

# Energy Policies Under the Trump Administration

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## Abstract

Energy security was a core component of President Trump's campaign rhetoric. His candidacy was partially built on his avowed affinity for American fossil fuel industries, and his skepticism of both climate change and renewable energy. While still in its infancy, the actions of the Trump administration appear to be consistent with this element of his campaign platform. Nonetheless, the administration's ability to withstand the pressures of larger economic, political, and environmental trends affecting the American power sector remains in question.

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## Oil

President Trump expressed firm support for the American petroleum industry, and a marked skepticism of renewable energy and environmental regulation throughout his campaign.<sup>1</sup> He has referred to oil as "the country's lifeblood",<sup>2</sup> and has repeatedly expressed frustrations over the encumbrance of international oil dependency, environmental regulation and infrastructure permitting. He has instead advocated for relatively untrammled exploration and exploitation.<sup>3</sup> The America First Energy Plan calls for oil exploration on federal lands, the tapping of what is estimated to be some \$50 trillion in untapped reserves, and energy independence.<sup>4</sup> President Trump has also expressed what might be defined as neo-mercantilist inclinations towards the commodity, calling for the seizure of oil supplies in the Middle East.<sup>5</sup> The influence of his oil-centric perspective in turn is rather indubitable, with no less than the Secretary of State himself being a former oil executive. This of course does not represent an unprecedented degree of petrol-centric influence— President George HW Bush was an oil executive in his own right.

### *Keystone XL and Dakota Access Pipelines*

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<sup>1</sup>[http://www.ontheissues.org/2016/Donald\\_Trump\\_Energy\\_+\\_Oil.htm](http://www.ontheissues.org/2016/Donald_Trump_Energy_+_Oil.htm)

<sup>2</sup>[http://www.ontheissues.org/2016/Donald\\_Trump\\_Energy\\_+\\_Oil.htm](http://www.ontheissues.org/2016/Donald_Trump_Energy_+_Oil.htm)

<sup>3</sup>[http://www.ontheissues.org/2016/Donald\\_Trump\\_Energy\\_+\\_Oil.htm](http://www.ontheissues.org/2016/Donald_Trump_Energy_+_Oil.htm)

<sup>4</sup><https://www.whitehouse.gov/america-first-energy>

<sup>5</sup>[http://www.ontheissues.org/2016/Donald\\_Trump\\_Energy\\_+\\_Oil.htm](http://www.ontheissues.org/2016/Donald_Trump_Energy_+_Oil.htm)

The Keystone XL and Dakota Access pipeline projects were resurrected early in 2017 by executive order,<sup>6</sup> citing an ambivalent 2014 State Department impact study.<sup>7</sup> The projects are expected to create upwards of 12,000 temporary jobs, but only around 40 permanent jobs.<sup>8</sup> The Keystone XL pipeline has been estimated by the State Department to provide some \$2 billion of economic benefit overall.<sup>9</sup> Dakota Access claims that the project would mean approximately \$156 million in sales and revenues to state and local governments.<sup>10</sup> In addition to potential economic benefits, supporters assert that transportation of oil via pipeline is more environmentally sound than transportation via train or barge.<sup>11</sup> The renewal of the pipelines' will serve as a positive bridge for American-Canadian relations because the pipelines will connect the two countries.<sup>12</sup>

Detractors hope that thwarting the projects will stymie what they see as an ecologically destructive industry. Oil sands extraction is estimated to be 17 percent more carbon intensive than traditional modes of extraction.<sup>13</sup> Environmentalists are further concerned with the prospect of groundwater pollution. The Keystone XL's original planned route would cut through the Ogallala Aquifer, and bring it within a mile radius of many more.<sup>14</sup> The Dakota Access project is also opposed by members of the Standing Rock Sioux, who contend that the pipeline will be deleterious to their "environmental and economic well-being, and would damage and destroy sites of great historic, religious, and cultural significance."<sup>15</sup>

While largely symbolic given their relatively marginal economic and environmental impacts, these pipelines emerged as a considerable point of contention under the previous administration.<sup>16</sup> Their proposed construction sites saw high-profile, longterm protests, and public support for the pipelines has deteriorated sharply over time partially because of them. Recent Pew polling indicates that 48 percent of the public is opposed to the Keystone XL project, and 42 percent are in favor; polling in 2013 showed 66

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<sup>6</sup>[https://www.nytimes.com/2017/01/24/us/politics/keystone-dakota-pipeline-trump.html?\\_r=1](https://www.nytimes.com/2017/01/24/us/politics/keystone-dakota-pipeline-trump.html?_r=1)

<sup>7</sup>[https://www.washingtonpost.com/news/energy-environment/wp/2017/03/24/trump-administration-grants-approval-for-keystone-xl-pipeline/?utm\\_term=.43127ca3f770](https://www.washingtonpost.com/news/energy-environment/wp/2017/03/24/trump-administration-grants-approval-for-keystone-xl-pipeline/?utm_term=.43127ca3f770)

<sup>8</sup><http://news.nationalgeographic.com/2017/01/impact-keystone-dakota-access-pipeline-environment-global-warming-oil-health/>

<sup>9</sup><http://www.cnn.com/2017/01/24/us/dapl-keystone-pipeline-environment-protesters-trump-order/>

<sup>10</sup><http://www.cnn.com/2017/01/24/us/dapl-keystone-pipeline-environment-protesters-trump-order/>

<sup>11</sup><http://www.chicagotribune.com/news/opinion/commentary/ct-keystone-xl-dakota-access-pipelines-perspec-0131-md-20170130-story.html>

<sup>12</sup>[https://www.nytimes.com/2017/01/24/us/politics/keystone-dakota-pipeline-trump.html?\\_r=1](https://www.nytimes.com/2017/01/24/us/politics/keystone-dakota-pipeline-trump.html?_r=1)

<sup>13</sup><http://www.cnn.com/2017/01/24/us/dapl-keystone-pipeline-environment-protesters-trump-order/>

<sup>14</sup><http://www.cnn.com/2017/01/24/us/dapl-keystone-pipeline-environment-protesters-trump-order/>

<sup>15</sup><http://www.cnn.com/2017/01/24/us/dapl-keystone-pipeline-environment-protesters-trump-order/>

<sup>16</sup>[https://www.nytimes.com/2017/01/24/us/politics/keystone-dakota-pipeline-trump.html?\\_r=1](https://www.nytimes.com/2017/01/24/us/politics/keystone-dakota-pipeline-trump.html?_r=1)

percent in favor and 23 percent opposed.<sup>17</sup> The divide falls starkly along partisan lines.<sup>18</sup> Public opinion regarding the Dakota Access project is similarly stratified.<sup>19</sup>

### *Regulation and Prices*

The administration has taken a strong line against what they deem to be excessive regulations for the petroleum industry. President Trump's America First Energy Plan asserts that cutting regulations will result in wage increases of \$30 billion over 7 years.<sup>20</sup> Nonetheless, regulation is widely considered to play only a minor part in the industry's vitality. While oil firms are certainly in favor of lessened legal encumbrance, they have low expectations that actions by Washington can play a significant role vis a vis broader market forces.<sup>21</sup>

Republican officials have also proposed a border adjustment tax for oil. This would attempt to privilege U.S. exports and discourage imports by taxing the latter at a proposed rate of 20 percent.<sup>22</sup> While the U.S. has increased its energy exportation dramatically because of the shale oil revolution, it continues to import roughly five million barrels a day.<sup>23</sup> This has potential to raise prices for American consumers, a seeming contradiction with the President's earlier mandates for cheaper fuel.<sup>24</sup>

In contrast, there has been conjecture that the administration may well succeed in forcing oil prices downward, to the possible detriment of the industry. The commodity is "overwhelmingly glutted," owing to the resurgence of the shale oil revolution, as well as unprecedented levels of storage and increased Iranian and Iraqi production.<sup>25</sup> The petroleum industry is reportedly "reeling with bankruptcies" owing to declining prices; additional drilling as advocated by President Trump may exacerbate the issue.<sup>26</sup> The administration's patronage of the oil industry may therefore find itself at odds with its ideal of cheap fossil fuel energy for American consumers.

