

**Climate Change Action Plan
Electric Generation (EGU) - Draft Action Report List and Summaries**

**New Hampshire Climate Change Policy Task Force
Draft Action Report List and Summaries**

**Electric Generation and Usage
Working Group**

**Prepared by NHDES
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Climate Change Action Plan
Electric Generation (EGU) - Draft Action Report List and Summaries

Electric Generation Action Reports List

EGU Goal 1 Increase Demand Response, Energy Efficiency, and Clean Combined Heat & Power

- EGU Action 1.1 Implementing Decoupling to Remove Barriers to Energy Efficiency Investments by Utilities
- EGU Action 1.2 Energy Efficiency Procurement
- EGU Action 1.3 Combined Heat & Power Portfolio Standard

EGU Goal 2 Reduce Supply-Side Direct Emissions from Existing Generation and Build New Renewable Generation

- EGU Action 2.1 Renewable Portfolio Standard (RPS)
- EGU Action 2.2 Regional Greenhouse Gas Initiative (RGGI)
- EGU Action 2.3 New Source Performance Standard (NSPS)
- EGU Action 2.4 Low and Non-CO₂ Emitting Supply Side Resources
- EGU Action 2.5 Nuclear Power Capacity

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Electric Generation Action Report Summaries

EGU Action 1.1 Implementing Decoupling to Remove Barriers to Energy Efficiency Investments by Utilities

Summary: Revenue decoupling is a rate mechanism that could remove obstacles to increasing energy efficiency activities by utilities. Full decoupling makes utility distribution revenues completely independent of sales volumes, thereby removing a utility's disincentive to sell more energy in order to increase profits. Advocates of decoupling believe that it is a necessary ingredient to obtain strong utility support for energy efficiency. Most agree that decoupling, which only removes disincentives to utilities for energy efficiency, should be combined with positive performance incentives in order to assure maximum utility support for energy efficiency.

EGU Action 1.2 - Energy Efficiency Procurement

Summary: A combination of statutory limits on investment levels and the manner in which utilities recover energy efficiency costs currently restrict the size of cost-effective electricity and natural gas efficiency investments. This proposal would improve the way the NH utilities invest in efficiency programs that currently cost a small fraction of the price of energy supply. Utilities would be required by the PUC to purchase cost-effective "demand-side" resources like energy efficiency and demand response which are less expensive than the price of energy supply. A new Energy Efficiency Advisory Council composed of consumer, environmental, and state agency representatives would work with the utilities on identifying all cost-effective investments in efficiency and planning and designing programs. The Council will increase utility accountability, while leaving final regulatory approval with the PUC.

EGU Action 1.3 - Combined Heat & Power Portfolio Standard

Summary: A Combined Heat & Power Resource Standard (CHPRS) could be enacted to provide emissions reduction and price reduction benefits. Similar to a Renewable Portfolio Standard for renewable power, certificates could be awarded to non-renewable CHP project developers/owners, and electric utilities could be mandated to meet a percentage of their portfolio by buying CHP certificates. Because CHPRS annual requirements are cumulative, savings would steadily mount. If a CHPRS calls for 0.75% savings per year, after a two-year ramp-in period, by 2020 annual electricity from the grid would be reduced by nearly 10%.

EGU Action 2.1 - Renewable Portfolio Standard (RPS)

Summary: Implement the RPS enacted in 2007 that mandates that 23.8% of the retail sales to in-state customers will be met by renewable energy sources by 2025.

EGU Action 2.2 - Regional Greenhouse Gas Initiative (RGGI)

Summary: Implement RGGI beginning in 2009 that modestly stabilizes regional 3-year average carbon dioxide emissions from power plants at 188,076,976 tons through 2014, and then reduces them by 2.5% per year for 4 years or by 10% through 2018. In 2012, evaluate further post-2018 reductions.

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EGU Action 2.3 - New Source Performance Standard (NSPS)

Summary: In addition to RGGI, a fuel-neutral, output-based emission standard (emission limit) for CO₂ could be developed that is applied to all NH **new** power plants above a specific size threshold. The work group requested a sensitivity analysis of two options (i.e., >10 MW & >30 MW) for applicability thresholds, for both potential emissions reductions and costs. Similarly, the group requested a range of analysis options for the level of the standard, namely from 250 lb/MWh (achievable by applying carbon capture & sequestration to new integrated gasification combined cycle (IGCC) coal plants at an 87.5% reduction from an assumed uncontrolled level of 2,000 lb/MWh) to 1,100 lb/MWh (the current ISO-NE marginal emission rate, roughly equal to a conservatively high uncontrolled level for natural gas-fired units). The consultant CSNE explained that the applicability thresholds are essentially the same, since all new fossil fuel-fired plants are likely to be larger than 30 MW, and that new natural gas-fired plants' emission rates are 800 lb/MWh, so there is no need to evaluate any higher emission rate, because the 1,100 lb/MWh rate was used as representative of business-as-usual. Preliminary analysis indicates significant avoided emissions could be achieved by implementation of an NSPS.

EGU Action 2.4 - Removing Barriers to Low and Non-CO₂ Emitting Supply Side Resources

Summary: Society needs to transition from carbon based supply side resources (i.e., carbon emitting generation facilities) to generating plants that are low or non CO₂ emitting. While significant and increasing resources are to be deployed to reduce electrical demand by improving efficient, reduced usage and utilize clean distributed generation, it is acknowledged that current level of resources are needed to bridge the transition from today to a future state. However, as efforts are being made to reduce demand, part of a strategic plan must also be prepared for load growth and enable the construction of clean, new generating facilities, not only in New Hampshire, but also in other states and Canada. Key components of achieving this goal will be addressing transmission infrastructure issues and siting concerns.

EGU Action 2.5 - Nuclear Power Capacity

Summary: Nuclear power generation accounts for 20% of the total electricity generated in the United States and 45% of the total electricity generated in New Hampshire. FPL Energy Seabrook Station is New England's largest single-unit power plant and generates enough power to serve more than a million homes and businesses in the region. Seabrook Station's current operating license expires in 2030, and the company plans to file for a 20-year license renewal. Continued operation of Seabrook Station was assumed by CSNE in the business-as-usual baseline scenario.

There are current plans to build more than 30 new nuclear plants in the United States, but most will be located in the South. The first unit is not likely to go on line until 2015 due to permitting and construction timelines. Many believe that the Northeast is an unlikely spot for siting new nuclear plants, due to a history of opposition to such plans.