistic stakeholder engagement activities. As described in greater detail herein, the Carbon Plan was informed not only by the specific Carbon Plan stakeholder engagement, but by other subject matter-specific related stakeholder engagement efforts that pre-dated the Carbon Plan process.

This Appendix is dedicated to describing the development and process of Duke Energy's stakeholder engagement efforts that supported the development of the Carbon Plan, as well as how the feedback and input received from stakeholders influenced the Plan. This Appendix also describes other

[1] Great Plains Institute is a Midwest-based not-for-profit consulting company, with over 20 years of experience advising and facilitating stakeholder processes comprised of a wide range of stakeholders, such as utilities, environmental groups, regulators, community leaders and government officials, to create strategic decarbonization plans and address the impacts of the clean energy transition.

stakeholder engagement efforts that relate to the Carbon Plan, including future stakeholder engagement regarding the implementation of the Plan.

Carolinas Carbon Plan Stakeholder Engagement

Process

Duke Energy began the stakeholder process by planning three stakeholder meetings, consistent with the Commission's November 19, 2021 Order setting forth requirements for the stakeholder process ("Carbon Plan Procedural Order").[2] Stakeholders were notified of the opportunity to attend each meeting through communication from GPI, notice filed at the Commission, and through Duke Energy's Carbon Plan website.[3] For the first meeting, the Companies provided GPI with a list of over 500 stakeholders known to Duke Energy as interested in resource planning issues historically and GPI invited those stakeholders to participate. Over the course of the stakeholder process, the list of stakeholders registered to receive communication about the stakeholder process expanded to over 900 individuals.

In addition to the three stakeholder meetings, in response to stakeholder feedback, the Companies and GPI also hosted three Technical Subgroup meetings. These meetings were designed to provide a smaller forum in which self-designated "experts" could discuss the technical aspects of portions of the Carbon Plan modeling inputs and assumptions. A wide range of stakeholders served as "technical panelists" on each subgroup. To further transparency and inclusivity, all stakeholders were invited to attend the meetings.

All of the stakeholder meetings were widely attended, with approximately 500 unique stakeholders representing over 300 organizations attending at least one of the meetings. Figure B-1 below illustrates the variety of stakeholder interests represented.

[2] November 19, 2021 *Order Requiring Filing of Carbon Plan and Establishing Procedural Deadlines*, Docket No. E-100, Sub 179.

[3] *See* http://www.duke-energy.com/CarolinasCarbonPlan.

Figure B-1: Duke Energy's Stakeholder Community

Given the volume of information to be discussed in such a limited period of time, the meetings were scheduled for the entire day. Notably, stakeholder attendance did not change significantly through the seven-hour meetings; that is, the majority of stakeholders attended each meeting for the entire duration of the meeting.

Given such robust participation, it was important to establish ground rules early in the stakeholder process. Of utmost important was ensuring a respectful environment in which ideas could be shared. To that end, stakeholders agreed to uphold the Chatham House Rule, which prevents stakeholders from publicly attributing any particular statement or comment to a specific individual. The Companies commend stakeholders for their demonstrated respect for the different ideas and perspectives shared throughout the stakeholder process. Participants ensured that differences of opinion were focused on concepts and ideas and not on individuals. The tone and the candor of the stakeholder discussion fostered a supportive environment in which ideas could be shared in a productive manner.

Objectives

In developing the Carbon Plan stakeholder process, one of the key considerations was ensuring that all stakeholder interests and individuals had an opportunity to participate in the stakeholder process.

Given that this was the first stakeholder process dedicated to the Carbon Plan, it was important to ensure broad participation and to support inclusivity. Accordingly, the following objectives were identified as goals for the stakeholder process:

- Ensure the Carbon Plan is informed by input from a wide range of stakeholders.
- Enable a transparent conversation about how to plan an energy transition that prioritizes affordability and reliability for North Carolina and South Carolina customers.
- Build on areas of agreement, clarify areas of disagreement and seek opportunities for collaboration in advance of filing the Carbon Plan.

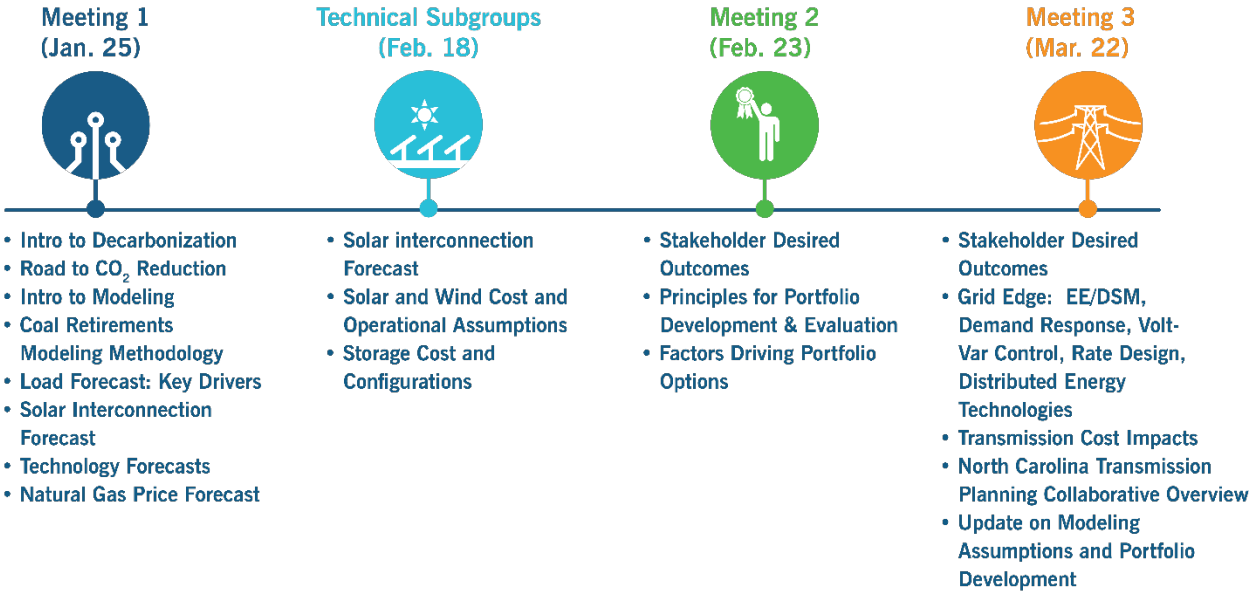
Achieving consensus on resource portfolios or modeling assumptions was not identified as a goal of the stakeholder process, given the importance of broad stakeholder participation. With hundreds of stakeholders participating in a very expedited stakeholder process on novel, complex issues, it would simply not be possible to achieve consensus with all stakeholders on these issues. In fact, there were some cases in which the Companies' positions expressly conflicted with those of certain stakeholders or where the Companies determined it was not possible to meet stakeholder requests for information. But once again, given the breadth and complexity of the issues at stake and the constrained timelines, it was inevitable that there would be differences of opinion among such a diverse group of stakeholders. The Companies hope that in the development of future Carbon Plan updates, there will be greater opportunity to achieve consensus on at least a subset of issues in advance of filing the Carbon Plan. The Companies believe that having the benefit of one stakeholder process to build from and the existence of an initial Carbon Plan from which to begin will be helpful in the future.

