The Electricity Journal xxx (2016) xxx–xxx

Contents lists available at ScienceDirect

The Electricity Journal

journal homepage: www.elsevier.com/locate/electr

Incorporating stability and resilience in energy policy for the U.S. power sector: Recommendations for the Trump administration

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ARTICLE INFO

Article history:
Available online xxx

Keywords:
Energy policy
Power sector
Trump administration

ABSTRACT

With the impending transition in energy policy, the inevitability of political transitions should be accounted for in order to avoid an unsustainable shift in policy that is short-lived and introduces uncertainty for the U.S. power sector. A policy correction rather than an outright reversal can offer a middle ground for energy-environmental centrists to sustain pragmatic energy policy through political transitions, and engagement in international climate talks independent of the administration's position on climate change.

1. Introduction

The 2016 U.S. presidential election has generated concern within the environmental community, particularly with respect to climate change, as President-elect Trump has conveyed his intent to address what he considers regulatory overreach in the U.S. energy sector and unleash an energy revolution in America (Trump, 2016a). This includes expanding U.S. oil and natural gas development, reviving the coal industry, rolling back EPA's Clean Power Plan, and withdrawing from the Paris climate agreement (Mufson and Dennis, 2016; Schoof, 2016; Trump, 2016a). All combined, this would extract from current U.S. energy policy the core of President Obama's climate agenda and effectively put the Obama climate legacy into hibernation—a legacy that, if elected, Hillary Clinton would have likely kept intact and expanded upon (Clinton, 2016). How this projects forward remains in question. What is clear is this: the election of Donald Trump has triggered what will be an ideological shift in energy policy. While this may bode well for upstream and midstream oil and gas sectors in the near term, the impact on the power sector is not as certain (Rapier, 2016).

Past U.S. energy policies that impacted the power generation sector were motivated by various circumstances, some domestic and some external. The Rural Electrification Act (U.S. Department of Agriculture, 1936) was implemented to facilitate the provision of electricity to rural areas of the U.S. The Power Plant and Industrial Fuel Use Act (U.S. Congress, 1978a), which prohibited the construction of new oil and natural gas baseload power plants in favor of coal plants, was a national security measure taken in response to the 1973 oil crisis, but was later repealed. The Public Utilities and Regulatory Policies Act (U.S. Congress, 1978b), also in response to the 1973 oil crisis, was intended to promote energy efficiency and the development of domestic energy resources. The Clean Air Act Amendments (US Congress, 1990) were implemented to address acid rain, urban air pollution, and toxic air emissions, and resulted in significant technological changes and retrofits for power plants. The Energy Policy Acts of 1992 and 2005 created frameworks for wholesale power generation and the consideration of net metering by states (U.S. Congress, 1992, 2005). The Energy Independence and Security Act of 2007 (US Congress, 2007) was, as its title indicates, focused on shifting the U.S. toward less dependence on foreign energy supplies. The Clean Power Plan, which establishes CO_2 emission performance rates for power plants as a measure to ameliorate global climate change, has proven to be one of the most contentious energy-related policies, as there is currently no economically viable environmental control technology available to manage CO_2 (US EPA, 2015). Most recently, the U.S. Senate passed the Energy Policy Modernization Act (U.S. Congress, 2015), which was developed to promote conservation, improve accountability, increase America's energy supply, improve energy infrastructure, and enhance energy efficiency in an overall effort focused on energy security.

These few examples convey the inherent dovetailing of energy and environmental policy with national security, and, in some cases, show how energy policy is oftentimes a proxy for environmental policy. They also exemplify how U.S. energy policy has evolved from a focus on U.S. domestic welfare to one that is now global in scope. While past policies faced their own political and social resistance when originally proposed, most policymakers

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http://dx.doi.org/10.1016/j.tej.2016.12.005
1040-6190/

today retrospectively support the ideologies of past policies implemented to provide electricity for all U.S. citizens, decrease dependency on foreign energy resources, and protect human health and welfare and the environment. However, energy policy designed to regulate U.S. carbon emissions for the sake of global climate welfare has generated conflict involving U.S. national interests, politics, science, the power sector, and America's leadership role in the world. While a Trump administration will focus on implementing its own ambitious energy policies while likely diminishing President Obama's energy and climate agenda, the realities of political and global ideologies and the inevitability of political transitions should be accounted for in order to avoid an unsustainable shift in energy policy that is short-lived and introduces more uncertainty for the U.S. power sector.

