Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

fact sheet

A 20 Percent National Renewable Electricity Standard Will Save Consumers Money and Reduce Global Warming Emissions

A national renewable electricity standard would require electric providers to supply a minimum percentage of their electricity from renewable sources such as wind, solar, geothermal, and bioenergy.[1] Similar policies have already been enacted in 22 states and Washington, DC.

The U.S. Senate has passed a 10 percent by 2020 national renewable electricity standard three times since 2002—most recently in June 2005. A 20 percent by 2020 standard was introduced in the House of Representatives in February 2007, and a 15 percent standard is under consideration in the Senate.

The Union of Concerned Scientists (UCS) used the Energy Information Administration's (EIA) National Energy Modeling System and assumptions to examine the effects of a 15 percent and 20 percent by 2020 national renewable standard.[2] We made no changes to EIA's model despite their use of more pessimistic projections for most renewable energy technologies when compared with projections by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy, and National Renewable Energy Laboratory. With EIA assumptions, the analysis found that a national standard would provide important consumer and environmental benefits for America.

Consumer Savings

Under a national renewable electricity standard, consumers would experience a slight reduction in their cumulative electricity and natural gas bills compared to business as usual (BAU). By 2030, consumers would save cumulatively $16.4 billion on their electricity and natural gas bills under a 15 percent standard, and $10.8 billion under a 20 percent standard.[3] Consumers in the residential, commercial, and industrial sectors are all projected to save money on their energy bills.

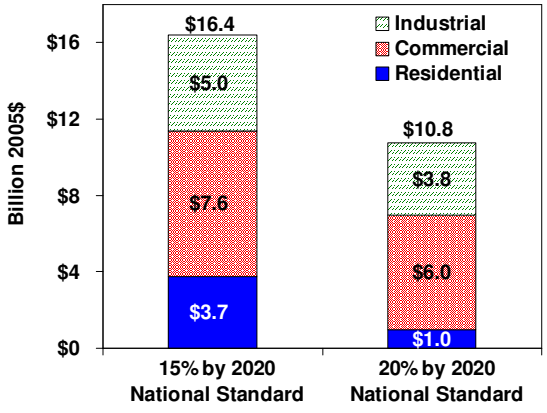
Comparison of Benefits through 2030, National Renewable Electricity Standard*

	20% by 2020	15% by 2020
Consumer energy bill savings	$10.8 billion	$16.4 billion
Electricity bill savings	$3.6 billion	$10.0 billion
Natural gas bill savings	$7.2 billion	$6.4 billion
Renewable energy capacity	121 gigawatts	91 gigawatts
Coal savings	1.9 billion short tons	1.4 billion short tons
Natural gas savings	9.6 trillion cubic feet	6.9 trillion cubic feet
Power plants annual CO_2 emission savings	263 million metric tons	180 million metric tons

*All benefits are cumulative through 2030 unless otherwise noted. Energy bill savings are in cumulative net present value 2005$ using a seven percent real discount rate.

A national renewable standard increases the use of renewable energy and reduces the projected demand for fossil fuels, creating new competitors for the fuel sources that

Consumer Natural Gas and Electricity Bill Savings, through 2030*



*Excludes transportation

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currently dominate the U.S. electricity mix. As a result, renewable energy helps reduce the price of fossil fuels and restrain the ability of fossil fuel prices to increase in the future. Natural gas and coal therefore costs less for electricity generation, as well as for other purposes, benefiting both electricity consumers and other natural gas consumers.

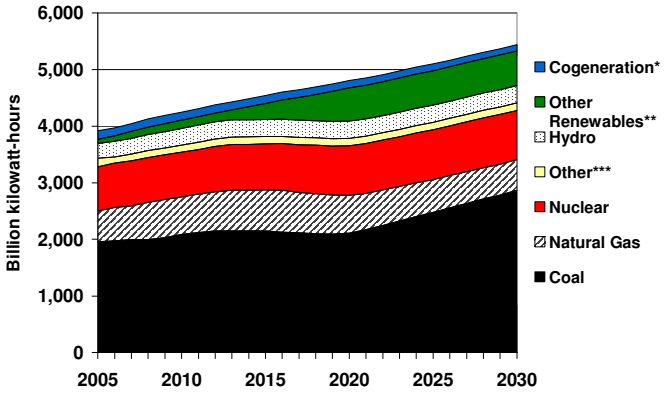
Energy Diversity

Renewable energy diversifies the energy portfolio by meeting a larger portion of U.S. electricity demand and by reducing the growth in coal and natural gas use for electricity. Our analysis found that America would increase its total homegrown renewable power capacity 4.5 to 6 times over present levels—from about 20 gigawatts (GW) in 2005 to 91 GW by 2030 under the 15 percent national standard and 121 GW by 2030 under the 20 percent national standard. This development would come from a diverse mix of bioenergy, wind, solar, and geothermal resources, providing enough power to serve the needs of 80 to 120 million typical U.S. homes. Increasing fuel diversity with domestic, renewable energy resources makes American consumers and the U.S. economy less vulnerable to potential energy supply shortages, interruptions, price spikes and manipulation.

Public Health and Environmental Benefits

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. CO_2 emissions would be lower by nearly 180 million metric tons (MMT) per year by 2030 under a 15 percent national standard, and 263 MMT lower under a 20 percent standard—a reduction equivalent to taking 29 to 43 million cars off the road. 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. We found that a 20 percent renewable standard would displace the need for up to 1.9 billion short tons of coal and 9.6 trillion cubic feet of natural gas by 2030 compared to BAU.

Electricity Generation under a 20 Percent National Renewable Electricity Standard



Source: UCS analysis, using EIA's model and assumptions.

A Cleaner, Safer Energy Future

A national renewable electricity standard would make America's energy supply more reliable and secure. It would use local energy sources to put energy dollars back into the pockets of consumers. While a 20 percent by 2020 renewable standard would have slightly lower consumer energy bills savings than a 15 percent standard, it would have greater diversity, environmental and economic development benefits. A national renewable 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 more information, visit the UCS website 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] For more information about NEMS' capabilities, structure, and assumptions visit www.eia.doe.gov/oiaf/forecasting.html.
[3] Results are presented in cumulative net present value 2005$ using a seven percent real discount rate.