Fox Rothschild LLP
ATTORNEYS AT LAW

434 Fayetteville Street
Suite 2800
Raleigh, NC 27601
Tel (919) 755-8700 Fax (919) 755-8800
www.foxrothschild.com

Benjamin L. Snowden
Direct No. 919-719-1257
E-mail: bsnowden@foxrothschild.com

May 25, 2023

Ms. A. Shonta Dunston
Chief Clerk
N.C. Utilities Commission
430 N. Salisbury Street
Room 5063
Raleigh, NC 27603-5919

Re: In the Matter of
Rulemaking Proceeding Related to Biennial Consolidated Carbon Plan and Integrated Resource Plans of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, Pursuant to N.C.G.S. Sections 62-110.9 and 62-110.1(c)
Docket No. E-100 Sub 191
New Energy Economics' Comments

Dear Ms. Dunston:

In accordance with the Commission's May 5, 2023, Order Establishing Comment Deadlines in the above referenced docket, New Energy Economics ("NEE") herewith submits its Comments in this docket and matter.

If you have any questions concerning this filing, please let me know.

Thank you for your assistance.

Sincerely,

/s/ Benjamin L. Snowden

Benjamin L. Snowden

pbb

Enclosures

Copy to: Counsel of Record
Parties of Record
NC Public Staff

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 191

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Rulemaking Proceeding Related to Biennial Consolidated Carbon Plan and Integrated Resource Plans of Duke Energy Carolinas, LLC, and Duke Energy Progress, LLC, Pursuant to N.C.G.S. § 62-110.9 and § 62-110.1(c)	)	COMMENTS OF NEW ENERGY ECONOMICS ON PROPOSED CPIRP RULE

Pursuant to the Commission's May 5, 2023, *Order Establishing Comment Deadlines*, New Energy Economics ("NEE") respectfully submits the following comments on the Proposed Rules to Consolidate Carbon Plan and Integrated Resource Planning Requirements ("Proposed Rules") filed by Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (collectively, "Duke") on April 28, 2023. NEE also submits a revision to Duke proposed rule, attached to these comments. Duke's proposed rule is the foundation of NEE's revision which mostly adds to Duke's rule.

1. Background on NEE and its goals for the CPIRP rule

New Energy Economics is a 501(c)(3) organized under the laws of the state of Colorado, whose Board members and staff include individuals residing and doing business in the State of North Carolina. Costs and performance of energy technologies and systems are evolving rapidly and require analysis to determine the most economical and compatible solutions. NEE's mission is to help utilities and energy decision-makers navigate rapidly evolving utility industry economics. NEE's team members collectively have over 160 years of direct regulatory and utility experience. NEE's innovative understanding of current and

past market economics and its neutral approach to technology and developers is rooted in the team's deep regulatory, utility, project development, customer, and capital market experience and an innovative understanding of current and past market economics. NEE adopts a long-term customer present value perspective, encouraging utilities and energy decision-makers to look at comprehensive data in order to select the most economic resources to lower rates and costs, while maintaining grid reliability. NEE's analysis often leads to support for competitive bidding processes, in part to avoid promoting any one technology or company and better ensure reliable service at least cost.

These Comments focus on linking Duke's resource planning processes to its procurement processes in a way that moves towards all-source procurement ("ASP") for most or all resources approved in the CPIRP. Although at first glance ASP may seem inconsistent (or at least in tension with) North Carolina H.B. 951's requirements as to resource and resource ownership, or with the approach to portfolio selection taken by the Commission in its *Order Adopting Initial Carbon Plan and Providing Direction for Future Planning* issued in docket no. E-100 Sub 179 December 30, 2022 ("Carbon Plan Order"), NEE submits that ASP can be employed to validate and refine the resource plans approved by the Commission in Carbon Plan / IRP proceedings, so that they conform to market realities and can achieve compliance with the carbon reduction mandates of H.B. 951 at the lowest cost for customers

2. All-Source Procurement Benefits Customers and Can be Effectively Deployed in North Carolina.

Competitive all-source procurement is a unified process for utility acquisition of new generation resources to meet energy and capacity needs identified through an

integrated resource planning process.[1] Although ASP can be used as the primary means to establish a preferred resource portfolio, it can also be used to validate and refine a portfolio established through an administrative resource planning process, such as that envisioned by the proposed CPIRP rules. NEE's experts have learned from experience in other states that electric utility planning is much more likely to produce least-cost results that meet customer needs when planning incorporates a timely, competitive ASP process.

ASP could be used in North Carolina to validate – and if necessary, adjust – the resource portfolios and short-term procurement actions approved by the Commission in the CPIRP process. At a high level, here is how the process would work: the Commission would approve procurement targets for all zero-carbon (or low-carbon) resources in a near-term action plan, and Duke would attempt to procure those resources in a single integrated process. Procurement targets for each resource could then be adjusted in a holistic way based what the market actually delivers in the procurement. The final procurement package would then be reviewed (and if necessary, approved) by the Commission.

So if, for example, an approved portfolio called for the procurement of 600 MW of onshore wind but only 300 MW were available, Duke could procure more of other resources to make up the shortfall, rather than having to wait for the next biennial CPIRP proceeding to adjust its portfolio. Or if, to take another example, the bid pricing for standalone storage in an ASP were significantly lower (or higher) than the costs relied on in Carbon Plan modeling, the Companies could adjust the amount of standalone storage

[1] Energy Innovation. *All Source Utility Electricity Generation Procurement Best Practices*, available at https://energyinnovation.org/wp-content/uploads/2020/04/All-Source-Utility-Electricity-Generation-Procurement-Best-Practices.pdf (providing overview of All-Source Procurement). Colorado's ASP process is discussed on pages 33-38.

procured relative to other resources (e.g. gas-fired CTs) and reduce the cost of the overall portfolio to ratepayers.