The objective of this article is to offer policy recommendations that can help achieve President-elect Trump's goal of unleashing an energy revolution in America, reduce U.S. and global carbon emissions in the long term, and incorporate stability and resiliency into U.S. energy policy as it pertains to the power sector. The recommendations focus on: [1] policy correction as opposed to policy reversal, [2] development of a middle ground of energy-environmental centrists who can sustain and advance pragmatic energy policy through political transitions, and [3] engagement in international climate talks as necessary actions of diplomacy and leadership, independent of the administration's position on climate change.

2. Policy correction, not course reversal

The energy policies of President Obama are in sharp contrast with the energy policy proposals of President-elect Trump and thus project different outlooks for the U.S. power sector. The contrast can be highlighted based on Obama's focus on renewable energy, climate change, and regulations to reduce carbon emissions, compared with Trump's focus on dialing back regulatory overreach, unleashing "America's $50 trillion in untapped shale, oil, and natural gas reserves, plus hundreds of years in clean coal reserves," and canceling U.S. commitments through international climate agreements (EPA CPP CEIP 2015; Trump, 2016a, 2016b, 2016c; Volcovici and Stephenson, 2016; White House, 2016a, 2016b). As President-elect Trump considers rolling back the Obama rules, this is likely to be met with a firestorm of protests and litigation, although reversing course on some of President Obama's policies might not be straightforward (Jacobs, 2016). Nonetheless, President-elect Trump's threats are being hailed by some as a long-overdue attack on the regulatory state (Reilly, 2016). If the policy pendulum is characterized as having swung to the left under President Obama, it can be said that it may be about to swing to the right under President-elect Trump. But it may not swing through the middle to get there—it may go over the top.

Energy policy is inherently subject to political transitions and ideological shifts that generally accompany those transitions. While some may say that Obama's energy policies recommend a necessary course correction, President-elect Trump's focus should be on policy stability and resilience and not a complete course reversal. The reason being, just as quickly as President Trump can reverse course on President Obama's carbon rules and climate change goals, the next President may well reverse course on President Trump's, which only perpetuates the risk, instability, and uncertainty for the power sector, as it can't adjust its generation fleet or respond as quickly as an executive order can be issued. In this regard, the U.S. power sector has recently experienced regulatory and policy volatility and is in need of the latitude to develop long-term integrated resource and infrastructure planning and investment strategies that can hold up under future political transitions. If the direction set by the previous Obama administration is completely abandoned, then a President Trump policy reversal is itself likely to be reversed or abandoned under a subsequent administration; this is precisely what the power sector wants to avoid (Dennis, 2015; NERC, 2014; Eryilmaz and Homans, 2016). As such, the objective should be a resilient energy policy course correction that can be sustained long-term, not a course reversal that will likely be reversed in the future.

This will require a policy framework with institutional strengths to balance energy, environmental, economic, and national security objectives, within the realistic technological constraints of power generation systems. Moreover, it will require a coalition of pragmatists with a realistic view of developing economies and the environmental politics of coal, natural gas, nuclear power, and climate change not only in the U.S. but in a world that is undergoing economic growth and in need of more energy, not less.

3. The pragmatic center: foundation for resilient energy policy

Energy issues are polarized at political and environmental margins. If policy originates at those margins and is enacted based predominantly on agendas at those margins, trench warfare generally ensues as both sides dig in, one in defense and the other laying siege. While ground may be gained or lost over time, it's inevitable that the politics will eventually shift and strategies will be rearranged. The casualty in these shifts is stability and predictability and the resulting uncertainty is problematic for the U.S. power sector, which is at a transition point of its own with respect to infrastructure upgrades and cybersecurity (Campbell, 2015; Lott, 2015; US DOE, 2015).