The vitality of the oil industry, and its ability to provide employment to the President's constituency, is dependent upon a rebound in oil prices<sup>27</sup>. American Enterprise Institute

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<sup>17</sup><http://www.pewresearch.org/fact-tank/2017/02/21/public-divided-over-keystone-xl-dakota-pipelines-democrats-turn-decisively-again-keystone/>

<sup>18</sup><http://www.pewresearch.org/fact-tank/2017/02/21/public-divided-over-keystone-xl-dakota-pipelines-democrats-turn-decisively-again-keystone/>

<sup>19</sup><http://www.pewresearch.org/fact-tank/2017/02/21/public-divided-over-keystone-xl-dakota-pipelines-democrats-turn-decisively-again-keystone/>

<sup>20</sup><https://www.whitehouse.gov/america-first-energy>

<sup>21</sup><http://www.reuters.com/article/us-usa-trump-oil-regulation-insight-idUSKBN16U1A9>

<sup>22</sup><http://time.com/4662244/donald-trump-energy-policy-unclear/>

<sup>23</sup><http://time.com/4662244/donald-trump-energy-policy-unclear/>

<sup>24</sup><http://www.reuters.com/article/us-ceraweek-trump-idUSKBN16G0IU>

<sup>25</sup><http://www.nasdaq.com/article/will-trump-send-oil-prices-crashing-cm760322>

<sup>26</sup><http://money.cnn.com/2016/05/31/investing/donald-trump-energy-plan-oil-gas-coal/>

<sup>27</sup><https://www.aei.org/publication/energy-security-and-trumps-higher-oil-price-wager/>

analyst Andrew Bowen expects that the administration will apply pressure on Saudi Arabia and Russia to reduce production, but does not expect that oil prices will exceed \$70 a barrel.<sup>28</sup>

In keeping with its friendliness to the industry and hostility to over-regulation, the Trump administration has repealed anti-corruption legislation aimed at oil and gas firms. The regulation has been touted as necessary in promoting transparency in the resource cursed countries within which multinational petroleum interests often operate. Critics counter that it compels U.S. firms to disclose trade secrets and places them at an unfair competitive disadvantage in an inherently dubious business environment.<sup>29</sup>

President Trump has stated his intent to review federal vehicle fuel efficiency standards, known as CAFE standards.<sup>30</sup> Per the Department of Transportation, the standards are intended to “reduce our petroleum consumption, increase the availability of alternative fuel vehicles, promote the advancement of innovative technologies, lower greenhouse gas emissions both helping to mitigate climate change and improve air quality”.<sup>31</sup> They are also intended to encourage the early adoption of renewable technologies. Transportation accounts for some 71 percent of U.S. oil consumption.<sup>32</sup> As such, an arrest of upward motor vehicle efficiency trends could significantly influence both the environment and market conditions.

There is some speculation that the administration’s pro-coal industry policies may actually harm the oil and gas industries in turn. Terry Tamminen of CNBC posits that a rollback of Obama’s Clean Power Plan along with CAFE standards will require compensating for the increased emissions elsewhere in order to remain in compliance with federal air quality standards.<sup>33</sup>

### *Recent Developments*

President Trump signed the Energy Independence executive order in late March 2017. A broad array of regulations will be reviewed or overturned, including those pertaining to oil. The order has notably stopped short of actual withdrawal from the Paris Agreement and an outright disregard for the EPA’s carbon endangerment finding. The latter serves

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<sup>28</sup><https://www.aei.org/publication/energy-security-and-trumps-higher-oil-price-wager/>

<sup>29</sup><http://foreignpolicy.com/2017/02/01/greasy-palms-dept-congress-to-repeal-oil-and-mining-anti-corruption-regulation-exxon-mobil-rex-tillerson-republicans-resource-curse/>

<sup>30</sup><http://www.nbcnews.com/business/autos/trump-rolls-back-obama-era-fuel-economy-standards-n734256>

<sup>31</sup><https://www.transportation.gov/mission/sustainability/corporate-average-fuel-economy-cafe-standards>

<sup>32</sup><http://instituteeforenergyresearch.org/topics/encyclopedia/petroleum/>

<sup>33</sup><http://www.cnbc.com/2017/03/29/trumps-reversal-of-obama-climate-policies-could-hurt-oil-gas-commentary.html>

as the underpinning of the Obama administration's Clean Power Plan.<sup>34</sup> Among the order's dictates are attempts to render infrastructure development for oil more expedient, a move which is considered to be a greater boon to the teetering oil industry than simple deregulation.<sup>35</sup>

The President signed an executive order on April 27<sup>th</sup>, 2017 paving the way for the relaxation of restrictions on offshore oil drilling. It also allows possible reopening of numerous regions to exploration and potential exploitation, including much of the Southeast Atlantic coast and parts of the Arctic.<sup>36</sup> The order has been christened the America First Offshore Energy Executive Order.

The administration's boosting of Arctic oil exploration may be of questionable economic sense with prices at marked lows. Goldman Sachs commodity expert Michele Della Vigna stated that there is "almost no rationale for Arctic exploration"; Woods Mackenzie expects that "high-cost frontiers will be shunned." However, offshore Alaskan oil resources are thought to amount to 24 billion barrels of oil,<sup>37</sup> and there is a certain national security impetus for an increased U.S. presence in the desolate region.<sup>38</sup> Oil exploration may serve as something of a soft hedge against Russian influence, Russia having served as an rival of the United States in the Arctic for some time.

The Trump administration has promised fossil-fuel friendly policies since the inception of the President's campaign, and continues to act accordingly. At this still-early juncture, the administration has proven largely true to its word. Nonetheless, the greatest factors informing the vitality of the petroleum industry are fundamentals: supply and demand, technological advances, and broader political and popular sentiment. The shale oil revolution has permanently altered the landscape of resource-based international politics. At the same time, renewable technologies have reached unprecedented levels of economic practicality. Happily for the administration's agenda, America's longstanding aspirations for energy independence appear poised to more or less come true.

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<sup>34</sup><http://www.nationalreview.com/article/446309/trump-energy-climate-executive-order-coal-clean-power-plan>

<sup>35</sup><http://www.zerohedge.com/news/2017-03-28/trump-sign-energy-independence-order-killing-obamas-climate-change-initiatives>

<sup>36</sup><http://www.latimes.com/nation/la-na-trump-offshore-drilling-20170427-story.html>

<sup>37</sup><http://www.latimes.com/nation/la-na-trump-offshore-drilling-20170427-story.html>

<sup>38</sup><http://foreignpolicy.com/2017/03/24/oil-companies-cool-on-arctic-drilling-trump-wants-it-anyway-energy-alaska-environment/>

## Coal

Bringing back the coal industry has been one of President Trump's key campaign promises. His American Energy Independence executive order was focused on reversing "the regulations on American jobs and energy production".<sup>39</sup> The majority of this executive action focuses on promoting the coal industry by repealing the Clean Power Plan (CPP) and lifting the ban on leasing for coal mining on federal lands. In addition to this executive order, Trump is also working to roll back environmental regulations on coal mining, including the Stream Protection Rule.

The reasons he cites for these actions are that Obama-era regulations and climate policies were harming American jobs and acting as a "road block" to energy independence.<sup>40</sup> This section looks at the implications of his actions, and how they will neither increase energy independence nor significantly increase job security. In contrast, his policies will increase civil unrest and vulnerability to climate risks in areas where both coal is mined and coal power plants are used for electricity.

### *Background of Coal in the U.S.*

The majority of the coal mined domestically is used for electricity generation. Although natural gas has recently overtaken coal as the largest source of the nation's electricity, about 30 percent of America's electric energy mix still comes from coal.<sup>41</sup> Therefore, coal does still play an important role in U.S. energy security because it makes up a large portion of the fuel used for our electricity production.

However, the U.S. is not dependent on foreign countries to supply coal. In fact, the U.S. has been a net coal exporter, exporting 60.3 million short tons of coal in 2016. And while these exports have been declining, this is mostly due to decreases in demand and increases in competition from other countries.<sup>42</sup>

Coal production has been overall declining since about 2008. There are three main production areas in the U.S.: Western, Appalachian, and Interior. According to the Energy Information Administration (EIA) these three areas have not seen equal declines. Since 2008, Western areas have seen a decline of 36 percent, whereas

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<sup>39</sup> <https://www.whitehouse.gov/the-press-office/2017/03/28/president-trumps-energy-independence-policy>

<sup>40</sup> <https://www.whitehouse.gov/the-press-office/2017/03/28/president-trumps-energy-independence-policy>

<sup>41</sup> <https://www.eia.gov/tools/faqs/faq.php?id=427&t=3>

<sup>42</sup> <https://www.eia.gov/todayinenergy/detail.php?id=30332>

Appalachian areas saw a much sharper decline of 53 percent. Interior areas actually saw a slight increase of 2 percent in the same period.<sup>43</sup>

The sharp declines, especially in Appalachian areas, have forced multiple coal companies to declare bankruptcy within the last year, including Alpha Natural Resources, Peabody, Patriot, and Arch coal.<sup>44</sup> The decline is largely due to the fracking revolution which resulted in cheap domestic natural gas with which coal could not compete.<sup>45</sup>

### *Stream Protection Rule*

The Stream Protection Rule was an Obama-era regulation put into place on December 19th, 2016 and would have restricted coal companies from dumping mining waste into streams.<sup>46</sup> The destruction of streams within Appalachia has become a significant problem, especially with the rise of extreme forms of surface mining like mountaintop removal mining (MTR). Already in areas of Appalachia where this type of mining takes place, over 2,000 headwater streams have been buried and even more have been polluted from this indiscriminate dumping.<sup>47</sup>

While the Stream Protection Rule wasn't strong enough to completely ban MTR, coal companies fought vehemently against it. Coal production in Appalachia has been hit the hardest economically, due to Western coal being cheaper to mine, as well as competition from natural gas. In February, President Trump overturned the rule through the Congressional Review Act in an attempt to bring back coal jobs in Appalachia.<sup>48</sup>

However, the repeal of the Stream Protection Rule will not improve coal mining jobs and may not bring back significant amounts of mining either. The economic feasibility of these mining jobs very much depends on natural gas prices. If coal becomes cheaper than natural gas, mining may increase. However, even if more permits are approved, it will not significantly increase mining jobs. This is because MTR and other types of surface mining are the only 'economical' ways to mine coal in Appalachia and as they are highly mechanized, they do not require a large work force.<sup>49</sup> This is the main reason for the significant decline in mining jobs within Appalachia throughout the years.

