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Organization of this Comment

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2. Minnesota and the Clean Power Plan
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Center of the American Experiment submits the following comments in response to EPA's Advanced Notice of Proposed Rulemaking (ANPR) titled Repeal of Carbon Dioxide Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (Clean Power Plan).

About American Experiment

Center of the American Experiment is Minnesota's leading public policy organization. The Center is more than a think tank. It not only reaches and produces papers on Minnesota's economy, education, health care, energy, environment, employee freedom, and state and local governance, it also crafts and proposes creative solutions that emphasize free enterprise, limited government, personal responsibility, and government accountability.

American Experiment's staff advances those solutions by drafting legislation, testifying before legislative committees, placing op-eds in newspapers and magazines across the State of Minnesota and nationally, appearing on radio and television news programs, holding town meetings and lobbying. Further, American Experiment conducts grass roots advertising campaigns on radio and on the internet, which bring the key findings of the Center's research papers to millions of Minnesotans. And the Center carries out investigative reporting, uncovering waste, abuse of power and ineptitude in Minnesota's state and local governments, schools, and unions.

For more than 25 years, Center of the American Experiment has been the most impactful and effective public policy organization in Minnesota. It leads the way in creating and advocating policies that make Minnesota a freer, more prosperous and better-governed state.

Minnesota and the Clean Power Plan

The Clean Power Plan was often regarded as the Obama administration's signature climate change initiative. Its rules and regulations sought to reduce carbon dioxide emissions from existing power plants across the country to 32 percent below 2005 levels by 2030. The rules never formally took effect because a February 2016 U.S. Supreme Court decision in *West Virginia, et al. v. EPA, et al.* put the initiative on hold.¹

¹ State of West Virginia, et al. , U.S. Supreme Court [No. 15A773](#).

The overall 32 percent emissions reduction sought by CPP was supposed to be achieved by setting targets for each state as shown in Figure 1.^{2,3} Under the CPP finalized in August of 2015, Minnesota was required to reduce its carbon dioxide (CO₂) emissions per megawatt hour of electricity produced by 41.7 percent below 2012 levels by the year 2030.⁴

Figure 1.
Total Emission Reductions Percentage by 2030
(from 2012 levels)

