



# **The Clean Air Act**

## **Carbon Pollution Guidelines for Existing Power Plants**

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### **Regulation of CO2 Under the Clean Air Act Will Not Work**

As demonstrated in EPA's previous rules addressing anthropogenic emissions of carbon dioxide (CO<sub>2</sub>), the Clean Air Act (CAA) is wholly unsuited to regulate this most ubiquitous side-effect of basic human activity and natural processes. EPA should refrain from acting as a federal energy master and return to the CAA's mission: to protect human health from the adverse effects of pollution in the ambient atmosphere. EPA should hit the pause button on its aggressive climate change agenda and seek guidance from Congress on policies of such national consequence.

### **Protect Our Nation's Abundant, Reliable, and Affordable Electric Power**

When considering CO<sub>2</sub> New Source Performance Standards (NSPS) for existing power plants, EPA must first and last avoid jeopardizing supply, reliability, and affordability of electric power. Our nation's complex system of generating plants, transmission, and related infrastructure have been created and improved over the last century. Fossil fuels—coal, natural gas, and oil—remain essential to this system and, more pointedly, to our quality of life and all our economic activity.

### **CO2 Mandates for Existing Power Plants Mean Great Pain and No Gain**

Even if man-made emissions of CO<sub>2</sub> were eliminated in the U.S., the reduction of global man-made emissions would be minute, and the effect on global temperatures would be all but immeasurable. Based on the IPCC's own assumptions, even immediately eliminating all carbon emissions from the U.S. would only prevent 0.17C of anticipated increases in global temperature by 2100.<sup>1</sup>

Thus, EPA's climate initiative has no real benefits, and would leave the U.S. less prosperous and thus less adaptable to the natural flux of climate change.

### **Preserve a Dynamic Energy Market through Diversity**

Optimal dynamics in the electric sector need diverse energy sources in an open, adaptable market. EPA's proposed CO<sub>2</sub> NSPS for new power plants, the current parameters for NSPS for existing plants, and the multiple new rules to reduce conventional pollutants so disproportionately impact coal fired plants that they de facto eliminate coal from the generating mix. Yet, over the last 20 years, coal-fired electric utilities alone have invested nearly \$100 billion in emission control technology to achieve major reductions of genuine pollutants listed under the CAA.<sup>2</sup>

### **Coal is a Mainstay of Electric Power**

Coal remains the largest source and an essential mainstay of base-load electric power operating at steady state twenty four hours a day. Historically less subject to volatile swings in price, coal is critical to assuring reliable and affordable electric power. Energy infrastructure such as transmission lines and transfer stations developed over a century cannot be rapidly supplanted without enormous loss in investment, supply, reliability, and affordability.

### **Energy Poverty**

Countries in which national governments have forced an abrupt departure from fossil fuel generating sources have experienced a sharp rise in electric rates. After Germany's rush to renewables, their electric

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<sup>1</sup> Paul Knappenberger, "Analysis of U.S. and State-By-State Carbon Dioxide Emissions (for 2010) and Potential 'Savings' in Future Global Temperature and Global Sea Level Rise from a Complete Cessation of All CO<sub>2</sub> Emissions," Science and Public Policy Institute (April 8, 2013).

<sup>2</sup> Coal-Fired Power Investment in Emission Controls, Energy Ventures Analysis, Inc., December 2010.

rates are now three times higher than in the U.S. Major German media report that hundreds of thousands of German homes have disconnected electric service and now utilize (higher carbon) heating oil and wood chips for domestic fuel.<sup>3</sup> Modern society takes a dangerous step backward when electricity becomes a luxury good beyond the means of low income families and fixed income seniors.

EPA's current and planned rules to reduce CO2 already hurt middle and low income families in the US. In the last ten years, the cost of energy as a percentage of pre-tax income has nearly doubled for the poorest households.<sup>4</sup>

### **Reliability Risks Are High in Texas**

Although increasingly creative gains in energy efficiency abound, the demand for electric power in Texas is rapidly growing. At a moderate rate of economic growth in 2020, Texas will need almost over 12,000 megawatts of new generation capacity.<sup>5</sup> Denying Texas the ability to include new coal plants in the generation mix will increase reliability risks in Texas' competitive electricity market.

### **Source-Based Approaches ONLY**

EPA's Guidelines should require only "source-based" approaches and not "system-based" approaches. System-based approaches, such as forced fuel-switching, "non-emitting generation," and demand-side mandates to reduce consumption of electricity, are beyond the authority of NSPS under the Clean Air Act and would require new law enacted by Congress. "System-based approaches" are susceptible to broad, fuzzy measures; the emissions reductions or avoidance of which are impossible to quantify with any factual accuracy.

