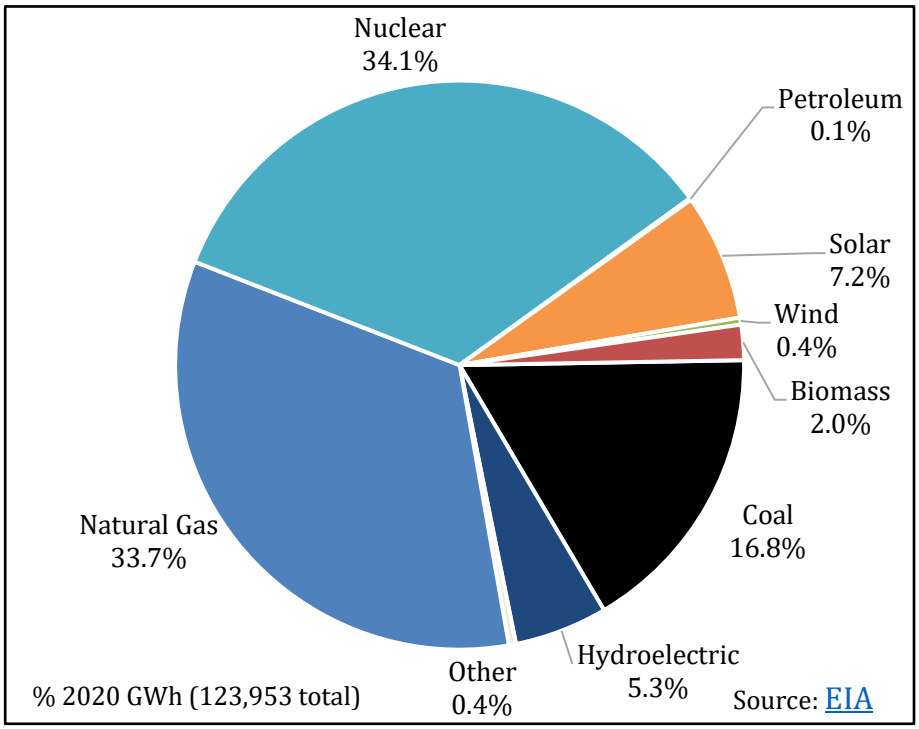
State Brief: North Carolina

BACKGROUND

Over the past decade, North Carolina has shifted away from a coal-dominated energy mix. While coal-fired generation provided roughly half of the state's electricity in 2011, coal contributed only 16.8% to the electricity mix in 2020. The decline of coal coincides with a sharp increase in natural gas-fired generation, jumping from 9.4% in 2011 to 33.7% in 2020. Nuclear energy accounts for just over one-third of the state's electricity generation.

North Carolina's Net Annual Electric Generation, 2020



The Tar Heel State has been a clean energy leader in the Southeast and was the first state in the region to adopt a mandatory renewable portfolio standard (RPS).[1] In 2018, Governor Roy Cooper issued Executive Order 80 which set a goal to reduce greenhouse gas (GHG) emissions 40% below 2005 levels by 2025. The Order also established a goal to have 80,000 zero-emission vehicles (ZEVs) in the state by 2025 and directed the Department of Environmental Quality (DEQ) to develop a clean energy plan. The 2019 North Carolina Clean Energy Plan outlined a number of goals for the state, including reducing power sector GHG emissions 70% below 2005 levels by 2030 and a goal to reach carbon neutrality by 2050. The plan also outlined several policy recommendations for transitioning North Carolina to a clean energy economy.

By the end of 2019, North Carolina had nearly 4,700 megawatts (MW) of installed solar capacity, the second highest in the country (behind California). In 2020, the Solar Energy Industries Association (SEIA) ranked North Carolina 9th in the nation for projected solar energy capacity growth. Due to a rigid permitting process and an 18-month moratorium on new leases for wind projects established when House Bill 589 was enacted in 2017, progress in developing onshore wind has been slow. Although the moratorium has expired, focus in the state is shifting to offshore wind development. In October 2020, North Carolina joined Virginia and Maryland to create the Southeast and Mid-Atlantic Regional Transformative Partnership for Offshore Wind Energy Resources (SMART-POWER). The SMART-POWER collaborative will work together to streamline the development of offshore wind in the region. In June 2021, Governor Cooper's Executive Order 218 set offshore wind development goals of 2.8 gigawatts (GW) by 2030 and eight GW by 2040.

