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Creating a Clean Energy Standard

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Third Way proposes a national Clean Energy Standard to help overcome market failures that are restraining the deployment of clean energy sources like solar, wind, and nuclear power. A Clean Energy Standard would provide the certainty businesses have asked for and incorporate national energy goals into policy. It would build upon successful renewable energy standards enacted by 33 states, while providing the flexibility states and utilities need to make long term energy decisions that reflect their geographic regions.

The United States faces a vexing challenge in switching from conventional to clean sources to generate electricity: How do we replace fossil fuel when natural gas costs $4 per million BTU and demand for electricity is expected to increase by over 20% by 2035? [1] This is particularly important at a time when there are no market signals, like a carbon price, to jumpstart domestic action and spur investment in clean energy. Meanwhile, the rest of the world is racing forward. [2]

In the absence of a national strategy, two-thirds of the states are stepping in with a patchwork of policies to stimulate demand with Renewable Energy Standards (RES). An RES requires a certain percentage of electricity to come from renewable sources like wind and solar power. The states adopting an RES are not limited to traditional first-movers like California, but include more conservative states like Colorado (30% by 2020), [3] Utah (20% by 2025), and even Texas (5,880 MW by 2015).

The results of a state-by-state approach are very uneven. Few Midwestern or Southern states have an RES, and wide variations in access to renewable sources and electricity prices means that some states and regions are rushing ahead while others are doing nothing. Still, all regions of the nation can take advantage of cleaner electric power, like nuclear, waste-to-energy, coal with carbon capture and sequestration, and natural gas. That is why Third Way proposes the creation of a structured Clean Energy Standard (CES).

The CES would include both renewable and other clean energy sources. It provides states flexibility in how they reach aggressive targets for clean energy generation, and it recognizes the diversity in regional energy resources. This would protect the economy and diversify our fuel mix while creating the certainty the private sector demands. As the CEO of Basin Electric has clearly articulated, “Without a definitive national energy policy, developing new generating facilities—whether it’s a coal-based plant or a renewable project—is more challenging than ever. We need a clear and solid energy policy that will create a path for domestic energy development (including coal). Without it, the United States and our fellow utilities will put little substantial effort toward clean energy development.” [4]

The Problem

Renewable sources alone cannot support the transition to clean energy fast enough or across all regions.

The United States needs more energy.

Since the start of the Great Recession, electricity consumption has dropped in the United States by 4.7 percent. [5] But like a rollercoaster's brief pause at the top of the first hill, this reprieve is only temporary. By 2030, population growth and a return to economic prosperity are expected to increase electricity demand by at least 20% from 2007 levels—requiring 220 gigawatts of new power to come online. That's the equivalent of approximately 440 coal fired power plants [6] or 484 wind farms the size of the Cape Wind project. [7] On our nation's current course, a huge portion of this power will come from conventional coal, which produces 48% of the electricity [8] in the U.S. today. [9]

We need clean energy that can meet the needs of every region of the country.

One of America's greatest strengths is its economic and regional diversity. This can also pose a challenge when developing national energy policy. The reality is that not every area has equal renewable energy resources. Although the Upper Midwest is blessed with wind, the Southwest with sun, and the Northwest with geothermal and hydro-electricity, there are many other regions that struggle to capture these energy sources. (A complete list of state renewable energy resources is contained in Appendix I.) Yet many of those states challenged with renewable energy development have access to and experience with other viable sources of clean energy. Half of South Carolina's electricity comes from the state's nuclear power plants. [10] Other states, such as Louisiana, derive much of their power from natural gas. [11] To meet these states needs with renewables would require transmitting electricity long distances, from renewable-rich states to renewable-poor states. This would not provide local jobs or energy security for every region. Moreover, our transmission infrastructure is simply not up to the task of managing intermittent energy generation and moving large quantities of energy across the country to regions that need clean power. [12]

We should not create a one-size-fits-all solution to a complex problem.

The RES, as its name suggests, is limited to a suit of renewable technologies, which includes primarily wind, solar, geothermal and some biomass. But in the age of global warming, when the focus is on moving away from high-emitting sources and toward cleaner, low-emitting energy solutions, the distinction between "renewable" and "clean" is one we

simply cannot afford. As Carnegie Mellon Professor Lester Lave testified before the Senate Energy and Natural Resources Committee, policies should "focus on reducing carbon-dioxide rather than singling out renewables as the answer. There are significant savings from letting all technologies compete in satisfying the goals of lowering greenhouse gas emissions, increasing environmental quality more generally, increasing energy security, and improving sustainability, ensuring that energy prices are not so high that they derail the economy." [13]

A RES unnecessarily limits the targets we can set to the capacity of only a select number of energy sources. For example, to increase the U.S.'s renewable energy capacity to 17% would require installing 162,000 megawatts of power—a six-fold increase in our existing capacity. [14] This would also require the installation of thousands of miles of new transmission lines from the upper Midwest to the South, costing as much as $93 billion and taking decades to complete. [15] Given the scope of this task, narrowing policy options to renewable energy alone creates an unnecessary obstacle to a transition to clean energy.

