



# A CITIZEN'S GUIDE

---

## North Carolina Renewable Energy & Energy Efficiency Portfolio Standard

Produced by the North Carolina Sustainable Energy Association



**NC SUSTAINABLE  
ENERGY ASSOCIATION**

THIRD EDITION



**In** August 2007, North Carolina adopted a Renewable Energy and Energy Efficiency Portfolio Standard (REPS) with the passage of Senate Bill 3. In doing so, North Carolina became the 25th state — and the first in the Southeast — to enact such a policy. North Carolina’s REPS law requires the state’s electric power providers to generate a portion of our electricity needs through renewable energy resources and energy efficiency.

Prior to its adoption, a study prepared for the NC Utilities Commission analyzed the costs and benefits of the REPS. The report, known as the “La Capra Study,” helped lead to the signing of Senate Bill 3. The La Capra Study found that adopting a REPS law would be about \$500 million cheaper than using new coal and natural gas or new nuclear power.

This comprehensive energy legislation includes the REPS law, financing for new coal power plants, and other measures. Senate Bill 3 passed as a result of nearly two years of discussions and negotiations among state legislators, NC Utilities Commission staff, about 90 stakeholder groups and others.

The policy received overwhelming bipartisan support in the NC House and NC Senate. The final votes were: 47 to 1 in the NC Senate and 107 to 9 in the NC House.

The North Carolina Sustainable Energy Association’s (NCSEA) “A Citizen’s Guide: North Carolina Renewable Energy and Energy Efficiency Portfolio Standard” introduces you to the REPS law and some of its finer points. For a more in-depth look at the REPS law, visit [energync.org](http://energync.org).

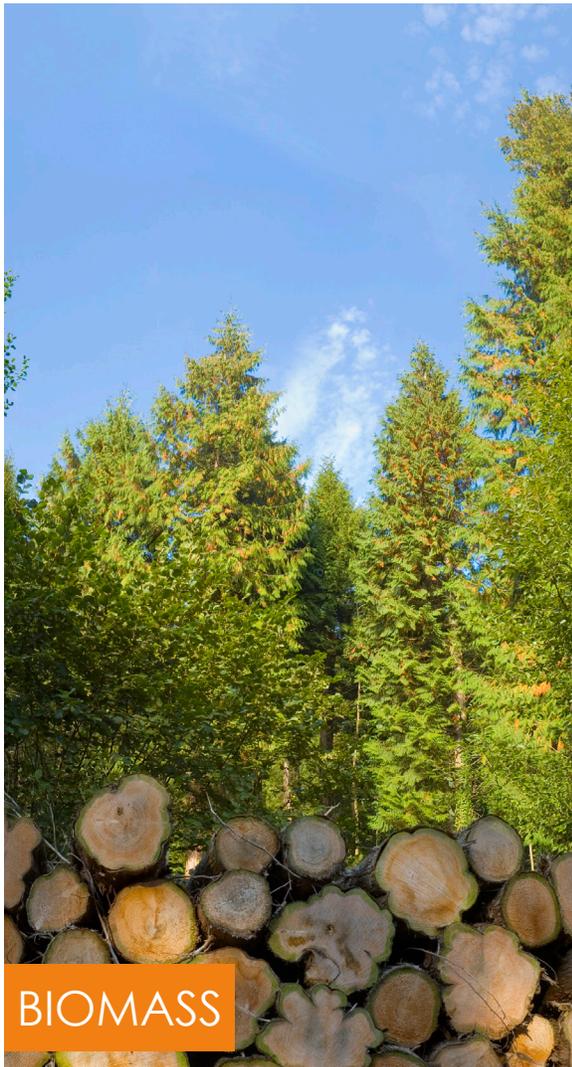


## WHAT IS THE REPS?

For the first time in our state's history, North Carolina's REPS law expanded energy policy to include the promotion and development of renewable energy and energy efficiency.

**The REPS law — found in North Carolina General Statute §62-133.8 — aims to:**

- Diversify the resources used to reliably meet the energy needs of consumers;
- Provide better energy security by using local energy resources;
- Encourage private investment in renewable energy and energy efficiency; and,
- Improve air quality and other benefits for energy consumers and residents.



## RENEWABLE ENERGY & ENERGY EFFICIENCY

Having an understanding of renewable energy and energy efficiency is helpful to gaining an appreciation of how the REPS law works to achieve its goals. Our electricity system, at its core, is about balancing supply and demand.

### SUPPLY

Electric providers can generate power using various technologies traditionally including nuclear, coal and natural gas. Some of the generating facilities use low or no-cost renewable fuels or recovered fuels. The power produced at such facilities is called renewable energy.