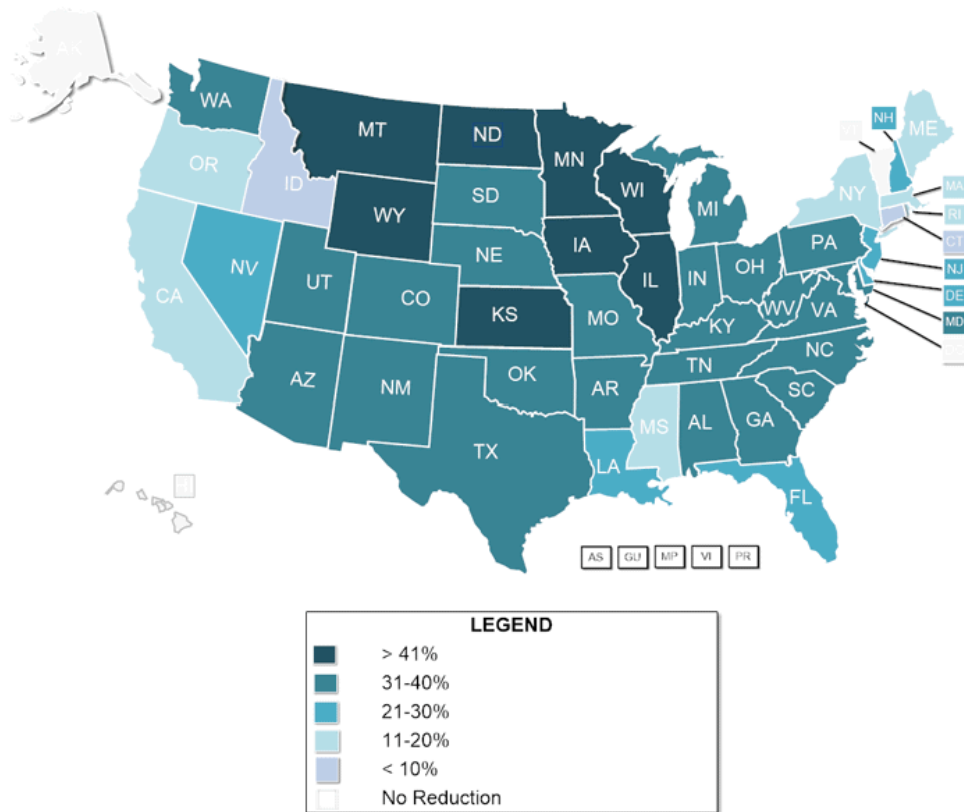


Figure 1. The emissions reductions required under the Clean Power Plan varied dramatically by state. Northern states and those in the Rust Belt would have been among those most affected had these regulations gone into effect. *Source:* Jocelyn Durkay, “[States’ Reaction to EPA Greenhouse Gas Emission Standards](#),” National Conference of State Legislatures, April 18, 2016.

² Jonathan H. Adler, “[Supreme Court Puts the Brakes on EPA’s Clean Power Plan](#),” *The Washington Post*, February 9, 2016.

³ Jocelyn Durkay, “[States’ Reaction to EPA Greenhouse Gas Emission Standards](#),” National Conference of State Legislatures, April 18, 2016.

⁴ E&E News, “Minnesota,” E&E Clean Power Plan Hub, Accessed April 27, 2018, https://www.eenews.net/interactive/clean_power_plan/states/minnesota.

Minnesota has already aggressively pursued wind energy as a means of reducing carbon dioxide emission from the electric power sector. These policies have been an unequivocal failure, causing electricity prices in the state to skyrocket. Electricity prices in Minnesota increased 23 percent faster than the national average since 2001.

Despite having its electricity prices increasing far faster than the national average, wind energy has not resulted in Minnesota reducing its carbon dioxide emissions at a greater rate than the rest of the country.

Although the CPP was never implemented on the federal level, its looming threat resulted in Minnesota state regulators and utility companies, particularly Xcel Energy, significantly damaging the electricity sector in the state to bring their electric generation portfolios in compliance with this Obama-era regulation.⁵

If the CPP is not repealed, Minnesota will be among the states that will face the largest burden to reduce carbon dioxide emissions. Government policies incentivizing these regulations are already seriously hampering our state's economy. That is why Center of the American Experiment urges the Environmental Protection Agency to **fully repeal** the Clean Power Plan.

The Failure of Wind Energy in Minnesota

Minnesota has aggressively pursued wind energy since 2007 when the state implanted its renewable energy standard, which requires the state to generate significant quantities of electricity from renewable sources.

In fact, Minnesota's Renewable Energy Standard is one of the nation's most aggressive renewable energy standards, requiring utilities to provide 25 percent of their electrical generation from renewable sources like wind, hydrogen and solar power by the year 2025.⁶

According to American Experiment's report "Energy Policy in Minnesota: The High Cost of Failure," the state has spent approximately \$15 billion on wind turbines and transmission infrastructure since the early 2000's.⁷ As a result, electricity prices have increased 73 percent since 2001, which is 23 percent faster than the national average, according to EIA data, as shown in Figure 2 below.

⁵ Caitlin Sievers, "[We Energies to Close Pleasant Prairie Power Plant](#)," The Journal Times, November 30, 2017.