The 2020 U.S. Energy and Employment Report found that North Carolina has 55,928 traditional energy workers (1.2% of total state employment). In 2020, North Carolina ranked ninth nationwide for clean energy jobs (including jobs in energy efficiency and solar) and the industry employed 99,670 North Carolinians.[2]

[1] Virginia adopted a voluntary goal in 2007, the same year North Carolina adopted its RPS. In 2020, Virginia adopted a mandatory RPS.

[2] This is in addition to the number of traditional energy jobs in the state.

The seven members of the North Carolina Utilities Commission (NCUC) are appointed by the Governor and regulate the state's three investor-owned utilities (IOUs) and five natural gas companies. Republicans control both chambers of the General Assembly and Governor Cooper is a Democrat.

POLICY STRENGTHS AND OPPORTUNITIES

The National Renewable Energy Laboratory (NREL) developed the notion of "policy stacking,"[3] an important framework for policymakers to consider. The basic idea behind policy stacking is that there is an interdependency and sequencing of state policy that, when done effectively, can yield greater market certainty, private sector investment, and likelihood of achieving stated public policy objectives.

In theory, but not always in practice, clean energy policies can be categorized into one of three tiers of the policy stack. Tier 1, market preparation policies, remove technical, legal, regulatory, and infrastructure-related barriers to clean energy technology adoption. Tier 2, market creation policies, create a market and/or signal state support for clean energy technologies. Tier 3, market expansion policies, create incentives and other programs to expand an existing clean energy market by encouraging or facilitating technology uptake by additional market participants.

For example, before financial incentives for combined heat and power (CHP) will be successful, two key considerations for deployment are having clear interconnection standards and favorable stand-by rates for customers who opt to add CHP. In this example, states should adopt policies to address interconnection and stand-by rates before adopting financial incentive programs.

GRID MODERNIZATION

Digital technologies have enabled utilities to better manage the grid and provide opportunities for consumers to customize their services to fit their priorities. These technologies allow a two-way flow of information between the electric grid and grid operators and between utilities and their customers.

Emerging technologies improve system reliability and resiliency by enabling better tracking and management of resources. These technologies allow grid operators to incorporate central and distributed energy resources, energy storage technologies, electric vehicles, and assist in addressing the challenges associated with planning, congestion, asset utilization, and energy and system efficiency.

On the customer's side of the meter, dynamic pricing, advanced metering infrastructure, and other technologies allow an exchange of information and electricity between a consumer and their electric provider. Grid modernization is associated with greater consumer choice by allowing customers to meet their energy priorities by producing their own energy or through contracting innovative clean energy services from different providers.

Grid modernization will require a suite of state and federal policy changes to support advancements in grid technologies, grid management, and utility regulation.

Duke Energy unveiled its $13 billion Power/Forward Carolinas initiative in 2017, $7.8 billion of which was initially planned for grid upgrade investments. In response to the plan's announcement, renewable energy and environmental advocacy groups challenged the inclusion of a cost-recovery rider due to ambiguity in planning processes, lack of coordination with stakeholders, and the absence of specific investments. Duke and other parties reached a settlement in 2018 which reduced the utility's grid modernization plan by $5.3 billion. However, NCUC rejected the proposed plan in 2018. Following continued negotiations with stakeholders and hearing delays due to the COVID pandemic, the NCUC approved a partial rate increase, an amended Grid Improvement Plan, and several other initiatives that include the creation of work groups to study climate risk and transmission resilience and measures to reduce energy costs for low-income customers in Spring 2021.[4,5]

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[3] V.A. Krasko and E. Doris, *National Renewable Energy Laboratory*, 2012. Strategic Sequencing for State Distributed PV Policies: A Quantitative Analysis of Policy Impacts and Interactions. http://www.nrel.gov/docs/fy13osti/56428.pdf.

[4] Duke Energy. 2021. "Duke Energy Responds to North Carolina Utilities Commission's Decision on Duke Energy Progress' 2019 Rate Request."

[5] The NCUC issued two separate, but substantially similar orders for the company's two subsidiaries: Duke Energy Progress and Duke Energy Carolinas.

