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OFFICIAL COPY

Nov 02 2020

November 2, 2020

VIA ELECTRONIC FILING

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

**RE: Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's
Avoided Cost Information Required by 18 C.F.R. 292.302(b)(1)-(3)
Docket No. E-100, Sub 167**

Dear Ms. Campbell:

Duke Energy Carolinas, LLC and Duke Energy Progress, LLC (collectively, the "Companies") herein submit to the North Carolina Utilities Commission ("Commission") the information required by Federal Energy Regulatory Commission regulation 18 C.F.R. 292.302(b)(1)-(3), which requires electric utilities to file certain avoided cost information with their respective state commissions on a biennial basis.

The Companies have designated their respective cost data as confidential and trade secret information and respectfully request that the Commission protect it from public disclosure pursuant to N.C. Gen. Stat. § 132-1.2. The information reflects the Companies' costs to procure additional energy and/or capacity. The wholesale electricity market is extremely competitive and, in order for the Companies to obtain the most cost-effective energy and capacity to meet the needs of its customers, each must protect from public disclosure its projected and actual cost to procure such energy, capacity or both. In addition, if this information was publicly available, potential suppliers would know the price against which they must bid, and rather than bidding the lowest price possible, they would simply bid a price low enough to beat the Companies' projections.

The Companies will make the confidential information available to other parties pursuant to an appropriate confidentiality agreement.

Please do not hesitate to contact me if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Kendrick C. Fentress". The signature is written in a cursive style with a large, stylized 'K' and 'F'.

Kendrick C. Fentress

Enclosures

cc: Parties of Record

**ESTIMATED AVOIDED ENERGY COSTS
18 C.F.R. § 292.302(b)(1)**

The estimated avoided cost on the electric utility’s system, solely with respect to the energy component, for various levels of purchases from qualifying facilities. Such levels of purchases shall be stated in blocks of not more than 100 megawatts for systems with peak demand of 1,000 megawatts or more, and in blocks equivalent to not more than 10 percent of the system peak demand for systems of less than 1,000 megawatts. The avoided costs shall be stated on a cents per kilowatt-hour basis, during daily and seasonal peak and off-peak periods, by year, for the current calendar year and each of the next five years.

RESPONSE:

WINTER AVERAGE AVOIDED ENERGY COST BY PERIOD (¢/kWh)

[BEGIN CONFIDENTIAL]

Year	Premium On-Peak Hours	Average AM On-Peak Hours	Average PM On-Peak Hours	Average Off-Peak Hours
2020				
2021				
2022				
2023				
2024				
2025				

[END CONFIDENTIAL]

SUMMER AVERAGE AVOIDED ENERGY COST BY PERIOD (¢/kWh)

[BEGIN CONFIDENTIAL]

Year	Premium On-Peak Hours	Average PM On-Peak Hours	Average Off-Peak Hours
2020			
2021			
2022			
2023			
2024			
2025			

[END CONFIDENTIAL]

SHOULDER AVERAGE AVOIDED ENERGY COST BY PERIOD (¢/kWh)

[BEGIN CONFIDENTIAL]

Year	Average On-Peak Hours	Average Off-Peak Hours
2020		
2021		
2022		
2023		
2024		
2025		

[END CONFIDENTIAL]

Notes:

- 1) Energy costs are expressed in nominal dollars and do not incorporate additional considerations used in rate calculations.
- 2) Energy price periods reflect the avoided energy rate design approved in Docket No. E-100, Sub 158.