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<sup>43</sup> <https://www.eia.gov/todayinenergy/detail.php?id=29872>

<sup>44</sup> <http://www.reuters.com/article/us-usa-coal-bankruptcy-idUSKCN0XC2KQ>

<sup>45</sup> <http://www.climatecentral.org/news/environmental-rules-minor-role-coals-decline-21396>

<sup>46</sup> <http://www.vox.com/2017/2/2/14488448/stream-protection-rule>

<sup>47</sup> <http://appvoices.org/end-mountaintop-removal/ecology/>

<sup>48</sup> <https://www.osmre.gov/programs/rcm/streamprotectionrule.shtm>

<sup>49</sup> <http://appvoices.org/2011/01/21/impacts-of-coal-101-mountaintop-removal-job-removal/>

## *Mining on Federal Lands*

In March, the Secretary of Interior, Ryan Zinke, repealed the moratorium on coal mining on federal lands. The moratorium was put in place under the Obama administration for the purpose of coal companies having to take into account the Social Cost of Carbon over how much coal was being mined. Secretary Zinke disagreed with this by stating that worrying about jobs is more important than considering the cost of carbon.

These federal lands represent about 41 percent of the nation's coal production, and in contrast to the repeal of the Stream Protection Rule, the lift of this moratorium largely affects coal mining in Western states.<sup>50</sup> Within Secretary Zinke's order comes a repeal of all climate change policies affecting the Department of Interior and an order to review all other policies on how they can increase the country's energy independence.<sup>51</sup>

The repeal of this moratorium may have a more significant effect on coal production than the repeal of the Stream Protection Rule. Paradoxically however, it may make mining for coal in Appalachia less competitive due to it being cheaper to accomplish on federal lands out West.

In addition to the lift of the moratorium, President Trump signed another executive order to review the use of the Antiquities' Act in the creation of national monuments. Former President Obama used this to create national monuments such as Bears Ears National Monument in Utah in order to protect areas that have cultural significance from fossil fuel extraction.<sup>52</sup> This executive order could lead to mining within some of these formerly protected areas.

Even if coal mining does increase on these federal lands, it will not have a large impact on U.S. energy security. This is because all of our sources of electricity are from domestic energy sources, so no matter which type is being used, there are no threats of them being cut off by foreign countries.

## *Clean Power Plan and Coal Power Plants*

The Obama administration's Clean Power Plan (CPP) was the main way that the U.S. planned on meeting its carbon reduction goals, and transition its electricity sector away from fossil fuels. The plan would have added heightened pollution restrictions to new

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<sup>50</sup> <http://news.nationalgeographic.com/energy/2016/01/150115-coal-lease-pause-federal-land-interior/>

<sup>51</sup> <http://thehill.com/policy/energy-environment/326307-interior-secretary-reopens-federal-coal-mining>;

[https://www.doi.gov/sites/doi.gov/files/uploads/so\\_3349\\_-\\_american\\_energy\\_independence.pdf](https://www.doi.gov/sites/doi.gov/files/uploads/so_3349_-_american_energy_independence.pdf)

<sup>52</sup> <http://thehill.com/policy/energy-environment/330976-what-to-know-about-trumps-national-monuments-executive-order>

power plants and would have also set mandatory carbon dioxide reduction goals for every state to meet.<sup>53</sup>

If enacted, this plan would have significantly affected the coal industry because coal is the most carbon-polluting of all sources of electricity.<sup>54</sup> Therefore it would have required the U.S. to transition away from coal use in the electricity sector. In response to an executive order, EPA Administrator Scott Pruitt called for a review of the plan.<sup>55</sup> On April 28th, 2017 the D.C. District Court, where the rule was being considered, froze the lawsuit which will likely be the end to the possibility of the rule ever becoming law.<sup>56</sup>

While the international implications of this plan will be discussed later, it also has domestic implications for coal production. One result of both the CPP and the fracking revolution was the change in economic certainty over electric utility investments for the future. New coal power plants are large infrastructure investments that take many years to recover the upfront costs of capital. Therefore, with the looming possibility of the CPP, and cheap domestic natural gas, many utilities have already made plans to not invest in new coal power plants. In a survey done this year, these utilities do not see those investments changing due to the election and change in policies.<sup>57</sup> While the repeal of the CPP will result in some coal plants staying open longer, it will not significantly affect electric utility investments, and therefore will not recover coal production or jobs within the U.S.

While continuing to mine for coal domestically will not improve U.S. energy independence, the repeal of environmental regulations will hurt the U.S. in the future. Coal mining comes with significant environmental justice concerns, which may likely result in higher levels of civil unrest. In addition, the environmental damage caused through both mining and burning coal exacerbates the effects of climate change and creates vulnerabilities from these effects.

### *Environmental Justice Issues*

Reversing both the Stream Protection Rule and the mining moratorium on federal lands, as well as opening up national monuments to resource extraction could lead to protests from both indigenous communities and other long-term residents of these areas. In the case of lifting the mining moratorium, as well as the review on national monuments,

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<sup>53</sup> <https://www.nrdc.org/sites/default/files/pollution-standards-epa-plan-summary.pdf>

<sup>54</sup> <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11>

<sup>55</sup> <https://www.epa.gov/Energy-Independence>

<sup>56</sup> [https://www.washingtonpost.com/news/energy-environment/wp/2017/04/28/court-freezes-clean-power-plan-lawsuit-signaling-likely-end-to-obamas-signature-climate-policy/?utm\\_term=.eabf81a33864](https://www.washingtonpost.com/news/energy-environment/wp/2017/04/28/court-freezes-clean-power-plan-lawsuit-signaling-likely-end-to-obamas-signature-climate-policy/?utm_term=.eabf81a33864)

<sup>57</sup> <http://www.utilitydive.com/library/2017-state-of-the-electric-utility-survey-report/>

many of those federal lands are considered vital to Native American tribes. For instance, the creation of Bears Ears National Monument in Utah was seen as a victory for Native American tribes in the area because it contains over 100,000 archeological sites and is considered sacred land.<sup>58</sup> In the past, tribes have fought vehemently with the federal government to have control over the coal deposits on their own lands.<sup>59</sup> In addition, fighting for clean water has been a major concern. As illustrated by recent protests over the Dakota Access Pipeline, if new coal mining permits were opened in these areas they would likely face strong pushback from the Native American communities that live there.<sup>60</sup>

In addition, continued use of MTR, which is encouraged through the repeal of the Stream Protection Rule in Appalachia to recover more coal, will fail to bring back jobs to the area. This will continue the destruction of these communities through pollution, safety hazards, and lack of economic opportunities. These all result in public health concerns, especially from polluted water sources. In addition, the public health crisis of drug use, which is already rampant in the area, would likely increase.<sup>61</sup>

### *Climate Security Issues*

The environmental regulatory rollbacks on the coal industry will harm the American people in the long run. Not only will burning more coal contribute to ever more greenhouse gas emissions, but the way that coal mining is conducted now increases the vulnerability to the effects of climate change. The majority of mines in Appalachia are surface mines and MTR mines, so they contribute to increased flooding and erosion due to their removal of the vegetation and topsoil from the mountains.<sup>62</sup> The dumping of mining waste into valley fills, which the Stream Protection Rule tried to address, also leads to increased flooding and water pollution.<sup>63</sup> Flooding will also increase as climate change progresses, which will compound the situation.

Lastly, as water resources become stressed in certain parts of the U.S., the continued use of water for cooling coal power plants, and for washing the coal after it is mined will make these systems more vulnerable. A typical coal power plant withdraws between 70 and 180 billion gallons of water per year.<sup>64</sup> According to the Department of Energy, the

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<sup>58</sup> <http://www.pbs.org/newshour/rundown/obama-names-utah-nevada-monuments-despite-opposition/>

<sup>59</sup> <https://thinkprogress.org/citing-religious-freedom-native-americans-fight-to-take-back-sacred-land-from-mining-companies-446fb032f611>

<sup>60</sup> [http://www.sourcewatch.org/index.php/Coal\\_and\\_Native\\_American\\_tribal\\_lands](http://www.sourcewatch.org/index.php/Coal_and_Native_American_tribal_lands)

<sup>61</sup> <http://www.wcyb.com/news/fmr-fda-commissioner-discusses-health-crisis-in-rural-southeast-regions-appalachia/438741698>

<sup>62</sup> <http://appvoices.org/end-mountaintop-removal/ecology/>

<sup>63</sup> <http://appvoices.org/end-mountaintop-removal/community/>

<sup>64</sup> <http://www.ucsusa.org/clean-energy/coal-and-other-fossil-fuels/coal-water#.WQPm9FPysWo>

amount of water used to wash coal after it has been mined is anywhere between 70 to 260 million gallons per day.<sup>65</sup> The water used to wash the coal is then irreparably polluted, and the way it is disposed of threatens other sources of water as well. These concerns over water will become ever more extreme as climate change puts more pressure on domestic water sources.