### **NSPS Compliance Within the "Fence-Line" ONLY**

Performance standards for existing sources must involve emission control and operational measures achievable within the "fence-line" of power plants. Congress never envisioned that EPA would use the CAA's New Source Performance Standards to mandate fundamental changes in the basic design, purpose, and fuel for existing electric generating units.

### **Viable Control Measures to Reduce CO2 Are Limited**

The control measures now commercially available to reduce CO2 emissions from electric generation are likely limited to site-specific energy efficiency measures to improve heat rate. The approach to controlling CO2 emissions from large, new stationary sources in EPA's so-called Tailoring Rule that are based on Best Available Control Technology (BACT)-derived energy efficiency measures could be applicable if applied appropriately within the fence. The levels of emission performance should not require switching from coal to natural gas, co-firing natural gas with coal or other options that may be technically achievable but would jeopardize reliability, capacity, and increase cost to consumers.

### **Performance Standards Must Be Specific for Fuel and Generating Design/Technology**

Performance standards for existing power plants must be fuel and technology specific, including subcategories for fuel, plant design, generating technology, size, and age.

### **Carbon Capture and Sequestration Technologies are Not Commercially Demonstrated.**

Carbon reduction and storage technologies must be commercially demonstrated at scale before

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<sup>3</sup> Von D. Siems and D. Wetzel, "Strom ist für viele Deutsche unbezahlbar geworden," Die Welt, April 29, 2012.

<sup>4</sup> Energy Cost Impacts on American Families, 2001-12, American Coalition for Clean Coal Electricity, April, 2012.

<sup>5</sup> Report on the Capacity, Demand, and Reserves in the ERCOT Region, ERCOT, May, 2013.

required of power plants. The Congressional Research Service, Department of Energy, and EPA's own studies conclude that carbon capture and storage technology (CCS) is not commercially available for coal-fired generation. Significant technical, financial, regulatory, and technical barriers must be resolved before CCS can become a practicable option for controlling CO<sub>2</sub> emissions at a commercial scale. The barriers to commercial use of CCS are now far more intractable than the staggering increased cost of generation at 80-100 percent. Finally, the historically declining cost of new emission control technology for conventional pollutants is not a credible precedent for CCS.

#### **Technical Feasibility is Different than Adequate Demonstration of Commercial Availability.**

In the recently re-proposed NSPS to reduce CO<sub>2</sub> from new power plants, the EPA erred by concluding that CCS was a feasible control option (or at least would be soon) at a reasonable cost for coal-fired generation.<sup>6</sup> EPA erred by conflating technical feasibility with adequate demonstration of commercial availability. Technical feasibility can be "demonstrated" by engineering designs, lab studies, small-scale pilot projects, or large scale demonstrations. Several heavily subsidized pilot projects have failed and the remaining, also heavily subsidized, projects are incomplete without evidence of commercial availability at scale.

#### **"Best System of Emission Reduction" (BSER) Refers to Emission Control Technology –Not a Fuel**

Any proposed "standards of performance" for existing and modified power plants should avoid the current EPA's expansive interpretation of "the best system of emission reduction." Under Section 111(a)(1) of the CAA, the performance standard must be no stricter than the "degree of emission limitation achievable through *the best system of reduction* which ... the Administrator determines has been adequately demonstrated."<sup>7</sup> Outside EPA's proposed NSPS for new power plants, EPA has consistently understood "best system of emission reduction" as a system of emission control, not a preferred fuel, generating technology, process, or plant design. Quite simply, the best system of emission reduction from a coal-fired steam electric generator is not a natural gas-fired combined cycle combustion turbine.

EPA's re-proposed rule for new power plants has somewhat backed away from using BSER to dictate fuel and generation technologies, but the same perspective reappears in EPA's "Consideration in the Design of a Program" to control CO<sub>2</sub> from existing power plants. EPA's treatment of a "system-based approach" exceeds the limited authority under Section 111(a)(1). Under a "system-based approach," EPA would arrogate to itself the power to dictate the nation's electric generation. Congress has not delegated EPA the power to mandate what is infeasible.

#### **The CAA Upholds Basic Economic Freedom of Individuals Acting in Private Markets.**

EPA's recent interpretation of the "best system of emission reduction" in Section 111(a)(1) of the CAA to mandate fuel-switching from coal to natural gas, or from fossil fuel generation to non-emitting generation (e.g. wind or solar), departs from a policy at the core of the CAA. Enacted and largely upheld more than 40 years ago, the CAA allows private actors, not the EPA, to choose their energy source, product, and process. This freedom of choice is a basic tenet of market dynamics in a democracy. The EPA's authority is limited to requiring the best emission control technology that has been practicably achievable as demonstrated by its commercial application at scale.