Stakeholder Meetings

Stakeholder meetings were held over a two-month period, addressing a broad range of topics applicable to the development of the Carbon Plan. The meetings covered a significant number of issues given the time constraints in which the engagement was to be conducted. While broad stakeholder participation was a priority of this engagement, one challenge such a range of attendees presents is an extreme variance in the levels of understanding of key concepts underlying the Carbon Plan. Some stakeholders are well versed in complex, technical issues and frequently appear as expert witnesses on these topics and some are individual residential customers generally interested in the Companies' energy transition. To account for this, the agenda topics for each meeting were developed with the goal of providing a majority of stakeholders with *some* information in each meeting that would be useful to them. The first meeting agenda largely focused on setting the stage and providing an introduction into the Companies' approach to integrated resource planning and modeling. Agenda topics for Meetings 2 and 3 and the Technical Subgroup Meetings were developed based on stakeholder feedback from the previous meetings, to cover topics that were specifically requested or that generated significant attention over the course of the stakeholder process.

Figure B-2 below provides an overview of the topics covered in each of the stakeholder meetings.

Figure B-2: Stakeholder Engagement Timeline



Stakeholder Meeting 1: January 25, 2022

The goal of Meeting 1 was to provide an introduction to the planned stakeholder engagement, helping stakeholders understand the purpose of the engagement and helping the Companies understand what stakeholders wanted to achieve from the engagement. Additionally, a goal of Meeting 1 was to provide an overview of HB 951's requirements for the Carbon Plan and an explanation of resource planning, along with a more technical overview of portions of resource planning and modeling assumptions that have historically been important to stakeholders.

Table B-1 below describes the topics that were covered at Meeting 1.

Table B-1: Stakeholder Meeting 1 Topics

Stakeholder Engagement Process and Objectives	
	• Introduction to Great Plains Institute • Objectives and timeline for the overall stakeholder engagement process • Ground rules to support productive dialogue in these meetings • Process for accessing meeting materials and providing feedback
Introduction to Resource Planning and Decarbonization in the Carolinas	
	• The three key perspectives of sustainability, affordability and reliability • Planning for reliability with variable and intermittent generation resources • Overall modeling approach of addressing demand first and then considering how resource options can meet demand • Differences between the mid-term CO_2 plans/targets and long-term CO_2 plans/targets

Road to 70% Emissions Reduction and Net-Zero Future	
	• Sources and approach to measuring carbon emissions • Resources being considered, including demand-side resources, solar, wind, advanced nuclear, hydrogen and energy storage
Discussion	
	• Clarifying questions from stakeholders to Duke Energy staff to help build understanding of the content presented so far • Opportunity for stakeholders to share their criteria for a successful Carbon Plan
Introduction to Modeling	
	• How Duke Energy uses capacity expansion and production cost modeling to identify both the resources that would be needed to transition the system and the impacts of those resources on costs • Key modeling inputs and process steps • Q&A
Economic Coal Retirements Modeling Methodology	
	• Overview of Duke Energy's existing coal fleet • How Duke Energy conducts coal unit retirement analysis, and what stakeholder feedback has already been received on that analysis • Proposed approach to coal unit retirement analysis for the Carbon Plan • Q&A
Load Forecast: Key Drivers	
	• Energy efficiency forecasting scenarios and opportunities and strategies to increase deployment of energy efficiency • Net energy metering (solar) modeling approach, including adoption rate and cost inputs • Electric vehicle modeling approach and adoption scenarios • Q&A
Other Key Modeling Assumptions	
	• Solar interconnection forecast and sensitivities • Technology forecasts for near-term emerging technologies that Duke Energy believes will be available within the planning horizon • Natural gas price methodology forecast • Q&A

Technical Subgroup Meetings: February 18, 2022

In response to feedback from stakeholders in Meeting 1, Duke Energy and GPI organized three Technical Subgroup meetings to allow technical experts the opportunity to discuss certain modeling inputs and assumptions (and other underlying data) in greater detail. To help keep discussions on topic and to a manageable size, only a limited number of stakeholders (who self-identified as experts) were designated as "technical panelists" and were able to participate in the discussion. All

other stakeholders participated as attendees and were able to submit questions/comments via the Webex chat.

