STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. E-100, SUB 179

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of Duke Energy Progress, LLC, and Duke Energy Carolinas, LLC 2022 Biennial Integrated Resource Plans and Carbon Plan	)))))	TOTALENERGIES RENEWABLES USA, LLC'S POST-HEARING BRIEF

Pursuant to the oral order entered by Chair Charlotte Mitchell in open hearing on September 29, 2022, and the Notice of Due Date for Proposed Orders and/or Briefs issued on October 4, 2022, TotalEnergies Renewables USA, LLC ("TotalEnergies") respectfully submits the following post-hearing brief for consideration by the North Carolina Utilities Commission (the "Commission").

I. INTRODUCTION

Now and in the future, as in the past, the adequacy and reliability of our systems for producing and delivering electric energy will dramatically impact the lives and well-being of the inhabitants of this State and the surrounding region for generations. The Commission has been uniquely charged with reformation of the electric industry structure and portfolios in North Carolina with an eye towards achieving the H.B. 951 mandate of a 70% carbon emissions reduction by 2030 and net zero carbon emissions by 2050, while maintaining or improving upon the adequacy and reliability of the State's existing grid. This is no easy task, as these proceedings have demonstrated. However, the Commission can fulfill its responsibility by selecting certain short-term resources and offshore wind as a technologically feasible long-term resource now, and

choosing a specific portfolio or range of potential portfolios in future revisions to its Carbon Plan when currently unproven technologies have had the opportunity to advance.

TotalEnergies submits that the offshore federal leases OCS-A 0545 and OCS-A 0546 can produce 2 to 3 GW of low-cost offshore wind capacity before 2030, assuming commencement during 2023 and 2024 of concurrent, coordinated development of the off-shore activities, and the necessary on-shore supply-chains and facilities. This assumption would require that the Commissions' final Carbon Plan selects resources which include a minimum of 2 GW and a maximum of 4 GW of offshore wind by 2030.

II. COMMENTS

A. The Commission Has Been Charged with Developing a Carbon Plan.

i. H.B. 951 represents a transformational shift toward longer-term resource and transmission planning by the Commission.

These proceedings flow from one provision of compromise legislation enacted last year by large legislative majorities during a period of political polarization, specifically Section 1 of N.C. Sess. Laws 2021-165, commonly known as H.B. 951.[1] The enacted legislation transformed a proposal for "replacement plans" calling for generation resources to be selected for replacement by regulated utilities into legislation that establishes a process for a more ambitious and broad-based reformation of the electric industry structure and environmental policies within this State.[2] The final bill effected a major paradigm shift that changed and expanded the legislative goals from ones of incremental replacement of specific coal-fired units to the decarbonization of the production of electric power by 2050, with intermediate decarbonization goals established along the way. These compromises as to goals were coupled with the substitution of language that

[1] N.C. Session Law 2021-165, § 1.

[2] *Compare* N.C. House Bill 951, Edition 2 (July 13, 2021), *with* N.C. Session Law 2021-165.

charges *this Commission* with the "selection" of new generation and other resources, and the continued oversight of the siting and construction of jurisdictional transmission and distribution facilities to "maintain or improve" the adequacy and reliability of electric service, in accordance with a *Commission-developed* Carbon Plan.[3] The direction, scope and rate of transformation remain disputed before the Commission in this proceeding.

The Commission bears the responsibility of developing a Carbon Plan, and it should avoid deciding issues now which may be more appropriately decided in a future Carbon Plan review — e.g., a specific generation mix or set of potential portfolios, as discussed *infra*. However, the Commission should not miss the opportunity presented in its development of the Carbon Plan to make decisions for the longer term in both resource and transmission planning, which would preserve options that would allow greater coordination of the State's priorities with regional and national policy.

ii. This shift toward longer-term resource and transmission planning by the Commission should include offshore wind as a selected class of resource.

