Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

Renewing New Hampshire's Economy

2004 analysis

A 20 Percent National Renewable Electricity Standard Will Create Jobs and Save Consumers Money

A national renewable electricity standard would require electric utilities to supply a minimum percentage of their electricity from renewable sources such as wind, solar, and bioenergy.[1] Similar policies have already been enacted in New Hampshire and 21 other states.

The U.S. Senate has passed a 10 percent by 2020 national standard three times since 2002—most recently in June 2005. Congress has also considered a national standard of 20 percent by 2020.

New Hampshire Benefits from a 20 Percent by 2020 National Renewable Electricity Standard

Job Creation
- 1,090 new jobs—1.5 times as many as generating electricity from fossil fuels

Economic Development
- $571 million in new capital investment
- $61 million in income to farmers and rural landowners
- $42 million in new local tax revenues

Consumer Savings
- $130 million in lower electricity and natural gas bills

Healthier Environment
- National reductions in global warming pollution equal to taking nearly 71 million cars off the road
- Less air pollution, damage to land, and water use

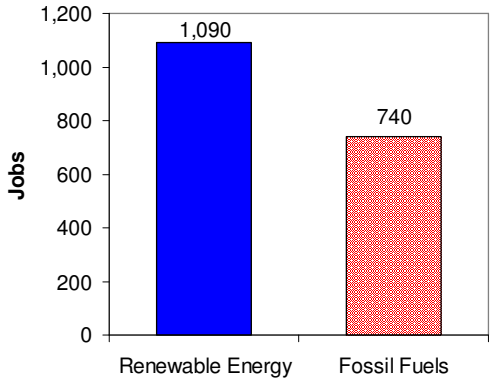
In September 2004, the Union of Concerned Scientists (UCS) used the Energy Information Administration's (EIA) National Energy Modeling System computer model to examine the costs and benefits of a 20 percent by 2020 national standard.[2] We modified the model using more optimistic assumptions for renewable energy technology costs and performance that are more in line with projections by the Department of Energy's national laboratories.[3] Our analysis found that a 20 percent standard would reduce electricity and natural gas prices and provide significant economic and environmental benefits for the Granite State.

New Jobs and Income

Our analysis found that under a 20 percent national standard, New Hampshire would increase its total home-grown renewable power to nearly 1,300 megawatts (MW) by 2020. The majority of this development would be powered by New Hampshire's strong wind and bioenergy resources.[4] This level of renewable development would produce enough electricity to meet the needs of one million typical homes, provide 42 percent of the electricity sales in the state, and reduce the use of imported natural gas and coal. New Hampshire has the technical potential to generate nearly 1.2 times its current electricity needs from renewable energy.

Renewable energy development would create high-paying jobs and other economic benefits in New Hampshire. By 2020, the 20 percent standard would generate 1,090 jobs in manufacturing, construction, operation, maintenance, and other industries—1.5 times as many as fossil fuels, representing a net increase of 350 jobs by 2020.[5] It would also generate an additional $30 million in income and $40 million in gross state product in New Hampshire's economy.

Job Creation in New Hampshire, Renewable Energy* vs. Fossil Fuels (2020)



*Under a 20 percent by 2020 renewable electricity standard

Economic Benefits for Rural Communities

Many of the jobs identified above would be created in rural areas where the renewable energy generating facilities would be located.

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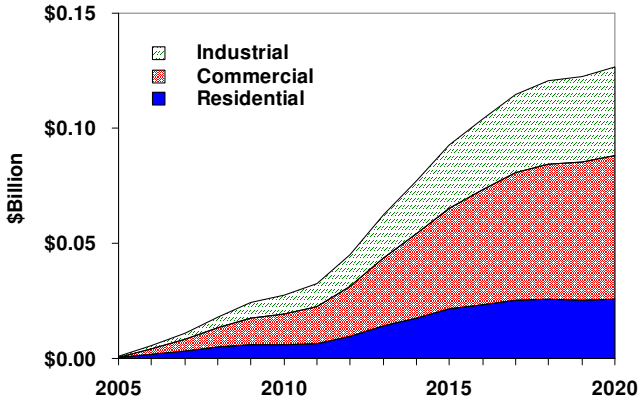
By 2020, the 20 percent national standard would also provide a boost to New Hampshire's economy in other ways:

- $571 million in new capital investment
- $61 million in income to rural landowners resulting from biomass energy production and lease payments from wind power generation
- $42 million in new property tax revenues for local communities[6]

Cumulative Energy Bill Savings in New Hampshire*



*By sector, under a 20 percent by 2020 renewable electricity standard. Excludes transportation.