Tables B-2 through B-4 provides a summary of the Duke Energy panelists, stakeholder panelists, and issues covered at each Technical Subgroup meeting:

Table B-2: Subgroup 1: Solar Interconnection Forecast

Duke Energy Panelists:	Stakeholder Panelists:	Agenda/Topics Covered:
• Bailey McGalliard • Sammy Roberts • Matt Kalemba	• Tyler Norris, Cypress Creek Renewables • Daniel Brookshire, North Carolina Sustainable Energy Association • Jeff Thomas, NCUC Public Staff • Dustin Metz, NCUC Public Staff • Steven Levitas, Pine Gate Renewables • Kirsten Millar, Rocky Mountain Institute • Maggie Shober, Southern Alliance for Clean Energy • Tyler Fitch, Synapse Energy Economics • Ed Burgess, Strategen Consulting	• Historic pace of generator interconnection: US trends and DEC/DEP trends • Volume of interconnected projects today • Description of the “red zone” and keys to unlocking the red zone • Timing associated with constructing network upgrades • Challenges with interconnection timelines across the country • Need to explore the North Carolina Transmission Planning Collaborative transmission planning process in new ways • Solar interconnection limitations and forecast included in the model • Discussion among panelists

Table B-3: Subgroup 2: Solar/Wind Technology Operational/Cost Assumptions

Duke Energy Panelists:	Stakeholder Panelists:	Agenda/Topics Covered:
• Matt Kalemba • Adam Reichenbach • Clift Pompée	• Moji Abiola, Apex Clean Energy • Mark Johnson, Clemson University • Zander Bischof, Cypress Creek Renewables • Neil Kern, Electric Power Research Institute • Jeff Thomas, NCUC Public Staff • Dustin Metz, NCUC Public Staff • Amanda Levin, National Resource Defense Council • Steven Levitas, Pine Gate Renewables • Kirsten Millar, Rocky Mountain Institute • Katharine Kollins, Southeast Wind Coalition • Tyler Fitch, Synapse Energy Economics • Ed Burgess, Strategen Consulting	• Description of utility-scale solar prescribed into the model and timing of that expected solar • Description of utility-scale solar profile and methodology for development • Key variables of solar technology profile development • Solar cost assumptions, data sources, and process for cost assumption development • Utility-scale onshore wind profile development • Onshore wind technology assumptions • Onshore wind cost assumptions and data sources • Offshore wind data sources for cost and the process for developing cost assumptions • Offshore wind technology assumptions • Discussion among panelists

Table B-4: Subgroup 3: Storage Operational/Cost Assumptions and System Configurations

Duke Energy Panelists:	Stakeholder Panelists:	Agenda/Topics Covered:
• Matt Kalemba • Adam Reichenbach • Sherif Abdelrazek	• Mark Johnson, Clemson University • Neil Kern, Electric Power Research Institute • Nathan Adams, Longroad Energy • Brad Slocum, East Point Energy • Jeff Thomas, NCUC Public Staff • Dustin Metz, NCUC Public Staff • Raafe Khan, Pine Gate Renewables • Kirsten Millar, Rocky Mountain Institute • Ron DeFelice, Southern Current • Tyler Fitch, Synapse Energy Economics • Ed Burgess, Strategen Consulting	▪ Review of storage use cases in the model ▪ Review of key storage technology terms ▪ Energy storage system configurations ▪ Solar plus storage system configurations ▪ Lithium-ion battery technology assumptions ▪ Data sources and process for cost development ▪ Other storage options modeled ▪ Discussion among panelists

Stakeholder Meeting 2: February 23, 2022

The goal of Meeting 2 was to provide a greater opportunity for stakeholders to participate in an interactive manner. To that end, presentation material from Duke Energy was limited, in favor of greater opportunities to receive feedback from stakeholders and participate in dialogue together.

Table B-5 below describes the topics that were covered at Meeting 2.

Table B-5: Stakeholder Meeting 2 Topics

Response to Questions from Meeting 1: Duke Energy staff responded to a number of themes raised in questions in the first meeting, including the following topics:
• Approach to initial selection and modeling of technologies • Modeling approach to coal securitization • Consideration of combining balancing areas • Consideration of consolidating future Integrated Resource Plans (“IRP”) • Approach to considering load growth from electric vehicles • Accounting for cost impacts
Stakeholder Desired Outcomes
• GPI reviewed with stakeholders the list of desired outcomes for the Carbon Plan that stakeholders had identified in the first meeting and asked stakeholders to identify clarifying questions and improvements to the list.

Principles for Portfolio Development and Evaluation
• Stakeholders were provided an opportunity to provide feedback to Duke Energy's proposed objectives for any portfolio to be modeled in developing the Carbon Plan, and their proposed metrics for evaluating different portfolios of resources.
Considerations Driving Different Portfolio Options
• Stakeholders were provided an opportunity to ask Duke Energy staff questions and receive feedback on a general framework for developing modeling scenarios in response to the requirements outlined in HB 951. Key issues discussed included consideration of the CO_2 emissions impacts of siting resources in or outside of North Carolina and consideration of HB 951 language around flexibility to meet the 70% target if new nuclear or offshore wind are deployed to meet that target.

Stakeholder Meeting 3: March 22, 2022

The goal of Meeting 3 was to provide stakeholders with additional sessions on certain technical topics that had been requested and also provide additional information on updated portfolio analysis and modeling assumptions. Additionally, the Companies provided the Clean Power Suppliers Association an opportunity to provide an overview and preliminary results of the modeling it had been conducting.

Table B-6 below describes the topics that were covered at Meeting 3.