Following the conclusion of a stakeholder process called for by the North Carolina Clean Energy Plan, the Rocky Mountain Institute (RMI) and the Regulatory Assistance Project (RAP) released a summary report of the group's work in December 2020. Among the recommendations to emerge from the North Carolina Energy Regulatory Process (NERP) was the development of comprehensive performance-based regulation of utilities to align utility incentives with 21st Century social and policy goals.

In February 2021, several utilities operating in Alabama, Georgia, Kentucky, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, and Tennessee filed plans with the Federal Energy Regulatory Commission (FERC) to establish the Southeast Energy Exchange Market (SEEM) aimed at improving their ability to trade power across the region. Proponents of renewable energy and FERC raised concerns about the market's lack of transparency, and some have argued that it will not incentivize the development of clean energy resources or reduce costs to ratepayers. On the other hand, some argue that SEEM is an important first step in increasing renewable energy integration in the southeast. In June 2021, the utilities amended the proposal to create greater transparency and provide for additional oversight by FERC.

North Carolina demonstrates leadership in grid modernization. There are supportive policies that North Carolina's policymakers can adopt to support and advance in-state modernization efforts.

1. Legislators can require that utilities' integrated resource or long-term plans include strategies to enhance cybersecurity, integrate distributed energy resources (including electric vehicles and energy storage), increase smart meter deployment and demand response and/or demand-side management (DSM) programs, and measure and report on the results of these efforts. The NCUC required utilities to include Smart Grid Technology Plans (SGTPs) as a part of their biennial IRP filings in a 2013 order. SGTPs must detail and assess utility smart grid projects, such as overall impacts to the grid, costs/benefits of certain technologies, description of pilot projects, and customer access to data. According to the 2015 rule amendments, SGTPs are meant to be informative, and the filing requirement does not directly promote or induce utility deployment of smart grid technologies.

2. North Carolina does not have clear state policies governing customer data access and privacy protections. However, the NCUC has requested utilities provide information on the status of third-party access to customer data in their biennial integrated resource plan filings. Some utilities in North Carolina have implemented the Green Button Connect program to ease customer access to energy data. To support this, policymakers could develop legislation that, at minimum, does the following: clarifies who owns the energy data associated with customer energy usage; protects customer privacy; outlines the process for allowing direct access to data by third parties; and promotes access to the highest resolution of data possible.

3. State departments of workforce services or their equivalent can be directed to work with utilities and other stakeholders to develop training programs for grid technicians and engineers. With new grid technology and distributed energy systems coming online, a new generation of workers can be trained to meet evolving needs, which will keep jobs local, and contribute to economic development.[6]

The adoption of incentives for or a requirement to integrate a certain amount of energy storage on the grid alongside enhancing renewable energy and electric vehicle policies can support modernization efforts and improve the chances of successful grid modernization.

ENERGY STORAGE

Energy storage offers a unique opportunity to manage supply and demand dynamically while also maximizing the value of grid resources. By deploying storage to strategic locations, utilities can more effectively manage their energy portfolios. First, storage allows utilities to manage intermittent demand – helping reduce peak demand requirements. Because the generation resources that provide peak power are the system's most expensive, reducing peak demand can save consumers money. Second, the responsiveness of energy storage can allow utilities to implement voltage regulation and other ancillary services, which are useful for improving system efficiency. Third, because storage technologies can both store and dispatch power, storage enables better integration of intermittent

[6] For a discussion of specific workforce needs that states might explore see: GridWise Alliance and U.S. Department of Energy. 2020. "Grid Modernization Index Insights into a Transformation: Principles for the Next Decade of Progress."

power generation resources like renewable energy to the grid. Finally, energy storage can help the commercial sector avoid costly demand charges. As utilities around the country consider implementing or extending demand charges to other sectors, energy storage will become more relevant as a customer cost-saving investment.

The flexibility of battery storage, combined with advanced metering infrastructure, allows customers to control, for instance, how and when they use energy from the grid or from solar panels installed on their home or business. In most cases, this can provide greater cost savings than standalone solar systems. Combined with time-varying rates or real-time pricing programs, state policy can further support customer choice and open a new market for energy services. Prices that better reflect the time-varying and location-dependent costs of producing and delivering electricity can lead to several economic and environmental gains.