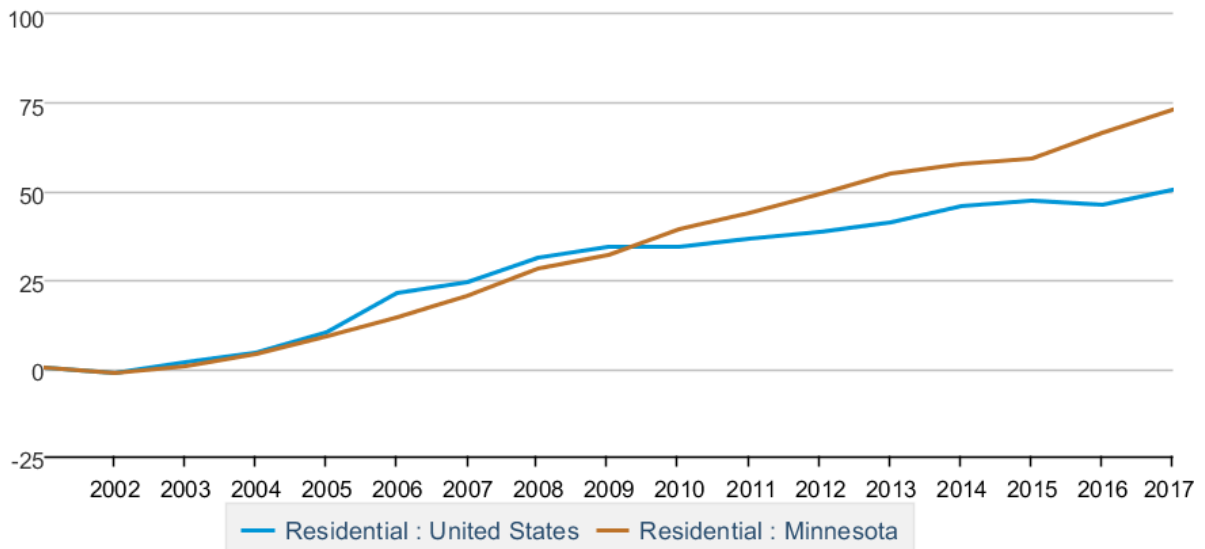
⁶ State of Minnesota, "Renewable Energy," Accessed April 26, 2018, <https://mn.gov/portal/natural-resources/renewable-energy/>.

⁷ Peter Nelson and Steve Hayward, "Energy Policy in Minnesota: The High Cost of Failure," Center of the American Experiment, October 10, 2017, <https://2lffqo2moysixpyb349z0bj6-wpengine.netdna-ssl.com/wp-content/uploads/2017/10/MN-Energy-10.2017-Final.pdf>.

Figure 2.
Average Residential Electricity Prices
Minnesota vs. the National Average

Average retail price of electricity, annual

Indexed to 2001 as percent
Percent



Data source: U.S. Energy Information Administration

Figure 2. Electricity prices in Minnesota have increased 23 percent faster than the national average, with much of the increase occurring after 2007, when Minnesota began to incorporate ever-increasing amounts of wind into their electricity generation portfolio.

The costs of increasing wind generation, and retrofitting coal-fired power plants to instead burn natural gas have resulted in Minnesota losing its historic price advantage on electricity. Since 2010, Minnesota has lost its long-held electricity pricing advantage over the national average. Between 1990 and 2009, the retail price of electricity in Minnesota was, on average, 18.2 percent lower than the national average. This price advantage was remarkably consistent year-to-year with only a small narrowing of the advantage between 1998 and 2000.⁸

However, Minnesota's price advantage began slipping in 2010 (See Figure 3).⁹ Over the next seven years, Minnesota prices increased faster than the nation—a 3.0 percent average annual

⁸ *Supra* note 7.

⁹ *Supra* note 7.

increase compared to 0.7 percent nationally. Energy Information Administration data show that by 2017, Minnesota's electricity prices were higher than the national average.

Figure 3.

