



Renewing Oregon

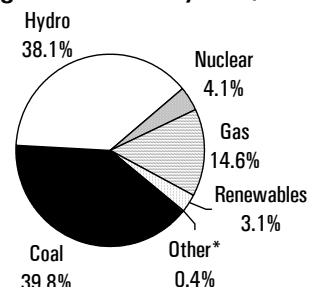
A National Renewable Electricity Standard Will Benefit Oregon's Economy

America's energy choices affect our national security, our economy, our family budgets, and our environment. Last year, the US Senate passed an energy bill (HR 4) that contained the first-ever national renewable electricity standard, which requires major electric companies¹ to gradually increase sales of electricity from renewable energy sources (wind, solar, bioenergy, and geothermal) to 10 percent by 2020. However, the standard did not become law as a committee of House and Senate members failed to agree on a final bill before the 107th Congress adjourned. The newly elected 108th Congress should revisit the renewable electricity standard during the current national energy debate in order to move our nation away from polluting fossil fuels and toward a safer, cleaner, and more sustainable energy future.

UCS used a modified version of the U.S. Energy Information Administration's National Energy Modeling System computer model to examine the costs and benefits of last year's Senate renewable electricity standard (RES) proposal – often called a renewable portfolio standard.² We found that this policy – along with Senate-passed tax credits for renewable energy – promises to bring economic development, jobs, and energy security to Oregon, as well as consumer and environmental benefits.

Current Electricity Mix. Oregon is heavily reliant on coal, hydropower, and gas to supply its electricity. Oregon's reliance on hydropower makes the state vulnerable to electricity shortages, price spikes, or increased imports during extended periods of drought. In addition, all of the coal and natural gas is transported into the state, exporting dollars and jobs in the process. Renewable energy sources such as wind and bioenergy (plants and clean plant wastes such as forest residues and mill wastes) currently provide about three percent of the state's electricity.

Oregon's Electricity Mix, 2001



*Oil and Municipal Solid Waste
Source: Oregon Office of Energy, 2002

Oregon's Renewable Energy Potential

Resource	Generation (billion kWh)	% of 2000 Electricity Sales
Wind	70.0	133%
Bioenergy	10.0	19%
Geothermal	17.0	32%
Landfill Gas	0.4	1%
Solar	68.0	129%

Source: Renewable Energy Atlas of the West, 2002

Renewable Energy Potential. Oregon has the technical potential to generate more than 3 times its current electricity needs from renewable energy. The resources with the greatest potential in Oregon are wind, geothermal and bioenergy. Emerging renewable technologies such as solar photovoltaics also have the potential to play a smaller but important part in the state's electricity supply. While not all of Oregon's renewable potential will be developed due to economic, physical, and other limitations, the national renewable electricity standard will spur significant development in Oregon.

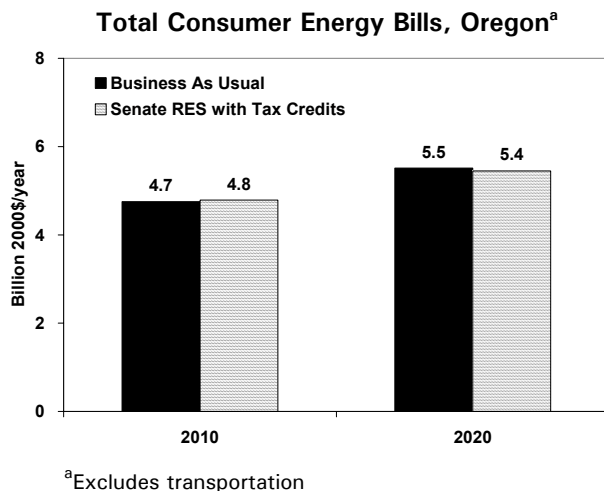
Renewable Energy Development. UCS analysis found that under a 10 percent renewable electricity standard, Oregon would increase its total homegrown renewable power to 3,360 megawatts (MW) by 2020. The majority of this development would be powered by Oregon's strong wind and geothermal resources. This level of renewable development would produce enough electricity to meet the needs of nearly 2.8 million typical homes, provide 21 percent of all the electricity sold in the state, and diversify the energy mix.

