

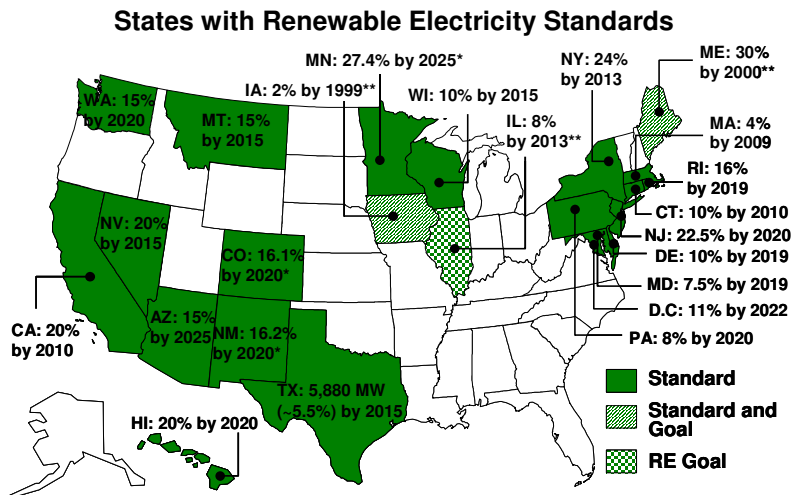


# Climate Solutions

## SUCCESSFUL STRATEGIES: Renewable Electricity Standards

In order to ensure healthy air and a stable climate for our children and grandchildren, we must make responsible decisions about our energy sources. Existing technologies and forward-thinking policies offer practical and affordable solutions to reduce our dependence on the fossil fuels that currently dominate America's electricity system. This system threatens the health of our communities by polluting the air and contributing to global warming. If left unchecked, heat-trapping emissions, such as carbon dioxide (CO<sub>2</sub>), are expected to cause irreversible damage to communities throughout the United States and around the world. This damage will likely include increased urban air pollution and emerging infectious diseases such as West Nile Virus;<sup>1</sup> sea-level rise causing flooding and erosion in coastal communities; extreme weather including more intense droughts and hurricanes; reduced productivity of some agricultural regions; and loss of many treasured landscapes and species—from coral reefs to polar bears.<sup>2</sup>

Practical solutions do exist. For example, more than 40 percent of U.S. states have adopted a renewable electricity standard—a policy that requires electricity suppliers to gradually increase their use of renewable energy such as wind, solar, geothermal, and bioenergy. These states are demonstrating that renewable standards are an affordable solution to reduce CO<sub>2</sub> and other unhealthy air emissions, while alleviating the harmful impact that fossil fuel extraction, transport, and use have on land and water resources.



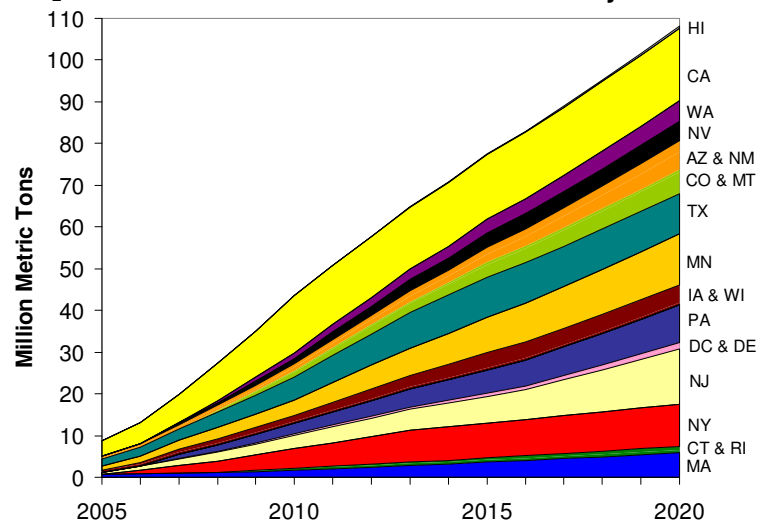
\* MN has a 30% by 2020 standard for Xcel Energy, and a 25% by 2025 standard for all other electricity providers. CO and NM have a 20% by 2020 standard for investor-owned utilities, and a 10% by 2020 standard for other utilities.  
\*\* In addition to their requirements, IA has a 1,000 MW (~10%) by 2010 goal, and ME has a 10% new resources by 2017 goal. IL has a renewable energy goal with no specific enforcement measures.

### States Demonstrate Potential

Renewable electricity standards have been enacted in 21 states and the District of Columbia. UCS projects that these standards will result in the development of 46,270 megawatts (MW) of new renewable energy capacity by 2020—an increase of more than 340 percent over total U.S. levels (excluding hydro) in 1997.