In IRP proceedings conducted prior to the passage of H.B. 951, this Commission had indicated an interest in the potential for ASPs to reduce costs to ratepayers. *In The Matter of: Technical Conference: 2020 Biennial Integrated Resource Plan Reports and Related 2020 REPS Compliance Plans by Duke Energy Carolinas and Duke Energy Progress*, Docket No. E-100, Sub 165, Tr. Vol. 3 at 8:20-59:5 (N.C.U.C., Oct. 1, 2021); Article Requested By Commissioner Duffley During IRP Technical Conference, *In the Matter of: 2020 Biennial Integrated Resource Plans and Related 2020 REPS Compliance Plans*, Docket No. E-100, Sub 165 (N.C.U.C., Oct. 11, 2021).

The Commission has indicated that, consistent with the requirements of G.S. § 62-100.9, the Commission will issue an order approving the next CPIRP on or before December 31, 2024. As was the case with the Commission's initial Carbon Plan order in 2022, it is envisioned that the Commission's order will include near-term actions that the Commission will direct Duke to take, including procurement of specified generation resources. Duke's proposed CPIRP rules do not address how these procurements will occur, but the 2022 Carbon Plan order directed Duke to undertake separate procurements for different resources. The Order required a separate docket relating to the procurement of solar and solar plus storage resources, similar to the 2022 solar procurement docket, but did not address how procurement of other resources, such as natural gas and on-shore wind included in the 2022 near-term execution plan, should occur.

NEE recommends that the CPIRP process be adjusted to include an ASP process that affords the opportunity to adjust the proposed resource portfolio based on procurement

results. Unfortunately, Duke's proposed rule does not provide for any form of ASP. However, the building blocks of competitive ASP already exist in North Carolina. NEE's recommendations leverage and improve upon North Carolina's recent experience with single-resource competitive procurement for solar and solar plus storage through the state's CPRE and H.B. 951 processes, including use of standard contracts, bid evaluation criteria, independent evaluators. And the portfolio adjustments possible in an ASP are simply a more sophisticated version of the Volume Adjustment Mechanism already approved for the 2022 and 2023 solar RFPs.

Based on experience in other states, ASP provides many benefits. It provides a vital path for the Commission to learn about various technologies, the benefits and drawbacks of each in the context of the utility's system, the economics of the renewable market, and how best to transition towards renewable energy. Each state and utility is different, and will face different hurdles moving away from carbon based fuels. ASP as described in NEE's proposed rule allows the Commission to balance the need for a reduction in carbon based fuels with the need for low cost electricity.

3. Competition and Transparency Benefit Customers and Participants

The ASP paradigm allows utilities to compete with private market developers. While Duke must own 100 percent of new resources selected for carbon plan compliance, save for 45% of solar and solar plus storage facilities, it is not necessarily the case that utilities can *develop* projects more cheaply than third parties, and they should be subject to the rigor and precision of competition.

North Carolina already requires competitive bidding for renewable resources as set forth in N.C. Gen. Stat. § 62-110.8. NEE's amendments to Duke's rules extend the bidding requirement to all sources, whether fossil fueled or not. Customers deserve the protections provided by the pursuit of low cost resources through competition.

NEE's suggested changes to Duke's rules are designed to provide bidders as much information as possible so that their bids are as precise as possible. The submission of model RFPs and contracts to the Commission for approval are a crucial steps because bidders will know what is expected of them.

NEE recommends that (1) Duke's stakeholder processes for RFPs / ASP utilize a regular stakeholder engagement list that is re-noticed whenever new issues related to the CPIRP or procurements arise (rather than a new group each time); (2) Duke provide and share regular and timely report outs as part of the stakeholder process to ensure the Commssion is hearing information reflective of stakeholder comments and discussions as they occur; and (3) all reporting by Duke be both regular and detailed enough to be reflective of stakeholder discussions, including suggestions and comments that were included in, partially adopted, or not included in the utilities' final proposals.

Maximizing transparency will help to avoid as much misunderstanding and contention as possible. This will simplify the process overall, improve bidders' trust in the procurement process, and result in lower resource costs. With each biennial cycle, the process should receive more bids per unit of need, which is necessary to achieve least cost.

The Commission has the ability to maintain control of the process at all times. Duke and other interested parties all have opportunities to influence the final portfolio. After the

final portfolio is chosen, the utility issues its RFP, and enters contract negotiation with the winning bidders.

4. Summary of Recommended Changes to CPIRP Process and Rule

Attachment 1 to NEE's Comments sets forth recommended revisions to the CPRIP rule that would allow ASP to be integrated with the CPIRP process in a manner consistent with H.B. 951 and with the Commission's approved Carbon Plan process.

NEE proposes a two-phase CPIRP process, which includes a resource planning phase and a procurement phase. **Figure 1** depicts the proposed process.