Minnesota Loses Electricity Advantage

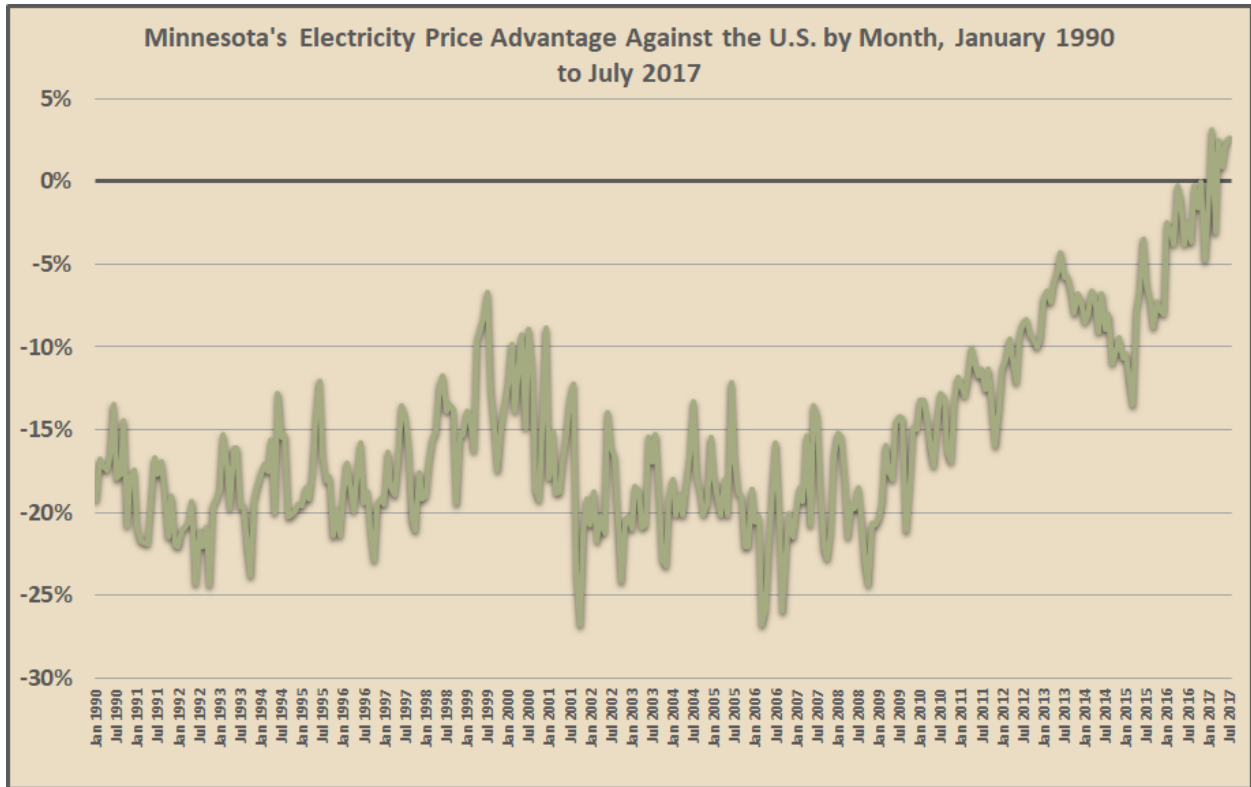


Figure 3. Minnesota has lost its traditional advantage with electricity prices. Minnesota previously had electricity prices 18 percent below the national average, now they are above the national average.

If Minnesota had retained this traditional price advantage, Minnesotans would have saved more than \$1 billion in energy costs in 2016, approximately \$476 dollars per household in 2016, alone.

Increasing electricity prices are strongly correlated to increasing electric generation from wind turbines, which began generating appreciable quantities of energy in 2007 (See Figure 4).¹⁰

Figure 4.

Minnesota Natural Gas and Wind Generation vs. CO2 Emissions

¹⁰ *Supra* note 7, (Figure Modified by Orr March 2018).

