

What Lies Beneath the Shifting Politics: Implications of U.S. Energy Policy on Global Energy Markets

By Julie Carey and Maggie Shober

The domestic and global energy industry is inextricably linked to political and regulatory systems that collectively implement government objectives for the energy industry, including economic incentives for investment and regulatory oversight. The recent U.S. election highlighted the importance of energy policy and now there is an anticipated shift away from the Obama Administration's clean energy policy agenda toward a pro-fossil fuel policy focus under the Trump Administration. This article investigates the influence of energy policies on the U.S. and global energy industry.

Important considerations for the impact of shifting policies include the various levers of policy and regulatory oversight that exist on the federal and state levels that direct the energy industry. While the Federal government regulators implement Presidential Administrative policies, state policy makers and regulators have a substantial role as a considerable amount of energy regulatory activity occurs at the state level. State goals vary widely, and can be in conflict with Federal goals.

In addition, market forces are at work in both the shale oil and gas revolution and the development of renewable energy that factor into the overall impact of any shifts in energy policies. The U.S. is flush with economic oil and gas resources that have observed substantial growth and development over nearly a decade. These resources provide strong contributions to the economy during their development and for ongoing operational jobs. U.S. oil and gas is increasingly important to global energy markets.

On the renewable side, the heightened focus on clean energy initiatives over the past 10 years has been spurred by a combination of Federal and State regulations. These policies have combined with technological advances to drive substantial cost reductions in renewable energy products that now put renewable energy in a more advantageous economic position than ever before.

Importantly, considerations of the market impacts from oil and gas and renewables is required to evaluate the impact of a policy shift by the new administration and Congress. Additionally, the benefits from a diversified portfolio of energy resources to meet our nation's energy needs, economic (i.e., jobs), environmental, and other policy goals should all be considered in concert when developing and advancing energy policy measures.

RENEWABLE ENERGY

Recent compounding forces have led to strong growth in both solar and wind energy. Chief among these are technological improvements and steep declines in equipment costs, in addition to cost assistance provided by state and federal policies. The average cost of a utility-scale solar power plant dropped by 12% in 2015 alone.¹ Wind has seen similar trends of declining costs and improving capacity factors.² Future improvements are generally expected. In addition to dropping costs, advances in the technologies and design of systems have increased the performance of solar projects. Solar capacity factors of projects installed in 2014 increased from 21% to 26.7% from new projects installed in 2010.³ Demand for renewables can arise from state policies, most commonly Renewable Portfolio Standards (RPS) that require utilities to obtain an increasing proportion of electricity from renewable sources, as well as customer demands including corporate renewable or sustainability policies leading to purchasing renewable power as well as residential roof top solar demand. Energy efficiency (i.e., targeted goals to reduce energy consumption) has seen similar trends and policies as well. The U.S. increased reliance on renewable energy is not unique. Developed and developing countries across the globe are seeing surges in renewable installations.

Despite growing interest and reliance on renewable energy in the U.S. and abroad, the new Presidential Administration and Congress are expected to shift federal policies away from additional support to the renewable energy industry towards support for fossil fuel. While the energy industry generally believes existing tax credits for wind and solar will not be repealed by the new Congress, most of the energy industry anticipates they will not be extended beyond their current sunset date. The Clean Power Plan (CPP), a regulation on CO₂ from power plants promulgated by the Obama EPA, would have created an advantage for renewable sources over those that emit CO₂ when it began in 2022. The 2016 election ensures that the CPP will not move forward.

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See footnotes at end of text.

