



Setting the **RENEWABLE ENERGY POLICY AGENDA**

**Insights from ACORE's 2015 National
Renewable Energy Policy Forum**



www.acore.org

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ABOUT ACORE

ACORE, a 501(c)(3) non-profit membership organization, is dedicated to building a secure and prosperous America with clean, renewable energy. ACORE seeks to advance renewable energy through finance, policy, technology, and market development and is concentrating its member focus in 2015 on National Defense & Security, Power Generation & Infrastructure, and Transportation. Additional information is available at www.acore.org.

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INTRODUCTION

Over just a few decades, U.S. government policy has helped the domestic renewable energy industry become a serious competitor in the national energy marketplace. By supporting the increased production of homegrown renewable fuels, heat, and electricity, such policies have spurred greater diversity in the nation's energy portfolio, more resilient and reliable energy markets, greater consumer choice, reduced emissions, and economic growth. While renewable energy is showing remarkable growth and attracting widespread support, renewable energy policy remains vitally important to its continued success.

The American Council on Renewable Energy (ACORE) hosted its annual National Renewable Energy Policy Forum in Washington, D.C. on April 23, 2015, bringing together a range of renewable energy industry stakeholders and policymakers – including three U.S. senators, senior government officials, and energy industry and utility CEOs – to deliberate, develop, and advance the critical policy priorities necessary for the industry's near- and long-term success.

Throughout the Forum, speakers continually returned to a few common themes:

- ▶ We appear to be in a new energy era, with rapidly expanding renewable energy deployment driven by increasing cost competitiveness powered by technological, financial, and policy innovations.
- ▶ Policy consistency and clarity build confidence and attract capital, yet renewable energy policies right now, especially at the federal level, are anything but consistent and clear.
- ▶ State policies continue to have an important influence on deployment of renewable energy and distributed generation, as well as on how the grid can adapt to accommodate this new generation.

The theme of policy consistency was particularly salient. As with mature, conventional energy resources, which continue to receive strong policy support and benefit from permanent incentives written into the tax code, the renewable energy industry needs stable, consistent, long-term policy at all levels to optimize investment, development, and deployment, and to continue to scale up and move strongly into the future.

This paper summarizes and builds on consensus from the Forum about the continued importance of renewable energy policy and presents a path for the next phase of federal and state government support.

AN AGE OF PLENTY AND COMPETITION

We have entered a new energy era – an age of plenty and an age of competition. The renewable energy sector has experienced remarkable growth over the last five years, with wind growing by 78% and solar by 4,400%.^{1,2} Meanwhile, advances in hydraulic fracturing and financial support mechanisms, such as tax-advantaged Master Limited Partnerships (MLPs), have also expanded

¹ American Wind Energy Association, *U.S. Wind Industry Fourth Quarter 2014 Market Report*, January 28, 2015. <http://www.awea.org/Resources/Content.aspx?ItemNumber=7150>

² Solar Energy Industries Association, *U.S. Solar Market Insight 2014 Year in Review*, March 10, 2015. <http://www.seia.org/research-resources/us-solar-market-insight>

domestic shale oil and natural gas production. Concurrently, U.S. energy demand has stalled due to slower economic growth, enhanced energy efficiency, and changed consumption patterns. Competitive dynamics are changing too, with some movement away from centralized generation to greater use of distributed resources. Consumers now have more choices when it comes to purchasing and producing energy.

The renewable energy industry is maturing, as evidenced by the huge flows of capital into the industry and falling cost curves. In 2014, more than \$38 billion was invested in U.S. renewable energy development, and renewable energy accounted for 50% of all new U.S. power capacity.^{3,4} Similarly, the amount of renewable generation capacity installed worldwide was, for the first time, greater than the amount of fossil generation installed – a trend that is expected to continue.⁵ Large corporate players, comprising nearly half of the Fortune 500, have been increasingly involved in renewable energy purchases over the past few years as well, seeking safe, clean, reliable, resilient, and affordable power, and 2015 is looking to be a record year for corporate renewable Power Purchase Agreements (PPAs).⁶

The costs of renewable energy technologies continue to decline rapidly. For example, the price of a solar panel has declined from about \$2.50/watt in 2009 to \$0.55/watt in 2015, which would allow homes in some areas to affordably reduce dependence on grid power. By 2030, the price of a panel could plunge to \$0.20/watt.⁷ This could cause a technological tsunami, similar to the maturation of semiconductors over the past few decades, which similarly saw rapidly rising capabilities with drastically falling costs. As with semiconductors, the U.S. should be aggressive in driving the coming technological tsunami and taking advantage of the potential for renewable energy generation and production.

