

This paper provides information about Kentucky and EPA’s Power Plan, which has been stayed by the U.S. Supreme Court.

KENTUCKY

- In 2015, coal provided 87% of Kentucky’s electricity, with natural gas providing 7%, hydroelectric power 4%, and other sources 2%.ⁱ Kentucky’s average retail electricity price was 23% below the national average.ⁱⁱ
- Many Kentucky families are struggling with high energy prices. The nearly 1 million low-income and middle-income families in Kentucky – 56% of the state’s households – take home, on average, \$1,800 per month and spend 18% of their take-home income on energy.ⁱⁱⁱ As a consequence, these families are more vulnerable to increases in energy prices.^{iv} (See “Higher Electricity Prices” below.)
- Kentucky’s coal-fired electric generating plants will have invested \$8.4 billion in air pollution control technologies by 2020 to reduce air emissions. Kentucky’s investment is the third highest among all the states.^v Moreover, Kentucky power plants have reduced emissions of sulfur dioxide and nitrogen oxides by 72% since 1995.^{vi}
- Nationwide, the U.S. coal-fired electric generating fleet has reduced its emissions of conventional air pollutants by 91% per kilowatt-hour of electricity generated since 1970.^{vii} Owners of coal-fired power plants had invested \$111 billion through 2015 to achieve these emission reductions, and they are projected to invest an additional \$16 billion through 2020.^{viii}
- So far, 16 coal-fired electric generating units (totaling almost 3,500 megawatts of power) in Kentucky have shut down or will shut down due to EPA policies.^{ix} These shutdowns represent enough electricity to supply 2.2 million households.^x
- Nationwide, power plant operators have shut down or announced the shutdown of 410 coal-fired electric generating units (totaling 67,000 megawatts) in 37 states because of EPA policies.^{xi} The coal-fired electricity supply being shut down because of EPA policies is more than three times greater than Kentucky’s entire electricity supply.^{xii}
- Kentucky’s coal mining industry has been devastated in recent years. EPA regulations are the cause for much of this harm. At the end of 2015, 8,400

people were employed in coal mining in Kentucky.^{xiii} Four years ago, more than 18,000 people mined Kentucky coal. This means that almost 10,000 people have lost their jobs in coal mining in Kentucky since 2011.^{xiv}

- In 2008, Kentucky produced 121 million tons of coal, in stark contrast to the 61 million tons produced in 2015.^{xv} Despite the harm already inflicted on the coal industry, EPA's Power Plan is estimated to reduce future coal use nationwide by 180 million to 240 million tons per year.^{xvi}

EPA'S UNLAWFUL POWER PLAN

- EPA's Power Plan is intended to address global climate change by reducing carbon dioxide (CO₂) emissions from coal-fired and gas-fired power plants in 47 states, including Kentucky. However, as explained below, its effect on climate change is meaningless.
- Kentucky is one of 27 states that have sued to overturn the Power Plan because it is unlawful under the Clean Air Act and violates the U.S. Constitution by usurping the authority of the states to control their own electricity systems.
- The 27 states suing to overturn the Power Plan represent more than 60% of the U.S. electricity supply.^{xvii} In addition, electric utilities, national labor organizations, the U.S. Chamber of Commerce, and a wide range of other business groups are suing to overturn the Power Plan.^{xviii}
- In early February, the U.S. Supreme Court stayed the Power Plan. As a result, EPA cannot implement or enforce the Power Plan until all court challenges are completed possibly by 2018. The Supreme Court's stay indicates that a majority of the Court is skeptical about the Power Plan's legality. States, including Kentucky, should not waste resources developing plans to implement the Power Plan until the Supreme Court rules on these challenges.

HIGHER ELECTRICITY PRICES

- NERA Economic Consulting projects that the Power Plan could cause a 20% to 25% increase in average retail electricity prices for Kentucky consumers, with peak year increases ranging from 28% to 35%.^{xix}
- Another study conducted by EVA for the National Mining Association projects a peak year wholesale electricity price increase of 27% for Kentucky consumers.^{xx}
- NERA also projects that the Power Plan could cause double digit

electricity price increases in 40 other states, as well as nationwide compliance costs averaging at least \$29 billion annually. ^{xxi}

MEANINGLESS EFFECT ON CLIMATE CHANGE

- In 2014, all U.S. power plants combined emitted a very small fraction (only 4%) of all global greenhouse gas (GHG) emissions.^{xxii} Thus, the Power Plan will reduce global GHG emissions by less than 1% at a cost of \$29 billion or more annually.^{xxiii}
- EPA projects that the Power Plan will reduce U.S. electric sector CO₂ emissions by 375 million tonnes per year by 2030. By contrast, China emits more than 800 million tonnes of CO₂ per month.^{xxiv} In other words, China alone emits more than twice as much CO₂ in a single month as EPA estimates the Power Plan will reduce in one year.
- The global insignificance of emission reductions from the Power Plan is the reason its effect on climate change is meaningless, despite its enormous cost. Assuming climate change models make accurate predictions, the Power Plan is estimated to reduce sea level rise by the thickness of two sheets of paper (less than 1/1,000th of an inch)^{xxv} and reduce global average temperature increase by 0.013 °C (1/80th °C).^{xxvi} For perspective, the average global temperature in 2014 was 14.59 °C.^{xxvii}
- Even with emission reduction commitments by the U.S. and other countries, global CO₂ emissions are projected to increase by 8.6 billion tonnes by 2030. This emissions increase by other countries cancels out 23 years' worth of emission reductions from the Power Plan.^{xxviii}

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ⁱ U.S. Energy Information Administration (EIA), *Electric Power Monthly*, February 2016.

