

**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	))))	INITIAL COMMENTS OF TOTALENERGIES RENEWABLES USA, LLC
--	------------------	---

NOW COMES TotalEnergies Renewables USA, LLC (“TotalEnergies”), pursuant to the Commission’s Order Requiring Filing of Carbon Plan and Establishing Procedural Deadlines entered on November 19, 2021, the Commission’s Order Granting Extension of Time entered on November 29, 2021, and the Order Establishing Additional Procedures And Requiring Issues Report entered on April 1, 2022, and respectfully submits the following Initial Comments of TotalEnergies Renewables USA, LLC, regarding the proposed Carbon Plan (“the Proposed Carbon Plan” or “Plan”) which is the subject of the Verified Petition for Approval of Carbon Plan (the “Petition”) filed in this docket on behalf of Duke Energy Progress, LLC (“DEP”) and Duke Energy Carolinas, LLC (“DEC”, and collectively with DEP, “Duke” or the “Companies”).¹

I. INTRODUCTION

TotalEnergies appreciates and thanks the North Carolina Utilities Commission (“the Commission”) for this opportunity to comment on the Companies’ Petition and Proposed Carbon Plan, and the four associated scenarios modeled within the Proposed Carbon Plan.

¹ TotalEnergies filed its Petition To Intervene on Wednesday, July 13, 2022. These Initial Comments of TotalEnergies are being submitted on a timely but conditional basis on July 15, 2022, before the Commission’s disposition of that petition to intervene; their submission assumes the Commission will ultimately allow that petition.

TotalEnergies holds lease OCS-A 0545 (“0545”) issued by the Bureau of Ocean Energy Management (“BOEM”). The lease grants TotalEnergies the exclusive right to propose an offshore wind farm in the lease area located in federal waters off the coast of North Carolina. TotalEnergies intends to develop optimally this lease to contribute to the execution of House Bill 951 (“HB 951”) Mandate, leveraging its more than 14 gigawatts of offshore wind projects in development worldwide and its century old experience in the management of very large integrated projects such as the Proposed Carbon Plan.

TotalEnergies is committed to work diligently with all state and local authorities toward a successful execution of the goals of HB 951, including its focus on the retirement of high-emission generation resources owned or operated by the Companies as public utilities under state law, and the establishment of a process for planning and developing a replacement mix of mostly utility-owned generation resources after consideration of a range of potential renewable or low-carbon emission resource options. Specifically, TotalEnergies is committed to contributing to the successful execution of HB 951’s goal of achieving by 2030 a 70% reduction of carbon emissions from utility-owned electric generation resources within the State, at the lowest reasonable cost for North Carolina ratepayers.

The Proposed Carbon Plan focuses on a variety of mixes and timings of utility-owned generation resources to replace existing in-state utility-owned coal plants. However, in doing so, it fails to maximize North Carolina resources, relies on unproven technologies to achieve goals belatedly, and doesn’t set in motion a 2022-2024 execution plan that maximizes the ability of North Carolina to achieve the 2030 HB 951 mandate. The Proposed Carbon Plan should be amended to adequately address these aspects by including multiple paths to obtain a 70% reduction by 2030 that rely on proven technologies and maximize the use of North Carolina’s

existing and potentially available resources. Such amendments will improve the Proposed Carbon Plan by increasing the long-term ability to obtain in this State clean energy at the least-cost to the ratepayer within the time horizon of the HB 951 mandate.

II. COMMENTS

A. The Approaches Presented In The Proposed Carbon Plan Make It Unlikely That HB 951's 2030 Mandate Will Be Fulfilled – It Combines A Reliance On Unproven Solutions With A Lack Of 2023-2024 Actions To Ensure Several Paths To Fulfill The Mandates Of HB 951.