We are losing the Clean Energy Race.

Right now, our global competitors are growing their clean energy sectors in order to dominate a market that some expect to expand by $2 trillion over the next decade. [16] As we describe in our report, *Creating a Clean Energy Century,* [17] China is committed to investing over $700 billion in clean energy over the coming decade, [18] in addition to building 245 new nuclear plants [19] and putting a price on carbon. The European Union has called for nearly $70 billion in clean energy spending, which would create 600,000 new jobs. [20] The EU also has a multinational renewable electricity standard (20%) that will take effect in 2020. [21] Some individual countries are going even further: France currently generates about 80% of its power from nuclear energy. [22]

The Solution

The Clean Energy Standard

To provide the federal policy certainty needed to accelerate the transition to clean energy, Third Way proposes the establishment of a national Clean Energy Standard (CES) that would require each state to use at least 25% clean energy by 2025 and 50% by 2050. [23] This federal CES would be a floor, not a ceiling—it would not preempt states like California that have stronger mandates in place. Under our proposal, electric utilities would be required to produce a set amount of their electricity from low or non-emitting sources or through energy efficiency. Energy efficiency could include either investments or direct action to reduce energy consumption by electricity generators by their customers. The CES will create a vital market for clean energy technologies, without picking winners or losers or

limiting options for those regions of the country that would strain to meet similar renewable energy standards. As Secretary of Energy Steven Chu has noted, by setting benchmarks for 2025 and 2050, utilities and generators will have time to make capital investments and secure financing for all forms of clean energy projects. [24] Some of these projects, such as new nuclear power plants, can produce baseload (power that is available all of the time) rather than intermittent generation, but can take years to build and bring on-line.

Investor-owned utilities, rural electric co-ops, and municipal generators across the country all produce electricity but have different energy resources available to them. A CES allows each electricity producer to pursue non-or low-emitting technologies that would be suited to their region. That is why a CES should include both renewable and non-renewable clean energy sources as well as energy efficiency. Well designed, a CES would not slow or dilute the development of renewable energy sources, and it would advance the goal of substantial carbon reductions in the electricity sector. This proposal would also mitigate the potential for severe rate increases on consumers in regions of country without an abundant supply of traditional renewable energy sources.

Why a Clean Energy Standard?

A system that allows for maximum flexibility for each region would permit utilities to meet CES goals in the most cost-effective manner, while keeping energy generation jobs local and rates as low as possible for consumers. Consequently, our proposed CES would include a percentage of natural gas when replacing existing coal capacity, [25] coal with carbon capture and sequestration, waste-to-energy, biomass, energy efficiency and nuclear power. This would mitigate the cost of compliance for states that have less abundant renewable energy resources, while avoiding the one-size-fits-all challenges of a national renewable electricity mandate. Moreover, the Clean Energy Standard approach prevents different areas from becoming overly reliant on energy and credits transferred from other states. A CES would set a national goal for clean energy that could be met from any qualified low- or zero-carbon energy source.

Targets and Time Tables

In crafting an energy plan, it is up to policymakers to determine the specific targets and timetables that should go into a Clean Energy Standard. Policymakers need to ensure that any CES is realistic in its design but achieves the goals of impacting emissions and ramping up clean energy technologies. The targets should not be so high as to become an unmanageable burden on businesses and consumers or so low that it does not meet or exceed the policy's aims. An ambitious goal of 25% clean energy by 2025 and 50% clean energy by 2050 could meet this standard.

The challenge moving forward will be to fill in the details, which will be difficult given the dearth of analysis on CES proposals. In the meantime, policymakers can take guidance from David Crane, CEO of NRG Energy, who recently said: "We're not talking about like 15 percent…a niche for wind and solar. We're talking about something that should be at least 50 percent. I mean, a clean-energy portfolio standard, properly done is, a national energy policy for the United States. And it doesn't pick technologies. It allows the private sector to go out and say, okay, this is what type of thing the government wants over the next 30 years, now let's innovate and figure out the way to do it." [26]

Critiques & Responses

A Clean Energy Standard will raise costs for consumers.

A CES that includes efficiency along with all low-and zero-emission technologies should have no greater impact on energy prices than proposals for a renewable energy standard. A Clean Energy Standard would have even less influence on electricity prices because of the greater flexibility it allows utilities in picking their power sources. Available analysis has found that a CES could actually achieve most of the emissions reductions of an RES, but at just 68% of the cost. [27]

A Clean Energy Standard makes other renewable energy and nuclear incentives superfluous.

