



Jack E. Jirak
Deputy General Counsel
Mailing Address:
NCRH 20 / P.O. Box 1551
Raleigh, NC 27602

o: 919.546.3257
f: 919.546.2694

Jack.Jirak@duke-energy.com

April 14, 2022

VIA ELECTRONIC FILING

Ms. A. Shonta Dunston
Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

**Re: Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's
Reply Comments on Supplemental Portfolio B
Docket No. E-100, Sub 165**

Dear Ms. Dunston:

Enclosed for filing in the above-referenced proceeding are Duke Energy Carolinas, LLC's and Duke Energy Progress, LLC's Reply Comments on Supplemental Portfolio B.

Please feel free to contact me should you have any questions. Thank you for your assistance with this matter.

Sincerely,

Jack E. Jirak

Enclosure

cc: Parties of Record

OFFICIAL COPY

Apr 14 2022

STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 165

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of

2020 Biennial Integrated Resource Plans) DUKE ENERGY CAROLINAS, LLC'S
and Related 2020 REPS Compliance Plans) AND DUKE ENERGY PROGRESS,
) LLC'S REPLY COMMENTS ON
) SUPPLEMENTAL PORTFOLIO B

Pursuant to the North Carolina Utilities Commission's (the "Commission") March 18, 2022 *Order Allowing Comments and Reply Comments on IRP Supplemental Filing*, Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP" and together with DEC, "the Companies" or "Duke Energy"), through counsel, respectfully submit these limited Reply Comments in response to the Supplemental Reply Comments of the Public Staff – North Carolina Utilities Commission (the "Public Staff") and letter comments of Carolinas Clean Energy Business Association ("CCEBA") addressing the Companies' 2020 IRP Supplemental Portfolio B – Limited Appalachian Gas Availability and Modified Gas Forecasting Assumptions ("Supplemental Portfolio B"), as filed with the Commission on February 9, 2022, in the above-captioned proceeding.

The Companies recognize and agree with the Public Staff that the modeling and analysis presented in Supplemental Portfolio B addresses important resource planning considerations relating to Appalachian gas availability that should be carefully considered in the Commission's review of the Companies' Carolinas Carbon Plan in Docket No. E-100, Sub 179. As the Commission is aware, the Companies are developing multiple portfolios to meet the legislative requirements of Session Law 2021-165 ("HB 951"), all of which consider the possibility of limited or no Appalachian gas availability. Notably,

on March 22, 2022, during Carbon Plan Stakeholder Meeting 3, the Companies shared preliminary plans for developing constrained Appalachian gas and no Appalachian gas portfolios in the Carbon Plan with the Public Staff and other stakeholders.¹ While the Public Staff's comments do not address Duke Energy's plans for modeling constrained and no Appalachian gas scenarios in the Carbon Plan, this is directionally what the Public Staff seeks through its comments and recommendations to develop a "limited DS Hub Gas portfolio base case."² At this time, however, a Commission order in this 2020 IRP docket directing the Companies to undertake specific modeling assumptions in the 2022 Carbon Plan would needlessly frustrate the already-accelerated modeling and portfolio development process the Companies are undertaking with stakeholder input. For that reason, the Companies respectfully request that the Commission accept Supplemental Portfolio B as filed and take no further action with respect to Supplemental Portfolio B and/or Carbon Plan modeling in this docket.

I. Response to Public Staff Comments on Supplemental Portfolio B

a. Natural Gas Assumptions in Supplemental Portfolio B are Reasonable and Can be Further Considered in Carbon Plan Proceeding

The Public Staff's comments on the Companies' Supplemental Portfolio B are generally consistent with the Companies' analysis and observations presented in the Supplemental Portfolio B filing. However, certain statements and conclusions that the Public Staff draws from this supplemental modeling exercise are not accurate and warrant clarification on key factors driving the development and modeling results of Supplemental Portfolio B.

¹ See Duke Energy Third Stakeholder Meeting Summary Report, Docket No. E-100, Sub 179, Attachment 2, at 108, 112 (filed March 29, 2022).