#### **CO<sub>2</sub> Performance Standard Must Incorporate Robust Cost-Benefit Analysis**

CO<sub>2</sub> performance standards for new and existing power plants must pass a genuine test of costs and

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<sup>6</sup> Carbon Capture and Sequestration: Research, Development, and Demonstration at DOE, CRS Report 7-5700 (April 23, 2012).

<sup>7</sup> 42 U.S.C. 7411(a)(1).

measurable benefits. Oddly, this important regulatory impact analysis was avoided in the re-proposed NSPS for new EGUs with the absurd conclusion that the rule would have no measurable benefits (actual reduction of CO2 emissions) and would impose no costs. If, as EPA noted, the rule merely reinforced trends in the energy sector, then its policy justification is incoherent and its legal justification is questionable. EPA's legal mission to protect human health and the environment does not include directing energy markets.

### **CO2 Emissions in the U.S. Already Declining More than Other Countries**

As Bloomberg reported on November 4, the United States already is already achieving greater reductions of emissions of man-made CO2 than almost any country in the world.<sup>8</sup> According to the Energy Information Administration (EIA), the carbon intensity of the U.S. economy has steadily declined since 1949. Carbon intensity is a measure of the tons of CO2 emitted per million dollars of economic output. Market-driven efficiency gains – not federal regulation—is the driver. In 2012, carbon intensity decreased by 6.6 %, the greatest decline since 1949. CO2 emissions from the energy sector were lower than in 1995. The U.S. State Department recently projected that by 2020, CO2 emissions in the U.S. will decline 17% from a 2005 benchmark. Neither the European Union's Emission Trading System, nor Australia's carbon tax, nor Germany's rush to renewables have catalyzed this magnitude of reduction, but the private economy's relentless drive for efficiency has – all without federal CO2 mandates.

### **Performance Levels Should Be State-Specific**

EPA's Guidelines for state established performance levels should in all ways avoid a uniform national level and should address state specific factors. Texas, for example, uses far more electricity than any other state because of the energy intensity of our industrial sector and the size of our population.<sup>9</sup> Unlike other states, nearly 50 percent of Texas' total energy use is in the industrial sector. That's more electricity for industry than the next three states (California, Louisiana, and Ohio) combined. Texas industries consume large volumes of electric power to make basic products sold across the country and world. Texas should not be punished because the state produces 25% of the nation's gasoline, 50% of its natural gas, and over 60% of the chemicals and feed-stocks that provide the raw material for thousands of products. The Texas coal mining manufacture of activated carbon and coal generated electricity produces over \$6 billion in total economic activity and \$1.69 billion in labor income.<sup>10</sup>

### **Uphold the Primacy of States**

EPA's Guidelines should clearly uphold the primacy of states in the development and implementation of performance standards. EPA's Guidelines must recognize the flexibility that states need to effectively implement emission control requirements by means of diverse, innovative, and market-based measures.

### **Re-Assess the Changing Science of Climate Change**

EPA should hit the pause button on its increasingly aggressive initiative to reduce anthropogenic emissions of CO2. Leading contributors to the U. N.'s Intergovernmental Panel on Climate Change (IPCC) note that the last 16 years of flat global temperature bring into question the IPCC's basic assumption that the earth's climate is highly sensitive to increased levels of man-made CO2. The IPCC's recently released Fifth Assessment Report (AR5) acknowledges that the model-projections driving the IPCC's projections are increasingly invalidated by empirical measurements. Rising levels of CO2 over the last 20 years have not led to the predicted rise in temperatures. Arctic and Antarctic sea ice has, in fact, increased. The AR5 also

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<sup>8</sup> Tom Randal, "America Is Winning a Race That It Never Signed Up For," Bloomberg, November 4, 2013.

<sup>9</sup> Energy Consumption by End-Use Sector, Ranked by State, 2010 Rankings, U.S. Energy Information Administration.

<sup>10</sup> Coal Mining and Coal-Fired Power Generation in Texas: Economic and Fiscal Impacts, Terry Clower, Ph.D and Manuel Reyes, D.E.D., Center for Economic Development and Research, University of North Texas, February 2013.

concludes that there is no meaningful correlation between extreme weather events such as hurricanes, tornadoes, and wildfires and increased levels of CO<sub>2</sub>. EPA's Endangerment Finding relied on scientific conclusions that are not validated by current physical measurement, nor that are widely held within the scientific community. Now is the time to review the state of the science supporting claims of catastrophic global warming caused by anthropogenic emissions of CO<sub>2</sub>.