The four portfolio scenarios in the Proposed Carbon Plan actually present a narrow range of choices that rely on the selection of unproven high-risk technology, with a high-risk of execution failure or delay. Those scenarios also omit any significant action plans for 2022-2024. As a result, the Proposed Carbon Plan already assumes delays of the statutory 2030 target in HB 951 to some point beyond 2030 in most of the scenarios presented. Organizations experienced in large project management know firsthand that planning for early-stage delays, and relying on unproven technologies for execution, make it a quasi-certainty that achieving the 2030 70% target will, during the following years, become either impossible and/or result in large inefficiencies and excessive costs, as pivots will be required when a solution on which the Proposed Carbon Plan relies underperforms.

TotalEnergies believes that achieving the 2030 mandate selected by the Legislature is very realistic 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.

The Commission's final order regarding the Proposed Carbon Plan will establish the firm execution mandate for 2023 and 2024, and its short-term action items will be critical to maximize the probability of North Carolina achieving the mandated 2030 reduction goal at the lowest reasonable cost. This can be achieved if the Commission's approved Carbon Plan (i) includes several scenarios relying on the proven technologies of solar combined with long duration storage, and offshore wind, (ii) incentivizes today the necessary actions to be taken between now and 2024, and (iii) allows for capturing the upside of currently immature technologies at a later date should they offer a commercially viable lower cost solution at that time.

B. The Proposed Carbon Plan Approach To Offshore Wind Would Lead To Excessive Costs For The Ratepayer As It Fails To Leverage A Sufficient Scale Of Development To Lower Costs, Doesn't Activate The Committed Investments In Local Jobs And Supply Chain By Developers, And Doesn't Take Advantage Of The Years-Long Work That Resulted In 3 Offshore Lease Areas Available Off The Coast Of North Carolina.

In order to achieve HB 951's 2030 mandate at the lowest possible cost for ratepayers, the Commission's final order regarding the Proposed Carbon Plan should leverage assets uniquely available to the State of North Carolina as a result of years of investment and hard work at the local, State and Federal levels. For example, North Carolina benefits from having three nearby offshore wind lease sites in development off the North Carolina coast. These assets represent matured generation projects which are available to produce zero-carbon renewable energy for North Carolina consumers before 2030, benefiting the State's ratepayers and other citizens. As a global offshore wind developer and energy provider, TotalEnergies has studied extensively the

various development plans for offshore federal leases OCS-A 0545 and OCS-A 0546 prior to the 2022 auction, and submits that these two areas can produce 2 to 3 gigawatts 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.

However, the Proposed Carbon Plan scenarios either omit offshore wind output entirely or include only smaller quantities of 0.8-1.6 gigawatts, and only made available after 2030. TotalEnergies believes that such portfolio mixes are certain to result in much higher offshore wind costs per megawatt hour for the North Carolina ratepayer than a full leveraging of the existing assets in development off North Carolina's coast. By contrast, if the Commissions' final order regarding the Proposed Carbon Plan requires scenarios which include a minimum of 2 gigawatts and a maximum of 4 gigawatts of offshore wind by 2030 will allow the State and its ratepayers and other citizens to directly benefit from a full development of these existing offshore assets, using a globally proven technology with low execution risks, and at an optimum price point, for several reasons.

First, the Commission's assessment of the modeled portfolios of a mix of utility-owned renewable or low-carbon generation resources should include consideration of maximizing the quantity of renewable energy produced at "least-cost" from various renewable resources, with an emphasis on proven technologies. For example, some of the four modeled scenarios in the Carbon Plan include a limited quantity of offshore wind resources, but the plan fails to demonstrate that the quantity of such offshore power represents the "least-cost" means to obtain offshore wind power, or the most efficient use of the capital and other resources already

invested, or which must soon be invested, to develop potential offshore sites for lower cost energy production.

When the Commission considers the inclusion of any offshore wind production when assessing the Proposed Carbon Plan, TotalEnergies urges the Commission to consider certain factors pertaining to timing and ultimate costs which, when considered, support an offshore wind target of at least 2-4 gigawatts in portfolio selection by 2030. This also would be in line with two of the six de-carbonization scenarios modeled by Duke in connection with its 2020 IRP submitted to this Commission, which included 2,650 megawatts of offshore wind, albeit by 2035. By making such a selection, the Commission would promote achievement of the “least-cost” energy from offshore wind production for the Companies’ North Carolina ratepayers, and at the most expedient timeline in light of certain Federal deadlines, and thereby realize greater quantities of renewable power delivered at lower cost, and sooner than the target dates in the model scenarios of the Proposed Carbon Plan.