Overall the actions taken by President Trump to try to bring back the coal industry will at most modestly boost coal production in the short term. However, these actions could have significant negative impacts on the environmental quality and public health of communities with vulnerable populations and could lead to more civil unrest due to mining on culturally significant lands. In addition, the climate risks that go along with strip mining and burning coal in general will be exacerbated by these policies, ultimately leaving the U.S. less secure than it was before the policies were put into place.

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## Natural Gas

The prodigious development of natural gas during the years of the Obama administration had major ramifications for the domestic energy industry and contributed to the United States' ascendancy as a major international energy supplier. It remains to be seen what effect President Trump's vastly differing policies and ardent commitment to U.S. energy independence will have on this expanding, lucrative and sometimes controversial resource.

### *Natural Gas Use and Reserves*

Natural gas contributed approximately 30 percent of the electricity used in the U.S. in 2015.<sup>66</sup> Today, natural gas is mostly used for heat and electricity in the U.S., but it is also used for various other purposes in the industrial and commercial sectors, and its applications have been increasing because of its domestic abundance.<sup>67</sup> In the 1990s, the invention of hydraulic fracturing led to the first boom in natural gas production, and since the advent of horizontal drilling it has had a mostly positive trajectory since then.<sup>68</sup>

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<sup>65</sup> Pg 20; <http://www.circleofblue.org/wp-content/uploads/2010/09/121-RptToCongress-EWwEIAcomments-FINAL2.pdf>

<sup>66</sup> [https://www.eia.gov/energyexplained/index.cfm?page=natural\\_gas\\_use](https://www.eia.gov/energyexplained/index.cfm?page=natural_gas_use)

<sup>67</sup> [https://www.eia.gov/energyexplained/index.cfm/data/index.cfm?page=natural\\_gas\\_home](https://www.eia.gov/energyexplained/index.cfm/data/index.cfm?page=natural_gas_home)

<sup>68</sup> <https://fivethirtyeight.com/features/trumps-plan-wont-reverse-coals-decline/>

Over the next two years, the generating capacity of natural gas has been projected to increase by 8 percent, or 36.6 gigawatts.<sup>69</sup> Proven reserves at year-end 2015 were 324 Tcf (trillion cubic feet),<sup>70</sup> and that year 27.31 Tcf was consumed domestically.<sup>71</sup> This consumption reflects the 19 percent increase in natural gas-fired power generation that year.<sup>72</sup> Following a brief production decline in 2016, 2017 projections for dry natural gas production predict an increase of 0.8 Bcf/d (billion cubic feet per day) to reach a high of 73.1 Bcf/d. In 2018 it is projected to be a staggering 4.0 Bcf/d above the 2017 level.<sup>73</sup> These increases reflect the ease of extraction facilitated by the fracking boom, but also the energy agenda and the projected energy policy implementations of the Trump administration.

### *President Trump's Plans for the Natural Gas Industry*

As with other sections of this report, President Trump's campaign promises must inform much of the analysis on this topic because of the short duration of his time in office and his prioritization of other domestic issues. During his campaign, he advocated for: returning to coal technology for power generation, potentially at the expense of natural gas; increasing natural gas exports, particularly to Asia and Europe; correspondingly increasing the number of natural gas export terminals; heavily deregulating the fossil fuel industries; and pushing forward with both major pipelines,<sup>74</sup> and natural gas development on federal lands.<sup>75</sup>

Many of these promises have not been a priority of the administration thus far, but some have begun to see realization. As was discussed earlier in this report, President Trump has already signed specific legislation to bring about fossil fuel deregulation<sup>76</sup> and renewed pipeline development.<sup>77</sup> While many current development projects for natural gas-fired power plants had been underway long before the election,<sup>78</sup> the Trump administration has recently made public several natural gas development or export projects. A source in the White House relayed that work is being done on a significant

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<sup>69</sup> <https://www.eia.gov/todayinenergy/detail.php?id=29732>

<sup>70</sup> <https://www.eia.gov/todayinenergy/detail.php?id=29172>

<sup>71</sup> <https://www.eia.gov/tools/faqs/faq.php?id=50&t=8>

<sup>72</sup> <https://www.eia.gov/todayinenergy/detail.php?id=26312>

<sup>73</sup> <https://www.eia.gov/outlooks/steo/report/natgas.cfm>

<sup>74</sup> <https://www.forbes.com/sites/jamestaylor/2016/12/26/trumps-energy-policy-10-big-changes/#5adc097f7cd9>

<sup>75</sup> <http://www.emergingenergyinsights.com/2017/03/trumps-executive-order-takes-multi-faceted-approach-eliminating-climate-change-regulation/>

<sup>76</sup> <http://www.washingtontimes.com/news/2017/feb/14/trump-nixes-rule-oil-gas-industry/>

<sup>77</sup> <http://www.cnn.com/2017/01/24/politics/trump-keystone-xl-dakota-access-pipelines-executive-actions/>

<sup>78</sup> <https://www.eia.gov/todayinenergy/detail.php?id=26312>

export deal of liquified natural gas (LNG) to India, which would involve Indian investment in US export facilities.<sup>79</sup>

### *Natural Gas Versus Coal*

Coal received a significant amount of focus during the Trump campaign, which won votes from the impoverished coal-mining Appalachian region. As stated earlier in this report, natural gas has long been a contributor to coal's decline in the American energy mix. The huge increase in proven natural gas reserves and the spread of fracking in the past few years has accelerated coal's downward trajectory even more.

Compared to coal, natural gas-fired power plants are cheaper to build and operate,<sup>80</sup> they satisfy environmental regulations,<sup>81</sup> have an average lifespan of thirty years, and they are just as reliable as coal-operated ones while being far more flexible and easily tailorable to surges or falls in demand.<sup>82</sup> While there have been debatable advances in clean coal technology, natural gas is still a far cleaner energy source, with half the CO<sub>2</sub> emissions of coal.<sup>83</sup> While coal-driven states badly need employment initiatives, there are other options besides coal, and for the health of the American public and environment, they must be taken seriously.

President Trump's plans to advance legislation to aid in coal extraction will likely draw resources away from far cleaner energy sources, such as solar and wind power, but it could also potentially have a negative impact on natural gas.<sup>84</sup> Natural gas development has been voracious in many staunchly pro-Trump areas that are also shale-rich, like Texas, Florida and portions of West Virginia, Pennsylvania and Ohio. Texas in particular produces more natural gas than any state. These states have invested considerable time and resources in natural gas infrastructure and many new gas-powered plants are being constructed in these areas that will increase capacity even further.<sup>85</sup>

Any deprioritization of natural gas because of efforts to bolster up the failing coal industry, or mishandling of the domestic or international economic strategy for natural gas by the Trump administration could have serious impacts on his support base. The outcry from this population that would likely result from any of these scenarios may

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<sup>79</sup><http://auto.economicstimes.indiatimes.com/news/oil-and-lubes/donald-trump-admin-may-approve-major-export-of-natural-gas-to-india/57871353>

<sup>80</sup> <https://fivethirtyeight.com/features/trumps-plan-wont-reverse-coals-decline/>

<sup>81</sup> <https://www.eia.gov/todayinenergy/detail.php?id=29732>

<sup>82</sup> <https://www.forbes.com/sites/thebakersinstitute/2016/05/17/whos-winning-the-battle-to-replace-coal/#5602e00d765d>

<sup>83</sup> <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11>

<sup>84</sup> <http://www.businessinsider.com/trumps-plans-for-coal-could-hurt-natural-gas-2017-3>

<sup>85</sup> <https://www.eia.gov/todayinenergy/detail.php?id=26312>

further widen the gap between the President's campaign rhetoric and actual policy implementation. However, the reverse is also true: his support from Appalachia would likely significantly decrease if he withdrew his support from coal. This is one situation where he cannot please all of his constituents. Given the projected demand for natural gas in the world market and the percentage of Americans who support it over coal,<sup>86</sup> it makes far more sense economically for President Trump to read the writing on the wall about the coal industry.