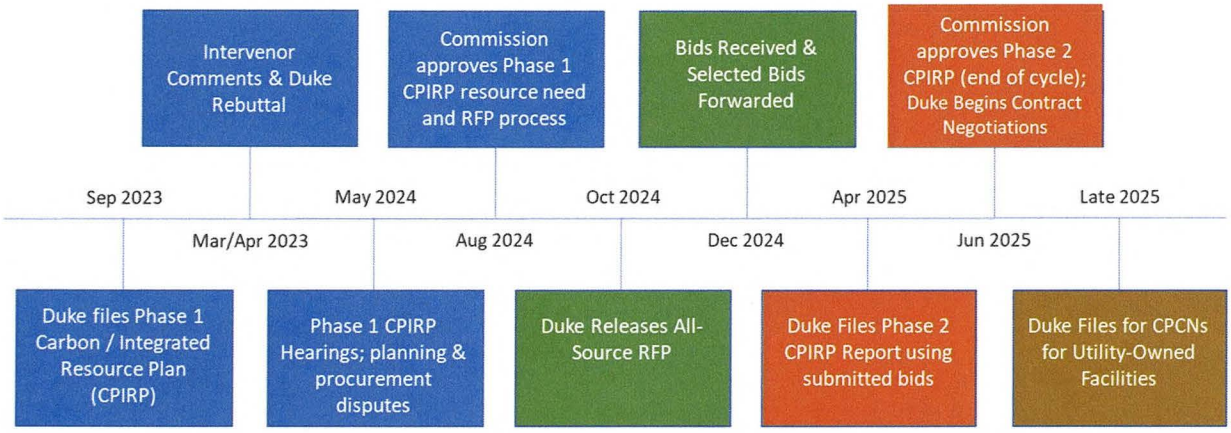

Figure 1. NEE's draft CPIRP process recommendation, including all-source procurement

The two year timeline for filing and considering CPIRP applications is ambitious. Under NEE's proposed rule, the Commission and any intervening parties consider the utility's initial CPIRP, issues a decision approving a resource portfolio, a final decision approving or modifying the utility's proposed CPIRP, and then the utility commences a separate ASP process to fill the resource need, one that is not subject to the CPIRP deadline.

During the first phase, the underpinnings of the resource need are examined by the parties and the Commission, including but not limited to: modeling assumptions for the utility's system; projected system growth, existing resources, demand side management

impacts, wholesale contracts, and planned retirements. The utility submits four plans to satisfy the resource need using increasing amounts of renewables. Parties then comment on the Company's proposals, and the Commission then accepts the Company's proposals, or modifies the portfolio, taking into account parties' comments. In its decision, the Commission addresses the resource need, and adopts the utility's proposed plan or modifies it by choosing different resources.

The impact of decarbonizing on customers is hugely significant. ASP will provide the Commission with sufficient information to ensure that customers benefit from market forces. Utilities issue requests for proposals based on model RFPs and contracts approved by the Commission. Developers and the utility may submit proposals to develop projects in response to the RFPs, and they are forced to compete through their bids. The Colorado Public Utilities Commission, for example, has seen fierce competition for projects benefit customers in terms of price and technologies.

The ASP process described in NEE's proposed rule will be transparent and at its core is based on Duke's CPIRP proposal. The Commission and all parties will be able to review the record to examine the utility's resource need, modeling assumptions, and how the utility proposes to meet its need while at the same time decarbonizing its system and providing low cost electricity.

NEE makes adjustments to Duke's proposed rule to accomplish the following:

1. **Process efficiency:** All decisions made by the Commission that affect the utility's need for resources are incorporated into the CPIRP process and used to develop a utility's need for new resources. Any renewable and demand side management decisions already approved are included in the process. NEE suggests additions that will make the stakeholder process set forth in Duke's rule more robust. NEE's additions will require the utility to report to the Commission areas of agreement and disagreement, and require the utility to share information that will allow

intervenors to be more prepared for hearing, and allow the Commission to focus on areas of dispute.

2. **Two-phase CPIRP process:** Under NEE's recommended process, the Commission would issue an order (at the end of Phase 1 of the CPIRP process) including an administratively determined resource portfolio that would then be the subject of a single, unified procurement process. This order approves, or modifies the utility's proposed CPIRP. The second phase of the process involves the acquisition of resources through competitive bidding. After bids have been submitted and reviewed, the utility would submit a report to the Commission indicating whether any adjustments to the preferred portfolio should be made in light of the price and volume of the bids received. The Commission would then decide whether to make any revisions to the portfolio of resources to be procured based on the information obtained through the integrated bidding process.

3. **Procurement Integrated with Planning:** Procurement documents and processes would be approved in the initial administrative order and resources are selected for procurement as part of the second revised administrative decision.

4. **Bidders need confidence in process:** Prospective generation resource developers must have confidence that the bidding process will be fair and robust, and that winning bids will be honored and the projects built. Accordingly, NEE suggests that model requests for proposals and model contracts be submitted as part of the proposed CPIRP to the Commission for approval. Further, NEE proposes a Commission process for developers to contest any perceived irregularities in modeling the bids, so that developers can be sure they are fairly treated. While NEE has not included any third-party monitoring, the Commission could certainly do so.

5. **Timing:**

    a. **Commission:** H.B. 951, as interpreted by the Commission, requires the Commission to issue its first revised administrative decision, approving the CPIRP concluding the biennial process, within two years of initiating the process. This deadline requires transparency with regard to modeling and an understanding of the bid process, how bids will be submitted and negotiated without compromising commercially sensitive bidder information.

    b. **Commercial timing:** Bidders must have enough time to submit bids, know how bids will go to negotiation, and be able to hold their prices until bids

are negotiated. NEE believes the proposed timeline for resource acquisition in the rules is sufficient.

c. **Utility timing:** Utilities need enough time for modeling, bid evaluations and negotiations (negotiations would occur after conclusion of the biennial process). The acquisition process therefore occurs outside the CPIRP process.

d. **Stakeholders:** Stakeholders must have time to analyze the initial filing, conduct analysis, and prepare testimony for Phase 1 hearings. Stakeholders, including consumers, need reporting, process transparency, and confidence that needs and issues will be addressed. Duke's proposed timeline provides sufficient time from the filing of the CPIRP to the filing of answer testimony.

6. **Stakeholder input and participation:** NEE recommends that Duke be required to address key RFP elements in the stakeholder engagement process conducted prior to Duke's first CPIRP filing. For example, stakeholders and bidders need information regarding draft all-source RFP, standard contracts, bid selection criteria, process timelines, and the process for selecting independent evaluator. Duke should also report the substance of these stakeholder discussions, and explicitly include both stakeholder recommendations Duke accepted and those it rejected. All parties benefit from appropriate utility reporting without compromising commercially sensitive bidder information.