² As further discussed in Section II below, the Companies' Carbon Plan will not include "non-limited DS Hub Gas portfolios" as recommended by the Public Staff.

First, the Public Staff reiterates critiques about the Companies’ reliance on Appalachian-priced gas in their 2020 IRPs “for all future and existing combined cycle (CC) generating facilities, beginning in 2026.”³ As noted in their Supplemental Portfolio B filing, the Companies’ analysis presented in Supplemental Portfolio B uses the same inputs from the originally-filed 2020 IRPs, which did not assume access to Appalachian gas for all future and existing CCs.⁴ The Companies explained in discovery provided to the Public Staff that Supplemental Portfolio B continues to assume that the availability of additional Appalachian gas to supply its existing natural gas CC fleet is limited to units which are not currently covered with firm transportation service from the Gulf Coast for natural gas supply.⁵ This is an important distinction, as the IRP modeling assumes the existing firm transportation services the Companies’ currently possess will be retained, thereby limiting the incremental transportation service required to further firm up the fuel supply of these units. The Public Staff’s assumptions—that the Companies solely relied on Dominion Southpoint hub prices—if accurate, would result in different cost assumptions for operating the system to meet customer demand. The Companies are attentive to the risks the Public Staff intended to highlight by advocating for the development of Supplemental Portfolio B, specifically that incremental natural gas transportation service could be limited, and the Companies continue to work to understand and mitigate these risks to ensure reliability and supply diversity for customers.

³ Public Staff Supplemental Reply Comments, at 1.

⁴ Supplemental Portfolio B, at 1 (“Supplemental Portfolio B utilizes the same FT assumptions from the Companies’ original 2020 IRPs, but limits the incremental volume of interstate FT available for new generation such that it can fuel only one new CC.”).

⁵ Response to NC Public Staff Data Request 20-8.

Additionally, the Public Staff notes that neither Portfolio B nor Supplemental Portfolio B limits the model's Transco delivered gas volume or pricing despite the fact that Transco is currently constrained.⁶ While it is accurate that Transco is fully subscribed, the Companies' 2020 IRPs and Supplemental Portfolio B did reasonably account for potentially limited supply or pricing volatility in its modeling. The main delivery hub for the Carolinas, Transco Zone 5, has relatively stable pricing volatility the majority of the year. During elevated natural gas consumption in winter months, especially during periods of extreme cold, delivered supply in Zone 5 can be limited due to Transco's firm transportation capacity being heavily utilized by its subscribers such as natural gas Local Distribution Companies ("LDCs"), which causes increased price volatility and supply scarcity in Zone 5. The Companies' experience during the remainder of the year, however, is that the Transco pipeline has delivered supply that can be further enabled by LDC subscribers' release of their firm capacity. To address this risk of price volatility and limited supply during the winter months, the Companies' 2020 IRP modeling assumed all peaking CT units operate on diesel fuel in the month of January. Natural gas co-fired coal units are also modeled to operate exclusively on coal in January. Once the assumption of additional interstate firm natural gas transportation to the remaining existing CC fleet exposed to Transco Zone 5 pricing is realized, the Companies' exposure to this price volatility and supply constraints is further reduced. In reality, these assumptions were conservative as peaking units and co-fired coal units may use natural gas in the month of January when supply is available and the cost to operate these units on natural gas are economic given the natural gas price.

⁶ Public Staff Supplemental Reply Comments, at 6.

