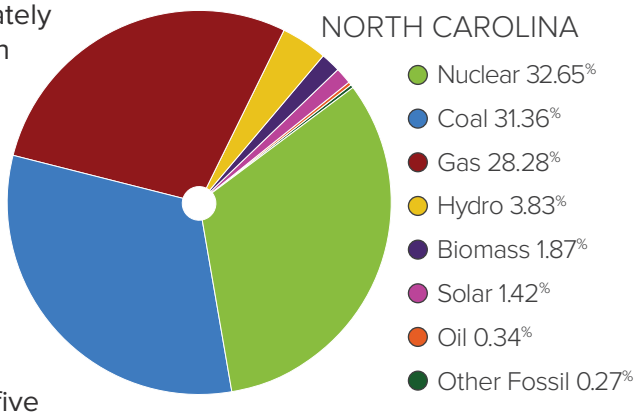
RENEWABLE ENERGY AND LOCAL GOVERNMENTS
OVERVIEW AND KEY PRINCIPLES

Background and Benefits

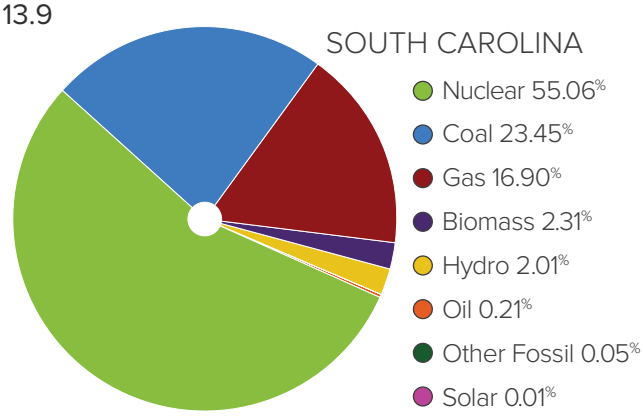
Renewable energy is energy that harnesses power from natural, sustainable sources, such as sunshine, wind, and water. Renewable energy is considered "clean energy" because it can decrease air pollutants. North Carolina and South Carolina, along with several other states, include nuclear power in their definition of clean energy as well.

Current Resource Mix

In the United States, renewable energy accounts for approximately 13 percent of the total electric generating capacity. Within North Carolina and South Carolina specifically, renewable resources supply approximately 5.7 percent of electric generation. Aside from renewable energy, 43.9 percent of the Carolinas' energy comes from nuclear, 27.4 percent from coal, 22.6 percent from natural gas, and the remainder from other sources.



The use of renewable energy is projected to continue to grow significantly. For example, North Carolina is expected to add 3,656 megawatts (MW) of solar electric capacity over the next five years, while South Carolina is expected to add 972 MW. Furthermore, for the United States as a whole, GTM Research forecasts that 13.9 gigawatts (GW) of new photovoltaic (PV) installations will come online in 2016, up 85 percent over 2015. Utility PV is expected to drive the majority of demand, accounting for over 70 percent of new capacity.



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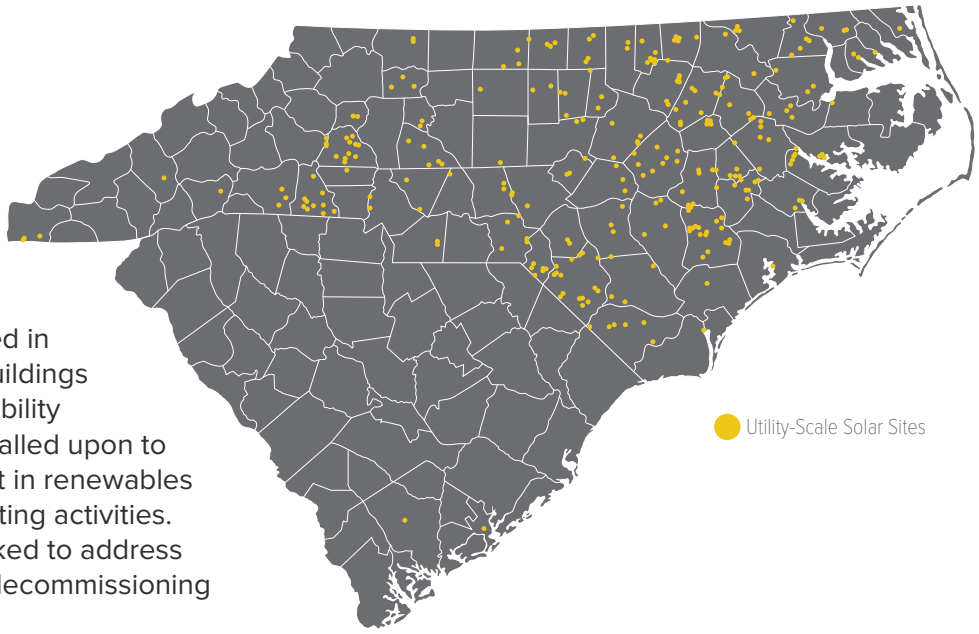
Both North Carolina and South Carolina have renewable energy mandates passed by their respective legislatures. Created in 2007 with the passage of SB3, the Renewable Energy and Energy Efficiency Portfolio Standard (REPS) in North Carolina requires graduated increases in renewable energy and energy efficiency through 2021. Beginning in 2021, 12.5 percent of electric power generated by investor-owned utilities must be provided by renewable resources and energy efficiency measures. Electric cooperatives and municipal utilities have to meet 10 percent of their electricity sales with renewable energy and energy efficiency measures by 2018 and face slightly different requirements. Likewise, South Carolina's Distributed Energy Resource (DER) program requires that the two investor-owned utilities acquire 2 percent of their 5-year peak load average from renewables by 2021.