7. **Contracting and CPCN must happen right after end of biennial cycle:** After the Commission decision at the end of the two-year cycle, using bids used in the approved portfolio, the utility is authorized to negotiate contracts with winning bidders. When utility is going to own the asset, the utility files for a CPCN.

NEE appreciates the opportunity to provide these Comments.

Respectfully submitted this the 25th day of May, 2023.

/s/ Ben Snowden
Ben Snowden
Fox Rothschild LLP
434 Fayetteville St., Suite 2800
Raleigh, NC 27601
Telephone: (919) 719-1257
E-mail: bsnowden@foxrothschild.com

Counsel for New Energy Economics

CERTIFICATE OF SERVICE

I hereby certify that all persons on the Commission's docket service list have been served true and accurate copies of the foregoing COMMENTS OF NEW ENERGY ECONOMICS ON PROPOSED CPIRP RULE by hand delivery, first class mail deposited in the U.S. Mail, postage pre-paid, or by e-mail transmission with the party's consent.

This the 25th day of May, 2023.

/s/ Ben Snowden
Ben Snowden
Fox Rothschild LLP

Attachment 1

to Comments of New Energy Economics

Proposed Rule R8-60A

New CPIRP Rule Applicable to Duke Energy Carolinas, LLC and Duke Energy Progress, LLC

NCUC Docket No. E-100, Sub 191

Rule R8-60A. BIENNIAL INTEGRATED RESOURCE PLANNING AND CARBON PLAN FILINGS.

(a) Purpose. — The purpose of this rule is to implement the provisions of G.S. 62-2(a)(3a), 62-110.1 and G.S. 62-110.9. The Carbon Plan constitutes the least cost integrated resource planning process for electric public utilities subject to G.S. 62-110.9 and the process for assessing and updating the integrated resource plan and the Carbon Plan for those utilities are therefore consolidated. The consolidated integrated resource plan and Carbon Plan (CPIRP) shall be reviewed every two years and may be adjusted as necessary in the determination of the Commission and the electric public utilities.

(b) Applicability. — This rule is applicable to Duke Energy Progress, LLC and Duke Energy Carolinas, LLC, which are each an "electric public utility" as defined in G.S. 62-110.9.

(c) Procedure for Review of CPIRPs.

(1) Filings.

(i) By September 1, 2023, and every two years thereafter, the electric public utilities subject to this rule shall file with the Commission their proposed CPIRP to commence phase I of the proceeding, together with all information required by subsection (f) of this rule. This CPIRP shall propose resources to be selected and a near-term action plan to be approved by the Commission for execution prior to Commission approval of the next succeeding CPIRP. Contemporaneous with filing the CPIRP, the electric public utilities must also make available complete CPIRP modeling input and output data files to the Public Staff and intervenors, subject to appropriate confidentiality protections.

(ii) Each CPIRP shall include an update on the progress each electric public utility has made to advance the near-term action plan in the most recently approved CPIRP.

(iii) If an electric public utility considers certain information in its biennial comprehensive CPIRP to be proprietary, confidential, and within the scope of G.S. 132-1.2, the electric public utility may designate the information as "confidential" and file it under seal.

(iv) The Commission will issue an order adopting the next CPIRP by no later than December 31 of the year after the year in which the proposed CPIRP is filed with the Commission.

(1) Each electric public utility individually or jointly shall provide notice to the Commission of its plans for engaging with interested parties at least 200 days in advance of its planned biennial CPIRP. The goal of the process shall be to determine areas of agreement and disagreement in an attempt to make any CPIRP hearing more efficient. The utility shall compile a list of interested stakeholders and shall electronically serve monthly reports due the first week of each month on the

stakeholders to provide updates on the process including but not limited to agreements among stakeholders, decisions to disagree, and outstanding issues.

During the Stakeholder engagement, the utility shall provide information to stakeholders, including but not limited to the following:

a. information used in modeling resource need and net present value
b. information regarding any draft all source RFP,
c. draft standard contracts,
d. draft bid selection criteria,
e. timeline between bids and contracts
f. process for selecting an independent evaluator, if any.

(2) At the time the electric public utilities file their proposed CPIRP with the Commission, the electric public utilities shall also file with the Commission testimony and exhibits of expert witnesses supporting the proposed CPIRP.

(i) No later than 180 days after the later of either September 1 or the filing of the electric public utilities' CPIRP, the Public Staff or any intervenor may file testimony and exhibits of expert witnesses commenting on, critiquing, or giving alternatives to the electric public utilities' proposed CPIRP.

(ii) No later than 45 days after the filing of intervenor testimony and exhibits, the electric public utilities may file rebuttal testimony and exhibits of its expert witnesses.

(iii) The Commission shall schedule an expert witness hearing to review the CPIRP proposals beginning on the second Tuesday in May following the public utilities' proposed CPIRP filing. The scope of any such hearing may be limited to issues as identified by the Commission. The Commission will also schedule one or more hearings to receive testimony from the public at a time and place of the Commission's designation.

(d) Definitions. — As used in this rule, the following definitions shall apply:

(1) "Base Planning Period" shall mean the 15-year period from the start of the year following the date the CPIRP is filed.

(2) "Carbon Neutrality Planning Horizon" shall mean the period beyond the Base Planning Horizon that is designed to ensure that the electric public utilities remain on the least cost path towards achieving carbon neutrality (as defined by G.S. 62-110.9(ii)) consistent with the requirements of G.S. 62-110.9.