If we can get more reliability in the tax code and reduce the regulations necessary, we will see a huge boom in the renewable energy industry.

– Sen. Dean Heller (R-NV)

Other renewable technologies are also positioned for rapid scale-up. More than 15 GW of wind power are expected to come online in 2015-2016 in the U.S.⁸ Estimates show that more than 12 GW of hydropower would be available by adding power generation to the approximately 80,000 unpowered U.S. dams. There is more than 3,100 MW of geothermal under development, and estimates show that biomass and waste-to-energy generation could supply 45 GW of power.⁹ Beyond further diversifying power generation, this scale-up will drive further cost reductions through improved efficiencies and economies of scale.

³ UNEP and BNEF, *Global Trends in Renewable Energy Investment 2015*, April 2015. http://fs-unep-centre.org/sites/default/files/attachments/key_findings.pdf

⁴ Federal Energy Regulatory Commission, Office of Energy Projects, *Energy Infrastructure Update*, January 2015. <https://www.ferc.gov/legal/staff-reports/2015/jan-infrastructure.pdf>

⁵ Bloomberg News, *Fossil Fuels Just Lost the Race Against Renewables*, April 14, 2015. <http://www.bloomberg.com/news/articles/2015-04-14/fossil-fuels-just-lost-the-race-against-renewables>

⁶ Ceres, *Power Forward 2.0: How American Companies Are Setting Clean Energy Targets and Capturing Greater Business Value*, June 2014. <http://www.ceres.org/resources/reports/power-forward-2.0-how-american-companies-are-setting-clean-energy-targets-and-capturing-greater-business-value>

⁷ As reported by Ahmad Chatila, CEO of SunEdison at ACORE's National Renewable Energy Policy Forum on April 23, 2015.

⁸ As reported by Bloomberg New Energy Finance at ACORE's National Renewable Energy Policy Forum on April 23, 2015.

⁹ National Renewable Energy Laboratory, *Renewable Electricity Futures Study*, Vol. 2, 2012. <http://www.nrel.gov/docs/fy12osti/52409-2.pdf>

The energy storage industry is about five years behind solar, pursuing a parallel path. Lithium ion battery technology doubles in density every ten years, and costs should be halved by the end of this decade.¹⁰ Storage technology will solve one of the largest challenges associated with some forms of renewable energy – namely, their how to integrate variable resources while maintaining grid reliability.

AVOIDING THE CLIFF: THE IMPORTANCE OF CONSISTENT, LONG-TERM POLICY

Energy in the U.S. has long been a policy-dependent area. Policy establishes the framework and rules of the competitive playing field and matters at all stages of energy production and generation – whether research and development, commercialization, or deployment. For example, policies such as renewable portfolio standards and renewable fuel standards create market demand for renewable energy. Policy also influences the financial returns for all types of energy, including sectors that are far more mature than renewable energy. Thus policies such as the Investment Tax Credit (ITC) and Production Tax Credit (PTC) have helped level the playing field for renewables against other energy sources with their own favorable, long-term, and permanent tax treatments. Even with increased financial innovations (e.g., yieldcos), green bonds, lower costs of capital, declining technology costs, and increasing technological efficiency, policy – especially tax policy – still has tremendous impact on the renewable energy sector, as it does with other energy sectors.

We are now integrating renewable energy into capital markets and the social fabric. It will not be a good time for a 66% tax hike at the end of 2016.

