Alternative Energy

"Alternative energy" is a phrase used to describe technologies that help increase energy efficiency and reduce reliance on conventional fossil-fuel based electricity generation, but do not qualify as clean or renewable energy sources. Energy efficiency is often conceptualized as a clean energy resource, and many consider efficiency resources to be nearly unlimited. Although ISO-New England recognizes efficiency as a capacity resource, Massachusetts does not recognize efficiency technologies such as cogeneration as qualified renewable generating units. Instead, they fall under the category of "alternative energy" and are prioritized differently in terms of funding.

The Alternative Portfolio Standard (APS) was established in January of 2009 as a result of the Green Communities Act. It requires a certain percentage of the state's electric load to be met by eligible "alternative energy" technologies, which include:

- **Gasification** – A cleaner alternative to burning coal is to oxidize it and convert it into **syngas,** a combination of carbon monoxide (CO) and hydrogen (H_2) gases. Coal gasification releases fewer greenhouse gases and other pollutants than alternative coal-based electric generation technologies and is therefore considered an alternative energy technology by the Commonwealth. Qualifying gasification facilities under the APS standard must have a valid air permit and practice documented carbon dioxide capture & sequestration (CCS).

- **Combined Heat and Power (CHP)/Cogeneration** – Facilities that burn fuel to generate electricity can be made more than twice as efficient by capturing and using the waste heat created during the combustion process. This is known as "cogeneration" or "combined heat and power (CHP)." Cogeneration facilities can qualify as APS Generation Units, reporting both their electrical generation and their production of useful thermal energy (which is converted from Btus into MWhs and reported to the NEPOOL GIS system). Cogeneration facilities powered by Class I RPS biomass fuel can qualify as both Class I RPS Generation Units as well as APS Generation Units.

- **Flywheel Storage** – Flywheel storage mechanisms serve a purpose similar to that of pumped storage dams; they help stabilize the grid by storing energy during times of overproduction and releasing it during times of high demand. Flywheel storage technologies work by absorbing electrical energy to accelerate a high-speed rotor, which

converts the electrical energy into mechanical (rotational) energy. Energy can be drawn from these flywheels, which slow down as energy is removed.

- **Paper-Derived Fuel** – If the paper used to generate electricity displaces an equal or greater amount of fossil fuel, it will qualify under the APS.
- **Efficient Steam Technology**