[bw] RESEARCH PARTNERSHIP

MEMORANDUM

To NC Sustainable Energy Association

From BW Research Partnership

Date 22 July 2025

Re Economic Impact Analysis of Removing North Carolina's Power Sector Interim Carbon Reduction Target

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BW Research, on behalf of the North Carolina Sustainable Energy Association (NCSEA) and the Environmental Defense Fund (EDF), analyzed the economic impact of North Carolina Senate Bill 266 (SB266), which removes the mandate that the NC Utilities Commission take all reasonable steps to achieve the interim power sector carbon reduction target of 70% by 2030. This memorandum analyzes the impacts of SB266 on North Carolina's employment, fiscal revenue, and energy generation capacity for the next decade.

Key Findings

Passing SB266 would have the following effects on North Carolina:

- A **total peak capacity of 12 GW below the 2035 projected status quo**. North Carolina is projected to add 32.1 GW of peak generation capacity by 2035. Provisions in SB266 would lead the state to add 20.1 GW in the same timeframe.
    - Reduced peak generation capacity presents significant challenges for the state in fulfilling the rising power demand. This limitation **hampers the state's ability to meet current energy needs** and **undermines its competitive edge in attracting energy-intensive industries**.
- **Nearly 50,700 fewer jobs annually, on average, in the power sector (304,200 job years between 2030 and 2035)**. Slowing down the growth of power generation capacity by 2035 would result in decreased investments in the construction and operation of power plants. This, in turn, leads to fewer job opportunities in the state.
- **Unmaterialized power sector investments of over $47.2 billion, between 2030 and 2035**. Capacity additions in solar, offshore wind, nuclear, and storage, which would drive large investments, would be heavily diminished.
- **More than $1.4 billion in unrealized state tax revenue**. The construction and operation of several gigawatts of power generation would generate considerable tax revenue for North Carolina. Reducing deployment of generation technologies also harms the state's fiscal revenue from this sector.

- **Limited deployment of advanced natural gas technologies, such as combined cycle power plants**. The passing of SB266 will favor traditional combustion turbines and hamper the adoption of newer and more efficient technologies.

Analysis

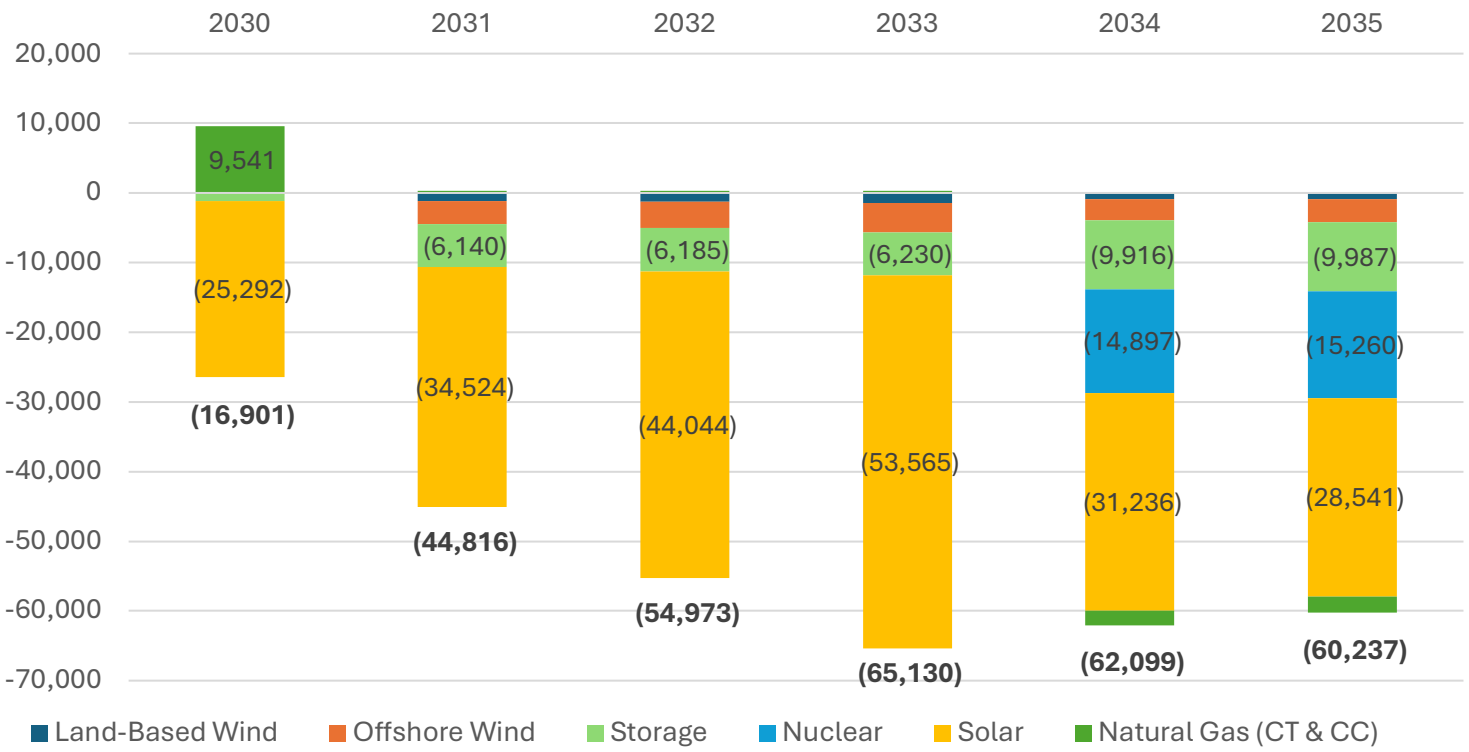
To determine the impacts of SB266, BW Research estimated the economic impact of the net capacity additions or retirements between the following two scenarios:

- **Status Quo, SB266 Fails to Pass**: The interim carbon reduction target of 70% is maintained, leading to faster deployment of batteries, advanced nuclear, solar, offshore wind, and onshore wind. This scenario has natural gas generation capacity additions, largely on combined cycle technologies.
- **Passing of SB266**: Removal of the interim carbon reduction target of 70% by 2030. Solar, battery, nuclear, offshore wind, and onshore wind deployment is delayed or diminished. There are net capacity additions in natural gas generation from combustion turbines.

The results presented in this analysis summarize the difference in economic benefits between the "Status Quo" and the "SB266" scenarios, e.g., "SB266" economic benefits minus "Status Quo" economic benefits.

The SB266 scenario supports 50,700 fewer annual jobs, on average, compared to the Status Quo scenario. Between 2030 and 2035, this represents 304,200 fewer job years. The gap in employment between scenarios increases after 2030 with the installation of battery storage and wind capacity.

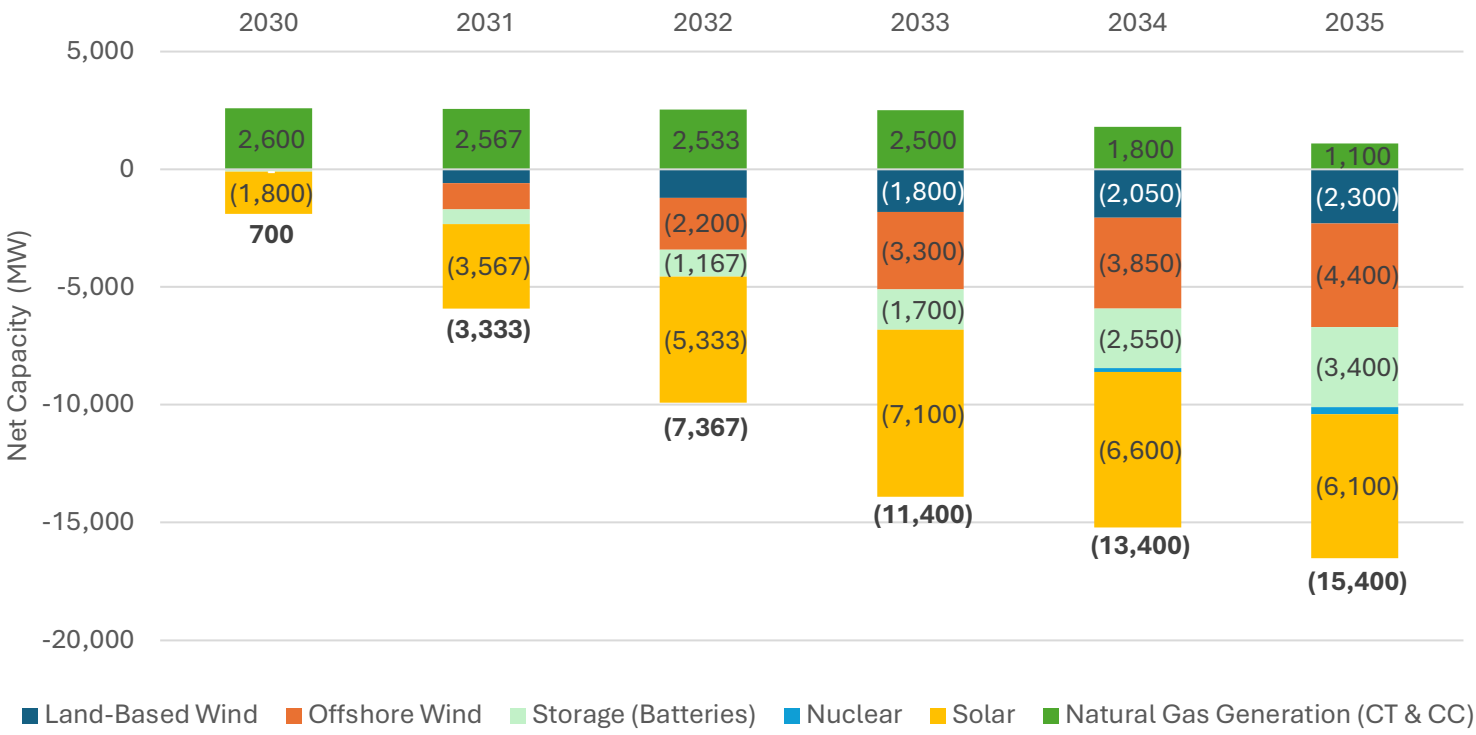
Figure 1. Net Employment Impacts, "Status Quo" Scenario Minus "SB266" Scenario



The gap in job generation in North Carolina is largely attributed to SB266 diminishing installation of utility-scale solar, which under the Status Quo scenario, supports more than 25,200 jobs annually between 2030 and 2035, and nearly 53,600 jobs in 2033. The Status Quo scenario projects 14.9 GW in additional solar capacity installed between 2030 and 2035, compared to the 8.8 GW under SB266, which generates significant employment in the construction and operation of these projects. This gap means that on average, about 36,200 annual jobs stemming from solar investments do not materialize.