(e) Consolidated Carbon Plan and Integrated Resource Plan. — The electric public utilities subject to this rule shall develop and keep current a proposed CPIRP to determine each

electric public utility's planned generation and resource mix that complies with the requirements set forth in G.S. 62-110.9. The CPIRP shall incorporate, at a minimum, the following:

(1) Base Planning for Native Load Requirements and Firm Planning Obligations. — The CPIRP shall include a forecast of native load requirements for the Base Planning Period (including known and quantified load reduction measures taken by wholesale customers pursuant to their FERC-jurisdictional wholesale power contracts) and other system capacity or firm energy obligations extending through at least one summer and one winter peak; supply-side resources (including owned/leased generation capacity and firm purchased power arrangements) and grid edge resources (including demand-side management programs, rate designs, voltage control, customer sited generation and storage, and energy efficiency) expected to satisfy those loads; and the reserve margin thus produced.

(2) Long-Term Planning for Carbon Neutrality. — The CPIRP shall also include a longer-term planning forecast beyond the Base Planning Period that is designed to ensure that the electric public utilities remain on a path that complies with the provisions set forth in G.S. 62-110.9. For purposes of analyzing resource needs to achieve carbon neutrality beyond the Base Planning Period, the electric public utilities may use simplifying assumptions and analytical approaches recognizing the inherent uncertainty in long-range planning and the ability to make planning adjustments in future updates to the CPIRP.

(3) Modeling Resource Needs Over Base Planning Period and Carbon Neutrality Planning Horizon. — The CPIRP must include, at a minimum, a comprehensive analysis of all resource options (supply- and demand-side) considered by the electric public utilities to serve customer native load requirements and firm planning obligations during the Base Planning Period and the Carbon Neutrality Planning Horizon in a manner that maintains or improves upon the adequacy and reliability of the existing grid as required by G.S. 62-110.9(3). The electric public utilities shall analyze potential resource options and combinations of resource options to serve its system needs, taking into account the sensitivity of its analysis to variations in future estimates of peak load, energy requirements, and other significant assumptions, including, but not limited to, the risks associated with extreme weather conditions, fuel costs, construction/implementation costs, and costs of complying with environmental regulation. Additionally, this analysis should account for, as applicable, system operations, compliance with state and federal regulations, and other qualitative factors.

(4) Resource Portfolios. — Each updated CPIRP shall include several resource portfolios developed with the purpose of fairly evaluating the range of demand-side, supply-side, energy storage, and other technologies available to meet each electric public utility's service obligations during the Base Planning Period and Carbon Neutrality Planning Horizon. For each resource portfolio, the electric public utilities shall identify planned resource additions and retirements, projected carbon emission reductions, present value revenue requirements over the Base Planning Period and Carbon Neutrality Planning

Horizon and explain whether, and if so, to what extent the electric public utilities plan to use offsets as allowed by G.S. 62-110.9 as part of the least cost path to achieving carbon neutrality.

(5) Evaluation of Resource Options. — As part of its CPIRP process, each electric public utility shall consider and compare a comprehensive set of potential resource options, including both demand-side and supply-side options, to determine the least cost combination (on a long-term basis) of resource options for reliably meeting the anticipated needs of its system in achieving the State's authorized carbon reduction goals. The CPIRP should include an assessment of power generation, transmission and distribution, grid modernization, energy storage, energy efficiency measures, demand-side management, and the latest technological breakthroughs to achieve the least cost path consistent with the requirements of G.S. 62-110.9.

(6) Ensuring Resource Adequacy and Reliability. — Each updated CPIRP shall describe how the proposed CPIRP ensures that generation and resource changes presented in the plan maintain or improve upon the adequacy and reliability of the existing grid. This analysis should address the electric public utilities' assessment of and plans to maintain appropriate planning reserve margins and maintain or improve resource adequacy of their systems.

(7) Resource Selection. — Each updated CPIRP shall identify the generation facilities and other resources proposed to be selected by the Commission pursuant to and subject to the requirements of G.S. 62-110.9(2). To the extent resources are selected based upon resource diversity, the electric public utility shall provide additional support for its decision based on the costs and benefits of alternatives to achieve the authorized carbon reduction goals and meet the requirements of G.S. 62-110.9.

(8) Execution. — Each updated CPIRP shall include a near-term action plan that the electric public utilities propose to execute over the near-term identifying specific supply-side and demand-side development, procurement, and retirement activities, including upgrades to the transmission system necessary to interconnect new supply-side resources. The CPIRP should also identify longer-term resource planning risks, strategies, or other considerations that the electric public utilities are monitoring that could impact achieving the State's carbon reduction goals in a manner that complies with the requirements set forth in G.S. 62-110.9.

(f) Contents of Biennial CPIRP. — Each electric public utility shall include in each updated CPIRP the following:

(1) Forecasts of Load, Supply-Side Resources, and Demand-Side Resources. — The forecasts filed as part of its CPIRP shall include descriptions of the methods, models, and assumptions used by the electric public utility to prepare its gross and net peak load in megawatts (MW) and energy sales (MWh) forecasts and the variables used in the models. The forecasts filed by the electric public utilities shall include, at a minimum, the following:

(i) The most recent ten-year history and a forecast of customers by each customer class, the most recent ten-year history and a forecast of energysales (MWh) by each customer class, and the most recent ten-year history and a forecast of the utility's summer and winter peak load (MW);

(ii) A detailed calculation of the impact of grid edge resources on gross load, including an explanation of why those resources are treated as load modifying or as a resource modeled on the supply side;

(iii) The electric public utility's forecast for at least the Base Planning Period, including peak loads for summer and winter seasons of each year, annual energy forecasts, reserve margins, and load duration curves, with and without projected supply or demand-side resource additions. The forecast shall also indicate the projected effects of grid edge resources on the forecasted annual energy and peak loads on an annual basis for the Base Planning Period, and these effects also may be reported as an equivalent generation capacity impact; and

(iv) For new technologies that may have significant impacts on the electric public utility's net load forecast, such as sector or process electrification or load modifying technologies, the utility should provide a description of the forecast methodology and projections.