It remains a matter of perspective, personal politics and individual beliefs as to whether policies are considered extreme or whether regulations are overreaching, but renewable energy and CO_2 regulations are often at the center of the debate. Many in the environmental community lobby for renewable energy as the necessary and proper response to climate change and push for incentives to make it competitive with traditional energy resources and to facilitate a transition toward an energy economy dominated by renewable energy (Council on Foreign Relations, 2016; Lovins, 2013). Some even advocate for a 100% renewable energy economy, primarily wind, water, and solar, not only for the U.S. but for the world, arguing that it can supply the world's energy needs and address climate concerns while meeting economic objectives (Jacobson and Delucchi, 2011). Power sector professionals contend that renewable energy's inherent intermittency characteristics limit its capacity and that baseload power is fundamental to ensuring system reliability (Blade, 2016).

CO_2 regulations interlock with policies promoting renewable energy, as is the case with the Clean Power Plan (CPP) and its Clean Energy Incentive Program, which incentivizes solar and wind as clean energy options to the exclusion of nuclear power (EPA CPP CEIP, 2015). Since the CPP would effectively signal the beginning of the end for coal-fired power in the U.S., President-elect Trump has criticized it as job-killing regulatory overreach (Trump, 2016a). The bottom line is that in a zero-sum game involving coal and renewable energy, the two industries will have difficulty agreeing on a way forward that doesn't preclude the other, and energy policymakers seem to be relegated to a polarized either-or policy space.

This polarization can, and should, be moderated by a middle ground occupied by energy-environment pragmatists who are in broad agreement on technologically sound approaches for meeting energy, environmental, and economic objectives concurrently. Therefore, a necessary component to a resilient energy policy will be a coalition of energy-environment centrists. These are

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individuals and organizations who may very well occupy a common energy and environment middle ground with the intent of reaching completely different destinations (one for energy independence and economic growth in the U.S., the other for a lower-carbon energy future to ameliorate the impacts of global climate change), but they're in full agreement that they need to hitch their ideals to common modes of transportation to reach their respective destinations.

This approach to energy policy mutualism, where the pursuit of individual objectives generates mutual benefits, has much to offer. As such, it should be leveraged for all it's worth as an opportunity to draw pragmatic environmentalists and elected officials from energy-rich states toward the rational center, as both have concerns about climate change but acknowledge the need for next-generation energy systems such as advanced nuclear power, highly efficient natural gas combined-cycle power plants, carbon capture and storage (CCS), geographically appropriate renewable energy, energy storage, electric vehicles, and smart grids. This is consistent with President Trump's initiatives to unleash America's energy resources, but in order for his initiatives to outlive the constitutional limits of a Presidential administration, they need to be balanced with technologies that will help stand up those resources through inevitable political transitions and individuals committed to supporting the resources and technologies.

3.1. Energy resources

Coal is arguably the most challenging resource to sustain in any energy policy. Therefore, any efforts to revive the coal industry and put coal miners back to work in the U.S. will face obstacles in the short- and long-term, as any policy that seeks to increase coal production and consumption will likely be countermanded at some point by a future administration. While nullifying EPA's Clean Power Plan may prolong the life of existing coal plants in the short term, it's unlikely the U.S. power sector will risk investing capital to expand its coal fleet knowing that, in the absence of a major breakthrough in carbon reduction technologies, future policy shifts will probably strand these assets. Flue gas desulfurization, catalytic converters, and electrostatic precipitation technologies sustained the coal industry through the 1990 Clean Air Act Amendments, but coal won't survive carbon reduction policies that are likely to return under subsequent political transitions particularly given the already stiff competition coal is facing from lower-priced natural gas. Therefore, the focus on unleashing U.S. coal resources should be balanced with a commensurate focus on the development of carbon capture and storage technology, because the climate change concern isn't coal or coal workers—the climate change concern is carbon (Global CCS Institute, 2015; Manufacturer's Monthly, 2016). Manage and reduce carbon emissions, and coal has a chance of surviving political changes. This would constitute not only a reprieve and perhaps new life for a vast U.S. energy resource, it would be an opportunity for U.S. industry to pursue research and development of a technology that, when economically feasible, will be in demand for power generation systems worldwide, where countries remain committed to growing and developing carbon-constrained economies. This will be particularly applicable in developing countries that continue consuming coal. Carbon capture and storage technology, then, represents an opportunity to bolster the coal industry at home and create investment partnerships for U.S. industry to ameliorate the environmental impacts of coal consumption in developing regions. Since this approach serves to sustain a U.S. resource and address carbon emissions, it represents a policy correction, not a complete reversal.

