

Renewable Portfolio Standards

Renewable Portfolio Standards (RPSs) are mandates that require electricity suppliers to purchase renewable energy. The rationale for RPSs is that they use market mechanisms to achieve increased use of renewable energy resources. The benefits of a diverse energy portfolio include reduction of price risk from overdependence on one generating resource, reduction of pollution and carbon dioxide emissions, and stimulation of economic development that comes from development of renewable energy resources

Market programs use "unbundled" systems, in which generators separate the environmental attributes from the electricity they produce. When a generator produces a MWh of electricity, it also produces environmental attributes along with that MWh, usually an emissions profile of CO₂, SO_x, and NO_x. If those environmental attributes meet the qualifications of the relevant RPS, the generator also produces a REC. The generator then sells its electricity either on the spot market or, more likely, through a Power Purchase Agreement (PPA). The generator also sells its RECs to suppliers meeting their RPS obligations, creating another revenue stream for renewable generators. State energy agencies verify RECs' environmental attributes to ensure the integrity of the RECs. Regional accounting systems such as the New England Power Pool Generation Information System (NEPOOL-GIS)¹ track REC trading for public utilities and competitive suppliers.

The definition of renewable energy varies from state to state, as does the amount that suppliers must purchase. State RPSs also differ in suppliers' ability to trade RECs. This means that each RPS must be examined on a microeconomic level to understand the impact on renewable resource development. For example, Maine's RPS requires the highest percentage of renewable energy as part of its overall generation mix of any state, 30%. But Maine's existing renewable resources, mostly hydropower, are included in the definition of renewable energy, and already meet the RPS percentage requirements. As result, the Maine RPS stimulates little or no growth in new renewable sources of electricity generation. In contrast, Massachusetts requires suppliers to purchase only 2% of their electricity from renewable generation in 2005, with an increase of a half percent per year. However, only generating facilities that came online after December 21, 1997 qualify as renewable resources under the Massachusetts RPS. Thus the Massachusetts RPS stimulates more new renewable development, despite Maine's larger percentage of required renewable generation.

In 1997, Massachusetts became the first state to deregulate its retail electricity market. RPS² was part of its restructuring legislation. The RPS legislation and the Massachusetts Department of Energy Resources (DOER) regulations governing the RPS require that, beginning in 2003, 1% of retail suppliers' sales to end-users come from new renewable resources, increasing by ½% per year until reaching 4% in 2009, then increasing 1% per year thereafter until a date determined by the DOER.

¹ <http://www.nepoolgis.com/>

² M.G.L. c. 25A, § 11F (2005); Mass. Regs. Code tit. 225, § 14 (2004); 225 CMR 14.00

In order to meet the RPS requirements, electric suppliers purchase RECs that represent generation attributes conforming to the Massachusetts RPS eligibility requirements. Electric suppliers may purchase RECs through bilateral contracts. The NEPOOL-GIS tracks the movement of RECs from one party's account to another party's account. Suppliers may bank renewable generation attributes from one year to the next. If a supplier does not have enough renewable energy supply in its portfolio, it may purchase alternative compliance credits. The cost of a compliance credit is \$50 beginning in 2003, adjusted for the CPI every year thereafter. Suppliers must submit annual compliance filings with the DOER that report the amount of RECs in the supplier's GIS account. The DOER has the right to audit the accuracy of information from both generators and retail suppliers.

For the purposes of the RPS, a new renewable energy generating source is one that begins commercial operation after December 31, 1997, or that represents an increase in generating capacity at an existing facility after December 31, 1997. Eligible technologies include solar photovoltaic and solar thermal, wind energy, ocean thermal, wave or tidal energy, fuels cells using renewable fuels, landfill gas, and gasification using biomass fuels. Notably excluded is hydroelectric energy. The Independent System Operator–New England (ISO-NE) must be able to verify the electrical output of a generation unit or, if the generation unit is behind-the-fence, the generation unit must be able to verify its output in some other manner.