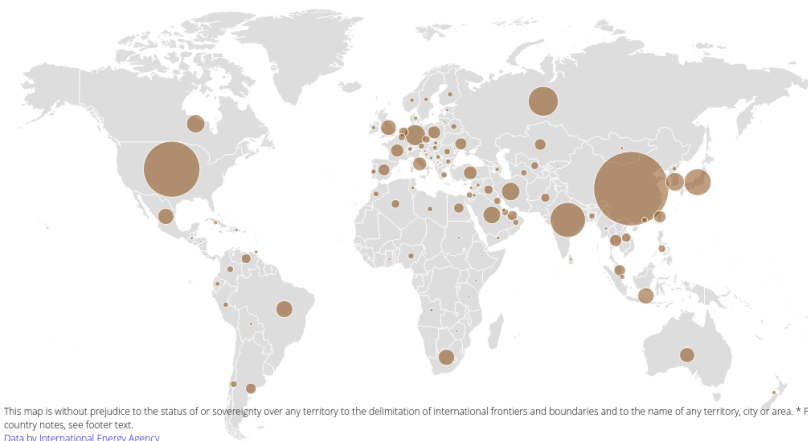
The combination of continuing state policies and incentives and declining costs suggests that even after the tax credits are allowed to expire renewable energy is likely to remain a key piece in our power grid. In addition, states have the ability to step in where the federal government is reducing or eliminating fiscal incentives and can offset the lost federal incentives with state policies. While the renewable sector has a more tempered outlook than it would have if the election results had been different, its future remains bright in spite of anticipated federal policy changes.

CLIMATE CHANGE

The Paris Agreement went into effect in November of 2016, just before election day in the U.S. The Paris Agreement is an international agreement under the United Nations Framework Convention on Climate Change in which countries affirm the importance of limiting global temperature changes to below 2° C and pledge to reduce global greenhouse gas emissions by meeting binding commitments determined by each signatory nation. The following map provides a visual depiction of the global nature of energy-related CO₂ emission, a common reference greenhouse gas.⁴ The Paris Agreement covers additional greenhouse gases such as methane from land use change. As seen below, China and the U.S. had the first and second highest emissions of CO₂ from fuel combustion in 2014, respectively. Other large emitters include the European Union and India.

New Presidential leadership has vowed to pull the U.S. out of the Paris Agreement. While the impact

CO₂ Emissions from Fuel Combustion (Mt CO₂) (2014)



This map is without prejudice to the status of or sovereignty over any territory to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. * For country notes, see footer text.
Data by International Energy Agency

of the U.S. not participating is unclear, international climate negotiations have evolved over the past few decades, other countries could step into the fold and offer to lead the path forward, and the market forces described above have not been limited to the U.S. In fact, some of the advancements that have enabled the U.S. to rapidly install renewables can be attributed to markets built in countries that have had climate policies in place for some time. In reaction to the possible U.S. exit, China expressed its continued interest as a Chinese official stated “China’s influence and voice are likely to increase in global climate governance, which will then spill over into other areas of global governance and increase China’s global standing, power and

leadership.”⁵ , China has recently showed increased commitments to additional renewables in its long term energy plan (including , nearly doubling the country’s installed solar capacity in 2016 with 34 GW solar installation additions), completion of over 30 GW of nuclear capacity installations and, effectively cancelling or delaying over 150 GW in new coal capacity, and capping total coal capacity at 1,100 GW by 2020.⁶ Other nations (including Mexico and Canada) have contemplated a possible carbon tariff on the U.S. if the Paris agreement pledge is not upheld.⁷

For all of these reasons, if the U.S. chooses not to follow through with the ratified Paris Agreement, it will not likely be viewed as a leader in the international climate political regime and could lose its seat at the table. In addition, the U.S. would likely have a hard time meeting its target of 26-28% emission reductions in 2025 compared to 2005 levels without the CPP.⁸ However, trends not dependent on federal regulations have contributed to significant declines in U.S. greenhouse gas emissions in recent years. The growth in natural gas and renewable power generation and a heightened focus to curb energy consumption through high energy efficiency capabilities.