Natural gas will likely stand up to political shifts better than coal and it projects to be a substantial part of the U.S. energy portfolio given the U.S. disposition in natural gas reserves, low natural gas prices, and the fact that natural gas carbon emission is much lower than that of coal (EIA, 2016). However, some obstacles will remain. First, fracking concerns are politically recalcitrant and are likely to return with a change in political ideology. Second, under the premise that coal capacity won't increase without carbon capture and storage, the U.S. power sector runs the risk of natural gas overdependence, which recommends attention to the U.S. pipeline infrastructure (Petrihos and VanWyhe, 2016). This, however, accommodates President-elect Trump's infrastructure plans (Trump, 2016b). Third, under the premise of natural gas overdependence, the U.S. power sector will be exposed to price volatility (Knittel et al., 2015). It's also noted that the environmental value of natural gas power plants can be enhanced by economically feasible carbon capture and storage technology—another reason to pursue the technology.

Nuclear power, with its zero-carbon, energy-dense, high-capacity-factor characteristics, holds great promise as a resource for the future and has been promoted as a middle ground solution (Wodka and Zelermyer, 2010). However, in part due to high capitalization costs, the inability of merchant markets to appropriately value nuclear as a zero-carbon resource, inexpensive natural gas, and opposition from anti-nuclear organizations that favor incentivizing intermittent renewable energy for powering America's future, nuclear power has been in a multi-decade stall and the U.S. is lagging the world in nuclear development and construction (Rand, 1985; Akerlind and Freed, 2014; Nuclear Engineering International, 2015; Khatib and Difiglio, 2016; Budnitz, 2016; Blade, 2016; Sierra Club, 2016). The exceptions are new units in Georgia, South Carolina, and Tennessee (CASE-nergy Coalition, 2014). With respect to climate concerns, the marginalization of nuclear power is arguably the most contentious stance taken by some environmental organizations committed to limiting the impacts of human-caused climate change. While past neglect of nuclear power in the U.S. can be attributed to a range of social and political issues, the current resistance to reviving this industry and this resource, particularly with respect to daunting and growing CO_2-related climate concerns, warrants national energy policy attention.

Reviving the U.S. nuclear power industry will generate not only short-term construction jobs but also long-term employment in operations and maintenance. The nuclear field has a wide open future for research and development of next-generation advanced reactors, which should be promoted in order to allow U.S. industry to move to the front edge of a science and engineering field that has unlimited and unknown national security implications. While other countries expand their nuclear fleets, the U.S. remains effectively stagnant in new construction and even stands to lose over 5 GW of existing capacity over the next few years (Larson, 2016; Patel, 2016a). With this said, President-elect Trump has an opportunity to moderate a decades-old anti-nuclear activism and go all-in on developing a modern nuclear power fleet and a vibrant research and development program to explore advanced reactor design, spent fuel reprocessing, small modular reactors, fast breeder reactors, and thorium as a next-generation fuel. Nuclear science and engineering are perhaps the final frontiers for advanced energy systems—this includes fission and fusion—and if the U.S. continues its nuclear dormancy, it will be at a decided disadvantage with respect to reliable, zero-emission power and cutting-edge science and engineering. Moreover, the national security implications of a lagging nuclear program are unknown, yet problematic. It's one thing to imagine an America without a viable civilian nuclear program. It's an altogether different proposition to consider the prospects of an America without the institutional knowledge and talent base of a vibrant nuclear

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science and engineering field that may well be the future of energy for civilian and military purposes.

