Enhance the Competitiveness of Renewable Sources of Energy

ENERGY Works For US

In addition to its significant reserves of fossil fuels, the United States is home to a large and diverse mix of renewable energy sources, including wind, solar, energy from waste, hydropower, geothermal, and biomass. While these forms of energy face challenges of cost and reliability, over time, additional research and development will bring prices down and deliver more reliable power—ultimately providing more clean energy to Americans. The government must phase out subsidies and reform its policies, which have fallen out of sync with the realities of their supply and the operation of power markets.

Projected renewable electricity generation by type, including end-use generation, 2008-2040 (billion kilowatthours)

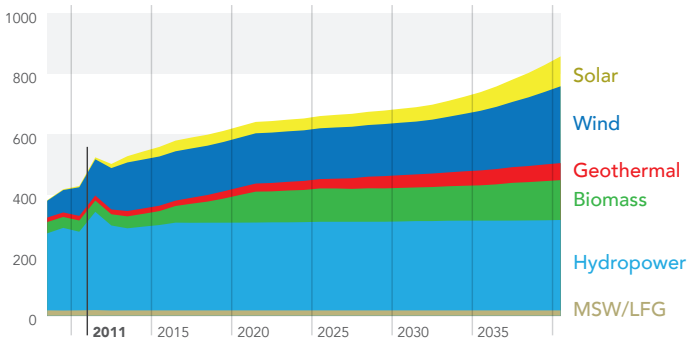

Image source: U.S. Energy Information Administration Annual Energy Outlook 2013

Renewables in the Electric Power Sector

Renewable energy resources will continue to play an increasingly important role in powering America.

In 2012, renewable sources provided roughly 13% of the United States' electric power production. Non-hydro renewables, which are generally more intermittent and produce less power, accounted for approximately 6% of production—more than twice what they delivered in 1990—and the U.S. Energy Information Administration (EIA) expects that number to increase substantially by 2030.

While the costs of renewable energy—primarily wind and solar—continue to come down, in many markets they remain uncompetitive with traditional energy sources and established hydroelectric projects. And with natural gas prices at historic lows, renewables look less appealing than they once did. As a result, these new renewables have grown to rely upon government mandates and subsidies.

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Policy Recommendations

- DOE should focus its renewable and energy storage technology research and development programs on lowering the installed cost of renewable electricity resources and levelizing the real-time output of such renewable resources.
- Congress should not extend the PTC, thereby ensuring a multiyear phase-out of the credit.
- Congress should pass legislation that modifies the federal tax code to permit the formation of master limited partnerships by renewable energy investors and, as a matter of policy, this option should be available to all energy projects.
- DOE should focus its biofuels research and development programs on lowering the installed cost of cellulosic ethanol production.
- Congress should address the problematic structure of the Renewable Fuel Standard, including requiring more flexibility to reflect market conditions, as well as potentially repealing the mandate.
- EPA should more aggressively exert its authority to waive and adjust annual Renewable Fuel Standard levels to accurately reflect market conditions, especially the availability of mandated fuels.

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The U.S. government provides federal tax credits to encourage the deployment of renewable power sources, but usually for one- to two-year periods and has allowed them to lapse only to reinstate them later, usually retroactively. The resulting boom-and-bust cycles have deterred investment and created tremendous inefficiencies, limiting the steady development of renewable power.

These tax credits also sometimes distort the market by encouraging generators to sell renewable power at a negative cost. As these renewable energy sources enjoy greater commercial penetration, the rationale for these tax credits becomes weaker.

To create a more predictable investment environment, the Energy Institute advocates phasing out these tax incentives.

One major challenge to renewable energy is that it remains intermittent. Solar and wind are primarily viable when the sun is shining and the wind is blowing, but that's not always when consumers demand more electricity. And many renewable sources are stranded far from demand centers until transmission capacity can link them to markets.

As intermittent renewable resources grow in importance, the need for more robust transmission systems becomes increasingly apparent. Efforts by the Departments of Energy and Interior to facilitate the siting of renewable energy projects on federal lands are supporting the development of America's significant offshore wind resources.

Breakthrough battery and storage technologies may also allow operators to store electricity cost-effectively, enabling them to compensate for changeable conditions and balance wind and solar energy output with real-time loads on the grid.

Transportation Sector

Renewable sources also play a greater role in American transportation. Federal incentives and mandates have driven much of the increase in biofuels in recent years. Yet because cellulosic ethanol and other advanced forms of biofuels have failed to be commercially available at the scale of quantities mandated, the EIA has substantially lowered its projections for the quantities of these fuels available in the coming years.

In 2005, the Energy Policy Act (EPAct 2005) set a new Renewable Fuel Standard (RFS) requiring Americans to use 7.5 billion gallons of ethanol and biodiesel per year by 2012. In 2007, the Energy Independence and Security Act built on EPAct 2005 and increased that requirement to 36 billion gallons by 2022.

The RFS has many unintended consequences. For example, as the RFS progressively increases the required amounts of biofuels to be blended, static gasoline demand has resulted in biofuels making up a larger percentage of the gasoline used by Americans. If that level were to exceed the 10% "blendwall," auto manufacturers will no longer be able to cover certain vehicles under warranty.

Every one of the challenges of the RFS imposes significant additional costs on Americans, and taken together, they render it completely unworkable. Even the EPA now recognizes that the mandate is impractical. In November 2013, the agency set the quantity of mandated biofuels for 2014 below the level prescribed by the RFS. EPA's first use of its discretion under the RFS was warranted, but significant and durable structural changes must be made.

In 2012, renewables accounted for roughly

13%

OF TOTAL ELECTRIC POWER SECTOR PRODUCTION.

AEO 2013 estimates that non-hydro renewable generation capacity will exceed

110 GIGAWATTS

BY 2030.

The Renewable Fuel Standard issued in 2007 requires Americans to consume

36 BILLION GALLONS

OF BIOFUEL BY 2022.

Want to know more about renewable energy? Read the full report, *Energy Works for US*.

ENERGY Works For US

www.energyxxi.org/energyworksforus

Data referenced from the following sources: U.S. Energy Information Administration, Annual Energy Outlook 2013; U.S. Energy Information Administration, Electric Power Monthly, January 2013