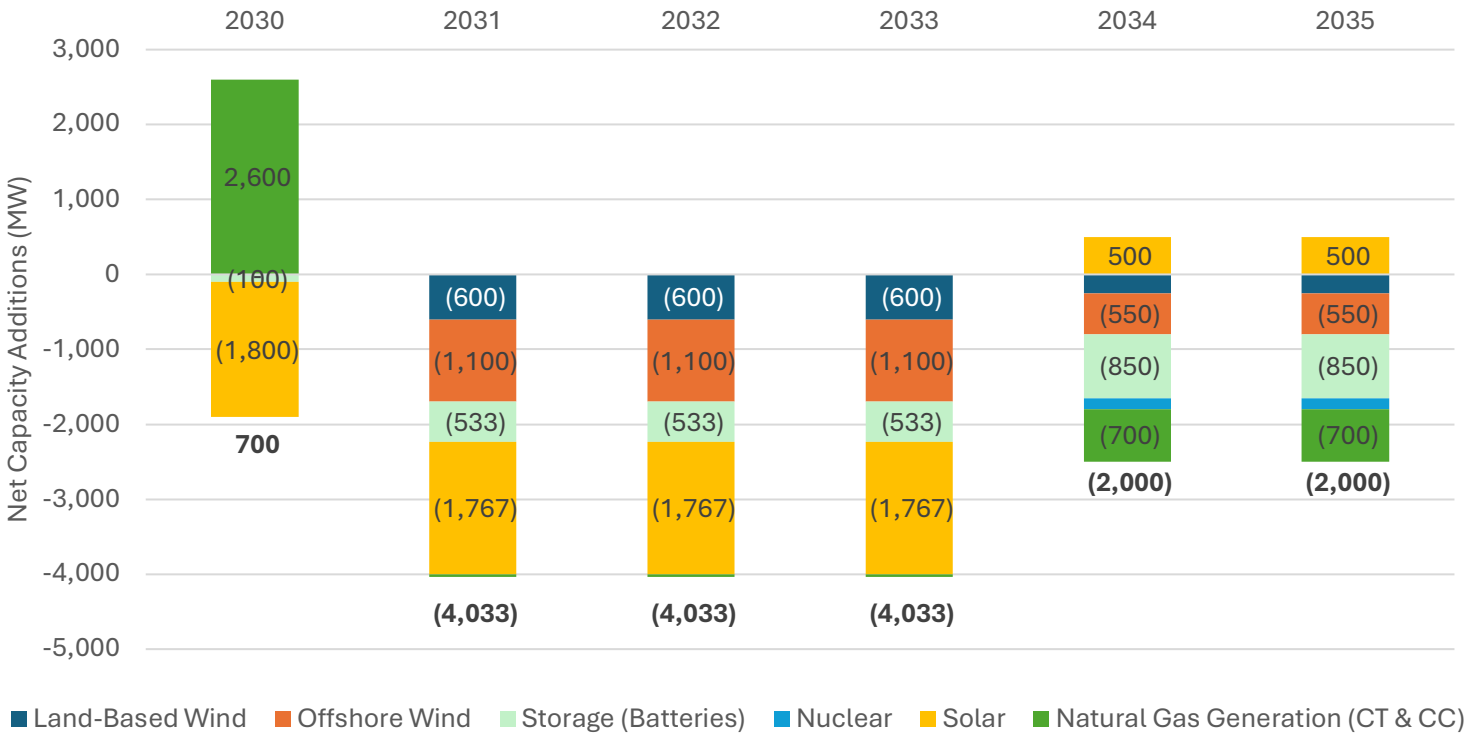
The Status Quo scenario also projects 2.3 GW in Onshore Wind and 4.4 GW in Offshore Wind capacity by 2035. The SB266 scenario will not have these technologies developed by 2035. By 2035, the Status Quo scenario has an additional Advanced Nuclear capacity of 600 MW, compared to 300 MW under SB266. The development of nuclear energy represents a significant investment in both the construction and operation phases, and generates important economic activity due to the high wages in the jobs involved.

Figure 2. Net Capacity, "Status Quo" Scenario Minus "SB266" Scenario



The Status Quo scenario adds additional capacity to North Carolina's grid every year after 2030, compared to the capacity installed under SB266. Capacity additions capture the CAPEX investments and construction activities happening in a given year. Higher capacity installed also generates more long-term jobs in operations and maintenance activities. On net, the Status Quo scenario sees at least 2 GW of additional capacity installed every year between 2031 and 2035.