The Trump administration will have an opportunity to coalesce an alliance of energy-environmental centrists with the engineering, environmental, and political credibility to stand up and sustain nuclear power through the inevitable shifts of political transitions. Nuclear power is by and large politically bipartisan and has strong support among environmental and climate change pragmatists who understand that the world needs more energy, not less, and who are working to implement big solutions for big global problems, including advanced technologies for coal, natural gas, nuclear, and renewables (Asafu-Adjaye, et al., 2015; Hansen et al., 2015; Environmental Progress, 2016; Third Way, 2016; Environment & Energy Publishing, 2016).

4. International climate talks

The United Nations Framework Convention on Climate Change is an international environmental treaty ratified by the United States in October 1992, during the presidency of George H.W. Bush, and entered into force in 1994 (UNFCCC, 2016). As such, the UNFCCC is recognized by the United States as the formal organization of countries to facilitate international discourse on environmental issues of mutual concern—including climate change. The Obama administration chose to provide leadership in the climate change space by regulating U.S. carbon emissions out of the economy via the Clean Power Plan and the UNFCCC Paris climate agreement. More recently, at the Marrakech Climate Change Conference, Secretary of State John Kerry presented an even more aggressive U.S. proposal for deep decarbonization, which proposes that the U.S. could cut emissions 80% by 2050, indexed to 2005, primarily through the power sector (White House, 2016c; Walton, 2016)

President-elect Trump's position is that President Obama's climate actions have hurt U.S. industry, and he therefore plans to cancel the Paris agreement, ratified in September 2016, and cut off U.S. funding to United Nations climate change programs (Santucci and Stracqualursi, 2016). Since it would require four years to withdraw from the Paris agreement, there remains concern that President-elect Trump may decide to expedite the cancellation of the Paris agreement by taking action to withdraw from the UNFCCC (Reuters, 2016). However, rather than reversing course or withdrawing from international climate talks altogether, President-elect Trump has the opportunity to project U.S. leadership along a different arc, one with the potential to have a greater impact on global carbon emissions, stimulate U.S. investment opportunities abroad, address humanitarian needs in poverty-stricken regions, and maintain America's historical position of leadership and engagement in deliberations deemed important to the global community. Moreover, this can be done independent of President-elect Trump's position on climate change.

4.1. Redirect efforts rather than reverse course

China, the U.S., and India are the top three CO_2 emitters in the world, in that order, and they represent countries in three distinct stages of economic growth. The U.S. is a well-established industrial economy with sound environmental health standards. China is a recently established industrial economy built extensively on coal and with substantial human and environmental health issues. India, a country with severe environmental stresses (Acharya, 2012; McKinsey & Co., 2013; National Bureau of Asian Research, 2013; Patel, 2016b; Quartz, 2016a, 2016b) is a fledgling economy trying to establish its industrial base and a reliable power generation sector to provide electricity to hundreds of millions of its citizens living in energy poverty. To do this, India is consuming coal. Of the three countries, only the U.S. has decreased both its coal consumption and CO_2 emissions over the past 15 years. In fact, in 2015 India surpassed the U.S. in coal consumption for the first time ever, whereas China surpassed U.S. coal consumption in 1987 and now leads the world in CO_2 emissions at a rate 1.7 times that of the U.S. (Figs. 1 and 2; Gattie, 2016a).

The power sector for each country reflects similar trends (Table 1 and Fig. 3). While all three countries have increased their respective power generation capacity, the rates of increase and the contribution of fossil fuel capacity to those respective increases differ, particularly over the past 10 years. From 2005 to 2014, U.S. total capacity increased 97 GW (9.9% increase), of which 17 GW was fossil fuel capacity (2.2% increase in fossil capacity). During this same period, China increased its total capacity 882 GW (170% increase), of which 533 GW was fossil fuel capacity (136.3% increase in fossil capacity). For India, the increase was 161 GW (107% increase), of which 121 GW was fossil fuel capacity (116.3% increase in fossil capacity).

