Renewable Portfolio Standard (RPS)

Policy Summary: The Massachusetts Renewable Portfolio Standards (RPS) was created as part of electricity restructuring in Massachusetts in 1997, expanded in the Green Communities Act of 2008 and modified in the Competitively Priced Electricity Act of 2012. The RPS requires retail electricity suppliers—both distribution companies and other retail suppliers—to buy a percentage of their portfolio of electricity sales from eligible resources.

	Savings from full policy implementation	% of 1990 level
Economy-wide GHG reductions in 2020	1.1 $MMTCO_2e$	1.1%

Clean Energy Economy Impacts: The Massachusetts Clean Energy Center's Clean Energy Industry Report estimates that there are 26,850 Massachusetts jobs in renewable energy. The renewable energy sector grew 28% in the last 12 months, with jobs spanning installation, legal, marketing, and finance services. In 2014, the Massachusetts renewable energy sector received over $232 million in investment.

Rationale: Because of low prices for fossil fuels, the lack of a market price for the negative impacts of pollution from fossil fuels (externalities), and other market barriers, the private market is not, on its own, supplying as much renewable, low-carbon power as society needs. By creating market demand, the RPS drives investments in renewable energy supply.

Policy Design: The Massachusetts RPS stimulates new renewable development through the Class 1 New Renewables, Class 1 Solar Carve-Out, and Class 1 Solar Carve-Out II. Suppliers meet their Class I commitments by buying Renewable Energy Certificates (RECs) and Solar Renewable Energy Certificates (SRECs), the accounting mechanism for ensuring that every unit of renewable energy generated is counted exactly once in terms of state requirements. Fifteen percent of electricity supply must be from new Class 1 renewable resources, such as wind, solar, small hydro, and eligible biomass and anaerobic digestion, by 2020.

GHG Impact: 1.1 $MMTCO_2e$ can be avoided in 2020 from the expansion of the RPS, not including the RPS requirements that existed prior to the Green Communities Act.

Other Benefits: As with other electric sector policies, the RPS results in reduced burning of fossil fuels and therefore reduced local air pollution and improved public health. For example, a study by the independent National Research Council found that coal use around the country resulted in 20,000 premature deaths annually.

Cost: There is a great deal of variability in the REC prices over the last 5 years because of variations in fuel prices, federal policies, and rapidly changing technology. The SREC market has operated separately from the Class I REC market. The SREC incentives have been substantially higher than the market value of Class I RECs. The incentives were initially set high because installation costs were substantially higher than they are today. While SREC values

have generally declined since 2010, they still remain substantially higher than the market value of Class I RECs, and have not necessarily kept pace with the decline in solar installation costs over that same time period. Since the cost of installing solar has substantially declined, there is a significant opportunity to reduce the cost of future solar incentives and still retain a robust solar market. The RPS also can reduce wholesale energy prices throughout New England, due to the price suppression effects of the inclusion of low or zero fuel cost generation in the regional electric energy market. However, a white paper recently published by the ISO-NE suggests that over the long term, this would cause a shift in the cost of electricity from the wholesale energy market to the capacity market, offsetting to some extent the long-term savings in the wholesale market, as generators bid higher capacity prices to make up for lost revenue in the energy market.

Experience in Other States: Thirty states plus the District of Columbia have some type of Renewable Portfolio Standard. Key features of successful programs are those which provide transparency, longevity, and certainty to the market. Repeated changes to the program design create concern in the market.

Legal Authority: RPS authority derives from electricity restructuring statues from the late 1990s as well as the Green Communities Act and the Competitively Priced Electricity Act of 2012.

Implementation Issues: The RPS (Class I) program compliance began in 2003. Apart from some modest shortages in 2011 and 2012, the Class I obligation has been successfully met since 2007 with the retirement of RECs. In 2014, the minimum standard of 9 percent was met. While the share of imports from New York and adjacent Canadian provinces into the New England region increased significantly between 2003 and 2009, it has since fallen, with two-thirds of all generation coming from within New England in 2012-2014. It is particularly noteworthy that the share of RPS Class I generation coming from Massachusetts itself has increased from 9% in 2010 to 24% in 2014, an increase that is largely attributable to the growth stimulated by the Commonwealth's Solar Carve-Out programs. Since the restructuring of energy markets in Massachusetts in 1997, supply contracts between the electric distribution companies and power generators have typically been for only three months to one year, far too short a period to allow financing of the high capital costs involved in developing renewable generating facilities. This has been a contributing factor in limiting supplies of RPS-eligible renewables in Massachusetts. To rectify this problem, the Green Communities Act required that the distribution companies solicit proposals from renewable energy developers and enter into cost-effective long-term contracts for at least a limited amount of renewable energy, in order to facilitate the financing of renewable energy generation. Such contracts can assist renewable energy developers in obtaining financing by providing assurance of revenues from sales of RECs and electricity over a number of years.

Uncertainty: Siting constraints both for generation nearby or for transmission to remote resources could constrain the renewable supply. In addition, restructured markets like New England lack parties to enter into long-term power purchase agreements that are typically required for financing of large-scale renewable energy projects with substantial up-front capital investment.