- Steve Corneli, NRG Energy

[Referring to the current ITC's step down from 30% to 10%]

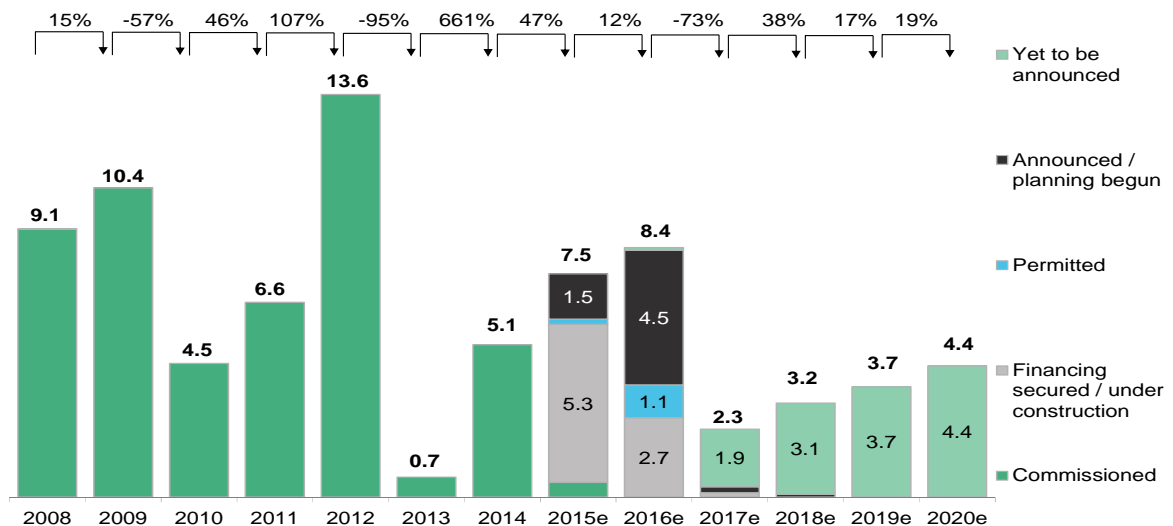


Figure 1: Annual Wind Installations in the U.S. (GW)

Source: Bloomberg New Energy Finance (BNEF)

¹⁰ As reported by Ahmad Chatila, CEO of SunEdison at ACORE's National Renewable Energy Policy Forum on April 23, 2015.

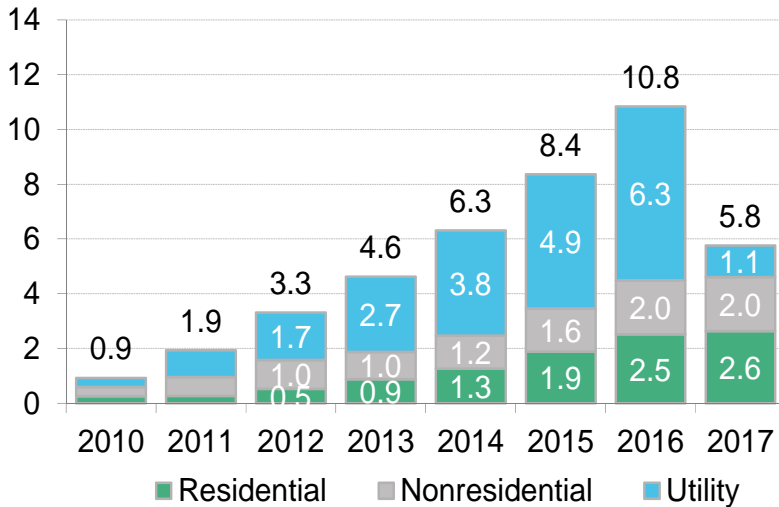


Figure 2: Annual Solar Installations in the U.S. (GW)

Source: BNEF

commercial installations. (See Figure 2.) For large projects and investments, the looming 2016 policy cliff is already impeding development.

The lack of predictable, consistent, long-term policy stifles investment and puts renewable energy at a competitive disadvantage vis-à-vis conventional resources. Renewable energy companies are unsure if their businesses will collapse because of a lack of clarity and consistency in the tax laws. There is a clear need for greater tax policy certainty.