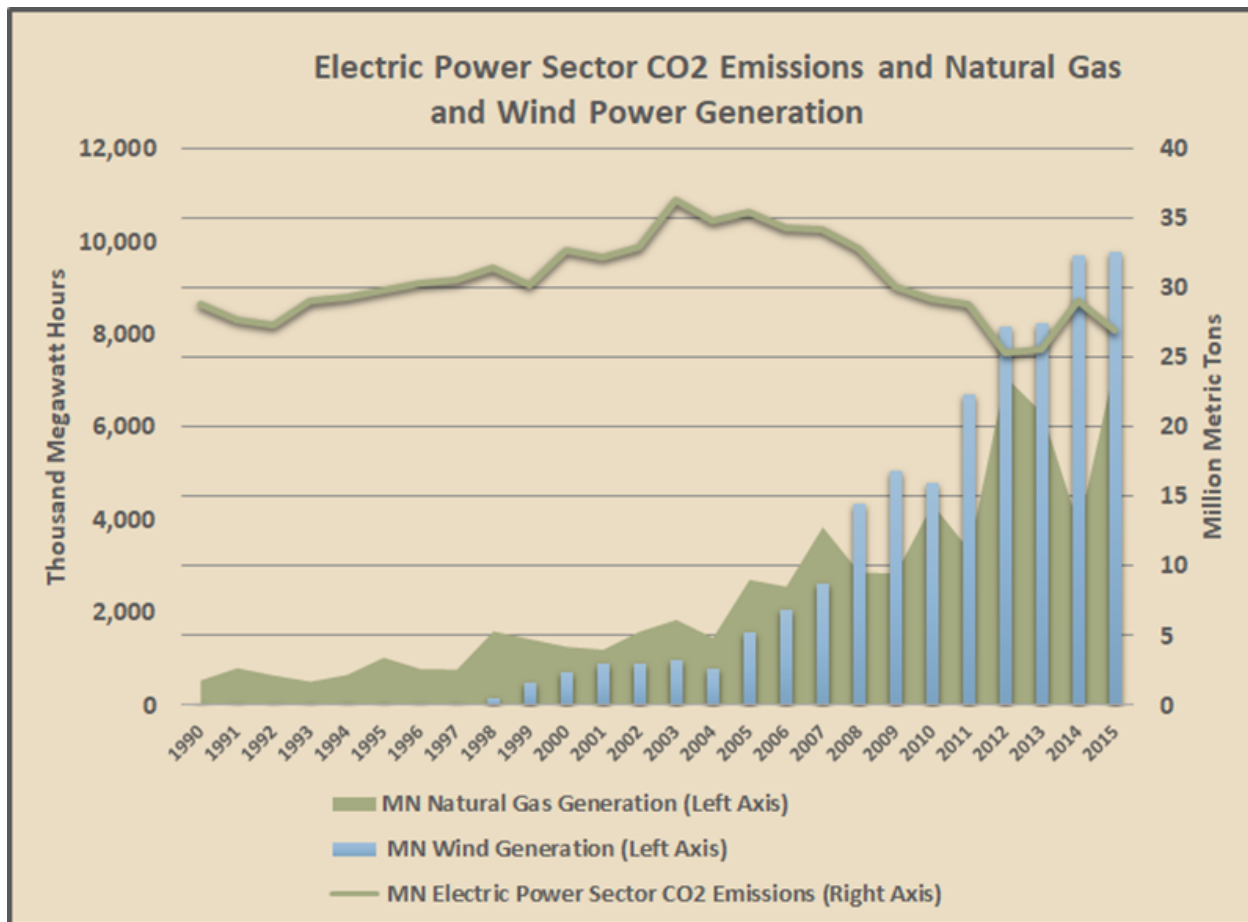


Figure 4. Figure four shows natural gas generation in green, the blue bars demonstrate wind generation, and the green line represent carbon dioxide emissions from the electric power sector. Carbon dioxide emissions have fallen since 2005; however these declines are strongly correlated to increasing natural gas generation and energy efficiency measures.

Interestingly, Minnesota’s electricity prices continued to spike despite a leveling off of natural gas prices. Electricity prices moderated on a national level largely because of falling natural gas prices, which fell from approximately \$8 per million British Thermal Units (MMBTU) in 2008, to approximately \$2.84 per MMBTU today.

Electricity prices have skyrocketed because electricity generation from wind and solar are vastly more expensive than existing natural gas, coal, nuclear, and hydro power. In many cases, existing electricity resources can generate electricity for one-third of the cost of new wind power and one-quarter of the cost of new solar.

For example, existing coal-fired power plants generate reliable electricity at a cost of \$39.9 per megawatt-hour on average, existing nuclear for \$29.1/MWh, natural gas \$34.4/MWh, and hydroelectric resources for \$35.4. Each of these resources is about one-third of the cost of new

wind resources, which generate electricity at a cost of \$107.4/MWh (see Figure 5).¹¹ So, less reliable renewable energy costs three times as much as reliable conventional energy.

Figure 5.

