

# A CITIZEN'S GUIDE

The North Carolina Renewable  
Energy and Energy Efficiency  
Portfolio Standard



NCSEA

*Produced by the North Carolina Sustainable Energy Association*

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# INTRODUCTION

In a historic stroke of the pen, on August 20, 2007, Governor Mike Easley signed Senate Bill 3 and North Carolina became the 25th state – and the first in the Southeast – to enact a mandatory renewable energy and energy efficiency portfolio standard (REPS) into law.<sup>1</sup> The new law – known as Session Law 2007-397 – requires North Carolina electric utilities to include renewable energy and energy efficiency in their electric generation portfolios. They must do this by ensuring that a percentage of the electricity they sell is created through the use of renewable energy resources or energy efficiency measures.

*A Citizen's Guide: The North Carolina Renewable Energy and Energy Efficiency Portfolio Standard* is designed to explain the new law and its implications for North Carolina citizens. The guide also provides an overview of the rulemaking process that is occurring at the NC Utilities Commission. This guide is brought to you by the North Carolina Sustainable Energy Association (NCSEA).<sup>2</sup>



## BASICS OF THE NC REPS

Session Law 2007-397 expands the policy of the NC Utilities Commission to include the promotion and development of renewable energy and energy efficiency in order to diversify North Carolina's energy resources, provide greater energy security, encourage investment in renewables and energy efficiency, and improve the quality of life in North Carolina. The NC Utilities Commission is the state agency authorized to regulate the rates and services of North Carolina's three investor-owned electric utilities – Duke Energy Carolinas, Progress Energy Carolinas, and Dominion North Carolina Power – and to some extent, electric membership cooperatives and municipal utilities.

### Renewable Energy

The legislation defines what resources qualify as renewable energy. Eligible renewable resources include solar electric, solar thermal, wind, geothermal, tidal energy, and biomass resources. Eligible biomass resources include

agricultural waste, animal waste, wood waste, energy crops and landfill methane.

Additional eligible renewable resources include hydrogen derived from a renewable energy resource, hydroelectric power facilities with a generation capacity of 10 megawatts or less, and waste heat derived from a renewable energy resource that is used to produce electricity or thermal energy at an electric customer's facility. Fossil fuels (oil, natural gas, and coal), peat resources, and nuclear energy are not renewable resources.

### Requirements – Investor-Owned Utilities

The legislation requires North Carolina's three investor-owned utilities – Duke Energy Carolinas, Progress Energy Carolinas, and Dominion North Carolina Power – to meet at least 12.5% of their annual electricity output with renewable energy by year 2021. Investor-owned utilities must also meet incremental requirements in earlier years (see Table 1).

**Table 1: Investor-Owned Utilities**

Calendar Year	REPS Requirements
2012	3% of 2011 NC retail sales
2015	6% of 2014 NC retail sales
2018	10% of 2017 NC retail sales
2021	12.5% of 2020 NC retail sales

A utility may meet the REPS requirements by generating its own renewable energy, by purchasing electric power from another renewable energy facility, or by purchasing renewable energy certificates (RECs) generated from renewable energy resources. A REC is a tradable financial certificate, much like a stock certificate, but represents the premium for a unit of renewable energy over a unit of electricity generated by a non-renewable fuel facility. As the instrument used to track and verify compliance with REPS requirements, a single REC is equal to one megawatt-hour (i.e., 1,000 kilowatt-hours) of electricity. Session Law 2007-397 allows RECs generated from out-of-state facilities to account for a maximum of 25% of a utilities' REPS requirements.

An investor-owned utility may also meet the REPS requirement by reducing energy consumption through energy efficiency measures.<sup>3</sup> In the early years of the standard – years 2012 through 2018 – electric utilities may meet up to 25% percent of the REPS requirement through measurable energy efficiency programs. Beginning in calendar year 2021, electric utilities may meet up to 40% of the of the REPS requirement through energy saved as a result of energy efficiency programs.

### Requirements – Electric Membership Cooperatives and Municipal Utilities

Session Law 2007-397 requires electric membership cooperatives and municipal utilities to generate at least 10% of their electricity from renewable energy and energy efficiency by year 2018. Similar to electric investor-owned utilities, these utilities must abide by following an incremental schedule (see Table 2).

Electric membership cooperatives and municipal utilities may meet the requirements by generating or purchasing electric power from a renewable energy facility or by purchasing RECs generated from a renewable energy sources. They can also employ energy savings from energy efficiency measures and demand side management. Differing from investor-owned utilities, electric

**Table 2: Electric Membership Cooperatives & Municipal Utilities**

Calendar Year	REPS Requirements
2012	3% of 2011 NC retail sales
2015	6% of 2014 NC retail sales
2018	10% of 2017 NC retail sales

membership cooperatives and municipal electric utilities are not subject to a cap on energy saved through demand side management to meet the requirement of the REPS. However, out-of-state RECs may only account for a maximum of 25% of their REPS requirements.

