



Jack E. Jirak
Deputy General Counsel

Mailing Address:
NCRH 20 / P.O. Box 1551
Raleigh, NC 27602

o: 919.546.3257

jack.jirak@duke-energy.com

OFFICIAL COPY

JUN 22 2022

June 22, 2022

VIA ELECTRONIC FILING

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

**RE: Notice of Correction to Preliminary Carbon Plan Solar Reference Cost
Docket Nos. E-2, Sub 1297 and E-7, Sub 1268**

Dear Ms. Dunston:

Duke Energy Carolinas, LLC (“DEC”) and Duke Energy Progress, LLC (“DEP” and together with DEC, “Duke Energy” or the “Companies”) hereby provide notice to the North Carolina Utilities Commission (“Commission”) of a correction to the preliminary Carbon Plan Solar Reference Cost, as filed with the Commission in the Companies’ April 29, 2022 response (“Response”) to the Commission’s April 25, 2022 *Order Requiring Answers to Commission Questions and Establishing Additional Procedural Deadlines* (“Order”). The Order requested the Companies provide responses to Commission questions concerning the 2022 SP Program, including the then-preliminary Carbon Plan Solar Reference Cost. The Companies’ Response described the Carbon Plan Solar Reference Cost calculation as well as publicly identified a preliminary Carbon Plan Solar Reference Cost calculation of \$57.86/MWh.

Since the filing of the Companies’ Response, and through discovery in the Carolinas Carbon Plan proceeding, Docket No. E-100, Sub 179, the Companies have identified a correction is required to the Real Levelized Fixed Charge Rate for transmission used to calculate the Levelized Transmission Adder incorporated into the Carbon Plan Solar Reference Cost. As a result of this correction, the updated Carbon Plan Solar Reference Cost is now \$59.21/MWh.

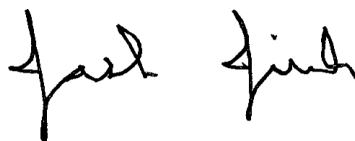
Contemporaneous with this correction filing, the 2022 Solar Procurement Program Independent Evaluator, Charles Rivers Associates, is posting this filing to the 2022 Solar Procurement Program website to provide comparable information to all market participants regarding the corrected Carbon Plan Solar Reference Cost.

Included as Attachment A to this letter are redlined corrections to questions two (2) and four (4) to the Companies' April 29, 2022 Response, identifying the updated inputs to the Carbon Plan Solar Reference Cost calculation and resulting cost totals.

The Companies have designated portions of Attachment A as confidential and trade secret information. Pursuant to N.C. Gen. Stat. § 132-1.2, the Companies respectfully request that the Commission protect this data from public disclosure. The designated portions disclose estimated costs to procure additional energy, as well as the projected cost of new utility-owned generation. Public disclosure could hinder the Companies from obtaining the most cost-effective energy and capacity necessary to meet the needs of its customers. The Companies will make this information available to other parties pursuant to an appropriate confidentiality agreement.

If you have any questions, please do not hesitate to contact me. Thank you for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Jack E. Jirak", written in a cursive style.

Jack E. Jirak

cc: Parties of Record

Enclosure

Docket No. E-2, Sub 1297
Docket No. E-7 Sub 1268

Attachment A

Duke Energy Carolinas, LLC
Duke Energy Progress, LLC

Notice of Correction to Preliminary Carbon Plan Solar
Reference Cost

2. Describe how the Carbon Plan Solar Reference Cost will be determined.

Duke Energy Response:

The Carbon Plan Solar Reference Cost to be included in Carbon Plan¹ is determined by taking the 55% / 45% weighted average of the levelized utility-owned solar on a \$/MWh basis and an estimated 25-year third-party PPA on a \$/MWh basis for solar installed in 2026. The capital and fixed operating and maintenance (FOM) cost of the solar facility is based on the same assumption of costs for a solar facility with a COD in 2026 that are used in the Carbon Plan. Additionally, the Carbon Plan Solar Reference cost includes estimates for solar transmission upgrade costs that will likely be required to incorporate this solar on the DEP and DEC systems.