These trends highlight the need to focus on those regions of the world where economic growth is occurring (China), where economic growth is about to occur (India and other developing economies), and where CO_2 emissions are increasing (all

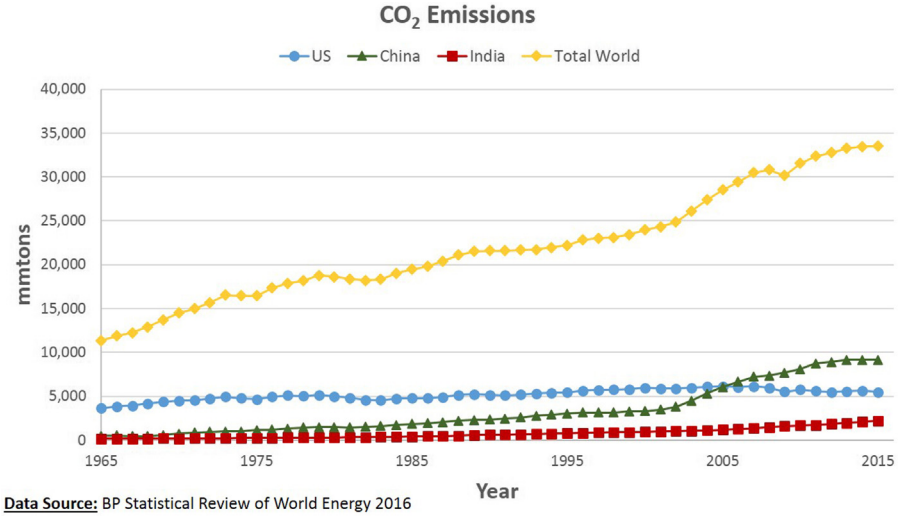

Fig. 1. Comparison of CO_2 emissions for the U.S., China, India and the world.

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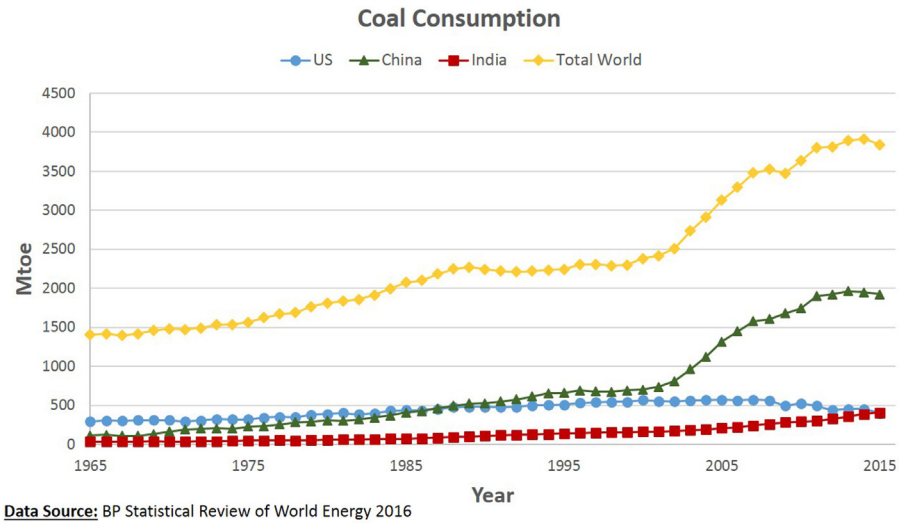

Fig. 2. Comparison of coal consumption for the U.S., China, India and the world.

Table 1
Profile of power generation in the U.S., China and India. (Data from BP Statistical Review of World Energy 2016 and the U.S. Energy Information Administration).