In summary, the Public Staff's concerns regarding the modeling of natural gas pricing and supply raise important resource planning issues. However, the 2020 IRPs and more recent Supplemental Portfolio B reasonably modeled natural gas availability for the CC fleet and appropriately took potential constraints and price volatility risks at Zone 5 into account. The Companies agree with the Public Staff that access to Appalachian gas as well as availability of natural gas on Transco will be a key issue in the Carbon Plan proceeding in planning to reliably achieve the carbon emissions reduction targets laid out in HB 951 on a least cost basis for customers. The Companies plan to address these important fuel supply issues in the 2022 Carbon Plan and look forward to further discussing natural gas and other fuel assumptions with the Public Staff and the Commission.

b. *Selection of CC Units in Supplemental Portfolio B*

The Public Staff highlights that Supplemental Portfolio B selects two fewer CC units than the original Portfolio B by 2035, pointing to higher assumed natural gas prices and fuel supply changes as the primary drivers.⁷ In response, the Companies clarify that optimization of Supplemental Portfolio B was limited to selecting one (1) new CC, on Appalachian priced gas.⁸ Said another way, since only one additional CC was available for selection, the model selected additional CTs to meet the system capacity needs.

The intent of this supplemental analysis was to observe the resource selection, system cost, and operation changes due to limiting the Appalachian gas supply to a portion of the existing CC fleet, and just one new combined cycle, as agreed upon with the Public Staff. Contrary to the Public Staff's conclusion that the updated fuel commodity price

⁷ *Id.* at 3–5.

⁸ Supplemental Portfolio B, at 1 (“Supplemental Portfolio B . . . limits the incremental volume of interstate FT available for new generation such that it can fuel only one new CC.”).

forecast (updating market prices to be consistent with those prices used in Avoided Cost Sub 175 and limiting natural gas market prices to no more than eight years) drove the selection of more CTs and fewer CCs, it was the resource constraints, rather than gas price assumed, that primarily drove the selection of peaking resources. As a result, the system had to rely more on its existing resources, including the Companies' remaining coal fleet, to meet the energy and capacity needs of the system, which in turn added to the increased the cost of the system. Had the model been able to select additional CCs on Appalachian gas, despite the changes to the fuel commodity price forecast, the model almost certainly would have selected more CCs, likely consistent with the amount selected in the original Portfolio B.

c. CO₂ Emissions in Supplemental Portfolio B

The Public Staff notes that the Supplement Portfolio B increases CO₂ emission and total system cost as compared to Portfolio B, which the Public Staff claims further highlights the importance of natural gas price forecasting under HB 951.⁹ In past IRPs, including the 2020 IRPs, the sensitivity of the portfolio to natural gas price more closely dictated resource selection, total model cost, and CO₂ emissions. In contrast, the Companies' 2022 Carbon Plan, which will be driven by compliance with HB 951's carbon reduction targets and associated reduction of fossil fuel resources in the portfolios, will result in less sensitivity to resource selection and CO₂ emissions. However, fuel price could still have a significant impact on the cost of the portfolio, which is why the Companies agree with the Public Staff that the 2022 Carbon Plan should include a robust discussion about natural gas supply both from a cost and reliability standpoint.

⁹ Public Staff Supplemental Reply Comments, at 6.

Combustion technologies, such as natural gas CCs and peaking CT resources, remain proven and cost-effective resources to accelerate coal retirements, provide flexibility for reliably integrating variable energy resources, and overall reducing the emission of the system.

d. *Treatment of Battery Optimization in Supplemental Portfolio B*

Finally, the Public Staff comments that no new incremental battery capacity is added in the Supplemental Portfolio B, but that battery deployments in DEP are accelerated relative to Portfolio B.¹⁰ Supplemental Portfolio B does not show incremental battery capacity relative to Portfolio B because the Battery Optimization process was not repeated for the supplemental filling. This process was explained in the Companies' responses to NC Public Staff DR 29-2:

Bulk Batteries – Battery optimization analysis, where CTs selected in the capacity expansion model are replaced with equivalent firm capacity of battery combinations to determine if the batteries are more economic, was not completed explicitly for Supplemental Portfolio B. Batteries that were economic in each utility in Portfolio B were translated to the Supplemental Portfolio B, replacing the CT resource that most closely matched the timing of the batteries in the original Portfolio B. The replacement batteries are reflected on line 39 for DEP in 2028 and 2033. There were not economic batteries in DEC in the original Portfolio B, so none were translated to the Supplemental Portfolio B in DEC.¹¹

As stated above, the same number of batteries that were originally modeled to be economic in Portfolio B were replaced in Supplemental Portfolio B. Due to the differences in resource selection from Portfolio B to Supplemental Portfolio B, CTs that were replaced with Batteries in Portfolio B were likewise replaced with batteries in Supplemental

¹⁰ *Id.* at 3–4.

