

Backgrounder: Connecticut's Renewable Portfolio Standard

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Issue

This report describes Connecticut's renewable portfolio standard (RPS) policy, targets, and history, with summaries of some related legislation.

Summary

Connecticut's RPS requires electric distribution companies and electric suppliers to get a portion of their energy from renewable sources. In 2017, companies must get 15.5% of their total output from Class I resources (e.g., wind and solar), 3% from Class I or II resources (e.g., trash-to-energy facilities), and 4% from Class III resources (e.g., energy efficiency). Under current law, the Class I requirement increases each year until it reaches 20% in 2020. The other requirements stay constant ([CGS §§ 16-245a, 16-243q](#)).

Connecticut's RPS has existed in some form for almost 20 years. The state initially established an RPS in 1998 in the same legislation that deregulated the electricity supply sector. Full implementation was delayed for several years. In 2005, legislation added Class III requirements. In 2007, the RPS was expanded to its current requirements. Various other public acts have changed the RPS by changing what types of resources may count toward compliance, how alternative compliance payments are spent, and requiring electric distribution companies to enter into agreements for renewable energy credits (RECs) or energy from certain types of generation.

Policy

Connecticut’s RPS requires electric companies and competitive suppliers to procure a portion of their power from renewable and other clean energy resources. Companies can meet the RPS by directly contracting to buy renewable energy or buying RECs on the regional market. By law, an electric company or supplier that does not meet the RPS must pay an alternative compliance payment (ACP) of 5.5 cents per kilowatt-hour for the shortfall. ACP-generated revenue generally must offset ratepayer costs ([CGS §§ 16-244c\(h\), 16-245\(k\)](#)).

Resources and Targets

The law defines three classes of resources, as shown in Table 1 ([CGS § 16-1\(a\)\(20\), \(21\) & \(38\)](#)).