Other energy sectors do not face this situation. The conventional energy sector has tax policies that date from as early as 1913 and that continue to be permanent in the tax code, including incentives and subsidies such as expensing for intangible drilling costs, percentage depletion for oil wells, and MLPs.¹¹ These industries continue to enjoy policy certainty that has fostered investment and growth, yet few on Capitol Hill cite these policies as picking winners and losers or distorting energy markets, as some claim with respect to renewable energy tax policies. The faster the renewable energy industry can get to stable and long-term mechanisms like the rest of the industry, the better for our nation’s energy security and future. Renewables need parity in policy treatment to compete on a truly level playing field.

The importance of stable policy extends to biofuels as well, though the primary concern for the biofuels industry is about consistent implementation of an existing statute. In 2005 and 2007, the federal government made a bipartisan commitment to lower gas prices and volatility at the pump, expand customer fuel choice, reduce our vulnerability to foreign sources of oil, and lower carbon emissions through the Renewable Fuel Standard (RFS). The RFS calls for increasing amounts of

When Congress inconsistently extends critically important tax incentives – or fails to do so at all – it creates uncertainty, slows growth, and has a chilling effect on the availability of capital for renewable energy producers, leading to boom-bust cycles. For example, after the PTC expired at the end of 2012, wind development fell by 95%. (See Figure 1).

Similarly, solar development is forecast to fall by approximately 50% if the ITC is allowed to expire at the end of 2016 for residential installations and drop to 10% for

Good tax policy requires certainty that can only come from long-term predictable tax laws, not this annual renewing of incentives.

– Sen. Chuck Grassley (R-IA)

¹¹ Resources for the Future, *Money for Nothing: The Case for Eliminating US Fossil Fuel Subsidies*, 2014. <http://www.rff.org/Publications/Resources/Pages/186-Money-for-Nothing-The-Case-for-Eliminating-US-Fossil-Fuel-Subsidies.aspx>.

The renewable fuels industry has been unbelievably successful, and we should expand it rather than ignoring it and allowing it to die on the vine.

– Former Senator Byron Dorgan

homegrown renewable biofuels to be blended into our liquid transportation fuel market through 2022.

The RFS has been a very successful policy when implemented according to statutory intent, tripling biofuel production in this country since 2005¹² and enabling biofuels to meet the overall Renewable Volume Obligations (RVOs) every year the obligations have been in place. Domestic biofuels account for 10 percent of our transportation fuel supply, and the industry produced a record 16 billion gallons of renewable fuel in 2014.¹³ The country's economic, security, and environmental interests in expanding the renewable fuel industry remain as vital as ever.

However, the proposed 2014 RVOs under the RFS that the Environmental Protection Agency (EPA) issued in November 2013 were for the first time below the statutory volumes – and below what the biofuels industry was capable of producing. Instead, the RVOs were based on the available infrastructure. This flawed methodology, contrary to legislative intent, undermined the federal government's commitment to renewable fuels, added serious policy risk within the biofuels industry, and significantly reduced investment in current and next-generation biofuels. The EPA rightly scrapped the proposed 2014 RVOs in November 2014 and released proposed RVOs for 2014-2016 on May 29, 2015.

The lack of policy certainty around the RFS has left biofuels producers guessing the rules of the game and has constrained industry growth, putting at risk significant domestic economic investment and associated jobs. For two years, the industry has faced reduced market access, freezing billions of dollars of investment just as advanced biofuels were poised to expand. Policy instability and delays in EPA rulemaking are responsible for the majority of an estimated \$13.7 billion shortfall in necessary investments for capacity to meet the RFS goal.¹⁴ In 2014, nearly 80% of U.S. biodiesel producers scaled back production, with almost 6 in 10 idling production altogether, due to the uncertainty surrounding the RFS and corresponding market demand.¹⁵ While three cellulosic ethanol plants came online in 2014, not one other cellulosic ethanol plant has selected a site in the U.S. since EPA released its proposed 2014 RVOs in November 2013.

DEBATES AND MESSAGING IN THE STATES

The nation's energy markets are governed by a mix of federal and state policies. States regulate their own retail power markets and 38 (including the District of Columbia) have enacted requirements or goals to drive renewable energy development and to diversify power generation. As existing coal power plants approach the end of their operable lives, many states are looking to renewables as cheaper, cleaner, safer, and more secure replacements. Important state policies include Renewable

¹² EIA, "Table 10.3 - Fuel Ethanol Overview", 2015. http://www.eia.gov/totalenergy/data/monthly/pdf/sec10_7.pdf

¹³ EPA, "RIN Generation and Renewable Fuel Volume Production by Fuel Type", May 11, 2015.