The Commission can realistically meet the 2030 deadline for 70% reduction of carbon emissions by choosing proven technologies available today on the market, while ensuring future improvements can be captured if new solutions, such as Advanced Small Modular Reactors ("SMR"), scale up to a full commercial phase at a competitive cost-point during that time span. Of the short-term options, the Commission may select resources and set short-term development goals

[3] Section 1 provides that the *Utilities Commission shall develop* a plan no later than December 31, 2022, Section 2 provides for cost of service based recovery with a few exceptions for new generation facilities or *other resources selected by the Commission*, Section 3 charges the Utilities Commission with ensuring that any generation or resource changes maintain or improve the adequacy and reliability of the existing grid, and Section 4 provides the Commission with discretion to determine optimal timing and generation and resource-mix to achieve the least cost path to compliance.

in motion without selecting a specific portfolio, as discussed *infra*. One resource class that uses proven technology available today is offshore wind.

Not only is offshore wind a proven technology elsewhere in the world, but this state is uniquely well-suited for offshore wind generation. North Carolina benefits from having three nearby offshore wind leases already in development off its coast, including one awarded to TotalEnergies in June 2022 by BOEM. Offshore wind and solar have highly complementary load curves which provide a stable load profile throughout a full 24-hour window as well as when considering summer and winter generation profiles of offshore wind and solar. Moreover, the early stages of preparing for offshore wind development and its supply chain "present a significant economic opportunity for North Carolina" in new jobs and capital expenditure.[4]

The report prepared by Gabel Associates, Inc. for the Tech Customers also recommends that the Commission select offshore wind as "a unique renewable resource that should be part of North Carolina's resource plan."[5] While Gabel Associates did not have enough information on cost and cost recovery to recommend a specific portfolio with a designated quantity of offshore wind from one or more specific sources in its modeling, Gabel noted that "the long-term benefits of offshore wind are significant, and we expect a portfolio utilizing offshore wind would not only further reduce emissions, but would also have the potential to be less costly than Duke's Portfolio 1."[6] Indeed, "the ability to utilize this resource could be a gamechanger in meeting and exceeding the goals of HB 951."[7]

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[4] N.C. E.O. No. 218, Advancing North Carolina's Economic and Clean Energy Future with Offshore Wind (2021).

[5] Gabel Associates, Inc., *Review of the Duke Carbon Plan and Presentation of a Preferred Portfolio* (July 15, 2022).

[6] *Id.* at 46.

[7] *Id.*

The only short-term action that is needed to encourage immediate commencement of development of a long-term resource with proven technology is the Commission's selection of offshore wind as a class of resource in the Carbon Plan; the selection of this resource class in the Commission's 2022 Carbon Plan would allow commencement of the planning for the upgrades of the transmission system to be included in the development of some of the regional transmission enhancements that will need to be built based on the current locations of the lease areas, regardless of the specific quantity and source of any offshore wind ultimately included as a replacement resource for which Duke will receive recovery on a cost of service basis.

B. The Commission May Apply Traditional Least-Cost Principles to New Generation.

H.B. 951 does not override traditional least-cost principles that must be applied in North Carolina when planning for new generation. Indeed, the statute expressly provides that "the Commission shall … [r]etain the discretion to determine optimal timing and generation and resource-mix to achieve the least cost path to compliance with the authorized carbon reduction goals".[8] In addition, the Commission shall "[c]omply with current law and practice with respect to the least cost planning for generation, pursuant to G.S. 62-2(a)(3a), in achieving the authorized carbon reduction goals and determining generation and resource mix for the future."[9] If anything, the statute reaffirms the Commission's use of least cost principles and planning, which requires the consideration of all resource options. This is particularly relevant to offshore wind generation's inclusion in the Carbon Plan's system generation or purchased power mix.

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[8] N.C. Session Law 2021-165, § 1(4).