This commitment to increasing renewable energy at the state level will have a significant impact on reducing CO<sub>2</sub> emissions. By 2020, state standards will reduce total annual CO<sub>2</sub> emissions by 108.1 million metric tons (MMT)—

### CO<sub>2</sub> Reduction from State Renewable Electricity Standards\*



\*Projected reductions assuming states achieve annual renewable energy targets.

the equivalent of taking 17.7 million cars off the road or planting 25.9 million acres of trees—an area larger than the Commonwealth of Virginia. The standards in California, New Jersey, Minnesota, New York, and Texas alone make up nearly 60 percent of the projected reductions.

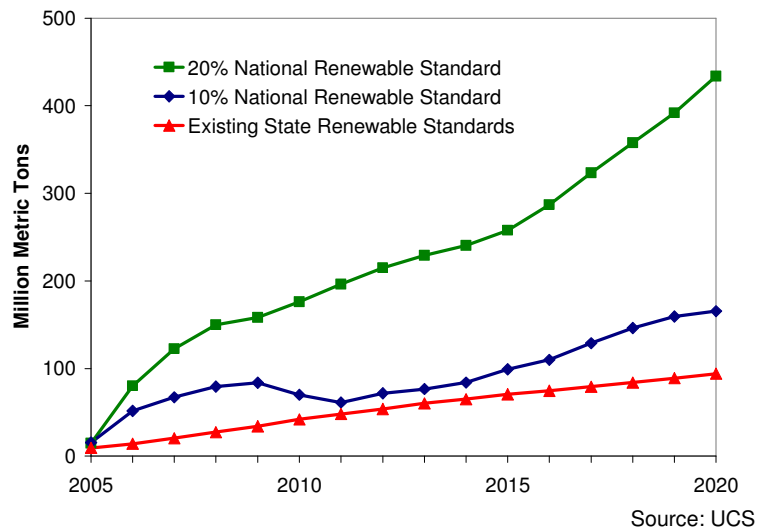
In addition to realizing significant reduction of harmful emissions, the states have also found that renewable standards are an effective means to help meet critical fuel diversity, energy security, and economic goals. In fact, this approach has been so successful that several states—including Arizona, California, Nevada, New Jersey, Pennsylvania, Texas and, most recently, Minnesota, New Mexico, and Colorado—have revisited and significantly increased or accelerated their annual requirements.

## A National Standard Significantly Increases Climate Benefits

While many states are making important strides in reducing CO<sub>2</sub> emissions with renewable electricity standards, substantially greater benefits could be achieved if Congress adopted a national standard. A 2004 UCS analysis examined the costs and benefits of a 20 percent by 2020 renewable standard, and found that America would increase its total renewable power to 180,000 MW in 2020—nearly 11 times more than current levels.<sup>3</sup>

The 20 percent national standard would reduce the projected growth in power plant CO<sub>2</sub> emissions under a business-as-usual scenario by more than half, or 434 MMT per year by 2020. This level of reductions is equivalent to taking nearly 71 million cars off the road or planting 104 million acres of trees—an area approximately the size of Oregon and Washington combined. Even a 10 percent standard would deliver substantial climate benefits, reducing annual CO<sub>2</sub> emissions by 166 MMT by 2020. Studies by the U.S. Department of Energy's Energy Information Administration have shown similar results.

**Comparison of CO<sub>2</sub> Reduction from State and National Renewable Electricity Standards**



## Renewable Electricity Standards are a Smart Climate Solution

With only five percent of the world population, the United States produces nearly 25 percent of annual global heat-trapping emissions.<sup>4</sup> Electricity generation accounts for fully one-third of these emissions.<sup>5</sup> We have a responsibility and a compelling interest to significantly reduce these harmful emissions. Renewable electricity standards offer a smart, affordable climate solution with a proven track record.

For additional information, visit the UCS Clean Energy web site at [www.ucsusa.org/clean\\_energy](http://www.ucsusa.org/clean_energy)

<sup>1</sup> Epstein, Paul R and Christine Rodgers. *Inside the Greenhouse: The Impacts of CO<sub>2</sub> and Climate Change on Public Health in the Inner City*. Report from the Center for Health and the Global Environment Harvard Medical School. April 2004.

<sup>2</sup> Intergovernmental Panel on Climate Change. *Third Assessment Report. Climate Change 2001: Impacts, Adaptation, and Vulnerability*. 2001.

<sup>3</sup> Union of Concerned Scientists. *Renewing America's Economy*. July 2004.

<sup>4</sup> United Nations Framework Convention on Climate Change. Annex 1: Greenhouse Gas Inventory Database.

<sup>5</sup> U.S. Environmental Protection Agency. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2002*. April, 2004.