Union of Concerned Scientists

EXECUTIVE SUMMARY

Clean Energy Momentum

Ranking State Progress

HIGHLIGHTS

The UCS Clean Energy Momentum State Ranking assesses state leadership in the nation's historic transformation to a clean electricity future. As its 12 measures of progress, current status, and likely future actions show, leading states help make clean energy happen, create clean energy jobs, and reduce public health risks. The states can be a consistent, powerful, positive force, embracing all that clean energy has to offer, from promoting renewable energy sources, to supporting energy efficiency for homes and businesses, to cutting transportation pollution with electric vehicles.

Clean energy is moving forward in the United States, with significant, tangible, rapid progress. Wind farms in 41 states provide enough electricity to meet the needs of more than 20 million American households. In 2016 alone, the nation added enough solar electric panels to meet the needs of two million households. Investments in energy efficiency over the last quarter century have precluded the need for the equivalent of more than 300 additional large power plants. Electrification of the transportation sector, while nascent, is rapidly picking up steam, with more than half a million plug-in electric vehicles now on US roads.

Those advancements yield direct benefits. Clean energy substantially improves public health by reducing the power sector's harmful emissions, particularly emissions from coal-fired power plants. And more than half a million people now work in the fields of solar, wind, hydro, and geothermal energy; four times as many have jobs in energy efficiency.

To assess state leadership in this historic transformation, the Union of Concerned Scientists (UCS) created the Clean Energy Momentum State Ranking. While the federal government can play important roles in making efficiency, renewable energy, and vehicle electrification a national priority, states can be a consistent, powerful, positive force as well. Understanding which states lead, and how, will help the nation as a whole build momentum toward a clean energy future.

Dennis Schroeder/NREL

States have been a consistent, powerful, positive force for driving clean energy momentum through renewable energy sources such as wind and solar, and through energy efficiency and transportation electrification.

Our easy-to-understand ranking uses 12 metrics in three broad areas to gauge state leadership.

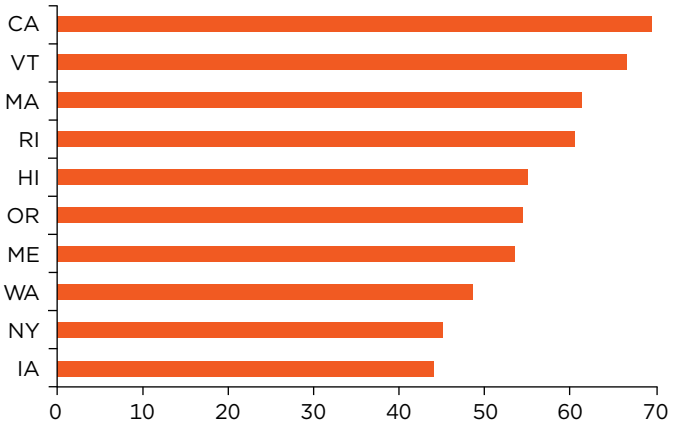
- **Technical progress:** How much of a state's electricity generation is based on renewable energy and how quickly has that changed in recent years? How much electricity are state utility programs saving, and how strong are electric vehicle sales?
- **Direct, visible effects on our daily lives:** How many jobs has clean energy created in each state? How much has it reduced pollution from power plants?
- **Policies to build the momentum for the future:** How much progress has a state made on policies to promote renewable energy, energy efficiency, and carbon reduction?

The UCS analysis identifies clear leaders among the 50 states (Figures ES-1, ES-2):

- **California**, a stellar all-around performer, leads the way on clean energy momentum. The Golden State appears in eight top-10 lists. It is tops in electric vehicle adoption and one of the top five on six other metrics: residential solar capacity per household, energy savings, clean energy jobs, renewable electricity standard targets, ease of corporate renewable energy procurement, and carbon reduction targets.
- **Vermont**, in second place, leads the nation in clean energy jobs per capita and for its carbon reduction target and has top-five scores in energy savings, electric vehicle adoption, and energy efficiency policy. The Green Mountain State earns 10 top-10 appearances, the most of any state.
- **Massachusetts**, in third place, garners top marks on one metric and top-10 appearances on nine metrics. It has the strongest energy efficiency resource standard and is a top-five performer in residential solar capacity per household, energy savings, clean energy jobs per capita, and carbon reduction targets.
- **Rhode Island**, number four, leads in energy savings. It is a top-five state in pollution reduction and policies around renewable electricity, energy efficiency, and carbon reduction.
- **Hawaii**, number five, is first in residential solar and scores high for electric vehicles and its renewable energy policy.
- **Oregon**, **Maine**, **Washington**, **New York**, and **Iowa** round out the top 10.