OIL AND GAS

The emergence of unconventional oil and gas in the U.S. over nearly the past decade has and will continue to have a tremendous impact on both the energy industry and the economy. In a paradigm shift, the oil and gas resources which were thought to be rapidly depleting, are now made possible by the shale revolution and economically efficient horizontal drilling combined with hydraulic fracturing of oil and gas resources from shale rocks located deep under the earth’s surface. The net effect of our abundant resources and cost effective extraction has led to high production levels of unconventional

oil and gas, as shown in Table 1 below.

The outlook for U.S. unconventional oil and gas is exceptionally bright—with expectations of enough supply to substantially meet domestic needs, and surplus enough to export to other countries. The U.S. became a net exporter of natural gas in November 2016. Importantly, oil and gas resources comprise the majority of energy consumed in the U.S. and global economy, comprising 65% of domestic energy use (and 16% for coal) and 57% of global energy consumption (29% for coal).¹⁰

Notably, our country's increased reliance on natural gas from abundant and low cost unconventional resources (by displacing coal) has reduced CO₂ emissions, and will continue to do so in the future. Carbon emissions hit a 20-year low (in the first quarter 2012 according to EIA) and the U.S. has made substantial and unexpected progress toward meeting the Kyoto Protocol even though we did not commit to it.¹¹

The U.S. abundant unconventional oil and gas resources create substantial energy security benefits, increasing our economic bargaining power or leverage in the global geopolitical arena. The bargaining tool can lead to better negotiations for global diplomacy and other goals as the U.S. has the ability to walk away from international negotiations which increases our likelihood to achieve our goals. We also have the ability to bring parties to the negotiating table that we previous were not able to. Importantly, this increased bargaining power could be used to effectuate many changes including, if the U.S. desired, global CO₂ emissions reductions or other goals that would increase sales of the U.S. abundant oil and gas resources contingent upon certain requirements.¹² A few illustrations of potential requirements could include greater reliance on natural gas power plants, commitments to CO₂ abatement power generation technology development, and other ways to reduce carbon. Assuming the U.S. energy policy targeted such goals.

In addition, increased oil and gas production from the additional sales to international counterparts in the global energy market strongly contribute to the U.S. economy by expanded energy output that creates additional jobs, increases tax revenues, improves our balance of trade payments and consequently expands Gross Domestic Product (i.e., GDP). The economic benefits extend beyond the energy industry as the expanded oil and gas production is like throwing a rock into water, which has a ripple effect. The increased demand for oil and gas has an indirect impact on related industries and services that serves as an extra benefit to the economy in an indirect benefit. There is also a further induced impact to the economy from additional spending due to higher labor income in these industries. Energy policies that expand U.S. energy exports contribute to the U.S. economy.

CONCLUSION

While what lies beneath the shifting politics is challenging to forecast, it is clear that we need a better path forward to find ways to meet in the middle for the benefit of our collective goals surrounding the economy, the energy industry, and the environment. More thoughtful comprehensive energy policies could be made to achieve substantial improvements for the U.S. to maximize the benefits to the energy industry, the economy and the environment which recognize the substantial economic benefits from a *diversified energy portfolio*, inclusive of oil, gas, and renewables.

Footnotes

¹ Lawrence Berkeley National Laboratory, "Median Installed Price of Solar in the United States Fell by 5-12% in 2015" August 24, 2016: <http://newscenter.lbl.gov/2016/08/24/median-installed-price-solar-united-states-fell-5-12-2015/>