Table B-6: Stakeholder Meeting 3 Topics

Duke Energy Response to Stakeholder Desired Outcomes
• Duke Energy staff provided an update on the Carbon Plan development process and responded to the stakeholder desired outcomes that were developed by stakeholders in Meetings 1 and 2.
Grid Edge and Customer Programs
• Update on EE/DSM Collaborative and discussion of potential enablers for delivering more EE/DSM in the Carolinas • Overview of Demand Response for the Carbon Plan and future key enables for additional demand response • Overview of integrated volt-var control ("IVVC") and distribution system demand response ("DSDR") • Rate design opportunities and distributed energy technologies

Overview of the Methodology to Develop Transmission Impact Estimates to be Used in the Carbon Plan:

- Description of factors impacting transmission needs and cost determinants
- Overview of network upgrade cost estimates in previous IRPs and planned for Carbon Plan
- Transmission considerations for Offshore Wind
- Transmission considerations for a PJM capacity purchase
- Example of long-term transmission expansion planning

Overview of the North Carolina Transmission Planning Collaborative

- Rich Wodyka, Administrator of the North Carolina Transmission Planning Collaborative ("NCTPC"), provided an overview of the history and process underlying the NCTPC efforts.

Clean Power Suppliers Association and Brattle Group Presentation of Carbon Plan Modeling

- Upon request by the Clean Power Suppliers Association, time was allotted for this stakeholder to provide its preliminary modeling results, as conducted by the Brattle Group.

Duke Energy Update on Modeling and Development of Potential Pathways

- Updated modeling inputs and assumptions
- Preliminary draft pathways under consideration to achieve decarbonization targets

Careful attention was paid to providing information to meeting participants after each meeting. Copies of the presentation materials and recordings of the meetings (with the Q&A sessions removed) were posted on Duke Energy's Carbon Plan website. GPI also sent meeting participants a copy of the text from the Webex chat, anonymized consistent with the Chatham House Rule. GPI also prepared a meeting summary, which was shared with stakeholders via email and filed with the Commission and the Public Service Commission of South Carolina.

Stakeholder Feedback and Opportunities for Input

The Companies and GPI provided a variety of mechanisms through which stakeholders could communicate with GPI and the Companies and provide feedback on the stakeholder process and the development of the Carbon Plan.

During the meetings, stakeholders could utilize the Webex chat feature to post questions or comments to Duke Energy or other stakeholders. Over the course of the stakeholder process, over 2,100 comments and questions were received through the Webex chat feature from over 150 distinct stakeholders. Portions of the stakeholder meeting were also dedicated to allowing stakeholders to use the "raise your hand" feature to ask questions live through their microphones. Through facilitation by GPI, the Companies answered as many questions as possible during each stakeholder meeting and also addressed questions in future stakeholder meetings that were raised previously. Given the limited

time and significant number of questions from stakeholders, it was not possible to address all questions raised by stakeholders; however, conscious and thoughtful best efforts were made to ensure sufficient time was dedicated to such "question and answer" opportunities.

Outside of the stakeholder meeting environment, stakeholders could provide feedback by sending emails to the dedicated GPI email address, DukeCarbonPlan@gpisd.net. GPI received 25 substantive comments and/or questions from stakeholders through the dedicated email box. These emails received a response from GPI acknowledging their input and were passed to the Companies for additional responses, as appropriate. The Companies utilized the feedback from these emails to inform the stakeholder process and future meeting agendas, but were not able to substantively respond to all feedback and questions received.

Incorporation of Stakeholder Input

Feedback received from stakeholders during the stakeholder process influenced the development of the Carbon Plan, as well as the development of the stakeholder process. From a process standpoint, stakeholders provided input and requests that helped the Companies create a process that better served stakeholders' needs. The Companies addressed and incorporated the following stakeholder requests into the Carbon Plan process:

- Request to receive advanced notice of the meeting agenda topics and presentation materials
- Opportunities to discuss technical topics in smaller settings
- Meeting agenda topics requested by stakeholders:
    - Energy efficiency and demand response
    - Distributed energy resources
    - Efforts to relieve transmission constraints to accommodate renewables
    - Modeling of transmission impacts
    - Coal retirements methodology
    - EnCompass modeling overview
- A "primer" on the North Carolina Transmission Planning Collaborative ("NCTPC") hosted by the NCTPC administrator
- Requests to receive modeling inputs and assumptions prior to the Companies' submission of the Carbon Plan

- Requests for the Companies to address how they were taking stakeholder feedback into account

- Clarity on how to join the EE/DSM Collaborative and waived prohibition on attorney participation for the March 3 meeting of the EE/DSM Collaborative

Certainly, it was not possible or practicable with timing and resource constraints to accommodate all of the stakeholders' requests. For example, the Companies could not hold technical subgroups on all topics requested. Also, the Companies were not able to share a draft of the Carbon Plan to stakeholders for their advanced review, nor were the Companies able to provide written responses to all questions asked by stakeholders.

The Companies also received a significant volume of stakeholder input as to the substance of the Carbon Plan development. The Companies have made thoughtful, diligent efforts to incorporate as much stakeholder input as possible, and such feedback drove changes to the Companies' initial modeling assumptions and plans for pathway and portfolio development. For example, the Companies adjusted modeling assumptions around the timing of offshore wind as an available resource and related to the configurations of solar plus storage resources.

As expected, not all stakeholder feedback could be incorporated into the Carbon Plan. Disagreements exist among stakeholders and also between stakeholders and the Companies as to the reasonableness of certain positions advanced by stakeholders and their consistency with the targets and requirements of the Carbon Plan as set forth in HB 951. For example, a number of stakeholders requested that Duke Energy include in Carbon Plan modeling the impacts of joining a regional transmission organization ("RTO"). In response to this recommendation, the Companies explained to stakeholders that wholesale power market constructs, like RTOs, are overseen and regulated by FERC and such alternative market structures are beyond the scope of the Carbon Plan directed by HB 951. The Companies explained that fundamentally changing the wholesale power market construct that exists in North Carolina would be a decision for the General Assembly and not a reasonable or practical assumption for the Companies to include in its Carbon Plan modeling.