Country	Total Generation Capacity in 2014 (GW)	2005–2014 Change			
		Change in Total Power Generation Capacity (GW)	Change in Fossil Fuel Capacity (GW)	Change in Coal Consumption (Mtoe)	Change in Total CO_2 Emissions (mmtons)
U.S.	1075	97	17	−120	−477
China	1400	882	533	631	3107
India	311	161	121	177	897

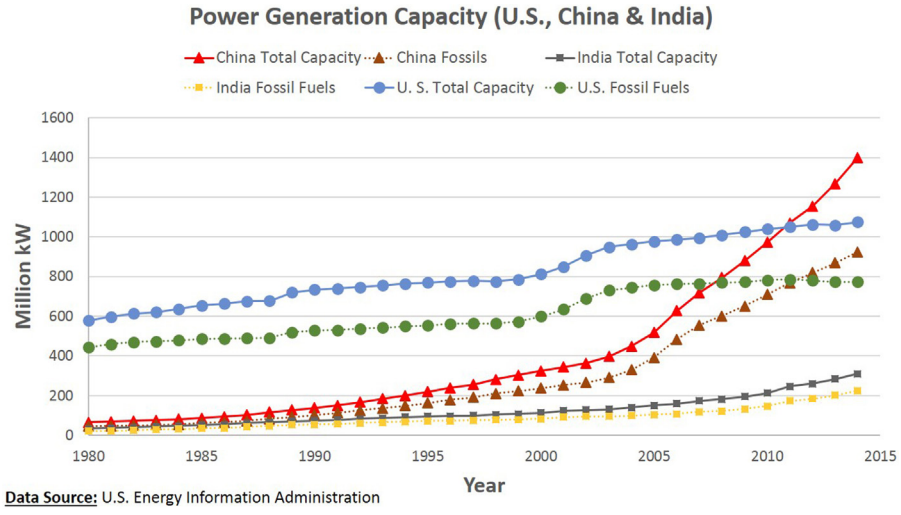

Fig. 3. Comparison of power generation capacity (total and fossil fuel) for the U.S., China and India.

developing economies). These are regions where advanced energy systems such as nuclear, highly efficient combined-cycle natural gas plants, CCS, and renewable energy can be implemented to meet complex and emerging economic and environmental needs and where carbon reduction can have the greatest climate impact (Gattie, 2016b). As such, this is an opportunity for a Trump administration to redirect U.S. energy policy and global carbon reduction efforts toward emerging economies, so that U.S. strengths can be leveraged more effectively as part of a comprehensive and globally strategic energy policy. This would also provide the opportunity to renegotiate U.S. carbon reduction targets rather than walk away from them. The intent should not be to simply preclude the U.S. from reducing its own carbon emissions—something the U.S. is already doing through its power sector. Rather, the intent should be to leverage U.S. strengths of technology, innovation, industrial capacity, and research and development where they can be most effective—to regions of the world where economic growth is occurring, fossil fuel consumption and emissions are increasing and poverty is prevalent.

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4.2. U.S. industry and humanitarian relief

Global poverty issues are energy poverty issues. Therefore, international climate talks, which are inherently energy talks, are by proxy humanitarian relief opportunities to engage the global community in energy-based efforts to alleviate poverty. Current estimates indicate that 1.2 billion people (~18% of global population) live without access to electricity and more than 2.7 billion depend on wood or some other form of biomass, including animal dung, for heating and cooking (IEA, 2016). While energy poverty is bad enough for entire communities, its impacts are particularly acute on the day-to-day lives and health of women and young girls (Oparaocha and Dutta, 2011; Habtezion, 2013). It's estimated that in India alone 92% of rural domestic energy needs are met by women gathering firewood, crop waste, and cattle dung (Habtezion, 2013). Developing countries, particularly those encumbered with energy poverty, may view these talks as opportunities to build relationships with industrialized countries sympathetic to their energy and economic challenges and willing to work with them in meeting those challenges. These countries have energy system, industrial, and infrastructural needs that are fundamental to their economic development goals and they're looking to build international partnerships with countries willing to invest in them and provide the industrial heft to help. Withdrawing from international talks risks alienating U.S. industry as some countries may seek partnerships with countries that demonstrate an abiding interest in global economic development and have remained engaged in the climate discussion. In addition, climate talks also represent an opportunity to strengthen the case for U.S. corporate tax reform. U.S. industry is up to the challenge of engaging with developing regions on developing energy infrastructure, but it needs a sensible investment climate in countries where the financial risk is high. To this end, high-level diplomatic climate talks can be leveraged as opportunities to negotiate friendlier business environments for U.S. industry in developing regions and as an argument for much-needed corporate tax reform in the U.S. to stimulate investment in regions where advanced technologies are critical but the investment climate is perilous (Ramamurti and Doh, 2004; Rose-Ackerman and Tobin, 2005; Henisz and Zelner, 2010; Williams et al., 2015; De Villa et al., 2015).