<http://www.epa.gov/otaq/fuels/rfsdata/2014emts.htm>

¹⁴ Biotechnology Industry Association (BIO), "Estimating Chilled Investment for Advanced Biofuels Due to RFS Uncertainty", May 2015.

<https://www.bio.org/sites/default/files/Estimating%20Chilled%20Investment%20for%20Advanced%20Biofuels.pdf>

¹⁵ The Daily News, "Biofuels needs stronger standards", May 12, 2015. http://www.wahpetondailynews.com/news_monitor/biofuels-needs-stronger-standards/article_189afde0-f8ad-11e4-89cd-1b3b53212cf9.html

Portfolio Standards (RPSs), new rate-making structures, and net metering – all of which are current subjects of debate. The EPA’s Clean Power Plan, which in the long run offers a great opportunity for renewable energy growth, will bring state policies even more to the center of renewable energy policy debates, because compliance plans will be state-driven and state-implemented.

Some states are attempting to reduce or repeal their RPSs, which have served as important policy tools to drive private investment in cleaner and cheaper renewable energy. Contrary to claims that RPSs add costs, states with the most renewables have seen their power rates increase less than states without significant renewable energy development.¹⁶ A New York state government study found that the state’s RPS yielded a net present value benefit of \$1.6 to \$3.5 billion.¹⁷

More broadly, the boom in distributed generation has spurred numerous state debates about how to account for the impact of that generation on the grid. Some argue that rooftop solar expansion and grid modernization require revisiting rates and charges to ensure that solar customers do not shift costs onto other customers. Others argue that those investing in distributed generation actually provides additional benefits to the utility and the grid system that should be compensated. Studies in some states have shown that rooftop solar *lowers* other consumers’ costs by avoiding expenses for building and upgrading central generation, transmission, and distribution systems. For example, Maine’s Distributed Solar Valuation Study finds that the value of solar power produced in the state is \$0.33/kWh, while customers who put solar panels on their roofs only receive a credit on their bill worth about \$0.13/kWh.¹⁸ Furthermore, distributed renewable generation provides tangible benefits to consumers; for instance, deploying solar where it displaces coal can reduce pollutants that cause health consequences for those living closest to coal-fired power plants.

Developments in distributed generation and other technologies are challenging the traditional central generation model for power production. Some utilities are doing a better job than others in beginning

***Real conservatives
champion free market
principles, not government-
created monopolies...
Freedom, wanting choice –
those aren’t Republican or
conservative attributes,
those are American
attributes.***

– Debbie Dooley, Green Tea Coalition

to shift their business models to better accommodate distributed, renewable resources and in working with policymakers and regulatory agencies to provide the necessary support to begin upgrading aging grid infrastructure. It is also possible that a decentralized, smart electricity network that serves as a platform on which competition takes place could function and be paid for entirely differently (e.g., through market forces instead of regulated rates of return).

Some state regulators are actively grappling with these issues, such as the Reforming the Energy Vision (REV) effort in New York, which is seeking to incorporate innovative

¹⁶ DBL Investors, *Renewables are Driving Up Electricity Prices, Wait, What?*, March 2015. <http://www.dblinvestors.com/wp-content/uploads/2015/03/Pfund-Chhabra-Renewables-Are-Driving-Up-Electricity-Prices-Wait-What.pdf>

¹⁷ NYSERDA, *NYSERDA Renewable Portfolio Standard Main Tier 2013 Program Review, Volume 2 — Main Tier Current Portfolio Analysis*, 2013. <http://www.nysERDA.ny.gov/-/media/Files/EDPPP/Energy-and-Environmental-Markets/RPS/RPS-Documents/2013/2013-RPS-volume-2.pdf> See also: Department of Energy, Lawrence Berkeley National Laboratory, *A survey of state-level cost and benefit estimates of renewable portfolio standards* (LBNL-6589E), 2014. <http://emp.lbl.gov/publications/survey-state-level-cost-and-benefit-estimates-renewable-portfolio-standards>

¹⁸ Maine Public Utilities Commission, *Maine Distributed Solar Valuation Study*, 2015. <http://www.nrcm.org/wp-content/uploads/2015/03/MPUCValueofSolarReport.pdf>

regulatory structures, such as demand response, smart and microgrid technologies, and advanced ancillary services, to create a platform that is competition-friendly but preserves the value of the underlying network (e.g., universal service). Many state regulators, however, have not yet embraced the potential of decentralized renewable energy.