HOUR DEFINITIONS

Season	Period	Days	Months	Hours
Winter	Premium	Mon – Fri ¹	Dec - Feb	6:00 am – 9:00 am
Winter	On-Peak Morning	Mon – Fri ¹	Dec - Feb	5:00 am – 6:00 am & 9:00 am – 10:00 am
Winter	On-Peak Evening	Mon – Fri ¹	Dec - Feb	5:00 pm – 10:00 pm
Winter	Off-Peak	Mon – Fri ¹	Dec - Feb	Remaining Hours + Holidays
		Sat – Sun		All Hours ²
Summer	Premium	Mon – Fri ¹	Jun - Sept	4:00 pm – 8:00 pm
Summer	On-Peak	Mon – Fri ¹	Jun - Sept	12:00 pm – 4:00 pm & 8:00 pm – 10:00 pm
Summer	Off-Peak	Mon – Fri ¹	Jun - Sept	Remaining Hours + Holidays
		Sat – Sun		All Hours ²
Shoulder	On-Peak	Mon – Fri ¹	Mar - May, Oct - Nov	6:00 am – 10:00 am & 4:00 pm – 11:00 pm
Shoulder	Off-Peak	Mon – Fri ¹	Mar - May, Oct - Nov	Remaining Hours + Holidays
		Sat – Sun		All Hours ²

Notes:

- 1) Excludes holidays considered as off-peak (New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the day after, and Christmas Day).
- 2) When one of the above holidays falls on a Saturday, the Friday before will be considered off-peak; when the holiday falls on a Sunday, the following Monday will be considered off-peak.

FUTURE RESOURCE ADDITIONS
18 C.F.R. § 292.302(b)(2)

The electric utility’s plan for the addition of capacity by amount and type, for purchases of firm energy and capacity, and for capacity retirements for each year during the succeeding 10 years.

RESPONSE:

PROPOSED RESOURCE CAPACITY ADDITIONS

Year	Winter Capacity (MW)	Description (Date Installed)
2021	65	Bad Creek Uprate (June 2020)
	16	Combined Heat and Power (December 2020)
	9	Energy Storage (December 2020)
2022	65	Bad Creek Uprate (June 2021)
	30	Combined Heat and Power (December 2021)
	20	Energy Storage (December 2021)
2023	65	Bad Creek Uprate (June 2022)
	30	Combined Heat and Power (December 2022)
	25	Energy Storage (December 2022)
2024	65	Bad Creek Uprate (June 2023)
	25	Energy Storage (December 2023)
2025	402	Lincoln Project (December 2024)
	25	Energy Storage (December 2024)
2026	25	Energy Storage (December 2025)
2027	25	Energy Storage (December 2026)
2029	457	Combustion Turbine (December 2028)
2030	457	Combustion Turbine (December 2029)

Notes:

- Data Source: 2020 Base Case used for Avoided Cost standard offer rates filed Nov. 2, 2020, in Docket No. E-100, Sub 167. (Base Case based on 2020 IRP Base Case without Carbon Policy)
- All values represent incremental MW in the year in which the resource impacts winter peak.

PROPOSED RESOURCE CAPACITY RETIREMENTS

Duke Energy Carolinas, LLC - Avoided Cost Information
Docket No. E-100, Sub 167

PUBLIC REDACTED VERSION

Year	Winter Capacity (MW)	Description (Date Retired)
2022	167	Allen 2 (December 2021)
	270	Allen 3 (December 2021)
	267	Allen 4 (December 2021)
2024	167	Allen 1 (December 2023)
	259	Allen 5 (December 2023)
2026	546	Cliffside 5 (December 2025)

Notes:

- Data Source: 2020 Base Case used for Avoided Cost standard offer rates filed Nov. 2, 2020, in Docket No. E-100, Sub 167. (Base Case based on 2020 IRP Base Case without Carbon Policy)
- The year is the year in which the capacity impacts the winter peak.
- All retirements are for planning purposes only.
- The date retired is the month and year that the asset is taken out of service.
- Retirement dates based on most economic retirement dates determined in the Coal Retirement Study presented in 2020 NC IRP filed Sept. 1, 2020 in Docket No. E-100, Sub 165.