Two major trends have enabled increased deployment of energy storage: declining costs and technological advances. State policies can help maximize these benefits by establishing both a framework for easy integration of energy storage resources onto the grid and a marketplace that monetizes the benefits of energy storage for cost-effective investment.

North Carolina's existing renewable energy generation capacity and potential makes the state prime for the deployment of energy storage technologies and development. In 2017, House Bill 589 directed the North Carolina Policy Collaboratory to study the economic feasibility, potential ancillary services, economic impacts, and policy recommendations for statewide energy storage policy. The final report was released in December 2018 and outlined the benefits storage would provide to the grid, including lower costs to consumers, enhanced distribution networks, and deferred investment in peaking capacity or transmission projects. The study also found that the state had the potential to develop more than 1,000 MW of cost-effective storage by 2030.[7] Legislation enacted in 2019 (House Bill 329) directed the DEQ to develop rules for decommissioning energy storage systems. The NCUC clarified interconnection rules for energy storage in a 2019 order, which held that systems interconnected to installed renewable energy systems would not require extensive reviews or permitting, if certain conditions apply.

Utilities in the state are actively pursuing energy storage technologies and developing storage projects, and the state already supports a growing industry. Duke Energy unveiled plans in 2017 to invest $30 million in two lithium-ion battery storage projects as part of their Western Carolinas Modernization Plan. In 2019, the utility completed construction on a solar and battery storage microgrid project to power a remote communications tower in the Great Smoky Mountains National Park. In 2020, Duke Energy completed a 9 MW battery storage system in Ashville. In 2021, the North Carolina Eastern Municipal Power Agency (NCEMPA) issued a request for proposals (RFP) for battery storage systems to reduce the Agency's peak power costs. According to a study commissioned by Audubon North Carolina, "268 company locations, representing 22,865 employees and $9.49 billion in sales, currently work in the battery storage value chain in North Carolina [and] 1,218 company locations, representing 160,687 employees and $45.22 billion in sales, have the potential to work in the battery storage value chain."[8]

There are several policy opportunities to take advantage of the growing technological advances in and declining costs of energy storage. The recommendations here draw heavily from the Interstate Renewable Energy Council's (IREC) 2017 report, "Charging Ahead – An Energy Storage Guide for Policymakers." Policymakers in North Carolina could consider the following:

1. Amend existing interconnection and net metering policies to ensure that storage can connect to the grid through a transparent and simple process. IREC has produced a series of protocols that states can adopt. States can establish best practices for interconnection and net metering in statute, or legislation can provide an instruction to the utilities commission to implement these best practices.

[7] The study also outlined several policy opportunities for North Carolina, some of which are also discussed here.
[8] L. Brun and G. Gereffi, *Audubon North Carolina*, 2020. Battery Storage: North Carolina's Footprint in the Global Value Chain. https://nc.audubon.org/sites/default/files/static_pages/attachments/storage_report_with_summary_and_cover_nc_final.pdf

2. Require the inclusion of energy storage as a critical piece of the energy system as both a demand and supply management resource. Some states have required that utilities evaluate the cost effectiveness of non-wires alternatives (NWAs) to large transmission and generation investments. States can require that utilities evaluate energy storage in their integrated or long-term resource plans. Alternatively, states can require utilities to develop a distribution investment plan that identifies the locations on the distribution system where energy storage or other distributed resources would offer the greatest value.

3. Consider creating a mandatory energy storage procurement target or requirement for energy storage with a documented process for periodic review of progress towards that goal. Procurement targets can include provisions limiting the amount of utility owned storage to be procured, requiring that a certain percent of the storage procurement goal be targeted to low-income customers, and creating carve-outs for specific amounts of storage to be procured at the transmission, distribution, and customer levels. Procurement targets can jump-start market creation, spur fast learning, and guide the development of a regulatory framework.

4. Finance and incentivize energy storage for customers and utilities. Incentives can enable customers to use storage to manage their electric load and store locally produced renewable energy. Incentives in the form of rebates, grants, and tax credits can provide a bridge to scalable deployment of storage. These incentives can also be designed to decline as the value of storage becomes more readily monetized, and/or as the cost of storage decreases. Policymakers can allow utilities that provide storage incentives to customers to also recover the costs of installing smart meters. This would enable dynamic and time-varying energy management from multiple distributed battery systems, while better aligning customer costs with system costs. Financing energy storage installations for commercial customers can help reduce their demand charges. Policymakers might start first with a policy that provides grants to pilot projects, and/or that targets existing solar system owners. Financial incentives should be designed to ensure that the state meets other goals including emissions and peak demand reductions, and equitable access to clean energy.