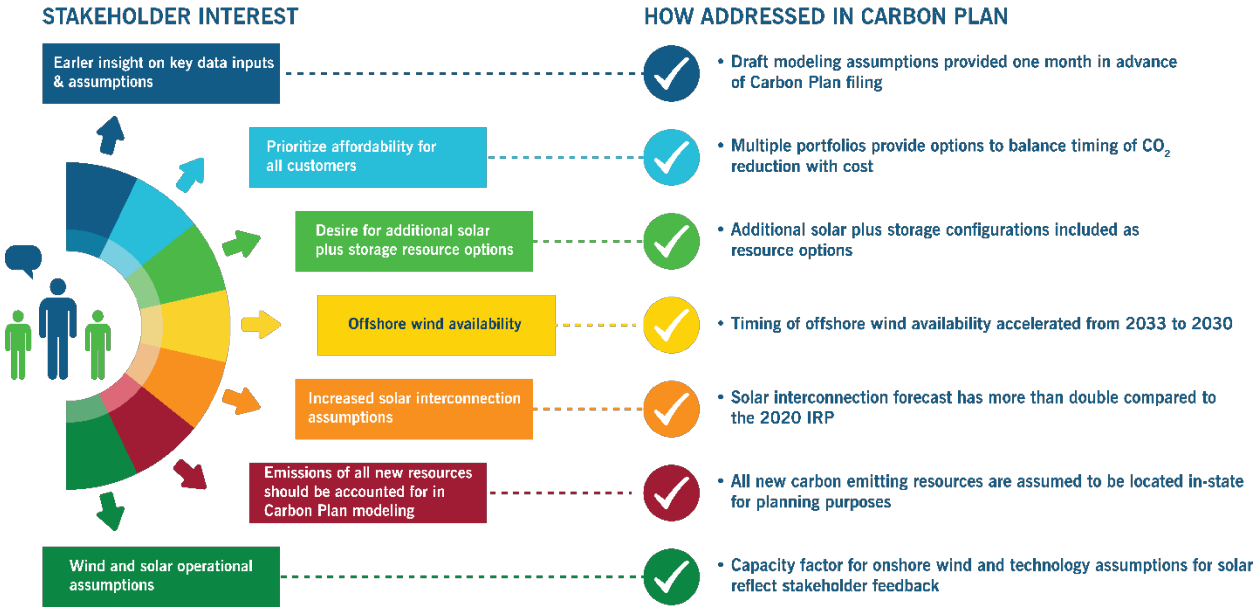
Additionally, some stakeholders wanted the Companies to include in the Carbon Plan an evaluation of upstream emissions related to the fuel supply (e.g., methane emissions). The Companies explained that in the Carbon Plan they would be focusing solely on CO_2 emissions from electric generating facilities in the State consistent with the plain language of HB 951. The Companies also explained that other workstreams with the Companies address Scope 2 and Scope 3 emissions. To that end, the Companies announced in February 2022 their expansion of carbon neutrality targets to include Scope 2 and certain Scope 3 emissions.[4]

Despite the impossibility of incorporating all stakeholder feedback into the Carbon Plan, the Companies believe that the stakeholder process was consistent with the intent of HB 951 and the Commission's Carbon Plan Procedural Order. More specifically, the stakeholder process allowed for

[4] Duke Energy News Center, Duke Energy expands clear energy action plan (February 9, 2022), *available at* news.duke-energy.com/releases/duke-energy-expands-clean-energy-action-plan.

transparent and open communication regarding a wide range of topics, including many of the Companies' initial modeling assumptions, and also allowed the Carbon Plan development to be influenced by information and opinions from stakeholders who presented reasonable and verifiable positions. Figure B-3 provides an overview of the Companies' incorporation of stakeholder feedback on certain key issues.

Figure B-3: Incorporation of Stakeholder Feedback



Stakeholder Desired Outcomes

The Companies also sought feedback from stakeholders through an ongoing process facilitated by GPI requesting that stakeholders provide their desired outcomes from the Carbon Plan. Time was dedicated during the Stakeholder Meeting 1 to developing an initial list of desired outcomes. In the Stakeholder Meeting 2, GPI re-visited this list with stakeholders to allow time for refinement and modifications. In Stakeholder Meeting 3, Duke Energy described how it plans to address each of the desired outcomes identified by stakeholders, categorizing the desired outcomes into three categories: (1) outcomes that will be addressed in the development of the Carbon Plan; (2) outcomes that will be addressed in the execution of the Carbon Plan; and (3) outcomes that are not addressed in the Carbon Plan but are addressed in other workstreams. The Companies' approach to each of the desired outcomes is provided in Tables B-7 through B-9 below.

Stakeholder desired outcomes that will be addressed in the development of the Carbon Plan are shown in Table B-7 below.

Table B-7: Outcomes Addressed in Carbon Plan Development

Engagement
 • Consider input from stakeholders and recognize where input changed assumptions and what those changes were. • Identify areas of consensus on as many issues as possible prior to filing. • Incorporate recommendations from related stakeholder engagement processes, including but not limited to the Clean Energy Plan stakeholder process, the Low-Income Affordability Collaborative, and the Working Group on Climate Risk and Resilience.
Modeling
 • Consider new or expanded customer-facing programs for energy efficiency, DSM and renewables.
Analysis
 • Maintain a long-term view toward achieving a net-zero system (keep the end target in mind).
Transparency
 • Transparently present modeling and measurement assumptions, inputs, and tools to the extent possible while protecting trade secret and copyrighted information. Ensure no inherent bias, include analysis of improvements to the transmission grid. • Transparently present metrics and principles being used to develop pathways and make modeling decisions. • Transparently present the impacts of the plan, including costs. • Clarify policy and regulatory interdependencies with the other components of HB 951. • Clarify consideration of carbon costs and carbon policies in the selected scenarios. • Clarify definition of net-zero. • Clarify the approach to siting facilities between North Carolina and South Carolina.