ⁱⁱ *Ibid.*

ⁱⁱⁱ Eugene M. Trisko, *Energy Cost Impacts on Kentucky Families*, January 2016.

^{iv} *Ibid* and 60 Plus Association, *Energy Bills Challenge America's Fixed-Income Seniors*, 2014.

^v Energy Ventures Analysis, *Capital Investments in Emission Control Retrofits in the U.S. Coal-fired Generating Fleet through the Years, 2016 Update*, January 26, 2016.

^{vi} EPA Air Markets Program Division Database (AMPD) query (February 27, 2016).

^{vii} EIA, *Monthly Energy Review*, December 2015; U.S. EPA, *National Air Pollutant Emission Trends*, AMPD database.

^{viii} Energy Ventures Analysis, *Capital Investments in Emission Control Retrofits in the U.S. Coal-fired Generating*

Fleet through the Years, 2016 Update, January 26, 2016.

^{ix} ACCCE, *Coal Unit Retirements as of December 30, 2015*; retirements and conversions are based on public announcements by the coal unit owners.

^x According to EIA, the average U.S. household used 10,932 kWh in 2014. Assuming an 80% capacity factor for coal-fired units, this translates into 640 households/MW. Therefore, 3,500 MW would supply enough electricity for 2.24 million households.

^{xi} ACCCE, *Coal Unit Retirements as of December 30, 2015*.

^{xii} According to EIA's *Electric Power Monthly* (February 2016), Kentucky's electric generating capacity was 20,186 MW as of December 2015.

^{xiii} Kentucky Energy and Environment Cabinet, "Quarterly Coal Report, Fourth Quarter 2015."

^{xiv} *Ibid.* In 2011, 18,194 people were employed in Kentucky coal mining.

^{xv} *Ibid.*

^{xvi} NERA Economic Consulting, *Energy and Consumer Impacts of EPA's Clean Power Plan*, November 7, 2015 ("NERA report"). National Mining Association, *EPA's Clean Power Plan: an Economic Analysis (Analysis Performed by Energy Ventures Analysis)* ("EVA analysis"), stating that EPA's Power Plan "is expected to displace 40% of total coal generation" (p. 8).

^{xvii} EIA, *Electric Power Monthly*, December 2015.

^{xviii} A total of 159 petitioners have filed challenges to the Power Plan. In addition to 27 states, these include legal challenges by 32 national and state trade associations, three national labor organizations, 39 rural electric cooperatives, and the Utility Air Regulatory Group.

^{xix} NERA report. An annual average increase of 20% to 25% means that electricity prices are projected to be 20% to 25% higher each year, on average, under EPA's Power Plan than electricity prices would be in the absence of the Power Plan. The peak year increase is the highest percentage electricity price increase projected to occur in a single year.

^{xx} EVA analysis.

^{xxi} NERA report.

^{xxii} IPCC, *Climate Change 2014: Mitigation of Climate Change: Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, page 6; EIA, *Monthly Energy Review*, July 2015, Table 12.6. The IPCC states on page 6 of the Working Group III report that total anthropogenic greenhouse gas emissions were 49 billion tonnes CO₂-equivalent in 2010. EIA estimates that the U.S. electric sector emitted 2.05 billion tonnes of CO₂ in 2014.

^{xxiii} NERA projects that the Power Plan will reduce, on average, between 396 million and 428 million tonnes of CO₂ per year. This represents 0.8% to 0.9% of 49 billion tonnes of global emissions.

^{xxiv} EPA, *Regulatory Impact Analysis for the Clean Power Plan Final Rule*, August, 2015. EPA projects reductions of 413-415 million short tons per year by 2030, which is equivalent to 374 to 376 metric tons. PBL Netherlands Environment Assessment Agency and European Commission Joint Research Centre, *Trends in Global CO₂ Emissions: 2014 Report*, stating that 2013 emissions from China were 10.3 billion tonnes.

^{xxv} ACCCE, *Climate Effects of EPA's Proposed Carbon Regulations*, August 2015.

^{xxvi} Lomborg, Bjorn, *Impact of Current Climate Proposals, Global Policy* (2015) doi: 10.1111/1758-5899.12295

^{xxvii} National Oceanic and Atmospheric Administration, *Global Analysis — Annual 2014*.

^{xxviii} United Nations Framework Convention on Climate Change, COP-21, *Synthesis Report on the Aggregate Effect of the Intended Nationally Determined Contributions*, October 30, 2015. Global emissions are estimated to be 48.1 billion tonnes in 2010 (page 40). Even with INDCs, global emissions are projected to grow to 55.2 billion tonnes (an increase of 7.1 billion tonnes) in 2025 and 56.7 billion tonnes (an increase of 8.6 billion tonnes) in 2030 (page 9).