(2) Generating Facilities and Energy Storage. — Each electric public utility shall provide the following data for its owned existing and planned electric generating facilities (including planned additions and retirements, but excluding cogeneration and small power production) and energy storage systems:

(i) Existing Generation. — Each electric public utility shall include a list of existing generation resources in service, with the information specified below for each listed resource. The information shall be provided for the Base Planning Period:

a. Type of fuel(s) used;
b. Unit characteristics (Type of unit *i.e.,* CT, Nuclear, etc., summer and winter capacity ratings, in-service date, and planned retirement date, if applicable);
c. Location of each existing unit;
d. A list of units for which there are specific plans for life extension, refurbishment or upgrading. The reporting electric public utility shall also provide the expected (or actual) date removed from service, general location, capacity rating upon return to service, expected return to service date, and a general description of work to be performed; and
e. Other changes to existing generating units that are expected to increase or decrease generation capability of the unit in question by an amount that is plus or minus 10%, or 10 MW, whichever is greater.

(ii) Existing Energy Storage. — The electric public utility shall include a summary of

its existing energy storage in service, with the information specified below for each technology. The information shall be provided for the Base Planning Period:

a. Storage technology (Pumped storage hydro, battery, etc.); and
b. Aggregate power capacity and designed storage duration.

(iii) Planned Generation. — The electric public utility shall include a list of planned generation resource additions, the rationale as to why each listed resource addition was selected, and the following for each listed addition:

a. Type of fuel(s) used;
b. Unit characteristics (Type of unit i.e., CT, Battery, etc., summer and winter capacity ratings, in-service date, and planned retirement date, if applicable;
c. Location of each planned unit to the extent such location has been determined; and
d. Summaries of the analyses supporting any new generation additions included in its forecast for the Base Planning Period, including its designation as baseload capacity, if applicable.

(iv) Planned Energy Storage Additions. — The electric public utility shall include a list of planned energy storage additions, the rationale as to why each listed resource addition was selected, and the following for each listed addition:

a. Storage technology (Pumped storage hydro, battery, etc.); and
b. Aggregate power capacity and designed storage durations.

(3) Non-Utility Generation. — Each electric public utility shall provide a summary of all non-utility electric generating facilities and energy storage in its service areas, including customer-owned and stand-by generating facilities. This summary shall aggregate capacities by generation type (solar, hydro, biomass, etc.).

(4) Wholesale Contracts for the Purchase and Sale of Power. —

(i) The electric public utility shall include a list of firm wholesale purchased power contracts currently in effect, including the primary fuel type, capacity (including its designation as base, intermediate, or peaking capacity), location, expiration date, treatment of the wholesale resource in CPIRP modeling after expiration, and volume of purchases actually made since the last CPIRP for each contract.

(ii) The electric public utility shall discuss the results of any Request for Proposals (RFP) that the electric public utility has issued for purchases of solar generation from third parties and for acquisition for utility ownership and, as applicable, RFPs for acquisition, transfer, or engineering, procurement and construction of other selected generation or storage resources since its last CPIRP. This discussion shall include a description of each RFP, the number of entities responding to the RFP, the number of proposals received, the terms of the proposals, and an explanation of why the proposals were accepted or rejected. The discussion shall also address how

the results of the most recent RFP completed during the biennial CPIRP period are incorporated into the electric public utility's analysis of its long-range energy and capacity needs. If any of this information is readily accessible in documents already filed with the Commission, the electric public utility may incorporate by reference the document or documents in its CPIRP, so long as the electric public utilities provide the docket number and the date of filing.

(iii) The electric public utility shall include a list of the wholesale power sales contracts for the sale of capacity or firm energy for which the utility has committed to sell power during the Base Planning Period, the identity of each wholesale entity to which the utility has committed itself to sell power during the planning horizon, the number of megawatts (MW) on an annual basis for each contract, the length of each contract, and the type of each contract (e.g., native load priority, firm, etc.).

(5) Demand-Side Management and Energy Efficiency. — The electric public utility shall include an assessment of the portfolio of existing and future grid edge resources including demand-side management and energy efficiency programs consistent with the most recently filed DSM/EE cost recovery rider filed by the electric public utility pursuant to Rule R8-69 and G.S. 62- 133.9(c). The electric public utility shall appropriately reflect grid edge resources as either load modifiers or as a resource considered on the supply side based upon the operating characteristics of the resource. For purposes of utility planning, the electric public utility shall model energy efficiency as a load modifying resource, ensuring its priority in utility planning. The electric public utility's modeling of the load modification associated with energy efficiency shall include a low, base, and high case.

(6) Transmission System Planning and Facilities. —

(i) Transmission System Planning – The electric public utility shall discuss the adequacy of its transmission system and identified future transmission needs (100 kV and above). With respect to future needs, the electric public utility shall include an overview of the utility's local and regional transmission planning process and discuss identified needs as well as planned transmission lines and facilities appearing in its most recent local transmission planning report that, as identified in that report, could reasonably be placed into service during the Base Planning Period.

(ii) Planned Improvements – The electric public utility shall include a list of planned, new or to be upgraded, transmission lines (100 kV or over) and transformers (low side voltage 100 kV or over) which are under construction or for which there are specific plans to be constructed during the Base Planning Period, including the capacity and voltage levels, location, and schedules for completion and operation.

a. The electric public utility shall describe how applicable planned improvements may enable specific siting of new resources or provide expected and planned impacts to other resource

interconnection constraints or operations of the systems.

