

ISSUE BRIEF

# OHIO AND THE CLEAN POWER PLAN: AFFORDABLE, RELIABLE, ACHIEVABLE

In September 2014, NRDC submitted an analysis to the Ohio Environmental Protection Agency and the Public Utilities Commission of Ohio, demonstrating that the proposed Clean Power Plan target for Ohio is achievable—largely via the state’s existing clean energy requirements.<sup>1</sup>

Further analysis completed this month confirms that efficiency and renewable energy standards are essential—they lighten impacts on consumers’ wallets, protect public health by reducing carbon and improving air quality, and breathe life into the state’s growing clean energy economy.

Working with ICF International,<sup>2</sup> NRDC analyzed the impact on electric bills for the average Ohio household under a “business as usual” scenario, without the proposed emissions target in place, versus a scenario in which Ohio satisfies the Clean Power Plan by developing its own plan to cut emissions.

## OUR FINDINGS ARE ENCOURAGING

With the right policies in place, Ohio’s Clean Power Plan target can be:

- **Affordable:** By making strategic, long-term investments in energy efficiency and renewable energy, Ohio can create a new path forward that can boost the economy while cost-effectively cutting carbon.
- **Reliable:** Doubling down on clean energy helps support grid reliability by providing more diverse sources of power and giving Ohio flexibility in how it cuts carbon.
- **Achievable:** Ohio was once emerging as a regional clean energy leader but recent policies are taking the state backward. Getting back on track and fully harnessing the state’s energy efficiency and renewable energy potential will facilitate Clean Power Plan compliance and reposition Ohio at the forefront of the clean energy economy.

## AFFORDABLE

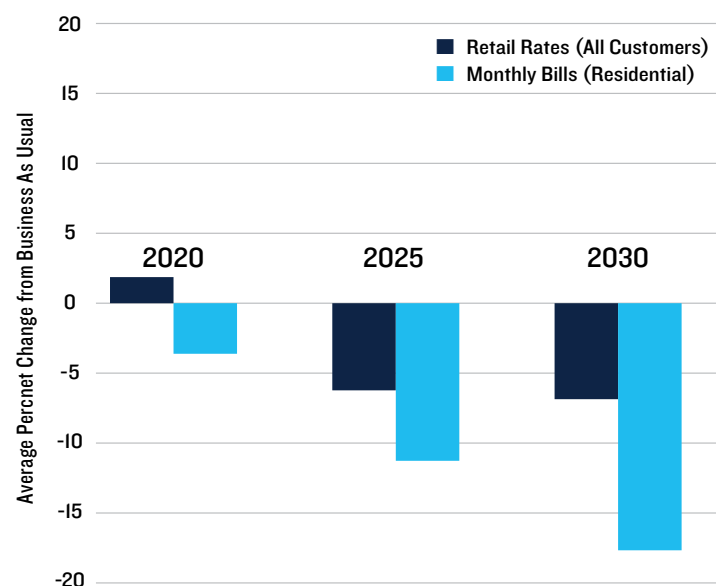
Ohio is in complete control of how it designs its state plan, and if done right it can be exceedingly cost-effective and even reduce utility bills.

Here’s how:

As Figure 1 demonstrates,<sup>3</sup> clean energy translates to cheaper power for Ohioans.<sup>4</sup> If Ohio thaws the recent freeze on its energy efficiency and renewable energy requirements<sup>5</sup> and develops its own plan that maximizes clean energy as the main tool for cutting carbon emissions, by 2030 the state could see:

- An average 7 percent reduction in retail rates for the typical electric consumer compared to “business as usual”
- An average 18 percent drop in monthly electric bills for the typical Ohio household compared to “business as usual”.

FIGURE 1: CHANGE IN RATES AND BILLS (VS. BAU) USING OHIO’S STANDARDS TO MEET THE CLEAN POWER PLAN



Clean energy lowers energy prices for everyone.

While both energy efficiency and renewable energy require upfront capital investments, the generation (or savings) requires little to no operating costs. Because of this dynamic, energy efficiency and wind and solar power bid low and “suppress” prices in the wholesale market. This impact can counteract part or all of the capital costs of clean energy investments, which are incorporated into retail rates. In fact, a recent analysis from DBL Investors found that the top 10 states leading the nation in renewable energy experienced lower electricity price growth on average than the rest of the country.<sup>6</sup>

Similarly, demand reductions through energy efficiency measures often reduce the need for the most expensive power, further lowering wholesale prices.<sup>7</sup> And because energy efficiency is Ohio’s least cost resource,<sup>8</sup> it also often translates into lower retail rates. As customers cut energy waste and use electricity more efficiently, they reduce their overall demand and save money on their bills.