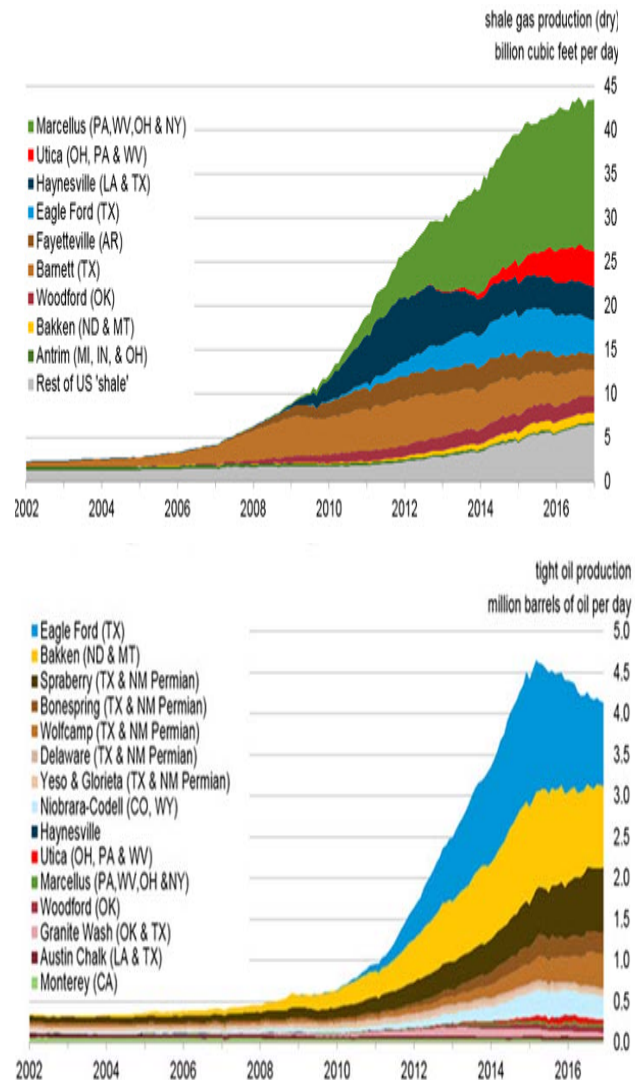


Table 1: U.S. Shale Gas and Tight Oil Production Selected Plays⁹

² See DOE's 2015 Wind Technologies Market Report for details: https://emp.lbl.gov/sites/all/files/2015-windtechreport.final_.pdf

³ Ibid

⁴ International Energy Agency. <http://www.iea.org/statistics/ieaenergyatlas/>

⁵ Reuters, "Trump win opens way for China to take climate leadership role," November 11, 2016: <http://www.reuters.com/article/us-usa-election-climatechange-idUSKBN1360DK>

⁶ Chinese Energy Storage Alliance, "Power Sector Reforms Announced in China's 13th Five Year Plan," November 22, 2016: <http://en.cnesa.org/latest-news/2016/11/22/power-sector-reforms-announced-in-chinas-13th-five-year-plan>.

⁷ New York Times, "Diplomats confront new threat to Paris Climate Pact: Donald Trump," November 19, 2016: <https://www.nytimes.com/2016/11/19/us/politics/trump-climate-change.html>

⁸ Nature World News, "US to Fall Short on Paris Agreement Without the Clean Power Plan, Study Suggests," September 27, 2016: <http://www.natureworldnews.com/articles/29296/20160927/u-s-fall-short-paris-agreement-without-clean-power-plan.htm>

⁹ Energy Information Administration https://www.eia.gov/energy_in_brief/article/shale_in_the_united_states.cfm

¹⁰ https://www.eia.gov/energyexplained/index.cfm?page=us_energy_home; Also notably the U.S. has an abundance of coal resources, including low-sulfur coal from the Powder River Basin. BP Energy Outlook 2016. <http://www.bp.com/en/global/corporate/energy-economics/energy-outlook.html>

¹¹ Surprise Side Effect Of Shale Gas Boom: A Plunge In U.S. Greenhouse Gas Emissions, Forbes, Julie Carey, December 7, 2012. <https://www.forbes.com/sites/energysource/2012/12/07/surprise-side-effect-of-shale-gas-boom-a-plunge-in-u-s-greenhouse-gas-emissions/#8f5f5e2068fe>

¹² The same bargaining leverage could be used with our U.S. coal resources.

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