The Companies state in the Carbon Plan that offshore wind is “a mature, scalable, and increasingly cost-effective zero-carbon resource”, but none of the scenarios studied reflects consideration of how to achieve the “least-cost” output from the available offshore opportunities, and none achieves the reduction target by 2030. The actual experience of developers of offshore wind resources globally indicates that the offshore wind developments off the North Carolina coast can successfully achieve operation by 2029-2030 if the initial phases of the development process are started soon enough. To both accelerate the date that the targeted reductions occur and to reduce the unit cost of production from these offshore areas, consideration should be

given to incentivizing the joint development at their lowest cost point of dollars per megawatt of power from these contiguous sites.

Based on experience and activities associated with lease 0545, TotalEnergies notes that in addition to the lease costs already incurred by each of the successful bidders, each bidder must also incur additional development expenses for surveys, mapping, engineering, and such. An order mandating that the Proposed Carbon Plan include the development of 2 to 4 gigawatts of offshore wind would enable the lease winners, 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. Much larger savings would result from conducting the actual construction phases offshore and onshore in a coordinated, concurrent manner.

A final order in this proceeding which directs coordinated, concurrent development of the already leased offshore wind areas off the coast would produce vast savings to the ratepayers in North Carolina when compared to the current Proposed Carbon Plan, which would result in more expensive offshore wind development costs for all the sites. Further significant cost reductions likely to be achieved by a 2 to 4 gigawatt 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 of these contiguous lease areas.

Second, in connection with the Carolina Long Bay offshore wind auction leases, the winning developers have made a \$42 million commitment for additional investments in North Carolina's workforce and regional supply chains, stemming from the BOEM auction procedures which

treated such investments as a bidding credit. This \$42 million monetary investment will be made to programs or initiatives that support workforce training programs for the offshore wind industry, and/or the development of a regional domestic supply chain for the offshore wind industry. A direct monetary investment of \$42 million in the state of North Carolina also will likely prompt many other secondary and tertiary onshore economic benefits, as will the development process of the offshore wind projects, from 2022 until their commercial operation in 2030, and also achieve a lower ultimate energy production cost per hour. The Proposed Carbon Plan, on the other hand, by delaying activities past 2024, would result in some or all of these committed investments being stranded indefinitely due to the lack of a development path.

C. Including Offshore Wind Resources In The Commission’s Final Order Regarding The Proposed Carbon Plan Will Drive Development Of Power Grid Transmission Upgrades Associated With The Execution Of HB 951 And The Payment For Those Upgrades, And Encourage Non-Utility Capital Investments In Generation And Transmission.

Another topic requiring optimization in the Proposed Carbon Plan is that there is no apparent consideration for how the development of such offshore resources would impact transmission requirements on the Companies’ combined transmission system, whether in the State or in the region. The Final 2022 Carbon Plan should consider, as has been done in other East coast states engaged in their own energy transition, whether and how developers should plan for common or shared onshore facilities and accompanying support fleets. Such coordination will maximize the efficient development and use of the output from these existing offshore lease areas, in order to achieve the lowest reasonable cost of energy production from these sites, and also achieve the

concomitant immediate reduction in carbon emission quantities using proven technologies, in the shortest period of time.

Similarly, there are substantial amounts of capital available for investment in transmission and generation assets to serve North Carolina and other southeastern states from various non-utility sources, including non-utility energy companies such as TotalEnergies. Many believe that considerable non-utility investments will be required for North Carolina to achieve substantial emission reductions by 2030, in part because of concerns over the costs for the State's retail ratepayers. Attracting investment of non-utility capital for these purposes, which the resource mix in the four modeled scenarios of the Proposed Carbon Plan does not achieve, requires that the Commission's final order incent the mobilization of those resources through a clear renewables and offshore wind mandate.