Stakeholder desired outcomes shown in Table B-8 below will be addressed in the execution of the Carbon Plan:

Table B-8: Outcomes Addressed in Carbon Plan Execution

Siting and Community Impacts
 • Take a holistic and intentional approach to the siting of new facilities, avoiding areas already disproportionately impacted by energy generation or other industrial facilities. • Provide support for coal plant host communities to address the economic and community impacts of plant retirements. • Center environmental justice communities in the development of the carbon plan.
Integrate Other Efforts
 • Incorporate recommendations from related stakeholder engagement processes, including but not limited to, the Clean Energy Plan stakeholder process, the Low-Income Affordability Collaborative, and the Working Group on Climate Risk and Resilience.

Stakeholder desired outcomes that are being addressed through other workstreams are shown in Table B-9 below.

Table B-9: Outcomes Addressed Through Other Workstreams

Environmental Impacts Beyond CO_2
 • Address all greenhouse gas emissions beyond carbon dioxide, including upstream methane leakage from natural gas being delivered to electric power plants. • Consider life cycle assessment of all system resources, including but not limited to, construction of infrastructure, etc., to get to net-zero.
Grid Resilience/Hardening
 • Enhance resilience and grid hardening through changes over time.
Support Favorable Business Environment
 • Support the ability of businesses and industries to operate competitively, preserve existing jobs, and/or to create new jobs. • Consider the carbon reduction targets and plans of cities and businesses in Duke Energy's service territories.
Affordability for All Customers
 • Strive to achieve fair and affordable rates and total costs for all customers, including at-risk/low-and-moderate-income households and communities.

North Carolina Clean Energy Plan Outcomes and Stakeholder Engagement

As part of the development of the North Carolina Clean Energy Plan ("CEP"), the Companies participated in a significant stakeholder process led by the Department of Environmental Quality and the Regulatory Assistance Project. This process was divided into two major work streams named after the A-1 and B-1 recommendations in the CEP, respectively. The A-1 workstream was led by Duke University's Nicholas Institute and evaluated carbon policy pathways for electric sector emissions reductions while the B-1 workstream, led by Rocky Mountain Institute and referred to as the North Carolina Energy Regulatory Process ("NERP"), considered "policies that align regulatory incentives and processes with 21st century public policy goals, customer expectations, utility needs, and technology innovation."[5]

The A-1 workstream began in December 2019 and continued through 2020 with the final A-1 Report issued in March 2021. This effort considered four carbon policy pathways:

- Accelerated coal plant retirements
- Market-based solutions for carbon reductions
- A carbon adder (which has also been described as environmental dispatch)
- A clean energy standard

The workstream was subdivided into two working groups: one focused on building out these policy pathways, and one focused on the technical aspects of their consideration. The policy working group established the parameters for each pathway that was then modeled by Duke University using a capacity expansion tool with limited support from the technical working group. The technical working group focused on building consensus for the base model assumptions and identification of scenarios and sensitivities.

While the collaborative work of the stakeholders in this effort is valuable to continued conversations regarding decarbonization underlying the stakeholder engagement for the Carbon Plan itself, the specific outcomes of the A-1 Report are not directly applicable to the development of the Carbon Plan. Given that HB 951 itself established the parameters from which the Companies are to achieve carbon emissions reductions the NC General Assembly has essentially established the policy framework that was the subject of the CEP work.

[5] https://deq.nc.gov/energy-climate/climate-change/nc-climate-change-interagency-council/climate-change-clean-energy-plans-and-progress/clean-energy-plan/north-carolina-energy-regulatory-process.

Moreover, the results from the A-1 modeling exercise were "directional only" and "did not attempt to duplicate how Duke Energy operates the grid."[6] While the Companies appreciate the analytical framework used for the limited purposes of the CEP process, such modeling was not consistent with the complex and detailed modeling required to support this initial Carbon Plan. The details underlying this modeling are provided in Appendix E (Quantitative Analysis).

The four topics explored in further detail in the B-1 process were:

- Performance-based regulation ("PBR")
- Accelerated retirement of generation assets including through securitization
- Wholesale market design and competition
- Competitive procurement for resource acquisition

For each topic, NERP produced Study Group Work Products. The following provides further details regarding each of the Study Group Work Products and, where applicable, its impact on the Carbon Plan.

PBR: The PBR Study Group Work Product recommended the adoption of three ratemaking tools: (1) residential decoupling, (2) performance incentive mechanisms ("PIMs"), and (3) multiyear rate plans ("MYRP") with an earning sharing mechanism ("ESM"). The basic framework for PBR legislation that was recommended by NERP was ultimately enacted, with modifications, in HB 951. All three recommended PBR components were ultimately included in HB 951.

Securitization for Generation Asset Retirement: The Study Group Work Product for this group explored the use of securitization as a tool to reduce financing costs for the remaining net book value of any early retired coal units. This work was incorporated into HB 951, which directed the Commission to "develop rules to determine costs to be securitized at fifty percent (50%) of the remaining net book value of all subcritical coal-fired electric generating facilities to be retired to achieve the authorized carbon reduction goals set forth in Section 1 of this act, with any remaining non-securitized costs to be recovered through rates."

Wholesale Market: The primary recommendation of the Wholesale Market Study Group Work Product was that the "the General Assembly of North Carolina direct the NCUC to conduct a study on the benefits and costs of the following wholesale electricity market reforms and implications for the North Carolina electricity system." This recommendation was not incorporated into HB 951.