PROPOSED PURCHASE CAPACITY ADDITIONS

DEC Base Renewables – Compliance + Non-Compliance				
Nameplate MW				
	Solar	Solar + Storage	Biomass/Hydro	Total
2021	950	0	132	1,082
2022	1,425	115	118	1,658
2023	1,778	134	81	1,993
2024	2,027	163	81	2,271
2025	2,232	192	59	2,483
2026	2,371	211	49	2,631
2027	2,360	210	49	2,619
2028	2,334	208	42	2,584
2029	2,215	207	42	2,464
2030	2,146	206	38	2,390

Notes:

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- Information presented in the year in which the capacity impacts the winter peak.
- Solar, Solar + Storage and Biomass/Hydro represent cumulative total in the year provided.
- Solar includes 0.5% per year degradation.
- Renewables capacity listed excludes REC-Only contracts.

**CAPITAL AND ENERGY COSTS OF PLANNED ADDITIONS
18 C.F.R. § 292.302(b)(3)**

The estimated capacity costs at completion of the planned capacity additions and planned capacity firm purchases, on the basis of dollars per kilowatt, and the associated energy costs of each unit, expressed in cents per kilowatt-hour. These costs shall be expressed in terms of individual generating units and of individual planned firm purchases.

RESPONSE:

ESTIMATED CAPITAL AND ENERGY COSTS FOR PLANNED CAPACITY ADDITIONS

[BEGIN CONFIDENTIAL]

2021 (Jun)	65 MW Bad Creek Uprate Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2021 (Dec)	30 MW Combined Heat and Power Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
	20 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2022 (Jun)	65 MW Bad Creek Uprate Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2022 (Dec)	30 MW Combined Heat and Power Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2023 (Jun)	65 MW Bad Creek Uprate Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2023 (Dec)	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2024 (Dec)	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh

	402 MW Lincoln Project Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh
2025 (Dec)	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh
2026 (Dec)	25 MW Energy Storage Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh
2028 (Dec)	457 MW Combustion Turbine Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh
2029 (Dec)	457 MW Combustion Turbine Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh

[END CONFIDENTIAL]

Notes:

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- Capacity cost based on generic unit assumptions and expressed in overnight in-service year dollars (excluding AFUDC) unless otherwise noted.
- Energy cost includes fuel and variable O&M.
- CHP energy cost includes revenues from steam sales.
- Energy Storage capital cost based on 50 MW/200 MWh Li-ion battery.
- Unit uprates greater than 20 MW included.

ESTIMATED CAPACITY AND ENERGY COSTS FOR PLANNED FIRM PURCHASES

The undesignated renewable resource additions listed under the 292.302(b)(2) requirement involve additions of large numbers of small power producers that will be subject to capacity and energy rates that will be negotiated or in place at the time the agreements are signed.

**ESTIMATED AVOIDED ENERGY COSTS
18 C.F.R. § 292.302(b)(1)**

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[BEGIN CONFIDENTIAL]

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2022				
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[END CONFIDENTIAL]

SUMMER AVERAGE AVOIDED ENERGY COST BY PERIOD (¢/kWh)

[BEGIN CONFIDENTIAL]

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2023			
2024			
2025			

[END CONFIDENTIAL]

SHOULDER AVERAGE AVOIDED ENERGY COST BY PERIOD (¢/kWh)

[BEGIN CONFIDENTIAL]

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2023		
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HOUR DEFINITIONS

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Summer	On-Peak	Mon – Fri ¹	Jun - Sept	1:00 pm – 4:00 pm & 8:00 pm – 9:00 pm
Summer	Off-Peak	Mon – Fri ¹	Jun - Sept	Remaining Hours + Holidays
		Sat – Sun		All Hours ²
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FUTURE RESOURCE ADDITIONS
18 C.F.R. § 292.302(b)(2)

The electric utility’s plan for the addition of capacity by amount and type, for purchases of firm energy and capacity, and for capacity retirements for each year during the succeeding 10 years.