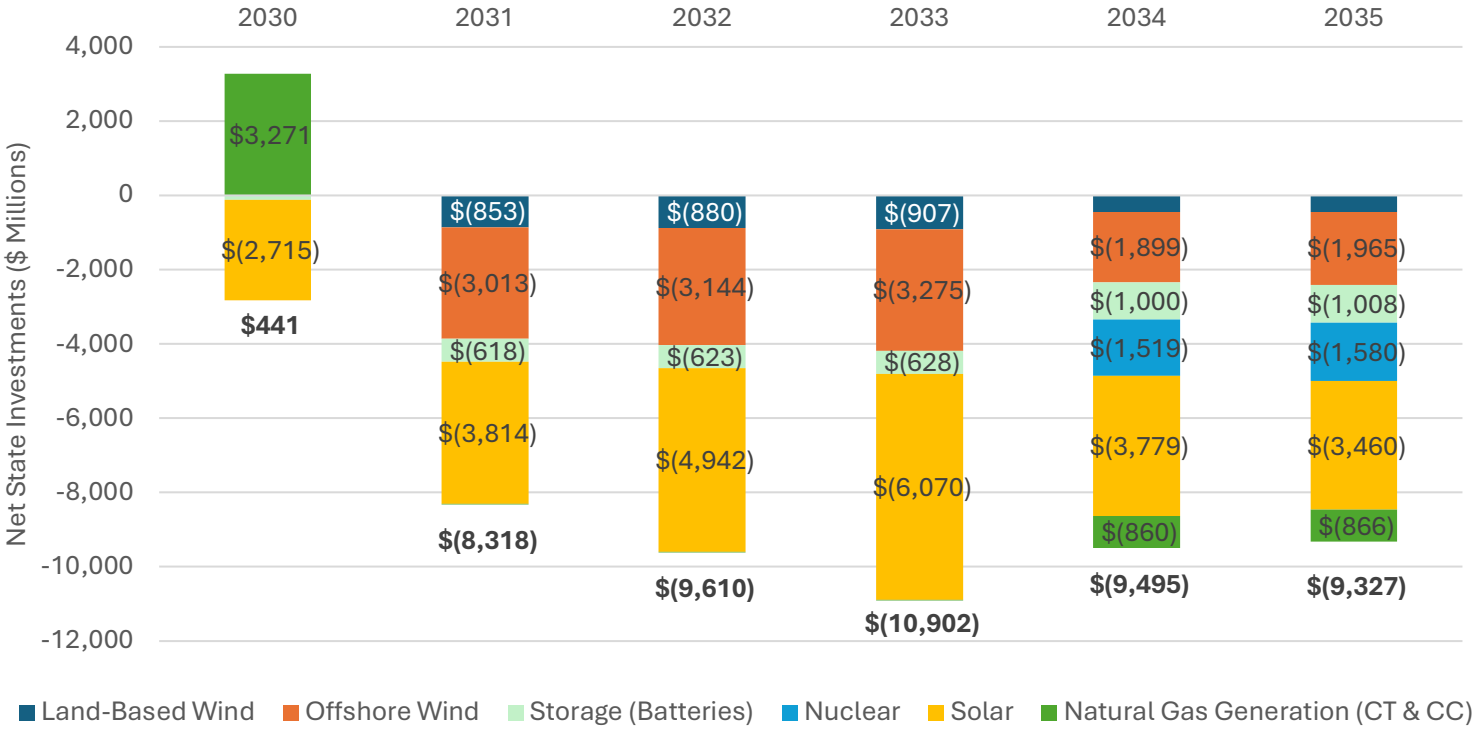
Figure 3. Net Capacity Additions, "Status Quo" Scenario Minus "SB266" Scenario



Capacity additions directly translate into investment flows in North Carolina. The state sees significantly higher investments in the power sector under the Status Quo scenario than the SB266 scenario. On net, investments to add power generation capacity would decrease by $47.2 billion between 2030 and 2035, with the passage of SB266.