(iii) Non-wires alternatives — The electric public utility shall provide an overall assessment methodology for non-wires alternatives, including a descriptive summary of analysis performed or used by the utility in the assessment of alternative solutions to transmission constraints that may be more cost-effective, such as locating generation in less constrained areas or strategically locating energy storage resources.

(7) Modeling of System Operations. — Each electric public utility shall provide a discussion of or applicable study addressing how utility relationships and system interconnections are modeled in the CPIRP including how relevant planning and operation functions influence modeling, such as modeled balancing areas and interconnections, joint dispatch agreements, energy exchange markets, and other future operating efficiencies planned by the electric public utility during the Base Planning Period.

(i) The electric public utilities shall also include, as applicable, a discussion of other planning factors influencing CPIRP modeling, such as corporate emission reduction goals or generation resource restrictions, legal or regulatory requirements from other authorities or jurisdictions that materially impact the resource plan, and the impact of these factors on the utilities' long-range resource plans over the Base Planning Period and Carbon Neutrality Planning Horizon, as applicable.

(ii) The electric public utility shall discuss the results that are expected from integrated (generation, transmission and/or distribution) systems planning processes, how integrated systems planning is used in the CPIRP process, and the impact of distributed energy resources and non-traditional solutions on resource planning and load forecasting.

(8) Modeling of Generating and Energy Storage Resources. — The electric public utility shall include an overall modeling framework and methodology for existing and potential generating and storage resources, including a descriptive summary of material assumptions and analysis performed or used by the utility in the assessment. The electric public utility shall also provide general information on any changes to the methods and assumptions used in the assessment since its most recently approved CPIRP, including supportive studies impacting assessment and selection of resources.

(i) To the extent that an updated unit retirement analysis is conducted as a part of the CPIRP, the electric public utility shall include a descriptive summary of material assumptions and analysis performed that may impact the retirement date modeled such as transmission requirements or replacement resource needs to enable executable retirement of resources.

(9) Maintaining or Improving Reliability and Resource Adequacy. — The electric public utility shall provide a description of, and justification for, the methodology by which the CPIRP will demonstrate that system reliability will be maintained or improved

throughout the Base Planning Period and Carbon Neutrality Planning Horizon. To the extent that the electric public utility's standards for quantifying that the reliability of the system has been maintained has changed, the electric public utility should discuss the reasons for the changes to these standards, including impacts to resource adequacy studies, effective load carry capability studies, or other applicable reliability studies.

(10) Load, Capacity, and Reserve tables. — Each electric public utility shall provide a table for a reference portfolio that shows, for both winter and summer peaks, the available capacity, wholesale purchases and sales, capacity from non-utility generation, load (gross and net of grid edge resources), retirements, new capacity additions, and estimated reserve margin for each year of the Base Planning Period.

(11) Each electric public utility shall calculate and provide a description of, and justification for, the methodology by which the utility determines a first year of avoidable capacity need (First Year of Avoidable Capacity).

(12) Evaluation of Resource Portfolios and Selection of Resources. — The electric public utility shall provide a description and a summary of the results of its analyses of potential resource options and combinations of resource options (supply-side and demand-side), including relevant information pertaining to portfolio costs (present value of revenue requirements and average retail customer bill impact analyses), operability and reliability, and CO2 emissions. The utility shall provide descriptions of at least four alternate plans that can be used to represent the costs and benefits from increasing amounts of renewable energy resources, demand-side resources, energy storage systems potentially included in a cost-effective resource plan. One of the plans shall represent a baseline case that describes the costs and benefits of the new utility resources required to meet the utility's needs during the planning period that minimizes the net present value of revenue requirements, and that meets carbon reduction goals. The other alternate plans shall represent alternative combinations of resources that meet the same resource needs as the baseline case but that include proportionately more renewable energy resources, demand-side resources, and energy storage systems. The utility shall propose a range of possible future scenarios and input sensitivities for the purpose of testing the robustness of the alternate plans under various parameters, such as for variations in fuel costs. The utility shall set forth its preferred plan that meets the resource need.

(13) The utility shall present a calculation of the net present value of revenue requirement for each plan, including the defined base case plan. The utility shall present the net present value of revenue requirement for each existing and new utility resource included in each plan.

(14) The proposed RFP(s) the utility intends to use to solicit bids for energy and capacity resources to be acquired through a competitive acquisition process, including model contracts (e.g. build-transfer contracts; solar purchase power contracts).

(15) Modeling assumptions and analytical methodology proposed to assess the costs and benefits of energy storage systems including, but not limited to: integration of

intermittent resources; improvement of reliability; reduction in the need for increased generation facilities to meet periods of peak demand; and avoidance, reduction, or deferral of investments.

(16) Stakeholder Engagement Report: The electric public utilities shall provide a report of its stakeholder engagement conducted pursuant to the plan described in section (c)((1)(V). The Stakeholder Engagement Report shall:

(i) Describe the stakeholder process, including the number of meetings, participants and topics discussed.
(ii) Include Stakeholder recommendations that were accepted by the utility.
(iii) Include Stakeholder recommendations that were rejected by the utility.

(g) Phase I decision.

Based upon the evidence of record, the Commission shall issue a written decision approving, disapproving, or ordering modifications, in whole or in part, to the utility's CPIRP. The decision shall approve the final portfolio of resources for which the utility will issue an RFP.

(h) Utility Plan for meeting the utility's resource need.

(1) It is the Commission's policy that a competitive acquisition process will normally be used to acquire new utility owned resources. The competitive bid process should afford all resources an opportunity to bid, and all new utility resources will be compared in order to determine a cost-effective resource plan (i.e., an all-source solicitation).

(2) Although the utility may propose a method for acquiring new utility resources other than all-source competitive bidding, as a prerequisite, the utility shall nonetheless include the necessary bid policies, RFPs, and model contracts for common supply-side resources and energy storage systems necessary to satisfy the resource need identified to be acquired exclusively through all-source competitive bidding.