Competitive Procurement of Resource Acquisition: The Study Group Work Product for this group assessed the use of competitive procurement practices for new resources. One of the key recommendations is that "[c]ompetitive solicitations benefit customers by ensuring the most cost-

[6] https://nicholasinstitute.duke.edu/sites/default/files/publications/Power-Sector-Carbon-Reduction-An-Evaluation-of-Policies-for-North-Carolina-Revised_0.pdf

effective generation resources are selected." This work was not specifically incorporated into HB 951, but the Companies intend to use a wide range of competitive procurement practices as part of its overall execution strategy.

Additional Stakeholder Engagement Efforts

The stakeholder engagement process dedicated to the Carbon Plan is only a portion of the stakeholder engagement activity that contributed to the development of the Carbon Plan. While the below description of stakeholder engagement efforts is not intended to provide an exhaustive list of all stakeholder engagement, it provides a summary of key formalized stakeholder engagement initiatives that are discussed in various appendices and that have informed, to varying extents, the Companies' development of the Carbon Plan or may inform future iterations of the Carbon Plan.

Low-Income and Affordability Collaborative

The North Carolina Low-Income Affordability Collaborative ("LIAC") was established in 2021, consistent with Commission requirements,[7] to prepare an assessment of affordability challenges and file a final report with the Commission detailing feedback and recommendations obtained in the collaborative to address the affordability of electric service for low-income customers. Over 30 stakeholder organizations approved by the Commission participate from across the State. The LIAC has hosted six of nine workshops and a joint collaborative meeting with members of the EE/DSM Collaborative and Comprehensive Rate Review. LIAC has at least two additional LIAC workshops and Pitch Day scheduled in advance of filing the LIAC Final Report with the Commission in July 2022.

EE/DSM Collaborative

The EE/DSM Collaborative was established in 2009 and hosts meetings every other month with a large and diverse group of stakeholders interested in Duke Energy's portfolio of energy efficiency and demand response programs. The EE/DSM Collaborative meetings serve three main purposes: first, to provide a forum to create transparency around the program performance and issues and market barriers; second, to garner feedback potential ideas for enhancements to ongoing programs; finally, to vet Duke Energy ideas for new programs and solicit additional ideas for new programs. This effort is comprised of approximately 20-30 stakeholder organizations spanning both North Carolina and South Carolina. The EE/DSM Collaborative's demonstrated history of successful stakeholder engagement has contributed to Duke Energy's portfolio of programs consistently performing above the national average and being the most effective in the Southeast.

[7] NCUC Order Accepting Stipulations, Granting Partial Rate Increase and Requiring Customer Notice in Docket Nos. E-2, Sub 1219 and Sub 1193 (April 16, 2021); NCUC Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice in Docket Nos. E-7, Sub 1213, Sub 1214, and Sub 1187 (March 31, 2021).

2022 Solar Procurement

Since January 2022, the Companies have held a robust stakeholder engagement process including five open stakeholder meetings to design a 2022 Solar Procurement Program ("2022 SP Program") framework. Through this engagement, the Companies, with stakeholder input, have developed plans for a systemwide 2022 SP Program RFP targeting at least 700 MW of new solar resources across the Carolinas. The Companies' petition to the Commission for approval the 2022 SP Program was filed on March 14, 2022 in Docket Nos. E-2, Sub 1297 and E-7 Sub 1268. The Companies have already commenced with further stakeholder engagement to continue to refine the procurement process.

Electric Transportation Collaborative

Through the Electric Transportation ("ET") Collaborative, Duke Energy, together with the NCUC Public Staff, engages in a collaborative stakeholder process to provide input and feedback on future ET programs and pilots. The ET Collaborative process was ordered by the Commission in November 2020,[8] along with the partial approval of Phase I pilot programs designed to help North Carolina increase the number of registered, zero-emission vehicles to 80,000 by 2025 as directed by Governor Roy Cooper's Executive Order 80. With the support of the ET Collaborative, an innovative funding program for customer-owned EV charging infrastructure, known as Make Ready Credit, was filed in April 2021. Additionally, Phase II pilot programs were filed in May 2021. The Phase II pilot programs proposed, among other objectives, increased electric vehicle charging options along state highways, expanded electric vehicle charging in low-to-moderate income communities and rural areas, and provided support to school systems to purchase up to 60 electric school buses. The Make Ready Credit program was approved in February 2022. Phase II pilots were denied in the same month, with the Commission directing the Companies to further engage the ET Collaborative in how to leverage federal and state funding as well as data obtained from Phase I deployments. The Companies were given 90 days to respond to the Phase II order and is actively planning next steps.

The ET Collaborative meets quarterly to allow stakeholders to receive updates on Phase I pilots and any new programs the Companies wish to pursue. Active dialog and input from ET Collaborative stakeholders will be critical to achieving carbon targets, both because load growth from necessary ET programs serves to make carbon targets more difficult to reach and because EV charging management programs will be central to aligning loads with low- and no-carbon generation.

North Carolina Transmission Planning Collaborative

Stakeholders contribute to the Companies' local transmission planning process through the North Carolina Transmission Planning Collaborative ("NCTPC"). As described in greater detail in Appendix P (Transmission System Planning and Grid Transformation), the NCTPC is a FERC-jurisdictional process and is described fully in Attachment N-1 to the Companies' Open Access Transmission Tariff. Any stakeholder may request to participate in the Transmission Advisory Group ("TAG"), which

[8] NCUC *Order Approving Electric Transportation Pilot, in Part,* issued November 24, 2020, Docket Nos. E-7, Sub 1195 and E-2, Sub 1197.

provides advice and recommendations to the NCTPC to aid in the development of the local transmission plan. The TAG generally meets on a quarterly basis and meetings of the TAG are open to the public. As described further in Appendix P (Transmission System Planning and Grid Transformation), the TAG provides a forum for stakeholders to contribute to the Companies' development of future local transmission plans through the NCTPC, including furtherance of the new public policy-driven transmission needs to be established in the Carbon Plan.