### Specific Resource Requirements

Compliance with North Carolina's REPS also requires a minimum amount of electricity to be generated from three specific resources: solar, swine waste, and poultry waste. For solar, at least 0.2% of North Carolina electricity must be supplied through a combination of new solar electric and solar thermal facilities by the year 2018. Electricity suppliers must meet this requirement independently by ensuring at least 0.2% of their electric generation originates from solar resources.

The swine waste and poultry waste requirements may be met as an aggregate of all electric suppliers. The legislation requires at least 0.2% of North Carolina's electricity to be supplied by swine waste resources and at least 900,000 megawatt-hours of electric power to be supplied by poultry waste resources by the year 2018.

### Compliance and Project Financing

Session Law 2007-397 directs the NC Utilities Commission to adopt rules providing for the monitoring and enforcement of the requirements of the REPS. In states with successful renewable energy portfolio standards, noncompliance results in financial penalties. Consequently, the prospect of a financial penalty results in the predictable development of renewable energy resources.

The converse – weak monitoring and enforcement – would hamper the development of renewable energy facilities. Investors in renewable energy projects could perceive inadequate enforcement measures to mean the REPS is not a strong mandate and will not be enforced. The unpredictable return on investment would make project financing expensive and limit competition, thereby further increasing the cost of electricity.

In sum, North Carolina would benefit from strong monitoring and enforcement, which includes a financial penalty for noncompliance. Such an environment would decrease project financing costs and promote competition among renewable energy developers. In turn, this would increase the quantity of renewable energy production, lower the cost of electricity from renewable resources, and reduce the likelihood of noncompliance.

### Cost Controls

Session Law 2007-397 limits the cost of the REPS to consumers by assigning a cost cap for each class of electricity customers: residential; commercial; and industrial. The cost cap for residential consumers limits REPS costs to an annual increase of \$10 during the initial phase (2008-2011), an annual increase of \$12 during the middle phase (2012-2014), and an annual increase of \$34 in the final phase (2015 and thereafter).

If the NC Utilities Commission adopts implementation rules similar to best practices found in other states, then the cost to consumers should be far less than the cost controls noted above. For example, in the first full year of the REPS, the increase in a household's utility bill is expected to be between \$0.25 and \$1.80. While this cost will increase over time, studies indicate that after ten years, customers will pay less under the REPS compared to the current business model – building more coal and nuclear power plants. Some of these plants will not be necessary because of the REPS, which means consumers are paying for clean energy instead of coal and nuclear.

The legislation also requires utilities seeking approval for a new coal or nuclear power plant to prove to the NC Utilities Commission that the proposal to build and operate conventional generation is more cost-effective than any combination of energy efficiency, renewable energy, and combined heat and power systems. This measure ensures new generation will be cost-efficient. However, the pollution resulting from a coal-fired fuel facility or the de-commissioning costs of a nuclear plant is not required to be factored into the plant cost.

### Similar Policies

A common question is how the legislation will interact with NC GreenPower – a nonprofit organization that accepts voluntary contributions to develop renewable energy resources in the state. The primary difference is that Session Law 2007-397 is a mandatory requirement and NC GreenPower is a voluntary program. Through this design, electric suppliers must meet REPS requirements, while citizens interested in supporting renewable

energy above and beyond the REPS law can contribute to the voluntary NC GreenPower program or directly purchase RECs when they become available. However, Session Law 2007-397 declares a REC generated from a renewable resource cannot be used by both programs – it may be applied to the REPS or to NC GreenPower.

The legislation also considers the impact of a federally required REPS. Should the U.S. Congress enact a federal REPS, Session Law 2007-397 mandates the implementation of the more stringent requirements.

### Connecting to the Electricity Grid

Interconnection standards and net metering are important to the development of renewable energy resources. An interconnection standard governs the technical rules and legal procedures for customers to connect to the electric grid. The content of these rules could be favorable or a barrier to entry for renewable energy generators. Net metering allows a renewable energy system to contribute excess generation to the electric grid – allowing one's electric meter to roll backwards. Similarly, the rules for net metering are critical in the decision path for renewable energy development.

The REPS legislation requires the NC Utilities Commission to establish an interconnection standard for renewable energy facilities up to 10 megawatts in size – giving North Carolina the sixth largest interconnection standard in the United States and potentially aligning the state's standard with the federal interconnection standard adopted by the Federal Energy Regulatory Commission (FERC). The NC Utilities Commission must also consider net metering for renewable facilities up to 1 megawatts. The technical and procedural rules for both of these issues have yet to be determined.