5. Clear data access policies that allow third parties to provide energy management services based on signals from the utility can greatly increase the value of efforts to monetize the value stream offered by energy storage. State policy should include measures to protect customer data, while also encouraging the use of this information to facilitate additional improvements to grid management and customer services.

MAINSTREAMING RENEWABLES

As the renewable energy industry matured, technology improved, and global production of generating equipment increased. Renewable energy is increasingly seen as the least cost and lowest risk form of energy (excluding energy efficiency). A 2021 Energy Information Administration report predicts that the share of the United States' electricity generation mix supplied by renewable energy resources will increase from 21% in 2020 to 42% by 2050. With increased deployment, utilities are learning more about how to integrate renewables effectively, investors are becoming more comfortable with the technologies, and building code officials are recognizing common standards and best practices. For these reasons, it is in the interest of policymakers to ensure that their states are well positioned to benefit from the transition to clean and sustainable energy resources.

To reduce barriers to customer and utility participation in the renewable energy market, North Carolina might consider several policy options.

Customer-Oriented Policies

1. **Interconnection, Net Metering, and Streamlined Permitting –** In general, customers want a clear, streamlined, affordable, and predictable system for connecting renewable energy systems to the grid. To ensure this, North Carolina's policymakers could consider removing net metering system size limitations. Allowing aggregated net metering would be especially beneficial to the state's agricultural operations. Other applications for aggregated net metering include commercial properties and public entities like state and local governments, universities, and schools. The state might also consider establishing statewide standards for streamlined permitting processes built on the existing template solar and wind permitting ordinance. Alternatively, the state might provide resources that support local governments that voluntarily implement a streamlined program, as Chapel Hill has done. State incentives, such as tax credits, financial incentives, or loans can be tied to systems that are established within a designated streamlined permitting jurisdiction.

2. **Shared Renewables –** Due to building and property attributes and ownership issues, many customers are unable to install renewable energy technologies where they live or work. Allowing shared, or community, renewable energy projects addresses these barriers. These projects have multiple owners or subscribers who pay for a portion of the generation provided by the system. In 2017, the Competitive Energy Solutions for NC Act (House Bill 589) required Duke Energy Carolinas and Duke Energy Progress to develop at least 20 MW of community solar in their territories. Duke Energy submitted its Shared Solar and Green Source Advantage programs to the NCUC in 2018, which were approved in 2019. There are at least three shared solar projects online in North Carolina. To encourage the development of shared renewable projects, the state might consider adopting a virtual net metering policy. Virtual net metering allows a customer to receive credits from a shared system as if the generation were on site. Virtual net metering is different from a power purchase agreement (PPA), which pays the customer for the proportion of power they produce. Because it is treated as a credit on the customer's bill, the customer can avoid the tax implications of a PPA payment - which can adversely affect the economics of the system (and may come as a surprise to the participant).

   Low credit ratings often deter participation in renewable energy markets; this can affect low- and moderate-income (LMI) households' adoption of renewable energy solutions. Supportive policies for shared renewables can be designed to encourage participation by LMI households; this can increase adoption of renewable technologies and reduce energy costs. Low-income participation can be encouraged either through a percentage mandate for the overall annual contracted capacity, or by offering a higher rate of payment for the portion of shared solar capacity attributed to low-income customers. States that have a shared renewable program may want to coordinate this program with implementation of the federal Weatherization Assistance Program to provide recipients of assistance with participation in a shared renewable system.

   There are several additional policy options that North Carolina might consider to promote renewable energy uptake by LMI consumers. Generally, successful state policies should be tailored to these customers, be cost-effective and financially sustainable, have measurable performance indicators, and be flexible enough to allow later changes in design.