In North Carolina, there are generally three types of electric power providers: investor-owned utilities (i.e., Duke Energy, Progress Energy, or Dominion NC Power); municipal power companies; or electric cooperatives. In addition, you can buy a diesel generator or a renewable energy system to produce power for yourself.

### DEMAND

Every day, you make decisions about how and when to consume electricity. If you want to lower your electric bill, you have a variety of energy efficiency options. For example, you could install an energy efficient air conditioner, or a programmable thermostat.



Studio B Architecture | BuildSense  
Durham, NC



Appalachian State University  
Boone, NC

## WIND & SOLAR

You can also change your routine, for example, by taking shorter hot showers or running the dishwasher late at night. Adopting these habits can cut down on your overall demand for electricity or shift your demand from when electricity is most expensive to when it costs the least.

Reducing and shifting demand are the main components of energy efficiency.

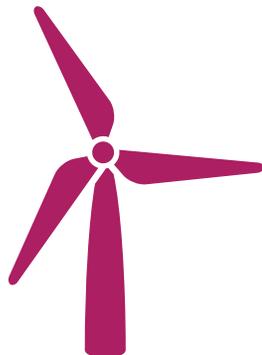
### DETAILS OF THE REPS

By 2021, Duke Energy, Progress Energy and Dominion NC Power must generate 12.5% of their energy needs through renewable resources or energy savings measures.

In 2012, investor-owned utilities (IOUs) must generate 3% of their energy needs through renewable resources and energy efficiency. The percentage increases every three years.

Municipal power companies (Munis) and electric cooperatives (Coops) have a similar 3% standard.

But the amount tops off at 10% by 2018.



NC REPS Requirements		
Percentages based on prior year retail sales		
Calendar Years	IOUs	Munis/ Coops
2012-14	3%	3%
2015-17	6%	6%
2018-20	10%	10%
2021 & beyond	12.5%	10%

Electric power providers have several options for complying with the REPS, including:

- Using renewable resources to generate power at new or existing power plants;
- Purchasing bundled power and renewable energy certificates known as "RECs" from renewable energy facilities;
- Purchasing unbundled RECs; or
- Implementing energy efficiency measures to reduce demand.

The NC Utilities Commission creates rules to govern the implementation of the REPS law and monitors its compliance. The REPS law and the associated rules contain a number of specific details.



## ENERGY EFFICIENCY



U.S. Army Environmental Command photo by Neal Snyder

### WHAT IS A REC?

RECs are how compliance with the REPS law is measured.

A REC amounts to the generation of one megawatt-hour of electricity from an eligible renewable energy source. Electric power suppliers can earn or buy RECs to comply with the REPS law.

The NC Utilities Commission developed and maintains a website, [ncrets.org](http://ncrets.org), to track RECs and verify compliance with the REPS law. In general, RECs generated from out-of-state facilities that do not serve in-state customers can account for no more than 25% of a utility's overall requirements.

## RENEWABLE ENERGY RESOURCES

Renewable energy resources under the REPS law include:

- Solar electric/thermal, wind, hydropower (less than 10 megawatts), geothermal generation, wave energy or ocean current;
- Biomass resources, including wood waste, animal waste, agricultural waste, spent pulping liquors, combustible residues, combustible liquids, combustible gases, landfill methane or energy crops;

- Waste heat derived from a renewable energy resource and used to produce electricity or useful, measurable thermal energy at a retail electric customer's facility; or
- Hydrogen derived from a renewable energy resource.

Renewable energy resource does not include peat, a fossil fuel (e.g., oil, natural gas, coal), or nuclear energy.

### SET-ASIDES

The North Carolina General Assembly prioritized development and use of three renewable energy resources (i.e., solar electric/thermal and swine and poultry waste) by creating "set-asides" in the REPS law. The set-asides establish targets for use of these specific resources. In 2012, the solar set-aside requires at least 0.07% of North Carolina's electricity be supplied through a combination of solar electric and solar thermal facilities.

This set-aside steps up to 0.20% in 2018. The swine waste set-aside percentages are identical. The poultry waste set-aside requires at least 170,000 megawatt hours of electric power be supplied from poultry waste in 2012 and increases to 900,000 megawatt hours in 2014.





## ENERGY EFFICIENCY

Under the REPS law, energy efficiency can be divided into three sub-categories: demand-side management, electricity-demand reduction, and energy efficiency measures.

### DEMAND-SIDE MANAGEMENT

Demand-side management refers to activities, programs, or initiatives undertaken by an electric power supplier to shift the timing of its customers' electricity use from periods of high-energy demand to periods of low demand. Investor-owned utilities cannot use these programs to comply with the REPS law.