Solar is on over 650,000 homes across the country,¹⁹ providing a clear connection for homeowners to mobilize for policy that affects their lives. These homeowners are not only motivated by climate change and environmental concerns, but also by principles related to free market choice, competition for government-created monopolies, and national security – principles that can unite Americans in both red and blue states. Conservatives could lead the charge for renewables in red states by grabbing the mantle of energy freedom and choice.

POLICY RECOMMENDATIONS

In the current policy environment, the renewable energy industry has a few concrete recommendations for Congress and other policymakers:

- ▶ **Extend the renewable energy tax incentives.** Congress should extend the PTC and ITC now, without waiting for comprehensive tax reform, so the industry can compete on a level playing field and continue hiring, expanding, reducing costs, and increasing taxpayer value. Industry views on the details of extension are mixed. Some would like to see the PTC extended for a long period, while others could probably support a reasonable, multi-year phase-out of the PTC that provides a clear, more certain pathway. The solar industry has only had the benefit of the ITC since 2006, and it is not time to ramp it down. Industry costs are coming down, as are costs per watt per system to taxpayers, which translates to an inherent phase-down of the ITC. Congress should extend both the section 48 (commercial) and section 25D (residential) ITCs. Ideally, the tax credits should also be made easier to use and more effective for taxpayers, such as by making them refundable, transferable, or tradable.
- ▶ **Consider other improvements to renewable energy incentives.** Improvements such as expansion of MLPs to cover renewable energy, changes to start-of-construction rules, and changes to passive-active rules would be extremely beneficial. Furthermore, Modified Accelerated Cost Recovery System (MACRS) depreciation is vital to renewable energy deals, and it is important to keep something closer to the five-year MACRS. In addition, while the renewables industry recognizes the challenges involved in putting new tax credits in place, it would be helpful to create incentives for associated and developing technologies, such as storage.
- ▶ **Improve the regulatory process for renewable energy project siting.** There is much focus in Congress on oil and gas permitting, but streamlining permitting for renewable energy projects is just as important. The difficulty of getting a permit on federal lands is causing some businesses to abandon efforts to do business on them. Regulatory reform is needed so that developers are not stuck for many years – spending millions of dollars – trying to develop projects.

My personal opinion is that it is time to start talking about phasing down the PTC gradually and making a lesser PTC permanent for the long run.

– Ben Fowke, Xcel Energy

¹⁹ SEIA, “Solar Industry Data”, May 5, 2015. <http://www.seia.org/research-resources/solar-industry-data>

- ▶ **Improve policies to expand and upgrade transmission and distribution systems for renewable energy.** New transmission development is often stymied by policy hurdles. While the Federal Energy Regulatory Commission's (FERC) Order 1000 has been very positive, there are still some applications of rates that are having a chilling effect on transmission development. In addition, taxable reimbursements to utilities for interconnection make some projects too expensive to pursue.
- ▶ **Support the domestic renewable fuels industry.** The biofuels industry, like all industries, depends on access to customers and stable policy in order to grow and attract the necessary capital. An RFS implemented in a timely manner, in accordance with bipartisan statutory intent, is an effective long-term policy that would ensure market access. While California and Oregon have enacted low carbon fuels standards, the renewable fuels industry needs an effectively implemented RFS to assure investors that if biofuels plants are built, there will be a market in which to sell these fuels. Without a level policy playing field and consistent policy implementation, biofuels plants will continue to close and the necessary capital to expand the industry, reduce cost and price volatility at the pump, expand consumer choice, and lower greenhouse gas emissions will be drawn towards other sectors.