Economic Development. Renewable energy development would bring significant economic benefits to Oregon. Through 2020, the national standard would produce in Oregon

- Nearly \$1 billion in new capital investment
- \$71 million in new property tax revenues for local communities
- \$13 million in lease payments to farmers and rural landowners from wind power³
- 1,580 permanent high-wage jobs plus an annual average of nearly 1,200 construction jobs from wind power

Consumer Costs and Benefits. The national standard and renewable energy tax credits passed by last year's Senate would slightly reduce long run energy costs to Oregon consumers. Increased competition from renewable energy leads to lower natural gas prices that offset the incremental costs of meeting the renewable energy standard in the state. Total annual consumer energy bills (not including transportation) would be 0.8 percent more than business as usual in 2010, but \$70 million or 1.2 percent lower in 2020. Cumulative consumer savings through 2020 would be over \$50 million.⁴

Environmental Benefits. The renewable electricity standard will reduce air pollution from power plants that threaten people's health by burning coal, oil, and natural gas. Carbon dioxide emissions, which trap heat in the atmosphere and cause global warming, would also be reduced. Nationally, the renewable electricity standard will reduce about 27 million metric tons of carbon emissions a year by 2020. The renewable standard will also reduce harmful water and land impacts from extracting, transporting and using fossil fuels.



The renewable standard increases consumer savings if natural gas prices increase

In the future, natural gas is projected to fuel much of the new electricity generation built in the United States without additional policies for renewable energy. This increase in demand for natural gas may lead to natural gas prices that are higher and more volatile than those used in our base case analysis. The more expensive natural gas is, the greater the savings will be from reducing natural gas use through a renewable electricity standard.

Specifically, UCS examined the effects of a renewable standard on an alternative scenario where wholesale natural gas prices are 35 percent higher by 2020. In this case, consumer energy bill savings from the renewable standard would be more than 3 times greater. Renewable energy generation and related economic development would also increase in Oregon if gas prices were higher.

Providing a clean, safe energy future

A national renewable electricity standard would make Oregon's energy supply more reliable and secure. It would diversify the fuel mix using energy produced within the state. The renewable electricity standard is a sensible step toward a balanced approach to meeting future energy demands with renewable technologies, and is far more responsible than continuing to rely on polluting or dangerous power sources. Renewable energy is ready to provide Oregon with a clean, safe energy future.

Impact of National RES Proposal in Oregon

In 2020:	Senate RES with Tax Credits	Senate RES with Tax Credits (High Gas Prices)
Total Renewable Energy Capacity	3,360 MW	3,405 MW
Cumulative New Capital Investment	\$990 million ^a	\$1 billion
Cumulative Consumer Energy Bill Savings ^b	\$50 million	\$160 million
Annual Consumer Energy Bill Savings ^b	\$70 million 1.2%	\$110 million 1.9%

- Notes
- a. All dollars presented in 2000\$. Cumulative results are in net present value using an 8 percent real discount rate.
 - b. Excludes transportation.

The Union of Concerned Scientists is a nonprofit partnership of scientists and citizens combining rigorous scientific analysis, innovative policy development, and effective citizen advocacy to achieve practical environmental solutions. For more information, visit our web site at www.ucsusa.org/clean_energy/index.cfm.

¹ Small utilities and publicly-owned utilities are exempted.
² More information about UCS' modeling approach can be found in the October 2001 report *Clean Energy Blueprint: A Smarter National Energy Policy for Today and the Future*, which is available at www.ucsusa.org/energy/blueprint.html.
³ Results presented are in 2000\$. Cumulative results are in net present value using an 8 percent real discount rate.
⁴ The House and Senate energy bills during the 107th Congress included renewable energy tax credits worth between \$2.6 billion (Congress' estimate) and \$5.2 billion (UCS' estimate) over the next 10 years. The bills also included 10 years' worth of subsidies for fossil fuel and nuclear power totaling about \$9.1 billion in the Senate bill and \$28 billion in the House bill. The taxpayer costs of the additional subsidies for renewable energy and conventional fuels were not included in the analysis. (Note: these dollar figures are *not* discounted.)