(3) The utility may participate in a competitive resource acquisition process by proposing the development of a new utility developed resource that the utility shall own as a rate base investment. The utility shall provide sufficient cost information in support of its proposal such that the Commission can reasonably compare the utility's proposal to alternative bids. In the event a utility proposes a rate base investment, the utility shall also propose how it intends to compare the utility rate based proposal(s) with non-utility bids. The Commission may also address the regulatory treatment of such costs with respect to future recovery.

(4) Each utility shall propose a written bidding policy as part of its filing including the assumptions, criteria, and models that will be used to solicit and evaluate generation

facility and energy storage system bids in a fair and reasonable manner. The utility shall specify the competitive acquisition procedures that it intends to use to obtain resources under the utility's plan. The utility shall also propose, and other interested parties may provide input as part of the resource plan proceeding, criteria for evaluating the costs and benefits of resources such as the valuation of emissions and non-energy benefits.

(i) Bid Evaluation and Selection.

(2) Upon the receipt of bids in its competitive acquisition process, the utility shall investigate whether each potential resource meets the requirements specified in the resource solicitation and shall perform an initial assessment of the bids. Within 45 days of the utility's receipt of bids, the utility shall provide notice in writing by e-mail to the developer of each potential resource stating whether its bid is advanced to computer-based modeling to evaluate the cost or the ranking of the potential resource, and, if not advanced, the reasons why the utility will not further evaluate the bid using computer-based modeling. If, after the utility issues notice to a developer that the potential resource was not advanced to computer-based modeling, the utility subsequently advances that potential resource to computer-based modeling, the utility shall provide notice in writing by e-mail to the developer of that potential resource within three business days of the utility's decision to advance the potential resource to computer-based modeling.

(3) For bids advanced to computer-based modeling, the utility shall, contemporaneously with the notification, also provide to the owner or developer the modeling inputs and assumptions that reasonably relate to that potential resource or to the transmission of electricity from that facility to the utility. The utility shall provide such information so that modeling errors or omissions may be corrected before the competitive acquisition process is completed. Such information shall explain to the owner or developer how its facility will be represented in the computer-based modeling and what costs, in addition to the bid information, will be assumed with respect to the potential resource. In the event that this information contains confidential or highly confidential information, the owner or developer shall execute an appropriate nondisclosure agreement prior to receiving this information.

(4) Within seven calendar days after receiving the modeling inputs and assumptions from the utility the developer of a potential resource shall notify the utility in writing by electronic mail the specific details of any potential dispute regarding these modeling inputs and assumptions. The developer shall attempt to resolve this dispute with the utility. However, if the developer and utility cannot resolve the dispute within three calendar days, the utility shall immediately notify the Commission with a filing in the resource plan proceeding. If the developer is not already a party to the proceeding, the developer shall file a notice of intervention as of right pursuant to the Commission's Rules within one business day of the utility's filing of its notice of dispute to the Commission, for the limited purpose of resolving the disputed modeling inputs and assumptions related to the potential resource. The Commission will expeditiously schedule a technical conference at which the utility and the developer shall present their

dispute for resolution. The Commission will enter an interim order determining whether corrections to the modeling inputs and assumptions are necessary. If the Commission determines that corrections to the modeling inputs and assumptions are necessary, the utility shall, within three business days of the issuance of the Commission's interim decision, provide the corrected information to both the developer and the independent evaluator. The utility shall also confirm by performing additional modeling as necessary, that the potential resource is fairly and accurately represented.

(5) Within 120 days of the utility's receipt of bids in its competitive acquisition process, the utility shall file a report with the Commission describing the cost-effective resource plans that conform to the range of scenarios for assessing the costs and benefits from the potential acquisition of increasing amounts of renewable energy resources, demand-side resources, or energy storage systems, as specified in the Commission's decision approving modifying or rejecting the utility plan. In the event that the utility's preferred cost-effective resource plan differs from the Commission-specified scenarios, the utility's report shall also set forth the utility's preferred plan.

(6) Within 45 days after the filing of the utility's 120-day report, the parties in the CPIRP proceeding may file comments on the utility's report.

(7) *Phase II Decision:* Within 90 days after the receipt of the utility's 120-day report, the Commission shall issue a written decision approving, conditioning, modifying, or rejecting the utility's preferred cost-effective set of resources. The utility shall pursue the final cost-effective plan either with a due diligence review and contract negotiations, or with applications for CPCNs. In rendering the decision on the final cost-effective plan, the Commission shall weigh the public interest benefits of competitively bid resources provided by other utilities and non-utilities as well as the public interest benefits of resources owned by the utility as rate base investments.

(8) The utility must complete the competitive acquisition process by executing contracts for potential resources within 18 months after the utility's receipt of bids in its competitive acquisition process. The utility may file a motion in the resource plan proceeding requesting to extend this deadline for good cause.

(9) Upon completion of the competitive acquisition process and consistent with the subsequent requirement for website posting of bids and utility, protected information that was filed in the resource plan proceeding will be refiled as non-confidential or public information as specified in the Commission order described below. To satisfy this requirement the utility shall file a proposal that addresses the public release of all confidential and highly confidential information related to bids for potential resources and resources the utility proposed to build and own as a rate base investment. At a minimum the utility shall address its 120-day report and all documents related to these reports filed by the utility, parties. The utility shall file its proposal in the resource plan proceeding within 14 months after the receipt of bids in its competitive acquisition process. Parties will have 30 calendar days after the utility files its proposal to file responses. The utility then may reply to any responses filed within ten calendar days.

The Commission shall issue an order specifying to the utility and other parties the documents that shall be refiled as public information.