State leadership on even a single metric is worth noting. South Dakota tops the states on its use of renewable energy in

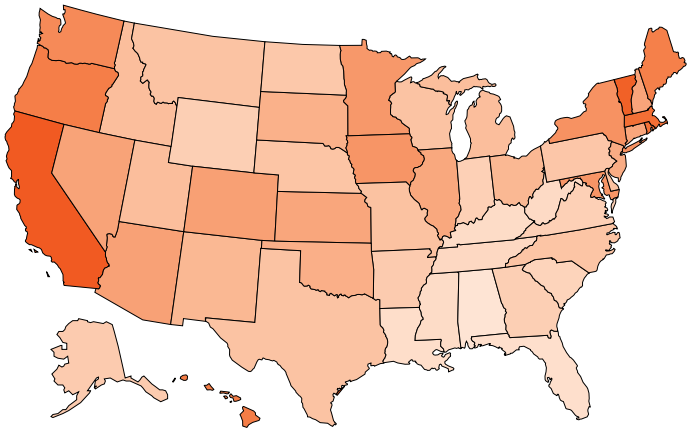
FIGURE ES-1. States Leading the Way in Clean Energy



To determine the clean energy momentum state ranking, UCS analyzed the 50 states on 12 metrics, such as job creation, pollution reduction, renewable energy in the electricity generation mix, and policies to advance clean energy. California leads the way, with strong showings on eight metrics and the number one position in electric vehicle adoption.

Note: For each metric, top-performing states receive a 10, bottom ones receive a zero, and other states are rated according to their position relative to those two benchmarks. A state's overall score is the total of their metric scores. The highest possible score is 120.

FIGURE ES-2. States Across the Nation Lead on Clean Energy Momentum



States from across the country drive clean energy momentum. Eight of the top 10 states in the UCS Clean Energy Momentum State Ranking are on the West Coast or in the Northeast, highlighting region-wide commitments to clean energy. Iowa leads in the Midwest, followed by Minnesota. Maryland, Colorado, Arizona, and Nevada also make the top 15.

Note: The higher the general score a state received, the darker it appears.

electricity generation, even if much of that electricity supplies neighboring states. Wyoming may dominate coal production in the country, but it also handily leads in terms of renewable energy being built on a per-capita basis as the state harnesses its great wind resources.

That said, multifaceted leadership matters most. In all, 21 states score in the top 10 for at least three UCS metrics. Moreover, any state can be a leader, not just those better endowed with natural resources. Both momentum and leadership are apparent in millions of clean energy jobs and in reduced damage to public health from power plants. States lead, too, with policies that will propel clean energy momentum into the future.

Taken together, the metrics in the UCS Clean Energy Momentum State Ranking paint a picture of state successes and a 50-state race for clean energy leadership. They also point to several important conclusions:

- The transition to clean energy is real, and clean energy momentum takes many forms.
- State choices translate into rapid growth in renewable energy, energy efficiency, and vehicle electrification.

Multifaceted leadership matters most. In fact, any state can be a leader, not just those better endowed with natural resources.

- Any state can lead on clean energy, not just those with the strongest renewable energy resources.
- Job creation is a powerful incentive for additional action on clean energy.
- Businesses can make major contributions to clean energy progress—if states let them.

With uncertainty surrounding national energy policy, state leadership is more important than ever. This analysis prompts UCS to offer several recommendations for states to accelerate clean energy momentum and lead the nation to a new energy future:

AP Photo/Mark Lennihan

Businesses play a large role in driving renewable energy, motivated not just by the potential to save energy and money directly but also by the ability to demonstrate leadership in a key sector undergoing transformation. Swedish furniture giant IKEA has solar on 90 percent of its US stores.

With the future of national energy policy uncertain, state leadership is more important than ever.

- **Adopt policies supporting multiple dimensions of progress.** Many states have implemented policies that have a proven ability to foster clean energy development at reasonable costs. By adopting such policies in support of renewable energy, energy efficiency, and vehicle electrification, along with setting economy-wide targets for reducing global warming pollution, states can create a broad framework for clean energy progress.
- **Facilitate business involvement.** State policies should make it easier for businesses to adopt renewable energy, enabling them to be a powerful force for accelerating clean energy progress. For example, states could broaden the array of options available to businesses for acquiring renewable energy through utilities or third parties, and could remove barriers to installing solar panels or wind turbines on site.
- **Improve energy equity.** States should directly address the challenges faced by low-income communities and communities of color—those who are most affected by power plant pollution and other inequities in the electricity sector. State programs, for instance, can help low-income homeowners weatherproof their homes to save money and improve comfort, and can give low- and moderate-income households better access to solar power and electric vehicles.
- **Advocate for federal action.** While leading by example, states should also insist that the federal government be a full partner in building clean energy momentum, through strong support for innovation and deployment. Efficiency standards, tax credits, research support, and other nationwide activities would provide a strong impetus for continued progress in all 50 states.

Kuchina/Shutterstock

Energy efficiency is a powerful clean energy resource, and has played a key role in building momentum across states. Energy efficiency resource standards drive efficiency for homes and businesses.

Clean energy is happening, with states building momentum in many ways. As measures of progress, current status, and plans for the future show, the efforts of top states create jobs and reduce pollution. California, Vermont, Massachusetts, Rhode Island, and Hawaii—as well as many others—are rising directly to the challenge of transforming the nation's electricity sector and embracing all that clean energy has to offer.

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FIND THE FULL REPORT AND TECHNICAL APPENDICES ONLINE: www.ucsusa.org/EnergyProgress

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