Consumer Savings

The 20 percent by 2020 standard would also increase competition in the marketplace, reducing long-term energy costs for homes and businesses by gradually lowering natural gas and electricity prices. By 2020, the savings in New Hampshire alone would amount to $130 million. Every sector of the state's economy would benefit, with commercial, industrial, and residential customers saving a total of $60 million, $40 million, and $30 million respectively by 2020.

Public Health and Environmental Protection

Increased renewable energy use would reduce toxic air pollution from power plants that threaten people's health by burning coal, oil, and natural gas. It would also reduce carbon dioxide (CO_2) emissions, which cause global warming by trapping heat in the atmosphere. The 20 percent national standard will reduce CO_2 emissions by 434 million metric tons per year by 2020—a reduction of 15 percent below "business-as-usual levels", equivalent to taking nearly 71 million cars off the road. And by reducing the need to extract, transport, and consume fossil fuels, a national renewable electricity standard would limit the damage done to our water and land and conserve our natural resources for future generations.

A Cleaner, Safer Energy Future

A national renewable electricity standard would make New Hampshire's energy supply—and the energy supply of the entire United States—more reliable and secure. It would use local energy sources to create high-skilled jobs in New Hampshire, improve the state's rural economies, and put energy dollars back into the pockets of consumers. Even under a 10 percent national standard, both UCS and EIA analysis shows New Hampshire would see all of these important benefits, but at lower levels than what would occur under a 20 percent standard.[7] A 20 percent national renewable electricity standard is a common-sense step away from our dependence on an unstable, dirty fossil fuel supply, and toward a future built on clean, renewable energy.

For additional information, visit the UCS Clean Energy web site at www.ucsusa.org/clean_energy.

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[1] The renewable electricity standard is also known as a renewable portfolio standard or RPS.
[2] An update to our 2004 analysis is currently underway, and is scheduled for release in Summer 2007.
[3] UCS evaluated a 20 percent by 2020 national standard proposal by Senator Jeffords (I-VT) and the tax credits for renewable energy that were supported by the Senate energy bill conference committee in November 2003. More information about UCS's modeling approach can be found at *www.ucsusa.org/clean_energy/renewable_energy/page.cfm?pageID=1505* and in the October 2001 report *Clean Energy Blueprint*, available online at *www.ucsusa.org/clean_energy/renewable_energy/page.cfm?pageID=44*.
[4] 1,050 MW of the nearly 1,300 MW total would come from wind power. Only a small fraction of New Hampshire's land area—approximately 0.9 percent (52,000 acres)—would be required for this level of wind development. The actual footprint of wind turbines and access roads would be far less—between 260 and 2,600 acres—based on current experience. The siting of wind facilities should be conducted through an open stakeholder process subject to all pertinent regulations, and with sensitivity to the value of New Hampshire's landscape.
[5] We conservatively assume that 33 percent of the manufacturing for the wind and solar technologies installed in New Hampshire is produced by businesses located in the state. We also do not include any jobs or economic development from New Hampshire manufacturers exporting equipment to other states or countries. If New Hampshire is able to attract renewable energy manufacturers to produce equipment for facilities in the state and for export, the jobs and income from the renewable electricity standard would increase significantly.
[6] Results are presented in cumulative net present value 2002$ using a seven percent real discount rate. Job results are for the year 2020.
[7] For more information, see *Renewing New Hampshire's Economy: A 10 Percent National Renewable Electricity Standard Will Save Consumers Money and Create Jobs*, available online at *www.ucsusa.org/clean_energy/renewable_energy_basics/renewing-americas-economy.html*