A CES will help create demand for clean energy, but is only one part of our energy policy. Because of the current difference in costs between many clean energy technologies and existing traditional energy sources, we need at suit of complementary policies that allow clean energy to compete in the short term. This means a CES paired with existing policies, such as Production Tax Credits, Investment Tax Credits, and loan guarantees. There may also need to be additional incentives for energy producers to enter into long term power purchase contracts. As clean energy scales up, it makes sense that these subsidies would decline over time.

Nuclear energy and natural gas are not clean.

The United States currently generates almost half of its electricity from coal, which accounts for 27% of America's total greenhouse gas emissions. [28] Although natural gas is a fossil fuel, it emits only half of the carbon dioxide as coal, and could serve as a bridge fuel to replace existing coal plants and back up renewables. Nuclear energy is entirely carbon-free and is currently the only zero-emission source of baseload energy in the United States, other than hydro-electricity. Both nuclear power and natural gas will be vital to providing

clean, reliable energy to the U.S. economy as traditional renewables and coal with carbon capture and sequestration are further commercialized.

Carbon pricing will make a Clean Energy Standard superfluous.

A price on carbon would go a long way to making clean energy sources cost-competitive with traditional fuels, but it is not the only policy tool necessary to reduce carbon emissions. A CES will help create demand for clean energy technologies, allowing them to begin ramping-up at scale and bringing down costs. This makes the CES a complimentary policy to a carbon price, rather than a conflicting one. As a study by Resources for the Future found, there is "no single policy, no silver bullet, [that] will simultaneously and significantly reduce oil consumption and CO2 emissions." [29]

A Clean Energy Standard would hurt renewables.

Between 2004 and 2009, wind energy capacity in the United States grew by 423% , while solar energy capacity expanded by 150%. [30] Yet over the same time frame, nuclear energy managed to increase by only 1 percent. [31] By 2020, wind energy will grow by another 82%, while nuclear power is only on track to expand by 10%. [32] A clean energy standard would help lift the dormant U.S. nuclear industry off the mat while also ensuring that the market for traditional renewables, like wind and solar, continues to grow through aggressive state mandates.

Appendix

State	Renewable electricity standards[35]	Total renewable net generation (thousand MWh)[36]	Renewable energy share of total electricity
Alabama	N/A	7,937	5.5
Alaska	N/A	1,302	19.1
Arizona	15% by 2025	6,639	5.9
Arkansas	N/A	4,860	8.9
California	33% by 2030	52,173	24.7
Colorado	20% by 2020	3,054	5.7
Connecticut	23% by 2020	1,093	3.3
Delaware	20% by 2019	48	0.6
District of Columbia	20% by 2020	—	—
Florida	N/A	4,457	2.0
Georgia	N/A	5,652	3.9
Hawaii	20% by 2020	846	7.3
Idaho	N/A	9,675	84.2
Illinois	25% by 2025	1,438	0.7
Indiana	N/A	681	0.5
Iowa	105 MW mandate	3,870	7.8
Kansas	N/A	1,163	2.3
Kentucky	N/A	2,134	2.2
Louisiana	N/A	3,807	4.1
Maine	40% by 2017	7,945	49.3
Maryland	20% by 2022	2,256	4.5
Massachusetts	15% by 2020	2,038	4.3
Michigan	10% by 2015	3,687	3.1
Minnesota	25% by 2025	4,586	8.4
Mississippi	N/A	1,493	3.0
Missouri	15% by 2021	1,234	1.4
Montana	15% by 2015	9,971	34.5
Nebraska	N/A	625	1.9
Nevada	20% by 2015	3,300	10.1
New Hampshire	23.8% by 2025	2,389	10.3
New Jersey	22.5% by 2021	864	1.4
New Mexico	20% by 2020	1,677	4.7
New York	24% by 2013	28,028	19.2
North Carolina	12.5% by 2021	4,656	3.6
North Dakota	10% by 2015	1,940	6.2
Ohio	12.5% by 2024	846	0.5
Oklahoma	N/A	5,195	7.1
Oregon	25% by 2025	33,816	65.0
Pennsylvania	8% by 2020	4,782	2.1
Rhode Island	16% by 2019	159	2.3
South Carolina	N/A	3,552	3.4
South Dakota	10% by 2015	3,067	50.0
Tennessee	N/A	5,910	6.2
Texas	5,880 MW by 2015	11,932	2.9
Utah	20% by 2025	734	1.6
Vermont	10% by 2013	1110	19.1
Virginia	12% by 2022	3,814	4.9
Washington	15% by 2020	82,560	77.2
West Virginia	N/A	1,422	1.5
Wisconsin	10% by 2015	2,846	4.5
Wyoming	N/A	1,484	3.3

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