3. **Corporate Procurement –** Many Fortune 100 and 500 companies have established either climate goals or commitments to purchase renewable energy. Since 2016, nearly 31 GW of renewable contracts have been announced by corporate entities. In 2020 alone, corporations signed 100 agreements for over 10 GW of renewable energy. In April 2021, Wells Fargo committed to purchasing the output of the 58 MW Blackburn Solar Project planned to be built in Catawba County. The 20-year power purchase agreement is the bank's "single largest to date". North Carolina's policy allows companies to purchase renewable energy credits (RECs), develop onsite projects, and participate in shared renewable energy projects. On-site third-party PPAs are not allowed in the state. The Competitive Energy Solutions for NC Act of 2017 required utilities to establish a standard contract for large customers, effectively extending Duke Energy's green source rider which expired in 2016. Under this statutory framework, public utilities pay renewable facility owners who supply electricity to large customers. The products available in North Carolina meet all six of the Corporate Renewable Energy Buyers' Principles, and the state was ranked 19th overall in the Retail Industry Leaders Association's 2020 rankings of state corporate procurement policies. To expand corporate procurement, the state might consider allowing companies to enter into onsite third-party PPAs. In addition, it is prudent to incorporate corporate renewable purchase commitments into the IRPs that utilities submit to regulators to plan for resource needs over multiple decades. By integrating these renewable purchase commitments into the IRP process, regulators can avoid over-building resources and stranding generation assets.

Utility-Oriented Policies

Some states have created programs that aim to reduce greenhouse gas emissions and increase investments in clean energy resources. States might see an emissions or clean peak standard as the next step in a progression from an RPS. As mentioned above, North Carolina has a mandatory RPS of 12.5% by 2021, and a goal to reduce greenhouse gas (GHG) emissions 40% below 2005 levels by 2025. Pursuant to Executive Order 80, the DEQ issued non-binding emissions reductions goals in its Clean Energy Plan, which calls for a carbon-neutral power sector by 2050. Duke Energy has a goal to reach net-zero carbon emissions by 2050. To increase utility adoption of clean energy technologies, North Carolina's policy makers might consider the following:

1. **Accelerating and Amending Renewable Portfolio Standards –** States can revisit existing RPS policies to increase targets and/or accelerate target dates to continue to spur the development of renewable resources and save ratepayers money. Additionally, states might add one or more carve-outs to further incentivize the development of distributed generation and offshore resources. Embedding an RPS within broader clean electricity or emissions standard can allow technological flexibility.

2. **Emissions Standards –** Emissions standards can take a technology neutral approach that looks at the total emissions of the utility portfolio and drives emissions down with a combination of renewables, traditional fuels, efficiency, and technological advances. Emissions reductions can be achieved through 1) a carbon portfolio standard approach, or 2) a market-based approach. A portfolio emissions standard sets emissions reduction targets to be achieved over time. This can be implemented through the IRP process or by establishing a maximum allowable rate of emissions per unit. Under a market-based approach, a state or a group of states might set a certain emissions reduction target, for example, 50% below 2005 levels by 2025. This reduction is achieved by the distribution of annual emission allowances that decrease to the point that the standard is met in 2025. One of the advantages of a market-based program is that it is designed to reduce emissions in the most economically efficient manner possible. Such a standard can also address other concerns such as pollution, asthma risk, environmental justice, and water use.

3. **Clean Peak Standards (CPS) –** Clean Peak Standards aim to increase the share of clean energy resources used to meet peak demand and decrease energy bills over the long-term by reducing peak demand in the hours when energy costs are highest. These objectives can be met through different policy options, including planning and procurement that focuses on peak demand; a moratorium on the construction of new peaking units or a phase out of existing units; incentives – including carve-outs in states with RPSs – for clean energy resources delivered during peak times; and/or adopting a new clean peak standard that sets a target for clean energy deliveries during peak times.

ELECTRIFICATION OF THE TRANSPORTATION SECTOR

An estimated 58% of new car sales will be electric by 2040. Therefore, a key part of building a modernized grid involves designing infrastructure that will facilitate easy connection of electric vehicles (EVs) to the grid. One of the most important barriers to increased adoption of EVs is the consumer's awareness of the availability of EV charging stations. Ultimately, drivers want to be sure that their car will get them where they need to go. The good news is that both supportive policies for developing charging infrastructure and technological advancements have eased "range anxiety."

