



Comments for the Record

Public Comment to EPA on New Stationary Sources Rule

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We appreciate the opportunity to comment on the Environmental Protection Agency's (EPA) proposed regulation, titled "Standards of Performance for Greenhouse Gas Emissions From New Stationary Sources: Electric Utility Generating Units." Our comment addresses four aspects of EPA's proposed rule: 1) cost-benefit projections, 2) enhanced oil recovery claims, 3) "adequately-demonstrated" technology, and 4) baseload power considerations.

COST-BENEFIT PROJECTIONS

In EPA's proposed rule and Regulatory Impact Analysis (RIA), the agency notes the proposal "does not contain a federal mandate that may result in expenditures of \$100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year." Thus, the proposal does not trigger the Unfunded Mandates Reform Act (UMRA). The analysis further notes that there are no new generating units expected without Carbon Capture and Storage (CCS), assuming that new generation could be built with carbon capture technology.

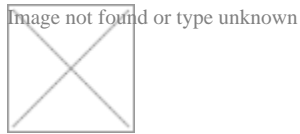
EPA then provides likely costs of both full and partial CCS. In 2011 dollars, the agency projects partial CCS costs of \$29/MWh, and full CCS costs of \$66/MWh. Based on these figures, if owners construct just one new coal plant with full CCS that generates three million MWh, the annual costs will eclipse \$198 million; this should trigger the threshold under UMRA.

Based on 2010 EPA facility-level data, the average coal plant generated 3.7 million annual net MWh. Assuming a company constructs just one new coal plant with full CCS that produces 3.7 million MWh, annual costs could approach \$247 million, well beyond UMRA's monetary threshold. One new coal plant with partial CCS that produces 3.7 million MWh would carry annual costs of \$107 million. Furthermore, if CCS is the established technology that EPA claims in the proposed rule and the RIA, and coal comprises just one percent of the U.S. generation mix, annual costs could easily exceed \$1 billion annually, assuming 2010 net generation levels. For partial CCS (\$29/MWh), assuming just one percent of new U.S. generation is coal, annual costs would be \$1.1 billion; assuming full CCS, costs would approach \$2.7 billion annually. Under the assumption that just five percent of new U.S. generation is coal, these figures are \$5.9 billion for partial CCS and \$13.6 billion for full CCS. For perspective, see figure below.



Even if advanced coal does not grow to represent five percent of total energy generation, this regulation will

impose significant costs. The Energy Information Administration anticipates coal to gain a greater share of generation after retirements hit their maximum in the next few years. According to their 2014 Annual Energy Outlook, between 2016 and 2029, coal will grow by 140 million MWh before declining slightly. If this incremental power comes from facilities that employ CCS under EPA guidelines, costs could span from \$4 billion to \$9 billion annually (for partial and full CCS, respectively).



In sum, using EPA's cost figures for carbon capture technology, if just one new coal plant produces three million MWh with full CCS, annual costs could trigger UMRA's threshold. If CCS technology implementation is more widespread, annual costs could stretch into the billions of dollars annually. We recommend EPA revisit its UMRA analysis to capture these scenarios. If CCS is viable, as EPA assumes, and it will cost between \$29 and \$66 per MWh, this proposed rule will likely impose annual unfunded mandates in excess of UMRA's threshold.

ENHANCED OIL RECOVERY

EPA concedes that enhanced oil recovery (EOR) is not widely available across the U.S. "The vast majority of CO₂-EOR is conducted in oil reservoirs in ... southwest Texas and southeast New Mexico. Other states where CO₂-EOR is utilized are Alabama, Colorado, Illinois, Kansas, Louisiana, Michigan, Mississippi, New Mexico, Oklahoma, Utah, and Wyoming." EPA assumes CCS will be viable based on EOR revenue, and assumes that costs for EOR are uniform throughout the U.S. However, CCS can only be viable for plants near areas geologically suitable for EOR. For large portions of the U.S., EOR cannot be viable, geologically or financially.

Obviously, the economics of EOR change drastically with distance and transportation. EPA's own analysis notes that northern Georgia has no EOR operations, such as oil and gas reserves, saline formations, unmineable coal areas, existing or planned CO₂ pipelines, and natural CO₂ sources. However, there are dozens of coal electric generating units hundreds of miles from the closest saline formations. The cost of building infrastructure for CO₂ transport or transporting CO₂ hundreds of miles far exceeds that of a facility located on an existing EOR site.

What are EPA's cost calculations for new facilities that do not have EOR within a certain geographic distance? Isn't it true that CCS won't be economically feasible for facilities without easy access to EOR? Based on EPA's own analysis, there are 37 states where CO₂-EOR is not utilized and eleven states that have virtually no CO₂ storage capacity or CO₂-EOR operations. There are obviously significant costs for building this framework and we do not believe EPA has incorporated these burdens into its analysis.