## BENEFITS OF THE NC REPS

As a result of Session Law 2007-397, North Carolina ranks fifth among U.S. states in the amount of required renewable energy generation and energy efficiency. North Carolina's REPS is also the first in the Southeast, and will open the state and region to a new era of sustainable energy development and economic opportunity.

More specifically, Session Law 2007-397 will:

- Realize approximately **\$2.5 billion** in new renewable energy investments by year 2018 and at least **\$350 million** in energy efficiency investments by year 2021.

- Eliminate the need for about **1,800 megawatts** of coal and nuclear power plants.
- Create and sustain **2,700 new jobs** at good wages.
- Reduce greenhouse gas emissions by at least **13 million metric tons** by 2018; this is the equivalent of taking more than **1 million cars** off the road.
- Result in roughly **30 megawatts** of new solar power installations by 2010 and 300 megawatts by 2018.
- Create the **first** renewable energy certificate (REC) market in the Southeast.
- Make it more **cost-effective and transparent** to connect a renewable energy system to the electricity grid.
- Allow NC GreenPower to continue offering an **additional option** to dedicated supporters of renewable energy to support in-state green energy development.
- **Extend state tax credits** for investments in renewable energy technologies to donors of nonprofit entities, such as churches.



## GETTING THE DETAILS RIGHT (RULES TO IMPLEMENT THE REPS LAW)

The NC Utilities Commission is in charge of creating rules to govern implementation of the REPS and to monitor compliance with the prescribed goals of the law.

### NC Utilities Commission

The NC Utilities Commission is the state agency authorized to regulate the rates and services of all investor-owned utilities in North Carolina. The Commission has seven members who serve eight-year terms. Appointments are made by the governor and subject to confirmation by the NC General Assembly. The Public

Staff of the Commission represent the interests of the end-user public – individuals, businesses, and government – in matters pending before the Commission. The Public Staff is an independent agency which is not subject to the supervision, direction, or control of the Commission. In fixing rates, the Commission must be fair and reasonable to both public utilities and their customers.

### Docket Number E-100, Sub 113

The NC Utilities Commission created docket number E-100, Sub 113 as the rulemaking proceeding to implement Session Law 2007-397.<sup>4</sup> Through this docket, interested parties – referred to as “interveners” – submit detailed filings and, over the course of several months, develop a set of detailed implementation rules. If particular issues of the REPS remain unclear, the NC General Assembly may choose to clarify them during the next legislative session, which begins in May 2008.

### Docket Number E-100, Sub 101

The Law also requires the NC Utilities Commission to change North Carolina’s interconnection standard to accommodate larger renewable energy systems up to 10 megawatts in capacity. An interconnection standard simplifies the contractual process of connecting a renewable energy system to the electricity grid, which reduces the cost of using renewable energy for the electric utility, the renewable energy system owner, and utility customers. Changes to the interconnection standard are being considered through docket number E-100, Sub 101. Changes to the State’s net metering rule will be considered in a separate docket.<sup>5</sup>

Several other North Carolina utility rules will need to be revised or updated after dockets E-100, Sub101 and E-100, Sub113 are completed by the NC Utilities Commission.

<sup>1</sup> North Carolina General Assembly. Session Law 2007-397, online at: <http://www.ncleg.net/Sessions/2007/Bills/Senate/HTML/S3v6.html>

<sup>2</sup> Learn more about NCSEA online at: [www.energync.org](http://www.energync.org)

<sup>3</sup> Session Law 2007-397 defines “energy efficiency measures” as an equipment, physical, or program change that results in less energy used

to perform the same function. Energy efficiency does not include demand side management, which is defined as activities, programs, or initiatives that shift the timing of electricity consumption from peak to non-peak demand periods. For example, installing an Energy Star washer and dryer would be deemed an energy efficiency measure while doing laundry late at night would be considered demand side management.

<sup>4</sup> North Carolina Utilities Commission. “Rule-making Proceeding to Implement Session Law 2007-397.” Docket # E-100, Sub 113, online at: [www.ncuc.commerce.state.nc.us](http://www.ncuc.commerce.state.nc.us)

<sup>5</sup> North Carolina Utilities Commission. “Model Small Generation Interconnection Standards.” Docket # E-100, Sub 101, online at: [www.ncuc.commerce.state.nc.us](http://www.ncuc.commerce.state.nc.us)



**NCSEA MISSION STATEMENT:**

**The North Carolina Sustainable Energy Association works to ensure a sustainable future by promoting renewable energy and energy efficiency in North Carolina through public policy, education and economic development.**

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