North Carolina has a handful of policies that support EV purchases and the installation of charging infrastructure. Executive Order 80 set a goal to increase the number of registered zero-emission vehicles (ZEVs) in North Carolina to 80,000 by 2025. As part of implementing Executive Order 80, state agencies are required to prioritize ZEV purchases for new fleet acquisitions, and the Department of Transportation and the Department of Environmental Quality released a ZEV Plan in 2019. The plan, developed through a stakeholder process, outlines recommended policy actions (some of which are also discussed below). In 2020, North Carolina joined 14 other states and the District of Columbia in signing an MOU to support the deployment of medium- and heavy-duty ZEVs. The American Council for an Energy-Efficient Economy (ACEEE) published a State Transportation Electrification Scorecard evaluating 29 states' progress in electrifying transportation in six key policy areas. North Carolina ranked 19th in the 2021 report.

There are opportunities to expand the market for EVs in North Carolina:

1. **EV and EV Charging Equipment Financing and Financial Incentives –** Providing additional financial incentives and innovative financing options can help spur greater market penetration of EVs. Sales, property, and income tax credits are some of the simplest methods for addressing high up-front costs of EVs and EV charging equipment. While sales tax credits are typically applied at the time of purchase, property and income tax credits may do less to address upfront cost barriers as the credit is not applied at the time of purchase.[9] States have adopted other financial incentives including low-interest loans, grants, vouchers, and rebates. A handful of

[9] A study by the Congressional Research Service suggests that tax credits are important tools for ensuring increased adoption of alternative-fueled vehicles.

states qualify EV charging equipment under their property assessed clean energy (PACE) programs. A simple solution is to increase and expand existing tax credits to incentivize commercial, publicly available charging stations.

2. **Charging Infrastructure Plan –** Locating charging infrastructure is different from locating conventional fueling stations. While some drivers will need to charge more quickly, others will refuel when they are parked for longer periods of time, for example when shopping at the mall or going to work. Charging infrastructure plans should attempt to pair the appropriate level of charging (level 2 or direct current fast charging) with a reasonable amount of time a person will be at that location. Legislation could direct a state agency to develop an infrastructure plan through a stakeholder process. North Carolina's existing registration fee for EVs could help fund these efforts. For example, in Washington a portion of each EV registration fee is used to fund charging infrastructure development across the state.

   Regional collaborations around the US are emerging to coordinate the development of electric transportation infrastructure. The REV West Plan and the Transportation and Climate Initiative (TCI) are in the process of planning regional EV charging corridors to reduce transportation sector carbon emissions. To alleviate range anxiety, bolster EV adoption, and coordinate transportation policy with other states, North Carolina might consider the potential for designing policy to link with the TCI or another regional network. North Carolina is a member of Drive Electric USA, a coalition of states committed to serving as examples of how to build successful statewide strategies to incentivize the purchase and use of EVs. Duke and Dominion Energy are members of the Electric Highway Coalition, a coalition of several utilities in the southeast committed to building fast charging infrastructure.

3. **Parking Infrastructure Requirements –** In tandem with the development of a statewide plan, legislation could set requirements for EV parking infrastructure. Some states have adopted permitting standards for parking lots, requiring, for instance, that for every 100 parking spaces, there must be at least one EV charging space. Legislation could also incentivize utilities to develop make-ready locations. These locations supply power to the point where a utility or third-party developer might install an EV charging station. North Carolina's statewide building energy code could also be updated to include requirements for EV charging infrastructure.

NEWS

- July 3, 2021: Mark Fleming and Laurie Barnhart: Revving Up N.C.'S Clean Energy Opportunities and Investments
- July 1, 2021: Governor Cooper Visits Innovative Apprenticeship Pilot Preparing Students for Clean Energy Jobs
- June 22, 2021: Duke Energy Begins Construction on Largest Solar Plant in Surry County, N.C.
- June 17, 2021: N.C. Weighs Joining RGGI, Closing All Duke's Coal Plants
- June 15, 2021: Bill Retires Many NC Coal-fired Plants, Boosts Renewables
- June 3, 2021: Duke Energy Announces $1 Million in Grant Opportunities for North Carolina Nonprofits Dedicated to Social Justice, Racial Equity
- June 3, 2021: Governor Cooper Announces Dionne Delli-Gatti to Serve as North Carolina Clean Energy Director
- June 2, 2021: Raleigh Solar Company Sees Increase in Demand, Discusses Future of Clean Energy
- May 14, 2021: Plans in Place to Create Network of Electric Vehicle Charging Stations in North Carolina
- April 14, 2021: Bipartisan Group Pushes for Offshore Wind Energy
- April 4, 2021: Strong Winds Off the Coast Could Power a Clean Energy Economy in North Carolina
- March 22, 2021: 'The Stakes Are Very High': In North Carolina More Interest Than Ever in Duke Energy's Long-Range Plans