### *Natural Gas and Clean Power*

The switch to natural gas from coal has most likely been the single largest contributor to reductions in CO<sub>2</sub> emissions by the U.S.<sup>87</sup> Natural gas was a cornerstone of the Obama administration's efforts towards switching to cleaner power. Compared to nuclear power natural gas is less expensive, contentious, and potentially destructive.<sup>88</sup> and more closely models coal's baseload and reliability than renewables.<sup>89</sup> Relative to other fossil fuels, natural gas has a higher energy content, which is why it has a lower CO<sub>2</sub> to energy ratio.<sup>90</sup>

However, while natural gas is a far cleaner option than coal and has many advantages over cleaner renewable technologies, it is still a fossil fuel, and President Trump's deregulatory policies will remove many of the emissions guidelines that helped to mitigate that fact. Natural gas consists mostly of methane, along with small amounts of hydrocarbon gas liquids and non hydrocarbon gases.<sup>91</sup> While it is usually refined before being utilized, when natural gas is burned for power it releases CO<sub>2</sub>. In addition, any leaks from pipelines, plants, or fracking release these gases into the atmosphere, which also contribute to the greenhouse gas effect. The Environmental Defense Fund estimates that 25 percent of anthropogenic global warming can be attributed to methane emissions.<sup>92</sup>

President Trump has expressed skepticism about the fact of climate change multiple times throughout his campaign and presidency.<sup>93</sup> This has corresponded with a deprioritization of renewable energy sources, which will be discussed in further detail later in this report. Natural gas will likely pick up part of the generating capacity

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<sup>86</sup> <http://www.gallup.com/poll/161519/americans-emphasis-solar-wind-natural-gas.aspx>

<sup>87</sup> <https://www.forbes.com/sites/jamesconca/2016/05/16/natural-gas-is-replacing-nuclear-power-not-renewables/#3cc4c36fdb6>

<sup>88</sup> [https://green.blogs.nytimes.com/2012/02/10/natural-gas-vs-nuclear-power/?\\_r=0](https://green.blogs.nytimes.com/2012/02/10/natural-gas-vs-nuclear-power/?_r=0)

<sup>89</sup> <https://www.forbes.com/sites/thebakersinstitute/2016/05/17/whos-winning-the-battle-to-replace-coal/#5602e00d765d>

<sup>90</sup> <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11>

<sup>91</sup> [https://www.eia.gov/energyexplained/index.cfm/data/index.cfm?page=natural\\_gas\\_home](https://www.eia.gov/energyexplained/index.cfm/data/index.cfm?page=natural_gas_home)

<sup>92</sup> <https://www.edf.org/methane-other-important-greenhouse-gas>

<sup>93</sup> <http://www.newsweek.com/timeline-every-ridiculous-thing-trump-has-said-about-climate-change-576238>

previously expected to be satisfied by renewables. Because of President Trump's stance on climate change, part of the deregulation of natural gas will include withdrawing emissions standards for all power plants, including natural gas-fired ones, which will substantially worsen the environmental impact of using natural gas.<sup>94</sup>

Hydraulic fracturing, or fracking, will also see less scrutiny and regulation under the Trump administration, and be deployed in more areas. This process has been a key contributor to the boom in natural gas, but it has also been proven to contaminate groundwater. Fracking has also been linked to earthquakes in Texas and Oklahoma because of the underground disposal of wastewater from the process.<sup>95</sup> President Trump also plans to withdraw Obama-era guidelines for curbing the enormous methane emissions from natural gas wells, which may speed extraction and lessen costs for natural gas companies, but at the cost of environmental, climate, and air safety degradations.<sup>96</sup>

### *Energy Security and Over-reliance*

A significant portion of President Trump's energy policies and energy security strategy relates to his interrelated goals of American energy independence and an end to the trade deficit, which has been labeled a national security risk by his administration.<sup>97</sup> Natural gas plays heavily into both of these objectives.

Along with advances in the development of other natural resources, the current status of the natural gas industry means that the Trump administration's plan to become energy independent, while of questionable judgement, is theoretically possible. However, the resources through which the U.S. may become energy independent must be strategically diversified, and there is a risk of domestic over-reliance on natural gas. The Trump Administration has not had a favorable stance toward renewable energy sources, so natural gas may be saddled with a significant portion of the lost capacity, especially if President Trump changes his stance toward reviving coal. As an example, since the closure of the Vermont Yankee Nuclear Plant in 2016, New England has become extremely dependent on natural gas, and it lacks the support systems and proper infrastructure to function effectively with it, or, more importantly, without it.<sup>98</sup>

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<sup>94</sup><http://www.cnbc.com/2017/03/27/trump-to-roll-back-obama-climate-actions-power-plant-emissions-rule.html>

<sup>95</sup> <http://www.businessinsider.com/trump-energy-plan-2016-10>

<sup>96</sup> <http://www.cnn.com/2017/04/19/politics/environmental-protection-agency-methane/>

<sup>97</sup> <https://www.wsj.com/articles/trump-trade-adviser-peter-navarro-makes-cutting-trade-deficit-top-priority-1488815842>

<sup>98</sup> <https://www.forbes.com/sites/jamesconca/2016/05/16/natural-gas-is-replacing-nuclear-power-not-renewables/#3cc4c36fdb6>

As the European Union has born witness to in recent years, an over-reliance on natural gas has drawbacks because of two distinct forms of energy security. Both relate to the ability of a state to reliably meet its energy needs, but one relates to excessive dependence on a foreign power, and the other on effectively evaluating and countering the unique challenges and context of a given resource. Because of fracking and continued development, and the deregulation that the natural gas industry will see under President Trump, this fuel source will continue to be abundant, effective, relatively clean and inexpensive. The U.S. will not find itself in a position where its energy security with regard to natural gas is threatened by a monopoly of the market by another state, as has happened in Europe and may well happen in Asia.

As natural gas becomes more widespread, the issues inherent to its use will become more prevalent as well. Natural gas requires significant infrastructure and pipelines which are often extremely contentious and unpopular. As climate change worsens and the weather becomes commensurately more extreme, there may be significant spikes in usage of natural gas specifically for heat at unexpected times, drawing huge amounts of energy away from power plants and vital electricity generation.

The Trump administration has no plans to rely exclusively on natural gas for the nation's energy mix, but his deregulatory policies may make gas so cheap that it happens anyway to some extent. There is also a risk that an overdevelopment of natural gas will flood the international market and crash the price of natural gas, to the disadvantage of the U.S. and several other major exporters.<sup>99</sup> Former President Obama went out of his way to ensure a deliberate variety of energy sources, including renewables.<sup>100</sup> Natural gas use and development under the Trump administration requires careful, strategic monitoring and management to ensure that the energy security of the U.S. is not jeopardized.

### *The Potential of Natural Gas*

Natural gas offers a unique compromise to the Trump administration. Its continued development ties strongly to the president's corporate interests, creates jobs and economic opportunities, and confirms his commitment to fossil fuels. He can distinguish himself from the Obama administration enough to please his supporters, but natural gas is the cleanest of the fossil fuels. While President Trump is not against natural gas, he must come to terms with the fact that its increased use at the same time as coal's attempted revival is not compatible, or advisable. A strategic, renewed commitment to

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<sup>99</sup><http://oilprice.com/Energy/Natural-Gas/Trump-Could-Send-A-Shockwave-Through-Natural-Gas-Markets.html>

<sup>100</sup> <https://green.blogs.nytimes.com/2012/02/10/natural-gas-vs-nuclear-power/>

safely deploying natural gas instead of coal has to potential to gain the president support and legitimacy from the opposition, as well as the international, scientific and environmental communities.

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## Renewable Energy

Globally, renewable energy has picked up speed, though its momentum in the U.S. has been stifled by the Trump administration. Concerning the role that renewable energies play in energy security, the International Energy Agency (IEA) stated that renewable technologies have the potential to contribute to energy security, while meeting environmental objectives at the regional, national and/or global level.<sup>101</sup> Countries which enjoy pivotal positions in the conventional energy world, will not necessarily enjoy the same position in a world in which renewables grow in importance.<sup>102</sup> Under the Trump administration, four years of unhindered backing for fossil fuels will slow the pace of renewable energy deployment in the U.S., while simultaneously impeding international climate action.

### *American Climate Policies*

The U.S. was once in a position of power to transition the world towards a meaningful low-carbon future by using clean energy to become the most important driver in the global low-carbon economy. Support from politicians for federal climate policy in the U.S. has diminished along with federal support for low-carbon energy. Historically, the U.S. has demonstrated an international leadership role in energy research and development, providing advances in fossil fuels, nuclear power, and renewable sources.<sup>103</sup> However, President Trump's top energy priority is to revive the coal industry and take advantage of the U.S.'s abundance of shale gas and tight oil. The Trump administration is attempting to increase America's short-term energy independence at the expense of long-term energy independence. Standing aside, the U.S. relinquishes its ability to remain relevant, and will lose out on opportunities to set early policy and regulatory frameworks around renewable technologies as entrepreneurs in China develop and pilot their projects.

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<sup>101</sup> [https://www.iea.org/publications/freepublications/publication/so\\_contribution.pdf](https://www.iea.org/publications/freepublications/publication/so_contribution.pdf)

<sup>102</sup> [http://www.exploringgeopolitics.org/publication\\_criekemans\\_david\\_geopolitics\\_of\\_renewable\\_energy\\_technology\\_desertec\\_north\\_seas\\_countries\\_offshore\\_grid\\_initiative\\_co2\\_emissions\\_investments\\_germany/](http://www.exploringgeopolitics.org/publication_criekemans_david_geopolitics_of_renewable_energy_technology_desertec_north_seas_countries_offshore_grid_initiative_co2_emissions_investments_germany/)

<sup>103</sup> [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0102-85292016000200643](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-85292016000200643)

While the Obama administration strengthened climate policies, President Trump's executive orders on climate reveal his intentions to limit America's political influence over global climate change mitigation. Not coincidentally, anti-renewable rhetoric has become common within the Trump administration as several cabinet members and members of Congress have ties to the oil and gas industry, giving him a clear incentive to back domestic nonrenewable energy sources.<sup>104</sup> Specifically, President Trump aims to dismantle any policies that oppose his America-First Energy Plan, the main objective of which is to eliminate harmful and unnecessary policies such as the Climate Action Plan, even going as far as mandating the Environmental Protection Agency (EPA) to eliminate the CPP.<sup>105</sup>

The absence of strong federal coal-based power regulations combined with federal policies that favor natural gas will hinder the uptake of renewable energy deployment needed to deeply decarbonize the power sector. The limited federal renewable energy policies that exist in the U.S. are scheduled to be phased out, further impeding its deployment.<sup>106</sup> Renewable energy increased with the assistance of the production tax credit (PTC) for wind energy investment, set to be phased out by 2020. In addition, tax credits for solar energy (ITC) are set to be phased out by 2020. Together these have been the linchpin of federal financial incentives regarding renewables. During this interim period, these scheduled phase-outs have given some certainty to renewable producers but greater uncertainty will resume if these regulations are not extended.