This significant savings puts money back into the pockets of Ohioans and throughout the local economy.<sup>9</sup>

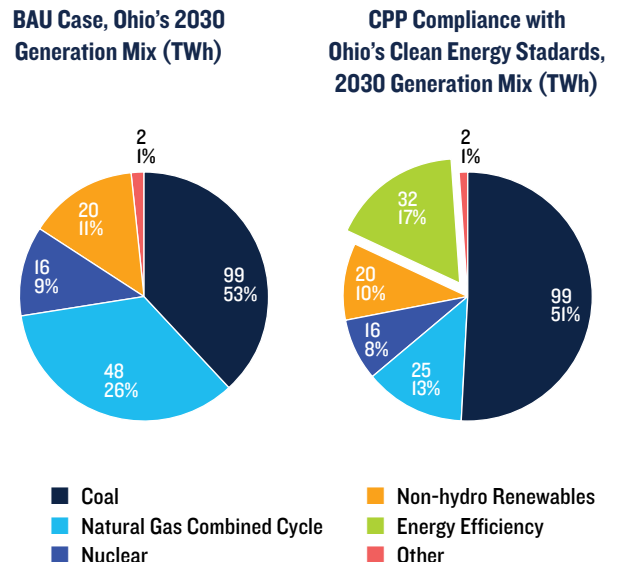
## RELIABLE

Ohio can meet the Clean Power Plan at the state’s own pace while keeping the lights on. If Ohio takes control of crafting its own state plan now, a more flexible approach allows the state to phase out existing power sources (such as coal-fired power plants) at its own pace, allowing the state to adjust the fuel mix as necessary.

The analysis shows if Ohio increases energy efficiency and invests in renewable energy sources (such as wind and solar power) to cut carbon, the state would be so close to the 2030 target that it may not even need to look elsewhere. States have free rein to develop their own strategies to cut carbon, and Ohio should use this opportunity to its advantage.

Figure 2 demonstrates how incorporating more clean energy into Ohio’s already diverse energy mix gives the state immense flexibility to meet the Clean Power Plan target.

FIGURE 2: BAU CASE VS. CPP W/OH’S CLEAN ENERGY STANDARDS<sup>10</sup>



## PJM Concur that Clean Energy is Key

Recent data from the PJM Interconnect—the nation’s largest independent grid operator that ensures the reliable movement of power across Ohio and 12 other states—bolsters NRDC’s findings.<sup>11</sup> PJM’s recent analysis shows Ohio can satisfy the Clean Power Plan targets if it coordinates with neighboring states and focuses on renewable energy and energy efficiency, tools the state already has at its disposal. Equally importantly, the data shows the state can accomplish these goals at a low cost without compromising dependable electricity services that support Ohio’s households and businesses.

## ACHIEVABLE

NRDC’s analysis confirms that Ohio is already well on the way to achieving the proposed Clean Power Plan target. By reinstating and doubling down on existing clean energy policies that have already reaped more than \$1 billion in savings<sup>12</sup> for the state over other more costly options, Ohio stands to maximize the economic, climate, and health benefits for its citizens.

Ohio can lead the Midwest and the rest of the country in harnessing its clean energy potential to craft a smart, cost-effective state plan.