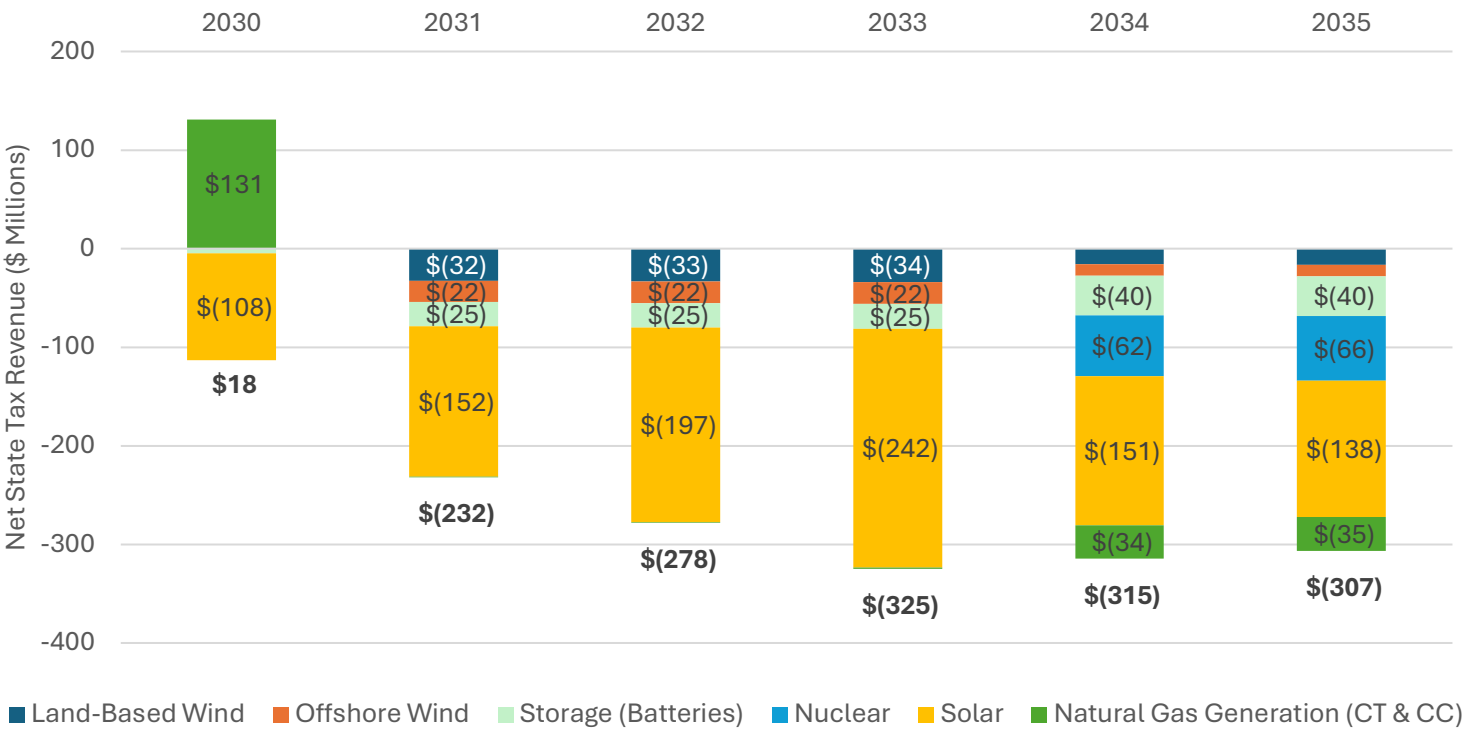
Investments in utility-scale solar energy would be the most affected, with about $24.8 billion fewer investments under the SB266 scenario, compared to the Status Quo scenario. The SB266 scenario would also result in a reduction of $13.3 billion in investments allocated for offshore wind.

Figure 4. Net Investments, "Status Quo" Scenario Minus "SB266" Scenario



The Status Quo scenario generates about $1.4 billion more tax revenue between 2030 and 2035 than the SB266 scenario. Investments and installation of solar, wind, and storage projects generate over $230 million more in tax revenue per year than what would be generated with the passing of SB266.

Figure 5. Net State Tax Revenue, "Status Quo" Scenario Minus "SB266" Scenario



Methodology

The economic impacts in this study were estimated using the IMPLAN and JEDI input-output modeling tools. IMPLAN is a static Input-Output model that provides North Carolina-specific spending patterns and industry multipliers to estimate the impact of an initial investment. JEDI is an energy-specific economic impact model from the National Renewable Energy Laboratory (NREL). It derives industry multipliers from IMPLAN and adjusts them to estimate the impacts of generation technologies such as solar, wind, and natural gas.

For this analysis, BW Research estimated total investments in energy technology using projected power generation capacity additions from the two resource portfolios that were developed by the Public Staff ("PS 2034 Base" and "NCGA-Base") to explore the impacts of SB266 and average CAPEX and O&M cost data per kilowatt from NREL.

The economic impacts presented in this analysis result from the capacity additions modeled by Duke Energy in the two scenarios obtained from the Public Staff and the North Carolina General Assembly's Senate Bill 266 implications on energy capacity additions.

The study analyzed net capacity additions and retirements in these generation technologies:

- Utility-Scale Solar
- Onshore Wind
- Offshore Wind
- Nuclear
- Coal
- Natural Gas (Combined Cycle and Combustion Turbine)
- Battery Storage

The analysis focuses on projections from 2030 through 2035 to maintain a more reliable time horizon for the capacity and economic benefits estimates.