Multiple non-utility sources of capital exist who are willing to invest on reasonable terms and conditions to speed the transition to a low or zero-carbon energy environment. However, companies in the business of supplying energy, such as TotalEnergies, cannot prudently invest in production facilities if the viability or competitiveness of an energy production investment can be impaired by the absence or lack of access to essential facilities needed to operate. For example, development of Lease Area 0545 likely will require that the output initially interconnect with a portion of the transmission system operated by the Companies in this State or South Carolina, and a commitment for long-term access to such facilities on reasonable terms and conditions would need to be made years before an offshore resource could be brought online.

The selection and siting of utility-owned renewable generation resources to replace the Companies' utility-owned coal plants as allowed by the Commission in its final order likely will

have significant impact on the timing and costs of upgrades to existing transmission facilities, and the planning, routing and build-out of new transmission resources within the Companies' Balancing Area, over lengthy time horizons. Unless consideration is given in this proceeding to the potential future needs of the developers of the offshore lease areas for one or more points of interconnection to receive energy onshore, for follow-on delivery to a supplier, the modifications to the Companies' transmission system resulting from this Commission's approval of the proposed Carbon Plan may impair or even foreclose economic development of Lease Area 0545. The scenarios modeled by the Companies, however, not only exclude or limit the quantities of output from offshore resources included as alternate resources, but also fail to reflect the effects on the transmission system and operational costs resulting from different scenarios where large quantities of offshore wind production are received. Based on its prior experience with offshore production resources, for example, TotalEnergies believes that the hourly characteristics of the production output of offshore wind facilities can reduce materially impacts that some complementary intermittent renewable energy supply resources otherwise might have on a transmission system. Consideration of such impacts in this proceeding could result in a different "least-cost" stack of alternative resource options over the relevant time horizon, and accelerate the date of achievement of the targeted reduction goal.

III. CONCLUSION

In conclusion, TotalEnergies believes the HB 951 mandate of a 70% Carbon emissions reduction by 2030 at reasonable cost for the ratepayer is realistic and achievable. The forgoing comments reflect TotalEnergies views about how to improve the Proposed Carbon Plan, based on its experience in large scale energy projects and offshore wind development, so the final 2022 Carbon Plan can reach its goal of fulfilling HB 951's mandate. The Commission's final order

should create a path to success by adequately taking into consideration the proven technologies available to fulfill the 2030 HB 951 mandate, rather than relying on unproven technologies. It also should create a path to success by laying out clearly a pro-active action plan for 2023-2024, rather than postponing until 2025 or later critical project milestones for efficient development of offshore resources.

The Commission's final order regarding the Proposed Carbon Plan shall create a path to success by utilizing North Carolina available assets and the cost savings they represent – in Offshore Wind, that means mandating a 2030 firm production of between 2 and 4 gigawatts – corresponding to the lowest cost of development for the assets directly accessible off the North Carolina coast. 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 HB 951, the Commission's order shall direct the expansion of the quantity of offshore wind resources, and incentivize the immediate investment of non-utility capital offshore and onshore along the State's coast.

Respectfully submitted, this 15th day of July, 2022.



Joseph W. Eason, Esq.
N.C. Bar No. 7699
joe.eason@nelsonmullins.com
Nelson, Mullins, Riley & Scarborough LLP
4140 Parklake Ave., Suite 200
Raleigh, NC 27612
DID: (919) 329-3807
Fax: (919) 329-3140

Weston Adams, III

Weston Adams, III, Esq.

N.C. Bar No. 18659

Weston.adams@nelsonmullins.com

Nelson, Mullins, Riley & Scarborough LLP

Suite 1700

1320 Main Street

Columbia, SC 29201

DID: (803)799-2000

Fax: (803) 256-7500

CERTIFICATE OF SERVICE

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

This 15th day of July, 2022.

A handwritten signature in blue ink that reads "Weston Adams, III". The signature is written in a cursive style with a horizontal line underneath the name.

Weston Adams, III Esq.