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## ENDNOTES

- 1 Williams, S., Yeh, S., and Haq, A., “The Clean Power Plan: Building on Ohio’s Clean Energy Accomplishments,” NRDC, September 2014, available at [www.nrdc.org/energy/files/ohio-clean-power-plan-report.pdf](http://www.nrdc.org/energy/files/ohio-clean-power-plan-report.pdf).
- 2 The assumptions in the analysis were designated by NRDC and the analysis was performed by ICF, International. NRDC has worked with ICF on multiple prior studies, including on spring 2014 carbon emissions reduction modeling prior to the release of the proposed Clean Power Plan targets. See Lashof, D. and Yeh, S., “Cleaner and Cheaper: Using the Clean Air Act to Sharply Reduce Carbon Pollution from Existing Power Plants, Delivering Health, Environmental, and Economic Benefits,” NRDC, March 2014, available at [www.nrdc.org/air/pollution-standards/files/pollution-standards-IB-update.pdf](http://www.nrdc.org/air/pollution-standards/files/pollution-standards-IB-update.pdf) (outlining several scenarios for how the EPA could shape carbon standards for power plants to get the greatest reductions, at the lowest cost). See also Henderson, K., “New Carbon Pollution Standards Can Save American Households \$13 Billion on Electric Bills, Create 274,000 Jobs,” NRDC, May 2014, available at [www.nrdc.org/air/pollution-standards/state-benefits.asp](http://www.nrdc.org/air/pollution-standards/state-benefits.asp) (electric bill savings and energy efficiency jobs created by cutting carbon nationally and in 13 states (including Ohio)).
- 3 All comparisons are made relative to the business-as-usual (“BAU”) scenario. Following the EPA’s modeling practice for the Clean Power Plan, the BAU scenario includes existing renewable portfolio standards, but does not incorporate energy efficiency resource standards or any incremental demand-side energy efficiency.
- 4 Monthly bills are estimated in fixed 2013 dollars. Average monthly energy use for residential customers in Ohio was estimated by ICF International, derived from EIA projections of state electricity sales (see U.S. Energy Information Administration, Annual Energy Outlook 2013, U.S. Energy Information Administration, May 2013, [www.eia.gov/forecasts/archive/aeo13/sector\\_energydemand.cfm](http://www.eia.gov/forecasts/archive/aeo13/sector_energydemand.cfm)). EIA assumes an average household size in Ohio of 2,343 sq feet, with average monthly consumption increasing over time, based on EIA projections of growth in household size, changes in appliance use, and other macroeconomic factors (see EIA, Housing Characteristics Table 10.11, EIA, May 6, 2013, available at [www.eia.gov/consumption/residential/data/2009/](http://www.eia.gov/consumption/residential/data/2009/)). Monthly bill impacts were calculated by ICF International as follows: wholesale energy prices, taken from IPM analysis performed by ICF based on Clean Power Plan implementation and power market assumptions from NRDC, were converted to average retail rates (average of industrial, commercial, and residential rates) based on the EPA’s retail rate calculation approach, as used for EPA’s Regulatory Impact Analysis of the proposed Clean Power Plan. Retail rates were multiplied by the average monthly energy use of a residential household to arrive at monthly bill estimates.
- 5 SB 310 froze Ohio’s efficiency and renewable energy requirements for 2015 and 2016 to be reinstated on January 1, 2017.
- 6 Pfund, N. and Chhabra, A., *Renewables Are Driving Up Electricity Prices: Wait, What?*, DBL Investors, March 2015, available at [www.dblinvestors.com/wp-content/uploads/2015/03/Pfund-Chhabra-Renewables-Are-Driving-Up-Electricity-Prices-Wait-What.pdf](http://www.dblinvestors.com/wp-content/uploads/2015/03/Pfund-Chhabra-Renewables-Are-Driving-Up-Electricity-Prices-Wait-What.pdf)
- 7 Neubauer, M., et al., *Ohio’s Energy Efficiency Resource Standard: Impacts on the Ohio Wholesale Electricity Market and Benefits to the State*, American Council for an Energy Efficient Economy, April 2013, available at [www.ohiomfg.com/legacy/communities/energy/OMA-ACEEE\\_Study\\_Ohio\\_Energy\\_Efficiency\\_Standard.pdf](http://www.ohiomfg.com/legacy/communities/energy/OMA-ACEEE_Study_Ohio_Energy_Efficiency_Standard.pdf)
- 8 According to American Electric Power, their efficiency programs deliver power at a rate of less than 2 cents per kWh, making energy efficiency the “lowest cost alternative.” See American Electric Power Ohio, *Energy Efficiency/Peak Demand Reduction Action Plan*, Volume 1: 2015-2019, March 26, 2014, pp. 16-17, available at [www.aceee.org/files/pdf/aep-ohio-2015-2017-ee-pdr-plan.pdf](http://www.aceee.org/files/pdf/aep-ohio-2015-2017-ee-pdr-plan.pdf).
- 9 Compare, for example, with the Public Utility Commission of Ohio’s December 2014 analysis finding elevated electric costs if Ohio meets the Clean Power Plan solely by fuel switching to natural gas combined cycle plants (The Public Utilities Commission of Ohio, Comments Submitted to the United States Environmental Protection Agency, December 1, 2014, [www.puco.ohio.gov/puco/assets/File/PUCO%20CPP%20Comments%2012012014.pdf](http://www.puco.ohio.gov/puco/assets/File/PUCO%20CPP%20Comments%2012012014.pdf)). NRDC’s analysis demonstrates these costs are unlikely to occur—in fact retail rate and monthly electric bills are likely to decrease—if Ohio chooses a diverse resource mix rather than a singular, go-it-alone strategy that only relies on one single generation source.
- 10 Most of the decline in natural gas generation in Figure 1 represents reduced demand for new power plants, as a result of increased demand-side energy efficiency.
- 11 PJM Interconnection, *PJM Economic Analysis of EPA’s Proposed Clean Power Plan: State-Level Detail*, PJM Interconnection, March 2, 2015, available at [www.pjm.com/~media/documents/reports/20150302-state-level-detail-pjm-economic-analysis-of-epas-proposed-clean-power-plan.ashx](http://www.pjm.com/~media/documents/reports/20150302-state-level-detail-pjm-economic-analysis-of-epas-proposed-clean-power-plan.ashx).
- 12 Utility self-reported energy efficiency data for program years 2009–2014, derived from annual status reports. The Public Utilities Commission of Ohio, Docketing Information System, The Public Utilities Commission of Ohio, [dis.puc.state.oh.us/](http://dis.puc.state.oh.us/). (Accessed June 1, 2015.)