

LWV-Amherst Energy Study Committee Report Updated May 2017

The LWVA Energy study group has been in existence since 2010. Originally formed to study the proposals to build wood-burning power plants in New England, the group has continued to focus on issues that have arisen as energy technologies continue to evolve. Past work of the committee resulted in an Amherst League consensus (2011) to limit the use of Wood as a fuel source in electric generating plants. A more comprehensive consensus favoring energy conservation, renewable green energy sources, and disfavoring fossil fuel sources was achieved in 2013. Both can be found in the 2015 LWVA Program Booklet (available on the LWVAmherst website). The committee continues to monitor, with great interest, the rapidly evolving energy landscape, especially here in Massachusetts and in New England. A number of developments are notable:

The use of natural gas is increasing dramatically. The use of natural gas to generate electricity in New England has increased from 15% in 2000 to 44% in 2014 and continues to increase. The U.S. has an abundance of natural gas reserves underground, but it requires hydraulic fracturing to harvest it, a process that has damaging environmental side effects. Natural gas is fairly cheap and relatively cleaner burning than oil or coal (including substantially less CO₂ per unit of energy) but the CO₂ that it does emit still contributes to global warming. New England has not developed the gas pipeline infrastructure to keep pace with the growth of natural gas demand, however, there is widespread public opposition to the expansion of pipeline capacity.

In New England many aging coal, oil and nuclear power plants are being, or have been, shut down, including Mount Tom (coal), Vermont Yankee (nuclear), the Pilgrim plant (nuclear), and others. In all, these represent a loss of 4,000 MegaWatts of generating capacity, approximately 12% of the total in New England. Also at risk of closing by 2020 are additional coal, oil and nuclear plants representing 6,000 MW. Although some of the lost capacity is being replaced by renewable energy (solar, wind, and hydro) most of it is being replaced by plants that use natural gas. This has created natural gas supply problems in winter when home heating demands require large amounts of the fuel, creating temporary supply shortages that dramatically drive up the price.

The New England electricity grid is in need of upgrades. The New England power grid is managed by the Independent System Operator for New England (ISO-NE), a federally authorized non-profit organization that oversees the minute by minute operation of the power grid that covers the six-states of New England and administers the region's \$10+ billion "stock exchange" for the buying and selling of wholesale electricity. The evolving mix of energy technologies will require upgrades to the grid in order to increase energy efficiency (smart metering), and to handle intermittent sources (solar and wind). New power lines will also be needed in order to transmit power from distant sources (wind power from northern Maine, and hydro-power from Quebec). The study group has had several informative meetings with representatives of ISO-NE.

Over the past year, the Energy study group has sponsored several public presentations. Ann George spoke about the electricity grid and the role of ISO-New England. UMass Prof. James Manwell presented separate talks on the potential for wind energy and solar energy in New England and pointed out that there are sufficient solar and wind energy resources in New England (including offshore wind) to supply 100% of the region's electricity demand. Solomon Goldstein-Rose spoke about energy policy options and bills in the Massachusetts legislature, including his bill (H3473), which proposes a carbon fee and rebate program as well as renewable energy technology development centers based in the state.

Most of the committee's past work has focused on energy that is used in the production of electricity. In the future, in addition to following the evolving technologies of electricity production, the committee plans to focus more on the energy that is used in transportation, which is the largest single end use of energy in the United States.