RESPONSE:

PROPOSED RESOURCE CAPACITY ADDITIONS

Year	Winter Capacity (MW)	Description (Date Installed)
2021	30	Energy Storage (December 2020)
2022	15	Energy Storage (December 2021)
2023	18	Energy Storage (December 2022)
2024	18	Energy Storage (December 2023)
2025	20	Energy Storage (December 2024)
2026	20 457	Energy Storage (December 2025) New Combustion Turbine (December 2025)
2027	20 457	Energy Storage (December 2026) New Combustion Turbine (December 2026)
2028	1,371	New Combustion Turbine (December 2027)
2029	1,224 913	New Combined Cycle (December 2028) New Combustion Turbine (December 2028)

Notes:

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- All values represent incremental MW in the year in which the resource impacts winter peak.

PROPOSED RESOURCE CAPACITY RETIREMENTS

Year	Winter Capacity (MW)	Description (Date Retired)
2021	514	Darlington 1-4, 6-8 and 10 (May 2020)
2026	68 164	Blewett CTs (December 2025) Weatherspoon CTs (December 2025)
2028	698 711	Roxboro 3 (December 2027) Roxboro 4 (December 2027)
2029	746 380 673	Mayo 1 (December 2028) Roxboro 1 (December 2028) Roxboro 2 (December 2028)

Notes:

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- The year is the year in which the capacity impacts the winter peak.
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- Retirement dates based on most economic retirement dates determined in the Coal Retirement Study presented in 2020 NC IRP filed Sept. 1, 2020, in Docket No. E-100, Sub 165.

PROPOSED PURCHASE CAPACITY ADDITIONS

DEP Base Renewables – Compliance + Non-Compliance				
Nameplate MW				
	Solar	Solar + Storage	Biomass/Hydro	Total
2021	2,854	0	284	3,138
2022	3,106	0	146	3,252
2023	3,371	0	135	3,506
2024	3,532	14	131	3,677
2025	3,677	13	131	3,821
2026	3,881	13	120	4,014
2027	3,836	13	120	3,969
2028	3,456	13	116	3,585
2029	3,089	13	60	3,162
2030	2,710	13	43	2,766

Notes:

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RESPONSE:

ESTIMATED CAPITAL AND ENERGY COSTS FOR PLANNED CAPACITY ADDITIONS

[BEGIN CONFIDENTIAL]

2021 (Dec)	15 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2022 (Dec)	18 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2023 (Dec)	18 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
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2026 (Dec)	20 MW Energy Storage Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
	457 MW Combustion Turbine Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh
2027 (Dec)	1,371 MW Combustion Turbine Capacity Cost: \$ [REDACTED]/kW Energy Cost: [REDACTED] cents/kWh

2028 (Dec)	1,224 MW Combined Cycle Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh
	913 MW Combustion Turbine Capacity Cost: \$ [REDACTED]/kw Energy Cost: [REDACTED] cents/kWh

[END CONFIDENTIAL]

Notes:

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- Energy cost includes fuel and variable O&M.
- CHP energy cost includes revenues from steam sales.
- Energy Storage capital cost based on 50 MW/200 MWh Li-ion battery.
- Unit uprates greater than 20 MW are included.

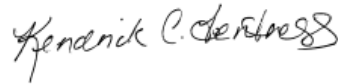
ESTIMATED CAPACITY AND ENERGY COSTS FOR PLANNED FIRM PURCHASES

The undesignated renewable resource additions listed under the 292.302(b)(2) requirement involve additions of large numbers of small power producers that will be subject to capacity and energy rates that will be negotiated or in place at the time the agreements are signed.

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's 18 CFR 292.302 Filing, in Docket No. E-100, Sub 167, has been served by electronic mail, hand delivery, or by depositing a copy in the United States Mail, 1st Class Postage Prepaid, properly addressed to parties of record.

This the 2nd day of November, 2020.



Kendrick C. Fentress
Associate General Counsel
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