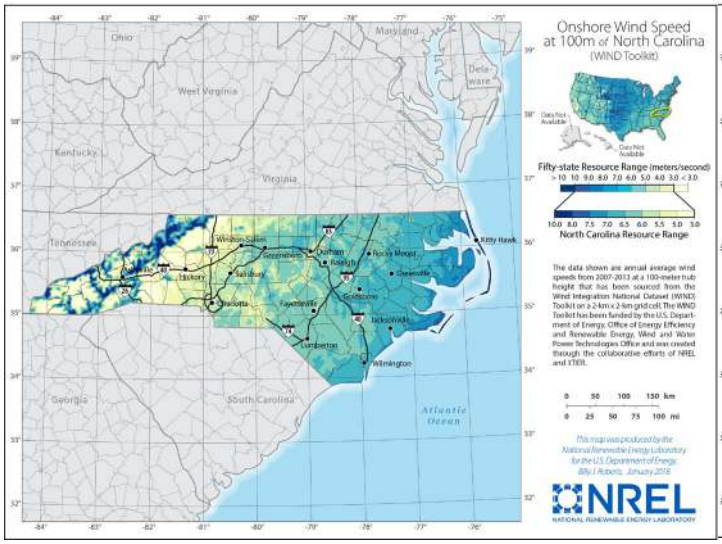
OTHER RESOURCES

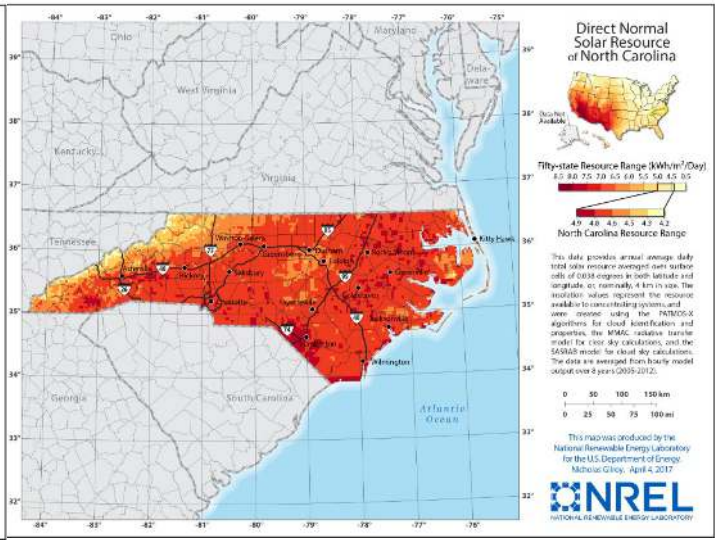
- North Carolina State Energy Office: http://www.energync.net/
- North Carolina Sustainable Energy Association: https://energync.org/
- Southeastern Wind Coalition: https://www.sewind.org/
- American Clean Power Association, North Carolina State Fact Sheet: https://cleanpower.org/wp-content/uploads/2021/05/North-Carolina_clean_energy_factsheet_Q2-2021.pdf
- The American Council for an Energy-Efficient Economy State and Local Policy Database, North Carolina: http://database.aceee.org/state/north-carolina

- The Database of State Incentives for Renewables and Efficiency, North Carolina: http://programs.dsireusa.org/system/program?state=NC
- U.S. Department of Energy's Alternative Fuels Data Center, North Carolina: https://www.afdc.energy.gov/states/nc
- U.S. Energy Information Administration, North Carolina: https://www.eia.gov/state/?sid=NC
- SPOT for Clean Energy, North Carolina: https://spotforcleanenergy.org/state/north-carolina/

NORTH CAROLINA'S WIND AND SOLAR RESOURCES

WIND https://windexchange.energy.gov/states/NC





Our Resources

CNEE Homepage: https://cnee.colostate.edu/

The SPOT for Clean Energy: https://spotforcleanenergy.org/

The Advanced Energy Legislation (AEL) Tracker: https://www.aeltracker.org/

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