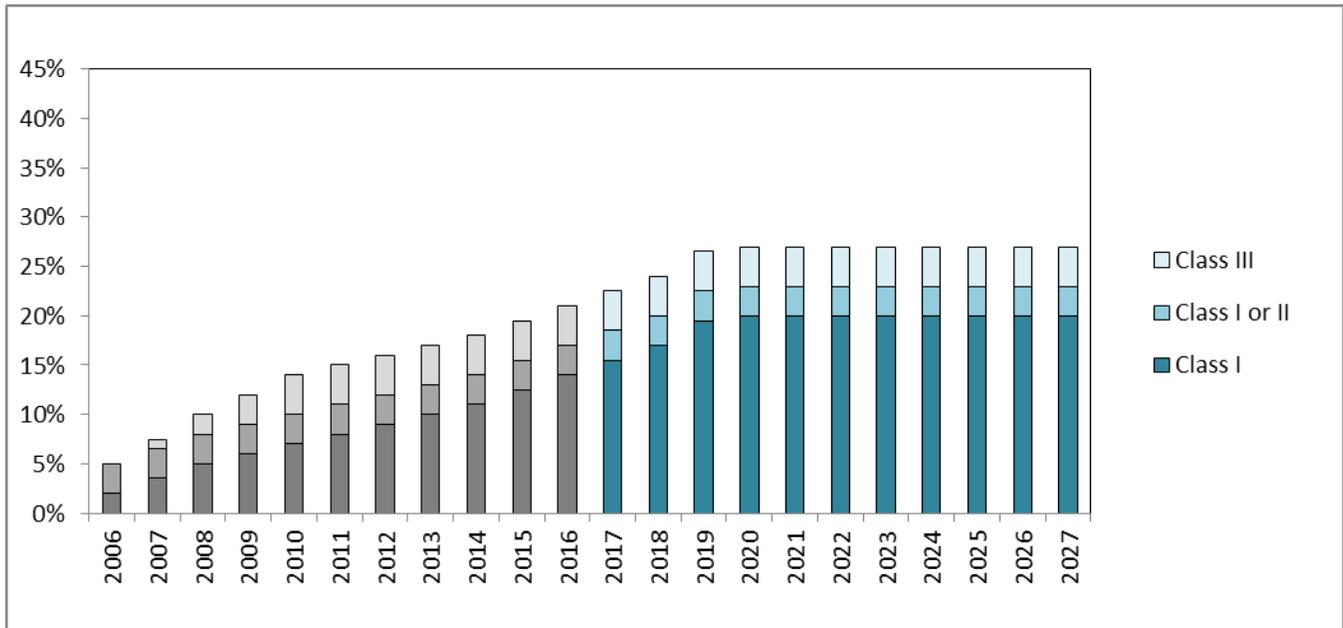
Table 1: Class I, II, and III Resources

	<i>Class I</i>	<i>Class II</i>	<i>Class III</i>
General Description	Solar, wind, and other renewables	Trash-to-Energy and certain other facilities	Cogeneration, waste heat recovery, and energy efficiency
Detail	Generation or electricity derived from: <ul style="list-style-type: none"> • Solar • Wind • Fuel cells • Geothermal • Landfill methane gas • Anaerobic digestion • Biogas from biological sources • Thermal electric direct energy converted from a certified Class I resource • Ocean thermal power • Wave or tidal power • Low-emissions advanced renewable energy conversion technology • Run-of-the-river hydropower facilities* • Biomass facilities* 	Energy derived from: <ul style="list-style-type: none"> • Trash-to-energy facilities • Biomass facilities* • Run-of-the-river hydropower facilities* 	Electricity output from: <ul style="list-style-type: none"> • Combined heat and power systems* • Waste heat recovery systems* • Electricity savings from conservation and load management programs*

*in certain cases, under certain circumstances, or with exceptions or limitations

As shown in Figure 1, under Connecticut’s RPS for 2017, companies must procure (1) 15.5% of their total output from Class I resources, a requirement that increases each year until 2020, when it will be 20%, (2) an additional 3% from Class I or II resources, a requirement that stays the same over time, and (3) 4% from Class III resources, also a consistent requirement.

Figure 1: Connecticut's RPS



History and Related Legislation

Connecticut’s RPS has existed in some form for almost 20 years, and over that time, legislation has made major and minor changes, expanding the program’s timeframe and applicability while defining and redefining terms of compliance.

Deregulation and RPS Establishment

The state initially established an RPS in 1998 in the same legislation that deregulated the electricity supply sector ([PA 98-28](#)). Under that law, suppliers initially had to obtain 0.5% of their power from Class I sources and an additional 5.5% from Class I or II sources. The law required these initial RPS requirements to rise each year until July 1, 2009, when suppliers would be required to obtain at least 6% of their power from Class I sources and an additional 7% from Class I or II.

The act required energy suppliers to comply with the RPS as a condition of licensure, but one of the electric distribution companies argued that the electricity it procured to provide standard service (for those customers who did not select a supplier) was not subject to RPS requirements. In its docket approving the company's plan for standard service, the Department of Public Utility Control (DPUC, predecessor to the Public Utilities Regulatory Authority (PURA)) agreed ([Docket 99-03-36](#)).

[PA 99-225](#) allowed DPUC to delay for up to two years the requirement that electrical suppliers comply with the RPS if it found that suppliers could not reasonably meet its requirements, and in practice, DPUC did so.

[PA 03-135](#) extended RPS requirements to apply to standard service procured by electric distribution companies. It also generally lowered the amount of renewable energy required each year under the RPS and the portion required to be Class I. Under this act, the RPS requirements increased gradually until January 2010, when utilities and suppliers would have to procure 7% of their power from Class I sources and an additional 3% from Class I or II. The act also allowed utilities and suppliers to meet RPS requirements by buying renewable energy from New England states (as required under prior DPUC regulations) or from certain other states (Delaware, Maryland, New Jersey, New York, and Pennsylvania) as long as they had similar RPS requirements. Legislation also passed that year made minor changes affecting the RPS, including changing the circumstances under which biomass could count as a Class I resource and how alternative compliance payments were paid ([PA 03-221](#)). Two years later, [PA 05-01](#), June Special Session, added requirements for Class III resources, starting with a 1% requirement for 2007 and adding a percentage point each year for three years (to 4% in 2010 and proceeding years). The act also prohibited electric companies and suppliers from meeting RPS requirements with non-New England sources until January 1, 2010.

Instead of purchasing renewable energy sources from New England and these other states, [PA 06-74](#) required electric suppliers and electric distribution companies to purchase renewable energy certificates (RECs) from the New England Power Pool (NEPOOL). It also changed the type of wood and other biomass products that count as Class I resources.

What is NEPOOL?

NEPOOL is a stakeholder organization for New England states for matters related to New England's wholesale electricity markets. NEPOOL's Generation Information System issues and tracks renewable energy certificates for electricity produced in the ISO-New England control area and imported electricity from neighboring areas.

Expansion and (Vetoed) Solar Requirements

[PA 07-242](#) marked the first significant expansion of the RPS since its creation. The act extended the RPS past 2010, by requiring utilities and suppliers to procure a certain percentage of their power from Class I resources in the following amounts: 9% in 2012, 10% in 2013, 11% in 2014, 12.5% in 2015, 14% in 2016, 15.5% in 2017, 17% in 2018, 19.5% in 2019, and 20% in 2020 and thereafter. The act also (1) allowed companies to purchase power and associated attributes from residential customers who net meter, and (2) expanded the types of resources that count as Class III.