### *The Clean Power Plan and Renewable Energy*

Between 2005 and 2015 carbon emissions in the U.S. were reduced by 10 percent.<sup>107</sup> The reduction in carbon emissions was accomplished perhaps to align with tougher federal regulations on carbon emissions, specifically the CPP. Anticipation of the CPP approval encouraged power companies to switch from coal to gas generation. As energy companies look to federal mandates to dictate their carbon emissions, carbon reduction progress may stall in the event that President Trump's attempts to dismantle the CPP are successful. The EPA estimated that under the CPP, renewable energy generation would have increased to nearly 20 percent of all power supplied in 2030.<sup>108</sup> Even if renewables are cost competitive in the energy market, without the CPP renewables will be impacted.

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<sup>104</sup> <http://www.vox.com/2017/2/1/14477314/oil-companies-disclosure-rule-tillerson>

<sup>105</sup> <https://www.whitehouse.gov/america-first-energy>

<sup>106</sup> <https://energy.gov/savings/renewable-electricity-production-tax-credit-ptc>

<sup>107</sup> <https://www.forbes.com/sites/rpapier/2016/06/19/the-u-s-leads-all-countries-in-lowering-carbon-dioxide-emissions/#7b7dcb445f48>

<sup>108</sup> <https://www.epa.gov/sites/production/files/2015-11/documents/fs-cpp-renewable-energy.pdf>

Despite the elimination of the CPP, the political reality is that the economic motivation for ramping up renewable energy deployment is growing stronger. Cities, states, and corporations are contributing to the decline in carbon emissions in the absence of federal regulation. Whether or not these actions are environmentally or financially motivated, it is clear that subnational actors are aligning with the growing trend of purchasing and developing clean energy. While individual states are continuing their energy decarbonization plans, laggard states that have been hesitant to adopt renewable energy policies may perceive the absence of a federal mandate as a deterrent from pursuing a renewable energy mix.<sup>109</sup>

Carbon emissions aside, repealing the CPP creates a missed opportunity for job growth in the clean energy industry, allowing China and others to fill the void. President Trump's support for the fossil fuel industry ignores the robust clean energy industry that employs nearly 3 million Americans who are working part or full time in the solar, wind, energy efficiency, and alternative vehicles sectors.<sup>110</sup> One in every 50 American jobs created in 2016 was in the solar industry, which now employs more than 260,000 Americans. Increasing 25 percent from 2015, jobs in the solar industry exceeded fossil fuel related jobs for the first time. Similar to the solar industry, the wind industry has shown progress. Building and operating onshore wind farms is more cost efficient than fossil fuel plants in many parts of the U.S.<sup>111</sup> Renewables will continue to foster job growth in the construction and manufacturing sectors despite President Trump's executive orders. However, he has made it clear that fossil fuel jobs take precedence over clean energy jobs.<sup>112</sup>

### *China and Others on the Rise*

It is expected that the future global demand for energy will exceed the availability of non-renewable sources. Major energy consumers in the world will not have an adequate domestic supply to meet future demand projections.<sup>113</sup> Competition for access and control of energy sources will increase both tension and cooperation between states.<sup>114</sup> Anticipating the need to diversify energy mixes, countries are attempting to maintain rapid development and economic growth, but in a much less energy-intensive way. A gradual uptake in renewables can be seen globally as countries attempt to supplement

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<sup>109</sup> <https://www.greentechmedia.com/articles/read/The-Fallout-from-Trumps-Executive-Order-on-Climate-Rules-Uncertainty-and>

<sup>110</sup> <https://cleantechnica.com/2017/02/01/us-clean-energy-jobs-surpass-fossil-fuel-jobs-5-1/>

<sup>111</sup> <http://www.ecowatch.com/clean-energy-job-grow-economy-2353800252.html>

<sup>112</sup> <https://www.commondreams.org/news/2017/03/28/contrary-spin-trump-slashing-energy-jobs-new-executive-order>

<sup>113</sup> [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0102-85292016000200643](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-85292016000200643)

<sup>114</sup> Podobnik, Bruce. 2002. 'Global Energy Inequalities: Exploring the Long-term Implications', *Journal of World-Systems Research* (8) 2: 252-274.

their energy mix. The utilization of renewables has the potential to restructure states' geopolitical positions and shape how states interact.

Renewables have already begun to shape the strategic realities countries face. For the first time, developing economies outweighed developed economies in new renewable energy investment in 2015. In 2015, China became the largest investing country for renewables, excluding large hydro. China invested \$102.9 billion in 2015, up 17 percent, representing well over a third of the global total. The U.S. was a distant second with \$44.1 billion, up 19 percent.<sup>115</sup> By ramping up clean energy domestically, China is building the economies of scale it needs to export cost-competitive clean energy products and services abroad. The U.S. on the other hand, could soon be moving in the opposite direction.<sup>116</sup>

Prioritizing domestic non-renewable sources diverts attention away from the America's inevitable transition towards greater incorporation of renewable sources into its energy portfolio. The U.S and China both face similar energy security barriers that could result in contentions or cooperation over control of the renewable energy landscape. As the U.S. focuses its attention on non-renewables, China is dominating the renewable energy market and becoming the leading renewable energy producing country.<sup>117</sup> Future U.S. energy security is contingent upon its geopolitical relationship with countries that are dominant in the renewables market.

Changes in countries' energy policies is critical in order to meet the world's contemporary energy security needs. As the conventional energy world evolves, countries that currently experience positions of influence will have to modify their energy policies to compete in a world where renewables grow in importance.<sup>118</sup> Many countries have demonstrated their commitment towards diversifying their energy mix. For instance, Saudi Arabia, known for its oil reserves, has set a target to diversify its energy mix with 3.45 GW of renewables by 2020. If this is achieved, it can continue exporting its oil, rather than relying on oil for the generation of domestic power and desalination plants.<sup>119</sup>

Favorable renewable energy policies in China position it to become the hegemon of the global low-carbon economy. Within the international system when, "great powers are in decline and all facets of the world-system are in flux," fundamental changes in the

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<sup>115</sup> [http://fs-unesp-centre.org/sites/default/files/publications/globaltrendsrenewableenergyinvestment2016lowres\\_0.pdf](http://fs-unesp-centre.org/sites/default/files/publications/globaltrendsrenewableenergyinvestment2016lowres_0.pdf)

<sup>116</sup> <https://newclimateinstitute.files.wordpress.com/2017/04/allianz-climate-and-energy-monitor-deep-dive-2017.pdf>

<sup>117</sup> [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0102-85292016000200643](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-85292016000200643)

<sup>118</sup> [http://www.exploringgeopolitics.org/pdf/Criekemans\\_David\\_Geopolitics\\_Renewable\\_Energy.pdf](http://www.exploringgeopolitics.org/pdf/Criekemans_David_Geopolitics_Renewable_Energy.pdf)

<sup>119</sup> <http://fortune.com/2017/01/16/saudi-arabia-renewable-energy-program/>

global energy system develop.<sup>120</sup> The rise of China's economic leverage within the global market could be considered the precursor to a fundamental change in the energy system. History tells us that during times of different hegemonic periods, the success of a country's influence was contingent upon its accumulation of the age's main energy resource. Those that were successful at pioneering new energy systems were given crucial advantages over their competitors, especially in times of conflict. As of now the stage is being set for China to emerge as the world's dominant hegemon in the global low-carbon economy. Without another country's competition in the global low-carbon market, China will distribute its renewable energy resources to foster alliances in order to enhance its perceived legitimacy as the dominant country.<sup>121</sup>

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## Overview of Broader Energy Sector Policies

During his time in office, former President Barack Obama focused on making the U.S. energy mix cleaner to meet U.S. commitments to the Paris Agreement; in contrast President Trump is primarily focusing on making domestic energy cheaper and not as dependent on foreign energy supplies. President Trump has stated that he is committed to vastly upgrading America's electricity grid to make it safer and more efficient.<sup>122</sup> This section will present a broad overview of President Trump's energy policies.