Levelized Cost of Electricity for New and Existing Generation Resources

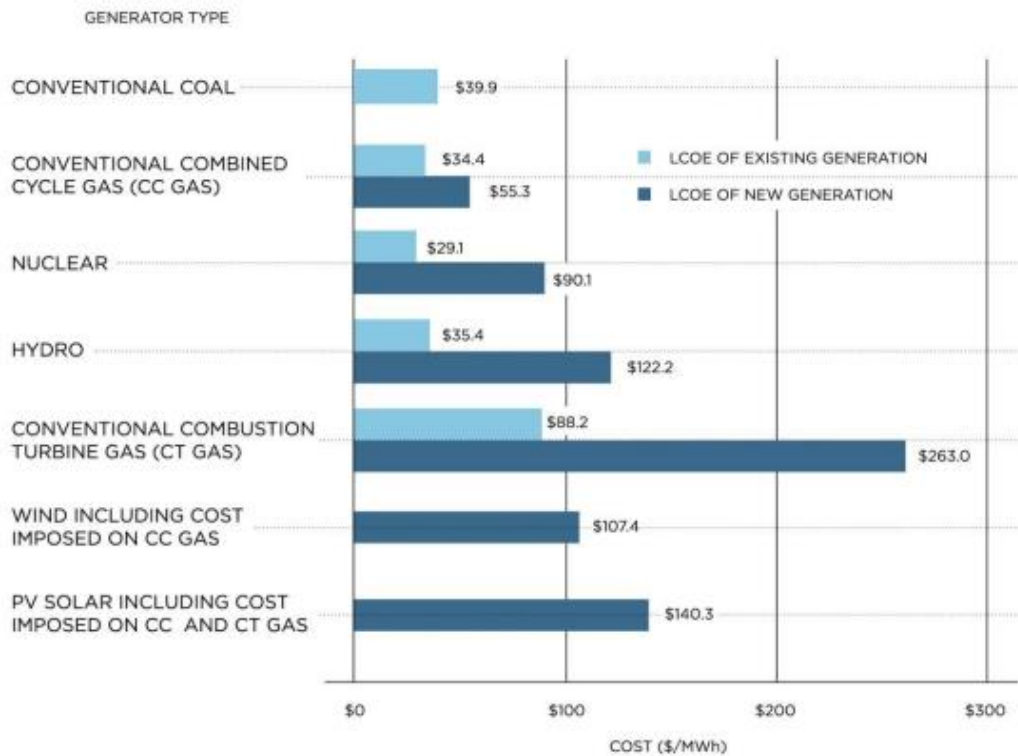


Figure 5. Electricity generation from existing natural gas, coal, nuclear, and hydro power is significantly less expensive than new generating resources. In many cases, existing electricity resources can generate electricity for one-third of the cost of new wind power and one quarter of the cost of new solar. Source: Tom Stacy and George Taylor, *The Levelized Cost of Electricity from Existing Generation Resources*, Institute for Energy Research, July 2016, page 5 (text color modified for readability).

Increasing electricity costs threaten heavy industry in Minnesota, particularly manufacturing and mining. For example, the iron mining industry contributes more than \$3 billion to Minnesota’s

¹¹ Tom Stacy and George Taylor, “The Levelized Cost of Electricity From Existing Generation Resources,” Institute for Energy Research, July 2016, https://www.instituteforenergyresearch.org/wp-content/uploads/2016/07/IER_LCOE_2016-2.pdf.

economy. This industry is incredibly energy intensive, with energy bills routinely constituting 30 to 45 percent of the costs incurred by iron-mining firms.¹²

Increasing costs from further decarbonization of the electricity sector to meet CPP mandates present a very real threat to this important Minnesota industry.

Not only has decarbonizing the electricity sector by increasing mandates for wind power driven up electricity prices, it has failed to achieve meaningful reductions in carbon dioxide emissions in the state when compared to reductions achieved by switching from coal for electric power generation to natural gas (See Figure 6).¹³

Figure 6.