Currently, North Carolina ranks second in the United States in installed solar capacity and is projected to rank third in solar growth over the next five years. The REPS, investment tax credits, declining cost of solar panels, long-term power purchase contracts, and improvement in system performance have all contributed to the progress of this resource. South Carolina currently has two solar plants registered with a capacity greater than 1 MW. The DER program, however, is ushering in an expansion of solar, and the state is expected to see a continued increase in capacity.



Renewable Energy Impacts on Local Governments

Renewable energy is growing at a rapid pace. For example, solar energy has the largest market share of new electric generating capacity in the United States. Local governments may be interested in adding renewable energy to their buildings to save money or support a sustainability initiative. Furthermore, they will be called upon to accommodate the increased interest in renewables in their planning, zoning, and inspecting activities. These governments may also be asked to address siting issues related to solar farms, decommissioning questions, and aesthetic concerns.

Limitations

Despite the many benefits and increasing applications of renewable energy technology, it has certain limitations. For example, there are significant engineering challenges with integrating renewables into the current electric grid.

Additionally, renewables are an intermittent resource. The output of solar energy and wind energy fluctuates throughout the day with the availability of light and speed of wind, respectively. Therefore, these resources require backup power and storage. There also can be periods when these sources produce too much power for the system, which adds costs because fossil-fuel power plants take time to ramp down generation, and excess generation drives costs up.

The increasing development of solar plants in the Carolinas may raise concerns over decommissioning (when a solar farm is no longer used as a solar farm), but risks of improper decommissioning are low. Individual communities can take different approaches to decommissioning, with some requiring a deposit to cover potential costs. However, some plans project that the salvage value of the solar materials is greater than the cost of removing them, suggesting that it would be a poor financial decision for a developer to leave a site abandoned at the end of use.

All of this emphasizes that renewables, as valuable as they are, must be integrated into the existing grid carefully.

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Next Steps

Local government staffs can prepare themselves and their elected officials for increased interest in solar by writing clear ordinances and policies that decrease uncertainty for citizens and the solar industry, alike. The North Carolina Clean Energy Technology Center and North Carolina Sustainable Energy Association managed the development of a template ordinance for North Carolina (which can also be used for communities in South Carolina). This ordinance addresses, among other things, the permitting, setbacks, and decommissioning of solar projects. The following additional resources may also assist in these efforts.

General Resources

- Solar.SC.gov
- Solar Powering Your Community Workshop Content
- Database of State Incentives for Renewables & Efficiency (DSIRE)
- U.S. Department of Energy Solar Energy Resource Center
- SolSmart Technical Assistance Program for Local Governments

Solar Planning and Zoning Resources

- American Planning Association Solar Search

Solar Permitting and Inspection Resources

- NC Clean Energy Technology Center and NC Sustainable Energy Association Template Ordinance
- Interstate Renewable Energy Council: A Guide to Preparing Solar Permitting Checklists
- Interstate Renewable Energy Council: Model Inspection Checklist for Rooftop PV Systems
- Interstate Renewable Energy Council: Simplifying the Solar Permitting Process
- Interstate Renewable Energy Council: Residential Solar Permitting Best Practices

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