Activities include, but are not limited to, load management, electric system equipment and operating controls, direct load control, and interruptible load. For example, where a consumer permits, a utility may cycle the consumer's air conditioning unit on and off during periods of high demand.

### ELECTRICITY-DEMAND REDUCTION

Electricity-demand reduction is a voluntary decrease in a customer's energy use achieved through real-time energy monitoring and two-

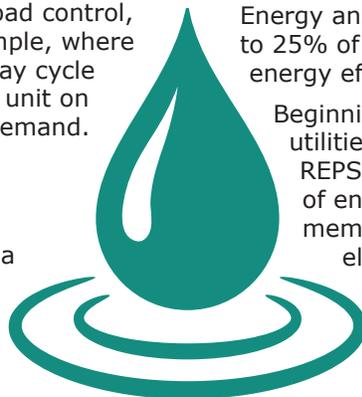
way communication. In 2011, lawmakers modified the REPS law to allow utilities to use this to comply with the law. But, the NC Utilities Commission has not yet established rules for implementation.

### ENERGY EFFICIENCY MEASURES

Energy efficiency measures are changes that result in less energy used to perform the same function. Energy efficiency measures do not include demand-side management. An example of an energy efficiency measure is the replacement of an inefficient appliance with an ENERGY STAR model through a utility program. Energy efficiency is a proven least-cost mechanism for reducing demand.

In the early years of the portfolio standard – 2012 through 2018 – Duke Energy, Progress Energy and Dominion NC Power can meet up to 25% of the REPS law through measurable energy efficiency programs.

Beginning in 2021, these electric utilities may reach up to 40% of the REPS through energy saved as a result of energy efficiency measures. Electric membership cooperatives and municipal electric utilities are not subject to a cap on how they use demand-side management or energy efficiency measures to meet their REPS requirements.





**JOB GROWTH**

Argand Energy Solutions  
Charlotte, NC

## COST CONTROLS

Senate Bill 3 limits the cost of the REPS to consumers by assigning a cost cap for each class of electricity customer: residential, commercial and industrial. The cost controls on the REPS are split into two types of cost: renewable energy and energy efficiency.

At a minimum, the charge for the renewable energy portion of the REPS will appear as a line item on a customer's monthly bill. Thus far, Duke Energy and Progress Energy's compliance with the REPS law has come in well under the cost cap.

As of March 2012, Duke Energy residential customers paid 48 cents per month, while Progress Energy residential customers paid 56 cents a month. The costs associated with the utility programs for energy efficiency are not included under the cost caps associated with renewable energy.

In general, the NC Utilities Commission approves each energy efficiency and peak shifting program and the associated costs to ensure that customers' monies are used prudently and yield verifiable reductions in energy consumption.



### Annual Per Account Cost Caps

Renewable Energy Portion of REPS

Customer Class	2012-14	2015 & beyond
Residential	\$12	\$34
Commercial	\$150	\$150
Industrial	\$1,000	\$1,000

## IMPACTS OF THE REPS LAW

Since the adoption of the REPS law and state tax incentives, North Carolina's renewable energy and energy efficiency industries have boomed. Over 1,000 renewable energy and energy efficiency companies do business in the state. These businesses generated more \$3 billion in revenue and employed more than 14,800 full-time equivalent positions in 2011.

From 2007 through 2011, the state's total solar PV registered capacity grew to more than 120 megawatts. In that time, more than 1,000 North Carolina solar PV systems were registered with the NC Utilities Commission.

Geothermal, biomass, solar thermal and wind resources continue to play an increasing role in energy production. Also, there are more than 900 ENERGY STAR-certified buildings and more than 1,200 LEED-registered buildings.





**NC SUSTAINABLE  
ENERGY ASSOCIATION**

North Carolina Sustainable Energy Association  
PO BOX 6465  
Raleigh, NC 27628

[energync.org](http://energync.org)

Founded in 1978, North Carolina Sustainable Energy Association (NCSEA) is a 501(c)3 nonprofit membership organization of individuals, businesses, government and nonprofits interested in North Carolina's sustainable energy future. Located in Raleigh, but active statewide, NCSEA is the only nonprofit in North Carolina devoted to leading public policy change and driving market development in ways that will make renewable energy and energy efficiency universally affordable and accessible for all of North Carolina.

NCSEA works to ensure a sustainable future by promoting renewable energy and energy efficiency to the benefit of North Carolina through education, public policy and economic development.

**Visit [energync.org](http://energync.org) to learn more about NC's Renewable Energy and Energy Efficiency Portfolio Standard and other clean energy policies.**