[PA 08-168](#) created a working group to develop a plan to maximize the use of solar power and create a self-sustaining solar industry in the state to help meet the RPS. (That plan is available [here](#) through the Legislative Library.) Among other things, the plan recommended adding a solar component (a “carve-out”) to the RPS to encourage installation of in-state solar energy systems. Legislation passed that year also limited the type of biomass that could count as a Class II resource ([PA 08-185](#)).

[PA 10-97](#) required electric distribution companies to (1) solicit and file long-term power purchase contracts with owners of certain customer-sited solar generation projects and (2) purchase at least 4.35 million “solar RECs” as part of this procurement that would count toward the companies’ RPS requirements. Governor Rell vetoed this act, which contained many other substantive provisions affecting state energy policy, stating, among other reasons, that the bill had not received input from critical stakeholders and that its policies could increase ratepayer costs. (See [OLR Report 2010-R-0266](#) for summaries of that year’s vetoed bills and governor’s statements.)

PA 11-80 and PA 13-303

[PA 11-80](#), which merged the Department of Environmental Protection and DPUC to create the Department of Energy and Environmental Protection (DEEP), included several provisions related to the RPS.

The act established the zero- and low-emissions renewable energy credit programs (Z-REC and L-REC programs). These programs require the electric distribution companies to solicit and enter into long-term (15-year) contracts to buy RECs from zero- and low-emissions projects. The programs require the companies to enter into contracts each year for six years and the RECs the companies purchase count towards their RPS obligation.

The act also allowed the electric distribution companies to submit proposals to DEEP to own limited amounts of generation capacity from Class I resources. (These projects are still known as Section 127 projects after the section of the act.) These may also count toward RPS requirements.

Finally, the act required DEEP to report to the Energy and Technology Committee on (1) options for minimizing the cost to electric ratepayers of procuring renewable resources under the RPS and (2) the feasibility of increasing the RPS. (That report is available [through DEEP's website](#).) Among other things, the report recommended:

1. gradually removing subsidies for biomass plants and landfill gas facilities;
2. expanding support for small hydropower, anaerobic digesters, and biologically-driven methane;
3. allowing the state to procure Class I resources through long-term contracts;
4. allowing the state to contract for large-scale hydropower; and
5. due to oversupply, discontinuing Class III incentives for ratepayer-funded efficiency programs.

[PA 13-303](#) made significant changes to the RPS and included many of the recommendations from DEEP's report. The act changed which resources count towards RPS requirements by (1) expanding the types of hydropower facilities that can count as Class I resources, (2) gradually reducing, through DEEP's integrated resources plan, the REC value for certain Class I biomass and landfill methane gas facilities, and (3) limiting the types of resources that count as Class III. It also included a provision allowing the DEEP commissioner to take certain actions if he determines that there is a shortage of Class I renewable energy sources, including allowing companies to meet one percentage point of the RPS requirement through large-scale hydropower procured under the act.

The act also required ACPs be used to reduce electric rates, rather than going to the Clean Energy Financial and Investment Authority (CEFIA, predecessor of the Connecticut Green Bank). The act changed how PURA determines whether a company has met RPS requirements, requiring an uncontested, rather than contested, proceeding.

Solar Home Renewable Energy Credits (SHRECs)

[PA 15-194](#) established SHRECs and required the electric distribution companies to purchase them from the Connecticut Green Bank as a part of the bank's residential solar investment program. Under the act, SHRECs are Class I renewable energy credits created for each megawatt hour of electricity produced by qualifying residential solar photo voltaic (PV) systems that receive approved

incentives from the Green Bank on or after January 1, 2015. A SHREC is owned by the Green Bank until transferred to an electric distribution company under a 15-year master purchase agreement, as required by the act. The companies can either (1) resell the credits into NEPOOL's Generation Information System REC market or (2) keep the credits to meet their own RPS requirements.

[PA 16-212](#) made several changes to the SHREC requirements, including extending the deadline to negotiate a master purchase agreement and requiring the companies to purchase 15-year blocks of credits annually through the end of the program. In January 2017, PURA approved the master purchase agreements for both electric distribution companies (see PURA's decision [here](#)).

Resources

Connecticut Clean Energy Fund, [Sustainable Solar Strategy for Connecticut Prepared for the Long-Term Sustainable Solar Strategy Workgroup](#), April 8, 2009.

DEEP, [Restructuring Connecticut's Renewable Portfolio Standard](#), April 26, 2013.

DPUC (PURA), [DPUC Determination of the Connecticut Light and Power Company's Standard Offer](#), July 7, 1999.

MF:bs