4.3. Diplomacy and leadership

International climate talks are energy talks, and energy talks are national security talks. As such, climate talks are discussions about world order and the projection of worldviews. Therefore, these are opportunities for the U.S. to provide global leadership and remain diplomatically engaged in an issue of common interest to 196 other countries—a hallmark of U.S. diplomacy since World War I. It isn't incumbent on the Trump administration to agree on the extent to which climate is changing or even on the cause of climate change. But it can agree that international climate talks are opportunities to negotiate, to project America's ideals, and to remain strategically engaged with world leaders on what is arguably one of the most critical issues of our time—energy. Therefore, what is perhaps most concerning is that a U.S. withdrawal from international climate talks will create a global leadership vacuum. And this vacuum will be filled by countries such as Germany, China, India, Canada, Russia, or other countries looking to expand their own sphere of political, economic, and diplomatic influence. If the U.S. steps away from these talks, it may very well abdicate a leadership role it can never regain.

5. Conclusion

As President-elect Trump and his administration look to relieve the U.S. power sector from what he considers regulatory overreach and unleash America's energy potential, it is recommended that he do so with a view towards developing a comprehensive energy policy resilient enough to withstand subsequent political transitions and to provide the power sector with a stable, more predictable investment climate. That is, complement upstream energy resource development with downstream technologies such as carbon capture and storage and nuclear power, which can serve as a long-term hedge for the power sector and limit its exposure to inevitable political changes. This will provide those in the pragmatic energy-environmental center with a strong base on which to argue for, and sustain, a policy correction—particularly if equipped with a renewed focus on nuclear power.

Also, a unilateral exit by the U.S. from international climate talks is a risky prospect with unpredictable outcomes and few, if any, upsides. Not only does it create a potential marginalization of U.S. industry as a partner in global energy infrastructure development, it isolates the U.S. from critical energy negotiations. Moreover, it creates a vacuum in global leadership with unknown geopolitical consequences and national security concerns. As such, the U.S. should remain diplomatically engaged in international climate talks independent of the administration's position on climate change.

In summary, the following policy recommendations are offered:

1. Focus on policy correction rather than reversal in order to incorporate resilience into a comprehensive energy policy that can stand up under political shifts and provide stability for the U.S. power sector.
2. Build a strong coalition of pragmatic energy-environmental centrists who will champion and sustain a comprehensive policy correction through subsequent administration transitions.
3. Complement any expansion of coal and natural gas development with research and development of environmental technologies to help sustain these upstream resource expansions through future administrations that may shift the focus of energy policy back to carbon emissions.
4. Promote nuclear power as the climate-neutral and politically bipartisan energy resource that it is, incentivize the U.S. nuclear industry to expand America's nuclear capacity, and stimulate U.S. research and development in advanced nuclear reactor designs for implementation at home and abroad.
5. Remain engaged in international climate talks as a matter of leadership, diplomacy, humanitarian efforts to alleviate poverty, and in the interest of cultivating global investment opportunities for U.S. industry, independent of the administration's position on climate change.

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Please cite this article in press as: D.K. Gattie, Incorporating stability and resilience in energy policy for the U.S. power sector: Recommendations for the Trump administration, Electr. J. (2017), http://dx.doi.org/10.1016/j.tej.2016.12.005

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Please cite this article in press as: D.K. Gattie, Incorporating stability and resilience in energy policy for the U.S. power sector: Recommendations for the Trump administration, Electr. J. (2017), http://dx.doi.org/10.1016/j.tej.2016.12.005