

**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 and Related 2020 REPS Compliance Plans	) ) )	<b>SUPPLEMENTAL REPLY COMMENTS OF THE PUBLIC STAFF</b>
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NOW COMES THE PUBLIC STAFF – North Carolina Utilities Commission, by and through its Executive Director, Christopher J. Ayers, and respectfully submits the following reply comments pursuant to Commission Rule R8-60(k) and the Commission’s March 18, 2022 Order Allowing Comments and Reply Comments on IRP Supplemental Filing in the above-referenced docket.

**DISCUSSION**

The Public Staff, in its Comments on the 2020 Integrated Resource Plans (IRPs) filed on February 26, 2021 (Initial Comments), raised concerns regarding the natural gas forecasts utilized by Duke Energy Progress, LLC (DEP), and Duke Energy Carolinas, LLC (DEC) (collectively, “Duke”). Specifically, the Public Staff criticized the use of Dominion Southpoint (DS) hub prices for all future and existing combined cycle (CC) generating facilities, beginning in 2026. The Public Staff also raised this issue in its Initial Comments in the 2020 and 2021 avoided cost

proceedings.<sup>1,2</sup> As summarized in those comments, recent developments related to the Mountain Valley Pipeline (MVP) project, including MVP developer filings with the Securities and Exchange Commission,<sup>3</sup> have cast doubt on the in-service date assumed in Duke's IRPs and avoided cost dockets.

In its November 19, 2021 Order Accepting Integrated Resource Plans, REPS and CPRE Program Plans with Conditions and Providing Further Direction for Future Planning (2020 IRP Order), the Commission directed Duke to file one additional iteration of its Base Portfolio with Carbon Policy portfolios that assumes limited DS Hub Gas, and also relies on no more than eight years of forward natural gas prices before using fundamental forecast data for the remainder of the planning period.

On February 9, 2022, Duke filed its Supplemental Portfolio B, which limited DS Hub Gas in the manner agreed to by Duke and the Public Staff and used no more than eight years of forward natural gas prices. In light of the results of this portfolio, recent developments related to the MVP,<sup>4</sup> which is the assumed method

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<sup>1</sup> See Initial Comments of the Public Staff, filed on January 15, 2021, Docket No. E-100, Sub 167, at 40-46.

<sup>2</sup> See Initial Comments of the Public Staff, filed on February 24, 2022, Docket No. E-100, Sub 175, at 41-42.

<sup>3</sup> For instance, Next Era Energy Resources has written off its entire investment in the MVP and recorded a liability of approximately \$0.2 billion, and stated, "[a]s a result of this evaluation, it was determined that the continued legal and regulatory challenges have resulted in a very low probability of pipeline completion." See Note 4 to 10K of NextEra Energy, Inc., filed February 22, 2022, accessible at <https://www.sec.gov/Archives/edgar/data/753308/000075330822000014/nee-20211231.htm>

<sup>4</sup> On February 3, 2022, a panel of the United States Court of Appeals for the Fourth Circuit (4th Circuit) found the U.S. Fish and Wildlife Service failed to adequately evaluate the environmental baseline condition of two vulnerable fish species within the action area of the MVP, as well as the cumulative effects on the species. *Appalachian Voices v. United States DOI*, 2022 U.S. App. LEXIS 3147, 25 F.4th 259, 52 ELR 20019. Additionally, on March 25, 2022, the 4th Circuit denied the

of transporting large quantities of DS Hub Gas to North Carolina generation assets, and the impending filing of Duke's 2022 Carbon Plan in Docket No. E-100, Sub 179, the Public Staff makes the following comments and recommendations to the Commission.

Through 2035, the Supplemental Portfolio B sees two fewer CCs being built than as contained in Portfolio B; one less in DEC and one less in DEP. By 2040, there are three fewer CCs in Supplemental Portfolio B than in Portfolio B. This reduction in CC capacity is replaced with a combination of economically selected combustion turbines (CTs), solar and solar plus storage, and onshore wind, as shown in the table below. While no new incremental battery capacity is added in Supplemental Portfolio B, battery deployments in DEP are accelerated relative to their deployment in Portfolio B. Onshore wind deployments are also accelerated, and an additional 1,350 megawatts (MW) in Duke's combined territory is expected by 2040. Table 1 below shows the changes in Supplemental Portfolio B relative to Portfolio B in selected years:

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request of Mountain Valley Pipeline LLC, for an *en banc* review of a January 25, 2022, decision by a three-judge panel invalidating federal authorizations allowing the MVP to cross a national forest. *Wild Va. v. United States Forest Serv.*, 2022 U.S. App. LEXIS 7973.

Table 1 – Changes in Supplemental Portfolio B Relative to Portfolio B in Selected Years				
BA	Resource	Change through 2030 (MW)	Change through 2035 (MW)	Change through 2040 (MW)
DEP	CC	-1,224	-1,224	-1,224
	CT	913	913	913
	Battery <sup>5</sup>	481	-	-
	Solar	-	-	-
	Solar + Storage	150	150	150
	Onshore Wind	300	600	600
DEC	CC	-	-1,224	-2,448
	CT	-	1,370	2,283
	Battery	-	-	-
	Solar	150	225	225
	Solar + Storage	75	75	75
	Onshore Wind	-	-	750
COMBINED	CC	-1,224	-2,448	-3,672
	CT	913	2,283	3,196
	Battery	481	-	-
	Solar	150	225	225
	Solar + Storage	225	225	225
	Onshore Wind	300	600	1,350