[9] N.C. Session Law 2021-165, § 1(2). The following sentence, which provides that "[a]ny new generation facilities or other resources selected by the Commission … shall be owned and recovered on a cost of service basis by the applicable electric public utility…" could be interpreted to speak separately as to each potential resource. Even with respect to a new generation facility selected by the Commission, the ownership and cost-of-service recovery requirement could refer only to the period following commercial operation of that new generation.

The Commission should apply traditional least-cost principles to the specific generation resources selected for the Carbon Plan, which should include a 2 to 4 GW development goal for offshore wind as a resource class.[10] This decision which would enable the lease holders of OCS-A 0545 and OCS-A 0546, TotalEnergies and Duke, to commence pre-construction development activities at the two contiguous sites during 2023 and 2024, producing aggregate savings exceeding $80 million or more for the pre-construction phase alone while aiming at reducing carbon emissions by 2030.

Further significant cost reductions likely to be achieved by a 2 to 4 GW development goal for offshore wind include other economies of scale, such as supply chain optimization, reduced mobilization costs of offshore construction activities, and optimized yield and power output from a harmonized and streamlined wind farm layout across both contiguous lease areas. Such a development goal for offshore wind is consistent with least cost planning principles and should be included in the final order in this proceeding.

C. The Commission Is Not Required to Select a Single Portfolio of Specific Resources at This Stage.

Duke has only proposed that the Commission select the following resources in the Carbon Plan for the 2022-2024 period (subject as necessary to a further certificate of public convenience and necessity ("CPCN") proceeding(s)):

1. 3,100 MW of solar generations (a substantial portion of which is assumed to include paired storage), including 750 MW to be procured through the 2022 Solar Procurement Program; targeted in-service would be 2026-2028;

[10] Executive Order 218 set forth a 2.8 GW offshore wind development goal by 2030 and 8 GW by 2040. Duke's Portfolio 2 proposes 1.6 GW offshore wind development goal, and Portfolio 6 proposes a 2.4 GW development goal.

2. 1,600 MW of battery storage (1,000 MW stand-alone storage, 600 MW storage paired with solar);
3. 600 MW of onshore wind procured in 2023-2024;
4. 800 MW from 2 combustion turbines units ("CTs") in 2023; and
5. 1,200 MW of combined cycle units ("CC") with CPCN filed in 2023 and evaluation of options for additional gas generation pending determination of gas availability.

Duke is also proposing Commission approval of initial project development activities on three longer-lead time resource classes — offshore wind, small modular nuclear reactors ("SMRs"), and new pumped storage hydro. None of these proposals require the Commission to approve a single proposed resource or portfolio, or even a pathway or range of proposed portfolios, at this stage.

Of the long-term resource classes proposed by Duke and others, offshore wind is a proven technology available today, and a technology uniquely suited to North Carolina's geography. The Commission should include Duke's proposed short-term resource selections as well as not less than 2.8 GW of offshore wind as a resource class in the final 2022 Carbon Plan.

III. CONCLUSION

The H.B. 951 mandate of a 70% carbon emissions reduction by 2030 and net zero by 2050 at reasonable cost for the ratepayer is realistic and achievable. The Commission's 2022 Carbon Plan should create a path to success by adequately taking into consideration the proven technologies available to fulfill these long-term goals, rather than relying on unproven technologies to become commercialized. It also should create a path to success by utilizing North Carolina's available assets and the cost savings uniquely presented by having nearby some of the most promising North American development sites for offshore wind. To both maximize and

accelerate the reaping of benefits from more carbon reductions and more "least cost" offshore energy, and to do so by the 2030 target in H.B. 951, the Commission's order should select offshore wind as a resource class in the 2022 Carbon Plan with a development goal of not less than 2.8 GW[13].

Respectfully submitted, this 24th day of October, 2022.

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CERTIFICATE OF SERVICE

The undersigned attorney for TotalEnergies Renewables USA, LLC, hereby certifies that he served the foregoing Post-Hearing Brief upon the parties of record in this proceeding by electronic mail and/or depositing copies in the United States mail, postage prepaid.

This 24th day of October, 2022.

Joseph W. Eason