Minnesota Natural Gas and Wind Generation Vs. CO2 Emissions

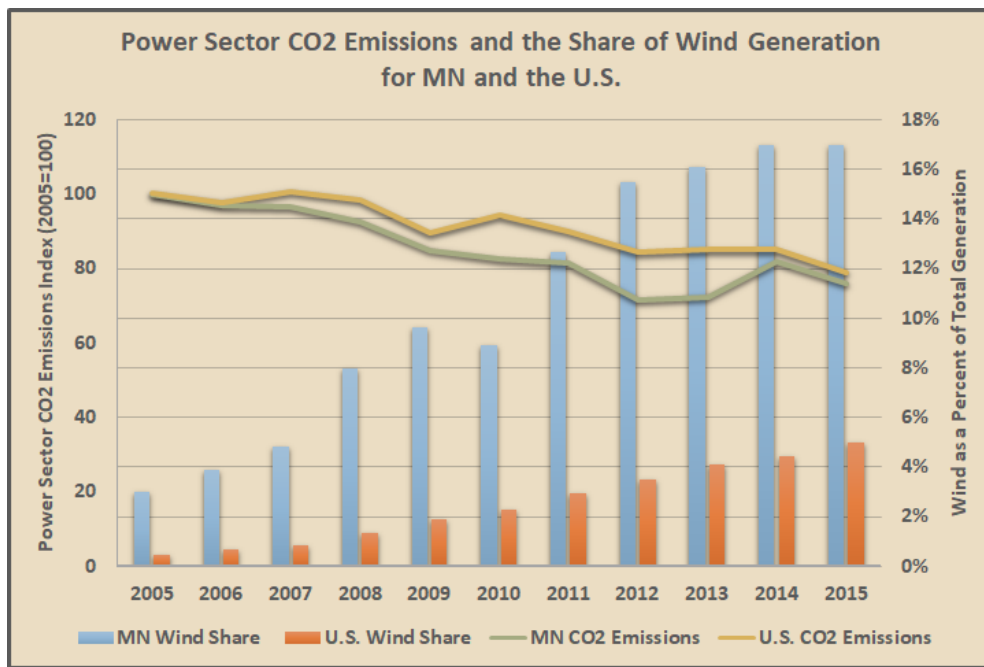


Figure 6. Minnesota has achieved roughly the same reduction in carbon dioxide emissions as other states, but has invested far more in wind power than the national average. This suggests wind is not an effective means of reducing CO2 emissions, and that natural gas is likely superior to achieving this objective. Natural gas is superior because it is dispatchable and is able to provide baseload power, whereas wind is intermittent and unreliable. As a result, Minnesota must keep its coal-fired power plants open to maintain reliable electricity services.

¹² Kelsey Johnson, President, Iron Mining Association of Minnesota, Personal Communication, April 24, 2018.

¹³ *Supra* note 7.

Furthermore, it is impossible to argue that the reductions achieved by using increasing levels of wind and natural gas will have any meaningful impact on global temperatures, as the Obama administration's own climate models indicate these policies will only avert 0.019 degrees C of warming by 2100, an amount too small to be measured with any degree of certainty.^{14, 15}

Conclusion

The Clean Power Plan must be fully repealed to ensure Minnesota has access to affordable and reliable electricity. Utility companies use this pending regulation as justification for shuttering coal-fired power plants, such as the Sherburne County units 1 and 2, and replacing these units with natural gas and wind energy. These coal-plant closures will continue to drive electricity prices upward.

Increasing electricity prices threaten Minnesota's heavy industry, including the iron mining industry where energy bills can constitute 35 to 45 percent of their total costs. Minnesota's iron mining industry provides 75 percent of the iron ore produced in the United States, and increasing electricity prices threaten their ability to profitably mine this crucial raw material.

EPA must rescind the CPP so state policymakers in Minnesota can no longer claim they are only enacting policies designed to reduce CO2 emissions to comply with federal law. Lawmakers who impose these heavy costs on Minnesotans should have to face responsibility for their actions, and not hide behind federal mandates and regulations.

¹⁴ Jonathan A. Lesser, Missing Benefits, Hidden Costs, The Cloudy Numbers in the EPA's Proposed Clean Power Plan, The Manhattan Institute, June 2016; Kevin Dayaratna, "The Economic Impact of the Clean Power Plan," Testimony before the Committee on Science, Space and Technology, June 24, 2015, The Heritage Foundation.

¹⁵ Patrick Michaels and Paul Knappenberger, "Spin Cycle: EPA's Clean Power Plan," Cato Institute, August 5, 2015.

For all of the foregoing reasons, Center of the American Experiment respectfully submits that the Clean Power Plan should be repealed. Respectfully submitted,

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