¹¹ Excerpt of Response to NC Public Staff Data Request 29-2.

Portfolio B. The decision to forego re-optimization of battery selection in developing Supplemental Portfolio B was also methodologically consistent with the Companies' treatment of battery optimization for Portfolios C, D, and E in the 2020 IRPs, retaining the same number of batteries identified in the original Portfolio B, and shifting the timing to be consistent with portfolio development approach.¹²

II. No Additional Commission Action is Needed or Appropriate in This 2020 IRP Proceeding

As directed by the Commission, Supplemental Portfolio B provides the Commission and stakeholders with useful sensitivity analysis and information regarding the opportunities and risks associated with natural gas price forecasting and natural gas fuel supply. The Companies agree with CCEBA that the 2022 Carbon Plan proceeding is the appropriate forum for further discussion of these issues.

The Public Staff, however, recommends that the Commission direct the Companies to “utilize the limited DS Hub Gas portfolio as a base case to its Carbon Plan” and requests that the Companies in the Carbon Plan “evaluate non-limited DS Hub Gas portfolios, comparing them against the limited DS Hub Gas portfolio base case.”¹³ While the Companies' 2022 Carbon Plan will explore both constrained access to future supply of Appalachian gas, as well as no access to Appalachian gas, the Companies respectfully request that the Commission decline to issue any affirmative directive regarding Carbon Plan development in this docket. With the deadline to file the proposed Carbon Plan just over a month away, any order requiring affirmative modeling steps entered in the coming weeks could seriously undermine the Companies' ability to meet the May 16, 2022 Carbon

¹² DEP IRP, at 175.

¹³ Public Staff Supplemental Reply Comments, at 6–7.

Plan filing deadline. Moreover, the Companies see it as unnecessary to further direct the development of the 2022 Carbon Plan based on the Companies' commitment in this filing to model constrained and no-Appalachian gas scenarios in the Carbon Plan, as recently discussed with stakeholders during the 2022 Carbon Plan stakeholder process.

The Companies also note that they do not intend to evaluate any non-limited Appalachian gas scenario in the Carbon Plan, as suggested by the Public Staff. Opportunities for pipeline projects and capacity releases are less predictable now than they were even two years ago in the development of the 2020 IRPs. The Companies' preliminary planned Carbon Plan fuel supply cases, as described above and recently shared with stakeholders, will serve to provide analysis around uncertainty related to natural gas transportation service and inform the Commission's review of the proposed Carbon Plan pathways to meeting HB 951's carbon emissions reduction targets.

III. Conclusion

WHEREFORE, for all of the foregoing reasons, the Companies respectfully request that the Commission accept Supplemental Portfolio B as filed and take no further action with respect to Supplemental Portfolio B in this docket.

Respectfully submitted, this 14th day of April, 2022.

/s/E. Brett Breitschwerdt

Jack E. Jirak
Deputy General Counsel
Duke Energy Corporation
PO Box 1551 / NCRH 20
Raleigh, North Carolina 27602
Telephone: (919) 546-3257
Jack.Jirak@duke-energy.com

E. Brett Breitschwerdt
Tracy S. DeMarco
McGuireWoods LLP
501 Fayetteville Street, Suite 500
PO Box 27507 (27611)
Raleigh, North Carolina 27601
(919) 755-6563 [EBB]
(919) 755-6682 [TSD]
bbreitschwerdt@mcguirewoods.com
tdemarco@mcguirewoods.com

*Counsel for Duke Energy Carolinas, LLC
and Duke Energy Progress, LLC*