



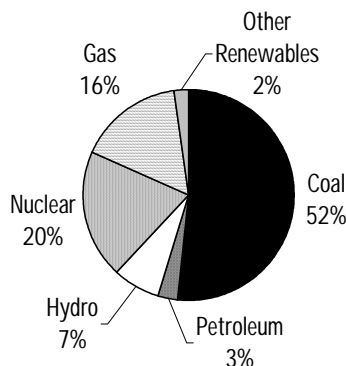
Renewing Where We Live

A National Renewable Energy Standard Will Benefit America's Economy

America's energy choices affect our national security, our economy, our family budgets, and our environment. UCS examined a national policy to increase America's use of renewable energy to 20% of electricity supplies by 2020, called a renewable portfolio standard (RPS). UCS found that by adopting a national standard of 20%, the United States can meet a significant portion of its electricity needs with renewable energy while generating substantial economic and environmental benefits for the nation. Twelve states have already enacted minimum renewable energy standards. See our briefing series *Renewing Where We Live* for more information on the benefits of a renewable energy standard for your region or state.

Electricity Mix. Today, the United States relies heavily on coal, nuclear power, and natural gas to generate its electricity. Renewable energy sources such as wind, geothermal, and bioenergy currently provide a negligible amount of the nation's electricity. According to the US Energy Information Administration, the United States' reliance on fossil fuels – particularly natural gas and coal – for electricity generation will increase if we continue on our current path. By 2020, natural gas will increase to 36% of total electricity generation, while renewable resources will barely increase.

United States Electricity Mix, 2000



United States Renewable Energy Potential

Resource	Generation (billion kWh)	% of 2000 Electricity Sales
Solar	>3,387	>100%
Wind	14,244	421%
Bioenergy	742	22%
Geothermal	212	6%
Landfill Gas	40	1%

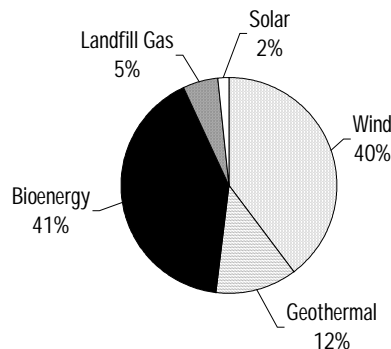
Renewable Energy Potential. The resources with the greatest potential in the United States are solar, wind, and bioenergy. The U.S. has excellent solar resources that could theoretically provide all of the nation's electricity use. In addition, the United States has the technical potential to generate 4.5 times its current electricity needs from wind, bioenergy, and other renewable energy sources. Not all of the renewable potential in the United States will be developed due to economic, physical, and other limitations.

Renewable Energy Development. The UCS analysis found that under the national standard, America would produce the equivalent of 10% of its electricity use from renewable energy (not including hydro) in 2010 and 20% in 2020. By 2020, wind, bioenergy, and geothermal provide most of the renewable energy generation in the United States.

Economic Development. Renewable energy development would bring significant economic benefits to the United States. Between 2002 and 2020, a 20% national standard would produce

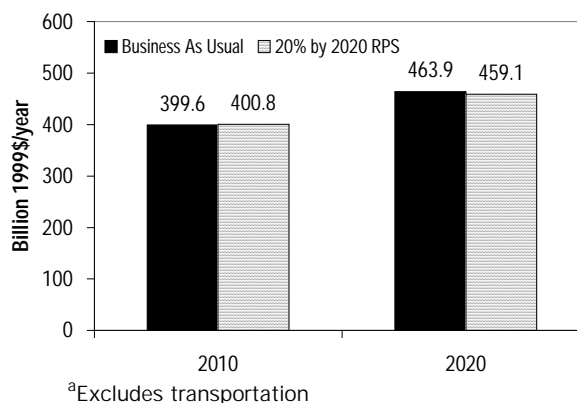
- nearly \$80 billion in new capital investment
- nearly \$5 billion in new property tax revenues for local communities
- \$1.2 billion in lease payments to farmers, ranchers, and rural landowners from wind power¹
- more than double our use of homegrown bioenergy fuels, providing billions in income for farmers

Renewable Energy Mix in the United States under 20% RPS



Consumer Costs and Benefits. A national standard of 20% would eventually reduce energy costs to consumers. Total annual consumer energy bills (not including transportation) would be only 0.3% higher than business as usual in 2010, but \$4.8 billion or 1% lower in 2020. The present value of total consumer savings would be \$4.5 billion between 2002 and 2020. Increased competition from renewable energy results in natural gas prices that are 9% lower than business as usual in 2020. Lower natural gas prices more than offset the slightly higher costs of generating renewable electricity in the United States.

Total Consumer Energy Bills, United States^a



Environmental Benefits. The increased use of renewable energy in the United States would help reduce air pollution in the state and surrounding region. Power plant emissions of carbon dioxide, which is fueling global warming, would be 19% lower nationwide by 2020 than without the renewable energy standard. Other pollutants from burning fuels that harm human health would also be reduced by a national standard of 20% by 2020.

Additional Renewable Energy and Energy Efficiency Policies Increase Benefits

UCS examined the impact of increasing energy efficiency along with a renewable energy standard. The Renewable Energy and Energy Efficiency Act of 2001 (S. 1333) combines a 20% standard, net metering, and a public benefits fund. Combining these policies greatly increases consumer savings, economic development and environmental benefits, significantly reduces natural gas prices, and provides additional diversity benefits compared to the 20% standard alone. These policies would also allow the nation to capture a larger share of its solar energy potential. Increasing both energy efficiency and renewable energy is the best option for the United States.

A 10% Renewable Energy Standard Would Have Fewer Benefits

UCS also looked at what would happen under a renewable energy standard of 10% by 2020, similar to a provision in the Senate's Energy Policy Act of 2002 (S. 517), introduced by Senators Daschle (D-SD) and Bingaman (D-NM). Under a 10% standard, the United States would realize greater savings on consumer energy bills, but much less diversity, economic development, and environmental benefits than under a 20% standard alone. The added diversity, economic development, environmental, and long-run consumer benefits make the 20% renewable energy standard the preferred option for the United States.

Impact of National RPS Proposals

In 2020:	20% RPS	Combined Policies of S. 1333 ^a	10% RPS
Cumulative New Capital Investment	\$79.6 billion ^b	\$185.9 billion ^c	\$43.8 billion
Cumulative Consumer Energy Bill Savings ^d	\$4.5 billion	\$68.6 billion	\$37.3 billion
Changes in Annual Consumer Energy Bills ^d	-\$4.8 billion -1%	-\$34.7 billion -7%	-\$14.2 billion -3%
Changes in Annual CO ₂ Emissions from regional power plants	-19%	-32%	-7%

Notes

- a. Includes 20% RPS, 2 ¢/kWh public benefits fund charge, and net metering.
- b. All dollars presented in 1999\$.
- c. Includes investments in energy efficiency.
- d. 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/energy.

¹ Results presented are in 1999\$. Cumulative results are in net present value using a 5% real discount rate.