North Carolina Comprehensive Rate Design Study Stakeholder Engagement

The Companies have undertaken a significant stakeholder engagement process to address rate design review and modernization opportunities, through the Comprehensive Rate Design Study, which the Companies have implemented with ICF as the third-party facilitator. This effort involved participation from more than 50 stakeholder organizations and will inform the Companies' future filings and applications for rate design changes, including Carbon Plan implementation.

Major findings include: (1) enabling beneficial growth and economic development, including electric vehicles, and equitable outcomes given increasing levels of energy technology adoption (e.g., solar, storage) that require more sophisticated rate designs that recognize both current and expected system changes; (2) some improvements are possible immediately (some program or rate design tariff filings have occurred during the course of the study), but others will require holistic design considerations and are best addressed in the context of rate case filings. The Companies filed a Roadmap at the conclusion of the process, which demonstrates the success of the collaborative approach at recognizing, organizing, and prioritizing improvement opportunities for a complex topic, to an extent not possible if such efforts were confined to a rate case proceeding. The concerted efforts and substantial commitment of resources from many groups will prove beneficial to all electric consumers in North Carolina as concepts are fully prioritized and implemented.

ISOP Stakeholder Engagement

Since December 2019, Duke Energy, together with its third-party consultant, ICF, has hosted five stakeholder engagement sessions with the goal of educating and soliciting feedback from interested parties on its Integrated System and Operations Planning ("ISOP") initiative. These sessions focused on communicating the purpose and key elements of ISOP, discussing approaches to comparable efforts across the country, and gathering stakeholder perspectives on various attributes of the ISOP initiative. The sessions also served as platforms for interested parties to ask questions and provide input on activities related to ISOP. The Companies plan to provide future updates to stakeholders regarding the ISOP initiative through additional stakeholder engagement, likely to be tied to future IRP stakeholder discussions or targeted forums such as distribution hosting capacity analysis as referenced in Appendix S (Integrated System and Operations Planning) or the Climate Risk & Resiliency Technical Working Group described below.

Climate Risk & Resilience Study Technical Working Group

In 2021, Duke Energy, together with its third-party facilitator, ICF, initiated a Technical Working Group ("TWG") to provide input and advisory support for a Climate Risk & Resiliency Study of Duke Energy's transmission and distribution ("T&D") assets and operations in the Carolinas. The study scope includes a climate science-based assessment of the DEC and DEP service territories, an evaluation of the potential impacts of different climate change scenarios on the T&D system, and the development of a flexible adaptation framework for providing reliable and resilient energy in the face of changing climate conditions. This study will inform future iterations of the Carbon Plan as the Companies work to mitigate vulnerabilities and incorporate resiliency recommendations from the study, which could impact T&D design standards, planning or operational criteria and processes, or the expected life assumptions of assets. The TWG is an advisory group with over 35 stakeholder groups represented with technical expertise in climate science, risk assessment, T&D infrastructure, emergency planning, and community resilience. Through meetings and communications with the TWG, the study team shares work in progress and solicits input, feedback and guidance. The TWG will continue providing support up to the publication of the final study report in mid-2023. An interim report will be published by fall of 2022. Both reports will include a summary of stakeholder activities and input.

Carbon Plan Implementation: Future Stakeholder Engagement

In addition to the stakeholder engagement efforts described above, looking into the future, the Companies will be seeking out opportunities to work with stakeholders in implementing the Carbon Plan, once approved by the Commission. The array of possible stakeholder and community engagement in this regard is vast, and it is not possible to identify the scope or timing of such future engagement at this time.

Energy transition impacts on customers and communities

Duke Energy believes that environmental justice is a business imperative, fundamental to operations and a pillar of meaningful stakeholder engagement. The Companies recognize and understand the importance of both the impact of Duke Energy's work on communities and early engagement with those impacted. The Companies convened a small group of environmental justice-focused stakeholders on May 3, 2022, to begin discussing how to engage North Carolina communities and understand what issues are important to low-income and communities of color. Ten stakeholders attended this meeting, representing a variety of interests, including health, environmental, and economic impact. This stakeholder engagement effort will be ongoing and involve a select number of individuals committing to working together with the Companies to explore these complex issues and identify areas for potential partnership and progress.

Communities where the Companies' have remaining coal facilities is another focus of stakeholder engagement. While the retirement schedule is not yet approved for these facilities, the transition from coal-fired generation to cleaner lower-carbon fuels will impact these communities in a real and demonstrable way. Despite the precise timeline for retirement and generation replacement of these units being uncertain, the Companies have started to engage local community leaders on this

transition. In addition to this engagement, on May 5, 2022, the Companies held a meeting with seven representatives from four counties, as well as organizations representing community colleges and economic development. Stakeholders expressed an interest in regular communications from the Companies on the plans for retiring coal facilities, even if details are unknown. The Companies are in the process of developing specific engagement plans for impacted counties and will continue the dialogue with local leaders such as these, along with Duke Energy employees who are impacted, as the state works towards its cleaner energy future.

Conclusion

As described through this Appendix, stakeholder engagement has been, and will continue to be, a vital priority that informs not only Duke Energy's business strategy but also its relationship with communities and customers. The Companies have learned that progress toward a cleaner energy future for families and businesses in the Carolinas is best achieved when it is informed by a diverse group of interested stakeholders. Due to the complexity of the issues at stake, success cannot be measured by the extent of complete alignment among these diverse voices, but instead must be measured by the extent of meaningful opportunities to be heard and the willingness to consider different perspectives and opinions. The Companies look forward to continuing these conversations and providing meaningful opportunities for engagement as the State progresses forward in Carbon Plan implementation and execution.