As shown in Table 1 above, DEC and DEP have partially substituted CCs with CTs and the Commission should consider the ability of CTs to replace CCs. Of the 2,448 MW reduction in CC capacity by 2035, 2,283 MW, or approximately 93% of the removed CC capacity, is replaced by CTs, leaving only 165 MW of CC capacity left to replace. However, to meet energy and capacity constraints in the model, DEC and DEP add an additional 1,050 MW of renewables by 2035. The CTs and renewables will operate at much lower capacity factors than CCs and

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<sup>5</sup> Battery deployments were accelerated, so Supplemental Portfolio B reflects 481 MW more battery storage in 2030 than Portfolio B; however, by 2035, both portfolios have an equal amount of storage.

have a lower Estimated Load Carrying Capability (ELCC) when satisfying Duke's reserve margin targets. The incremental renewables largely serve to supply the energy that is no longer being supplied by CCs, while the CTs supply the bulk of the capacity. In addition, while some battery storage is accelerated in Supplemental Portfolio B, the model did not select additional incremental battery capacity. Given the total costs and operational abilities of each resource, CTs were selected by the model, rather than deploying additional battery storage.

As summarized in Duke's filing, when the cost of carbon is excluded, the Present Value Revenue Requirement (PVRR) of DEC's Supplemental Portfolio B is \$50.3 billion through 2050, an increase of \$3.5 billion or 7.5% relative to Portfolio B. DEP's Supplemental Portfolio B PVRR is \$37.5 billion, an increase of \$1.8 billion or 5% relative to Portfolio B. However, the increase in costs is much more apparent when analyzing a shorter time period, as shown in Table 2 below. Supplemental Portfolio B's total system costs, excluding the explicit cost of carbon, are expected to be 15% higher by 2030 for the combined utilities relative to Portfolio B. The Public Staff is concerned that the model selected CTs rather than more efficient CCs due to a relative increase in modeled natural gas prices, which highlights the importance of forecasting natural gas prices and the availability of natural gas supply. Resource selection, total model costs, and CO<sub>2</sub> emissions are extremely sensitive to natural gas prices. This sensitivity further highlights the risk of relying on natural gas supply sources that are not yet in place.

<b>Table 2 – Supplemental Portfolio B PVRR through 2030</b>			
	(\$ Millions, Excluding the Explicit Cost of Carbon)		
	<b>DEC</b>	<b>DEP</b>	<b>Combined</b>
Portfolio B	17,252	13,480	30,732
Supplemental Portfolio B	20,018	15,411	35,429
Delta between Portfolio B and Supplemental Portfolio B	2,765	1,932	4,697
% Delta	16%	14%	15%

The CO<sub>2</sub> emissions associated with each portfolio are also important to note, given the recent passage of House Bill 951 (S.L. 2021-165) and the required carbon reduction goals. On an annual basis, across DEC's and DEP's combined balancing authorities in North Carolina and South Carolina, Supplemental Portfolio B is estimated to emit 4% more CO<sub>2</sub> than Portfolio B by 2030, and 5% more by 2040. This increase in CO<sub>2</sub> emissions is largely driven by the reliance on less efficient CTs to replace CC capacity that is no longer cost effective. These increases in CO<sub>2</sub> emissions and total system costs further highlight the importance of natural gas price forecasting, as well as the need for a robust discussion about natural gas supply from both DS Hub and Transco pipelines in future Carbon Plan filings. It is also noteworthy that neither case, limited or non-limited DS Hub Gas portfolios, has limited the model's Transco delivered gas volume or pricing, despite the fact that Transco capacity is currently constrained.

Based on its review of this filing and recent delays in completing the MVP, which are addressed in the Public Staff's initial and reply comments in this docket and in Docket No. E-100, Sub 175, the Public Staff recommends that the

Commission direct Duke to utilize the limited DS Hub Gas portfolio as a base case to its Carbon Plan to be filed May 16, 2022, in Docket No. E-100, Sub 179. The Public Staff also requests that in the development of Carbon Plan portfolios, Duke evaluate non-limited DS Hub Gas portfolios, comparing them against the limited DS Hub Gas portfolio base case.<sup>6</sup>

WHEREFORE, the Public Staff prays that the Commission take these supplemental comments into consideration in reaching its decision in this proceeding.

Respectfully submitted this the 30th day of March, 2022.

PUBLIC STAFF  
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<sup>6</sup> Because the Public Staff's recommendation, if approved by the Commission, would impact the development of the Carbon Plan being considered in Docket No. E-100, Sub 179, the Public Staff will serve a copy of these comments on parties to that docket.

## CERTIFICATE OF SERVICE

I certify that a copy of these reply comments has been served on all parties of record or their attorneys, or both, by United States mail, first class or better; by hand delivery; or by means of facsimile or electronic delivery upon agreement of the receiving party.

This the 30th day of March, 2022.

Electronically submitted  
/s/ Lucy E. Edmondson



DOCKET NO. E-100, SUB 165

VERIFICATION


I, Jeff Thomas, being duly sworn, depose and say: I have read the foregoing Supplemental Comments of the Public Staff and the facts stated therein are true of my personal knowledge, except as to any matters and things therein stated upon information and belief. As to those, I believe them to be true. I am authorized to sign this verification on behalf of the Public Staff-North Carolina Utilities Commission.

This the 30<sup>th</sup> day of March, 2022.

  
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Jeff Thomas

Sworn to and subscribed before me:

This the 30<sup>th</sup> day of March, 2022.

  
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Jessica Heironimus, Notary Public  
My Commission Expires: May 10, 2023