### *Overview of the Power Sector*

Although it is still unclear as to what sort of wide-sweeping reforms President Trump will bring about in the power sector, some analysis can be conducted on what he has already stated. Should President Trump give coal, and to a lesser extent, natural gas, precedence in America's energy mix, it will have little effect on adoption and continued interest in renewables. Renewable energy sources such as wind and solar are not subject to the same sort of price fluctuations as fossil fuels are in the world economy. Perhaps most important to the power sector is President Trump's interest in national grid modernization. According to Utility Dive, during his December 2016 transition meeting, the president listed grid modernization as one of the top goals for his presidency.<sup>123</sup>

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<sup>120</sup> <http://www.jstor.org/stable/pdf/j.ctt14bs7mx.5.pdf>

<sup>121</sup> <http://www.jstor.org/stable/pdf/j.ctt14bs7mx.5.pdf>

<sup>122</sup> <http://money.cnn.com/2017/03/28/technology/hacking-blackouts-infrastructure-electric-grid/>

<sup>123</sup> <http://www.utilitydive.com/news/trump-infrastructure-priority-plan-includes-transmission-wind-energy-stor/434754/>

Even still, it begs the question as to whether President Trump would be open to using renewables in the power generation mix. This would certainly improve the country's energy independence as renewable energy sources such as wind and solar are not exportable and must be used domestically. In an article in *Time*, a former top aide on energy issues for Trump's transition team stated that he believes that renewable energy research, and specifically research revolving around solar and wind, will likely be cut.<sup>124</sup> This would shake up the Department of Energy, which spends billions on renewable energy research each year. The amount of funding being given to renewable energy research during the Obama administration was also higher than that given to funding for fossil fuel research during this period.<sup>125</sup> Moreover, according to the article from *Time*, President Trump has particular misgivings concerning wind energy, believing it to be far too costly and prone to "killing birds".<sup>126</sup>

In March 2017, the President was sending signals that he would put forward a 1 trillion-dollar investment plan for new infrastructure.<sup>127</sup> However, there is uncertainty about whether President Trump really will put forward the plan. According to *Forbes*, the recently released budget proposal for the White House cuts current infrastructure spending, making it unlikely that a grid modernization overhaul will occur in the near term.<sup>128</sup> Moreover, President Trump's signing of an executive order to bring back coal and put a damper on the CPP will likely lead to higher costs for electricity.<sup>129</sup> Indeed, the CPP would have not only reduced CO<sub>2</sub> emissions, but also replaced ailing coal plants with large amounts of solar and wind generation farms.<sup>130</sup> Because renewable energy is becoming competitive with coal as a generation source for electricity, the CPP would have led to lower electricity costs and a healthier planet.<sup>131</sup> However, the suspension of lawsuits against the CPP by a federal court on April 28, 2017, will likely lead to the end of the plan, granting coal more dominance in the energy mix once again.<sup>132</sup>

However, renewable energy remains popular among Republicans and some of President Trump's constituents, giving it bipartisan support and making it unlikely that President Trump will be able to reverse progress completely on renewable energy.

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<sup>124</sup> <http://time.com/4681719/donald-trump-renewable-energy-research-funding/>

<sup>125</sup> <http://time.com/4681719/donald-trump-renewable-energy-research-funding/>

<sup>126</sup> <http://time.com/4681719/donald-trump-renewable-energy-research-funding/>

<sup>127</sup> <https://www.forbes.com/sites/energyinnovation/2017/03/29/electric-grid-modernization-we-dont-really-need-you-mr-president/#6c838dd04dcd>

<sup>128</sup> <https://www.forbes.com/sites/energyinnovation/2017/03/29/electric-grid-modernization-we-dont-really-need-you-mr-president/#6c838dd04dcd>

<sup>129</sup> <https://www.nytimes.com/2017/03/28/climate/trump-executive-order-climate-change.html>

<sup>130</sup> <https://www.nytimes.com/2017/03/28/climate/trump-executive-order-climate-change.html>

<sup>131</sup> <https://www.forbes.com/sites/energyinnovation/2017/03/29/electric-grid-modernization-we-dont-really-need-you-mr-president/#6c838dd04dcd>

<sup>132</sup> [https://www.washingtonpost.com/news/energy-environment/wp/2017/04/28/court-freezes-clean-power-plan-lawsuit-signaling-likely-end-to-obamas-signature-climate-policy/?utm\\_term=.7b5ef8ffe3ae](https://www.washingtonpost.com/news/energy-environment/wp/2017/04/28/court-freezes-clean-power-plan-lawsuit-signaling-likely-end-to-obamas-signature-climate-policy/?utm_term=.7b5ef8ffe3ae)

Indeed, even in Kentucky's coal country, a coal company is building solar panels over a stripped-down mountaintop coal mine.<sup>133</sup> The project will supply up to 100 MW of energy and would be the largest project of its kind in Appalachia. Although this might sound like an exceptional case, it is likely that due to the high cost of coal, it will eventually become too cost prohibitive to remain a major part of the energy mix.<sup>134</sup> In the next few years then, Americans might very well see President Trump pull back on his promises to fully commit to coal.

### *The Auto Industry*

President Trump's plans for the auto industry are also still unclear at this early point in his administration. What is clear though, is that many of his plans were already in place before he entered office. For example, according to Autotrader Senior Analyst Michelle Krebs, "These investments and hiring plans have long been in the works, but the timing and the way these investments are being packaged for public relations are definitely influenced by his [President Trump's] Tweets."<sup>135</sup> Krebs appears to be referring to President Trump's rhetoric during the election where he took aim at auto companies that were building plants, and manufacturing portions of their cars abroad for lower cost. The reality is that many automakers like Ford that have shut down plants abroad following Trump's election, were already planning to do so.<sup>136</sup> However, announcing the shutdown amid President Trump's rhetoric allows Ford to look better not only to its customer base, but also to Trump supporters.<sup>137</sup>

More recently, in March 2017, President Trump traveled to Michigan to proclaim that he would push his "Buy American, Hire American" motto even harder. According to an article from CNBC, "Trump again promised to boost manufacturing by encouraging companies to hire and produce in the United States while punishing those who do not. He highlighted pledges to roll back regulations and tweak trade deals that he deems bad for the U.S., like the North American Free Trade Agreement".<sup>138</sup> A little over a month later, President Trump appeared poised to pull out of NAFTA, only to renege on the claim after Canada and Mexico agreed to renegotiate the deal.<sup>139</sup> Before renegotiation can occur though, Trump must obtain permission from Congress. Permission can only be granted following a 90-day period of consultation with Congress and industry groups.

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<sup>133</sup> <http://www.motherjones.com/environment/2017/04/kentucky-coal-company-goes-solar>

<sup>134</sup> <http://www.motherjones.com/environment/2017/04/kentucky-coal-company-goes-solar>

<sup>135</sup> <http://www.freep.com/story/money/cars/mark-phelan/2017/01/21/donald-trump-auto-industry/96788860/>

<sup>136</sup> <http://www.freep.com/story/money/cars/mark-phelan/2017/01/21/donald-trump-auto-industry/96788860/>

<sup>137</sup> <http://www.freep.com/story/money/cars/mark-phelan/2017/01/21/donald-trump-auto-industry/96788860/>

<sup>138</sup> <http://www.cnbc.com/2017/03/15/in-michigan-trump-proclaims-the-assault-on-the-american-auto-industry-is-over.html>

<sup>139</sup> <http://www.cnn.com/2017/04/27/politics/donald-trump-nafta-90-days/>

<sup>140</sup> As such, it may be some time before anything changes involving NAFTA. At the time of this report, renegotiation of the deal had not been approved.

### *Fuel Economy Standards and Energy Efficiency*

Not long before President Trump's speech in Michigan in March 2017, the EPA stated that it was considering putting in place new fuel economy regulations for the automotive industry.<sup>141</sup> The proposal involves a reexamination of former President Barack Obama's plan to increase the fuel economy of vehicles to 54.5 miles per gallon.<sup>142</sup> These fuel economy regulations were opposed by automotive companies that feared that they would cause regulatory compliance costs to rise. The EPA has stated that it will review whether these standards were "appropriate". EPA Administrator Scott Pruitt stated that the regulations were "...costly for automakers and the American people."<sup>143</sup> Pruitt's statements fall in line with the Trump administration's focus on cutting federal spending and regulations.

These policies that jeopardize fuel economy would have broader effects, including decreasing energy efficiency and causing environmental degradation. Upon entering office, the Trump administration put a freeze on fuel efficiency standards proposed under the Obama administration. The states of Connecticut, California, Illinois, Maine, Maryland, Massachusetts, New York, Oregon, Vermont, Washington, and New York have all moved to legally challenge the Trump administration's suspension of rules improving the energy efficiency of "ceiling fans, portable air conditioners, and other products".<sup>144</sup> A similar letter from environmental groups mirrored these complaints.<sup>145</sup> New York Attorney General Eric Schneiderman stated that the fuel economy rules proposed by the Obama administration were "common sense" regulations that would have served to improve the environment by reducing CO<sub>2</sub> emissions and other harmful sources of pollution.<sup>146</sup> He also stated that the plans would have saved companies and consumers \$24 billion dollars.<sup>147</sup>

These legal challenges sent to Rick Perry and the Department of Energy (DOE) accuse both of failing to post its final efficiency rules in the Federal Registrar as per federal law.