The levelized cost of utility-owned solar is calculated based on applying financing assumptions (i.e. after-tax weighted average cost of capital) for a 30-year asset. Additionally, a 10% investment tax credit ("ITC") was assumed for solar with an in-service date of 2026, and based on the Companies' tax positions, the ITC was assumed to be monetized in 2031 when it was normalized over the remaining life of the asset. The MWh of the facility are based on an approximate 28% capacity factor with a 0.5% annual degradation rate which are the assumptions used for a single-axis tracking facility with bifacial solar panels that was the design used in the Carbon Plan based on stakeholder feedback.

The 25-year third-party PPA was determined by using the same revenue requirements model that was used to calculate the utility cost of service solar levelized cost, but the inputs were adjusted based on financing assumptions for a third-party developer. The financing assumptions used are sourced from the LCOE calculations in the 2021 National Renewable Energy Lab Annual Technology Baseline report. Similar to the utility-owned solar, a 10% ITC was applied for third-party PPAs, however, the ITC was assumed to be fully monetized in 2026 through a tax equity structure.

The following table summarizes the inputs used to calculate the levelized costs of utility-owned and third-party PPA solar, as well as the resulting preliminary LCOE for Utility-Owned and Third-Party PPA Solar.

BEGIN CONFIDENTIAL

	Utility Owned	Third-Party PPA
Nominal After-tax WACC		
Normalize ITC? (Y/N)	Y	N
Year ITC Monetized		
Asset Life / PPA Term (Years)	30	25
Transmission System Upgrade Costs, \$/w	\$0.17	\$0.17
Approximate LCOE, \$/MWh		

END CONFIDENTIAL

¹ All inputs and assumptions remain preliminary and subject to change until the Carbon Plan is filed on May 16, 2022.

Based on the above calculations, the preliminary Carbon Plan Solar Reference cost is [REDACTED] MWh. In an effort to address the Asset Life and PPA term differences between Utility-Owned and Third-Party PPA solar, the Companies assumed the same salvage cost was incurred for both ownership types in year 30 at a rate of 11% of the direct cost of the installed solar asset.

4. How will the Carbon Plan Solar Reference Cost compare to the “administratively determined avoided cost”?

Duke Energy Response:

Please refer to the Companies response to Questions 3 and 6. The Carbon Plan Solar Reference Cost is the assumed long-term lifecycle cost of a portfolio of controllable solar resources that is used in the Carbon Plan modeling framework to select a resource portfolio that achieves the Companies’ carbon reduction goals. These resources convey energy value, capacity value and renewable and environmental attributes and are sourced competitively.

The “administratively determined avoided cost” on the other hand is a methodology that was established for valuing the energy and capacity of “must-take” non-controllable QF resources that do not convey environmental attributes to customers. In North Carolina, the capacity value is currently based upon a gas peaker cost.

For the avoidance of doubt, Duke Energy is not suggesting that the Carbon Plan Solar Reference Cost is the utility’s avoided cost; instead, the reference cost reflects the assumed generic solar resource cost utilized in the Carbon Plan. The Carbon Plan Solar Reference Cost is dependent on the assumed solar technology and system upgrade costs in the Carbon Plan. The table below compares the Utility Owned and Third Party PPAs with and without transmission upgrade costs from the Carbon Plan to an estimated “administratively determined avoided cost” based on the following assumptions:

- Sub 175 rate assumptions
- March 2022 NC avoided costs (i.e. March 2022 fuel prices) escalated by 2.5% after 2041
- SISC netted from rates (i.e. rates reduced by SISC)
- 2026 start date
- Same solar bifacial profiles used for calculating the Utility Owned LCOE and Third Party PPA
- Peaker methodology derived avoided cost developed by weighting 25 Year rate at 45% and 30-Year rate at 55%

[BEGIN CONFIDENTIAL]

\$/MWh	Peaker Methodology Derived Avoided Cost	Preliminary Carbon Plan Solar Reference Cost w/ Transmission	Preliminary Carbon Plan Solar Reference Cost w/o Transmission

[END CONFIDENTIAL]