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<sup>140</sup> <http://www.cnn.com/2017/04/27/politics/donald-trump-nafta-90-days/>

<sup>141</sup> <http://www.cnn.com/2017/03/15/in-michigan-trump-proclaims-the-assault-on-the-american-auto-industry-is-over.html>

<sup>142</sup> <http://www.cnn.com/2017/03/15/in-michigan-trump-proclaims-the-assault-on-the-american-auto-industry-is-over.html>

<sup>143</sup> <http://www.cnn.com/2017/03/15/in-michigan-trump-proclaims-the-assault-on-the-american-auto-industry-is-over.html>

<sup>144</sup> <http://www.reuters.com/article/us-usa-trump-energy-lawsuit-idUSKBN1751R3>

<sup>145</sup> <http://www.reuters.com/article/us-usa-trump-energy-lawsuit-idUSKBN1751R3>

<sup>146</sup> <http://www.reuters.com/article/us-usa-trump-energy-lawsuit-idUSKBN1751R3>

<sup>147</sup> <http://www.reuters.com/article/us-usa-trump-energy-lawsuit-idUSKBN1751R3>

The DOE replied that Secretary Perry had only started the job on March 3<sup>rd</sup> and had not yet had the chance to review the new regulations.<sup>148</sup> It is unlikely that this response will be met with a warm reception and further challenges to the rules could very well be in the Department's future.

### *The Paris Agreement: An Uncertain Future*

President Trump's updated Energy Independence Policy scraps former President Barack Obama's restrictions on coal and appears designed to give it much more weight in the power sector energy mix. The language of the plan makes it evident that President Trump will give climate change a back seat to what his administration phrases as "energy independence".<sup>149</sup> As has been detailed throughout this report, this entails not only the removal of restrictions on coal but also those on natural gas and oil development and infrastructure. Moreover, President Trump has given power back to the states to decide how they would like to handle energy regulation.<sup>150</sup>

The ramifications that President Trump's repeal of the CPP could have on the Paris Agreement has been documented at length by media outlets over the last few months. As part of the Paris Agreement, the CPP was created to help the U.S. meet its carbon reduction targets. Moreover, the plan was to be used as quantifiable evidence to China that the U.S. would meet its international climate obligations.<sup>151</sup> However, with the suspension of the CPP, it will be much harder not only for the U.S. to meet its targets, but also for the rest of the world to prevent catastrophic climate change.

Even still, despite President Trump's claims on the campaign trail that he intended to pull out of the Paris Agreement, action to that end has not yet occurred. It is likely that this is because President Trump and Republicans are concerned that it could damage U.S. negotiating power in global energy policy.<sup>152</sup> Indeed, it appears that not even coal companies would like the U.S. to leave the agreement because they are concerned that it would damage their ability to influence policy on a global scale. According to an article from *Time*, coal companies are especially concerned that if the U.S. pulls out of the Paris Agreement it will lose the chance to ensure that coal has a place in future climate negotiations.<sup>153</sup> Coal companies also want to obtain federal funds to pay for clean coal technology development, which they could then offer to other countries to encourage

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<sup>148</sup> <http://www.reuters.com/article/us-usa-trump-energy-lawsuit-idUSKBN1751R3>

<sup>149</sup> <https://www.whitehouse.gov/the-press-office/2017/03/28/president-trumps-energy-independence-policy>

<sup>150</sup> <https://www.whitehouse.gov/the-press-office/2017/03/28/president-trumps-energy-independence-policy>

<sup>151</sup> <https://www.nytimes.com/2017/03/28/climate/trump-executive-order-climate-change.html>

<sup>152</sup> <http://www.cnn.com/2017/02/22/world/sutter-trump-paris-agreement/>

<sup>153</sup> <http://time.com/4731582/coal-companies-climate-change-paris-agreement/>

them to continue to use coal. This technology is new and expensive to develop, but without it coal companies believe that the industry will likely enter its death throes.<sup>154</sup>

Traction to stay in the agreement is also picking up within the White House itself. Secretary Perry has asked President Trump to stay in the agreement and renegotiate the climate targets for the U.S.<sup>155</sup> Moreover, Secretary of State Rex Tillerson has also asked President Trump to remain in the deal.<sup>156</sup> Major house Republicans who were originally opposed to Paris have warmed up to the idea of staying within the agreement as well, citing fears over losing the opportunity to negotiate for U.S. interests with other countries.<sup>157</sup>

President Trump's elimination of key Obama-era climate change policies will likely lead to the U.S. not being able to keep its commitments even if it stays within the agreement. In a *Washington Post* article, Rhodium Consulting Firm is quoted as saying that current Trump policies would lead to U.S. emissions being reduced by only 14 percent by 2025, as opposed to the 21 percent emission reduction that the country was on track to meet under the CPP.<sup>158</sup> Should the Trump administration stay in the Paris Agreement, it would need to revise these pledges downward, an act that would surely be met with international criticism and a lowering of confidence in the America's ability to lead on climate action.<sup>159</sup> This action will likely lead to the countries of the world looking to China for leadership on climate, and cast the U.S. in a comparatively negative light in the process. The U.S. pulling out of the agreement could have a broader, chilling effect on U.S. diplomatic relations with the rest of the world, greatly harming its ability to negotiate with other countries on other international agreements in an effective manner.

## Conclusion

### *The Road Ahead: A Dead End?*

Despite expectations to the contrary, President Trump has stayed the course and followed through on many of the energy promises that he made during his campaign. He has given renewables a back seat to fossil fuels and appears to be giving special

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<sup>154</sup> <http://time.com/4731582/coal-companies-climate-change-paris-agreement/>

<sup>155</sup> [https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/trump-said-he-would-cancel-paris-climate-deal-now-the-white-house-is-having-second-thoughts/?utm\\_term=.9eecab1a25b9](https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/trump-said-he-would-cancel-paris-climate-deal-now-the-white-house-is-having-second-thoughts/?utm_term=.9eecab1a25b9)

<sup>156</sup> [https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/trump-said-he-would-cancel-paris-climate-deal-now-the-white-house-is-having-second-thoughts/?utm\\_term=.9eecab1a25b9](https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/trump-said-he-would-cancel-paris-climate-deal-now-the-white-house-is-having-second-thoughts/?utm_term=.9eecab1a25b9)

<sup>157</sup> <http://time.com/4731582/coal-companies-climate-change-paris-agreement/>

<sup>158</sup> [https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/trump-said-he-would-cancel-paris-climate-deal-now-the-white-house-is-having-second-thoughts/?utm\\_term=.4c96779c6e06](https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/trump-said-he-would-cancel-paris-climate-deal-now-the-white-house-is-having-second-thoughts/?utm_term=.4c96779c6e06)

<sup>159</sup> [https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/trump-said-he-would-cancel-paris-climate-deal-now-the-white-house-is-having-second-thoughts/?utm\\_term=.4c96779c6e06](https://www.washingtonpost.com/news/energy-environment/wp/2017/04/26/trump-said-he-would-cancel-paris-climate-deal-now-the-white-house-is-having-second-thoughts/?utm_term=.4c96779c6e06)

preference to natural gas and coal. Moreover, one of his top priorities has been to dismantle Obama-era climate regulations, a move which should be supported by most Republicans. And yet, many of these Obama-era policies had bipartisan support, as demonstrated by the outcries on both sides concerning the revoking of fuel economy standards and support for renewables.

Energy security could be said to be synonymous with energy independence. In order for the U.S. to have full energy independence it will need to rely more on its endemic renewable generation sources, as well as its vast endowment of natural gas. President Trump still appears to be attempting to appeal to one very specific portion of his base. His focus on coal will lose him a great deal of support if it continues though. Coal is going to have an increasingly harder time competing with not just natural gas, but renewable energy sources as well. "Clean Coal" is new technology, and there are many doubts about whether the expenses to develop it will be worth the pay off in the end. Moreover, countries around the world have begun to wean off coal and many more have a disdain for it due to the high CO<sub>2</sub> footprint it leaves. If the U.S. stays in the Paris Agreement, but continues to use coal as a dominant fuel source, American assurances will mean less at the negotiating table, and this may not only be limited to climate change discussions.

To be sure, the Paris Agreement was a monumental international legal achievement, and the long battles that were fought to reach consensus will likely not die simply because the U.S. doesn't meet its commitments. Even still, countries will move forward and create new and innovative green technologies while the U.S. remains stubbornly focused on the past. China has already begun to invest in large amounts of green energy technology, giving it a valuable leadership position in the climate change movement. As China continues to develop this technology, it will better its international position and could perhaps be given even more weight in international negotiations not just with climate issues, but with wider energy issues as well.

In the meantime, the U.S. will likely become more inwardly-focused, using its natural gas and other fossil fuels to power its economy while the rest of the world moves away from these sources. Renewables certainly would not have led to the U.S. being fully energy independent, but they would have empowered the U.S. to supply more of its own energy. Also, this sort of thinking will leave the U.S. at the mercy of oil price spikes and continue to require that it has a powerful presence in one of the most unstable regions of the world. At least in the short-term, it appears that "energy independence" means increased reliance on fossil fuels. In the long-term though, renewables will continue to become more cost competitive with fossil fuels as investment companies

remain focused on new and innovative ways to supply energy. The question remains as to whether President Trump will be able to read the tea leaves, or if the world will have to wait for a more moderate president. Time will tell.