"ADEQUATELY DEMONSTRATED" TECHNOLOGY

It is appropriate that EPA seeks comment on its interpretation of “adequately demonstrated” technology for the purpose of establishing the “best system of emission reduction adequately demonstrated” (BSER) for new electricity generating units. We would submit that EPA consistently interpreted the law to grant itself the most flexible and expansive authority, resulting in an absurdly strict BSER.

The proposal establishes modern, efficient generation technology with partial CCS as the best system of emission reduction adequately demonstrated (BSER) for new electricity generating units. Partial CCS would include three major components: CO₂ capture, compression and transportation, and injection and storage. This is limited by the Energy Policy Act of 2005, which specified that the diverse projects receiving government funding under the clean coal provisions of the act could not be relied upon as an example that would “adequately demonstrate” the readiness of a particular technology for employment as BSER.

To circumvent this limitation, EPA draws on examples of different technologies employed in partial CCS as demonstrated at facilities that (1) are not designed to preliminarily generate electricity, (2) capture very small portions of their CO₂ stream, (3) generate small amounts of power relative to commercial scale facilities, or (4) have not yet been placed into operation. It is material that all three components of the BSER have not been demonstrated in unison at a coal electric generation facility of relevant scale and that the proposed emission standard has no record of achievability.

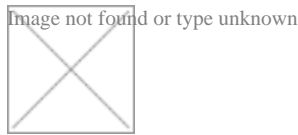
Among these facilities, EPA concedes to incomplete information about the degree to which government support contributed to the technologies used to justify BSER, but does not concede that this limitation warrants caution in determining the readiness of these technologies or their compliance with the restrictions placed upon the “adequately demonstrated” qualification. Further, EPA concedes that the only facilities that will unite the three cornerstones of CCS at sufficient scale both receive considerable government support and are not yet operational; each of these three facilities (Kemper, TCEP, and HECA) continues to face delays in construction, financing, and planning. Until at least one of these facilities produces commercial electricity, they should not be considered suitable evidence of the technical feasibility of these technologies.

Moreover, EPA asserted in the rulemaking that the control technology would qualify as BSER only if its costs are “reasonable.” Within this broad construct, EPA determined that the cost of compliance for new facilities would be comparable to the cost of construction for other low-carbon electricity generation. While this passed EPA’s own “reasonableness” test, we have concerns about its implications. EPA cites nuclear power as comparable in cost, but there has been no construction of a new nuclear facility in a generation. Much like full-scale CCS facilities, new nuclear remains in “advanced stages” of construction and planning. That EPA would use one unmarketable technology receiving copious amounts of assistance to identify another unmarketable technology as “reasonable” in cost borders on the absurd.

Lastly, EPA declares that one “important component for this rulemaking is to advance technology.” In no way is CCS technology ready to be incorporated into the market at sufficient scale. To the contrary, the challenge is to advance the coal industry along the CCS cost and knowledge curves. An excessively strict near-term regulatory regime will hamstring the investments and innovation that can keep clean coal in our energy toolbox, especially as market conditions and other regulations are already decreasing its economic viability. If this proposed regulation is finalized as-is, new fossil power will be almost entirely natural gas-fired. Fuel switching will achieve emissions reductions, but it will also introduce a structural dependency on natural gas to our power supply, along with potential vulnerability.

BASELOAD POWER CONSIDERATIONS

This regulation is stacking the deck in favor of electricity generated from natural gas, a fuel with a well-known volatile price and supply history. Recent production increases related to the proliferation of fracking technology have emboldened a dramatic increase in the share of natural gas in the electricity market. Without any additional regulatory impetus, the Energy Information Administration anticipates that natural gas will grow to over 35 percent of the electricity supply by 2040; just last year, the same projection estimated that natural gas would supply 30 percent of the electricity supply by 2040.



To find the dangers of over reliance on natural gas for electricity generation, one needs look no further than natural gas spot prices in New England this past winter. Prices reached a record high of nearly \$34 per million British thermal units in February 2014, pushing up delivered electricity and home heating prices. This spike led the Federal Energy Regulatory Commission to waive an established cap of \$1,000 per megawatt hour for generators.

An overly stringent regulation for coal-fired power would build a permanent preference to consistently favor natural gas fired power. This risks dramatically increasing costs and endangers the reliability of our electricity grid when the price of natural gas inevitably experiences perturbations.

Finally, we would like to suggest that EPA exercise restraint in finalizing this regulation. The dangers of climate change are a result of the accumulated concentrations of greenhouse gases in the atmosphere; the aim of this and every regulation dedicated to reducing greenhouse gases should be to gradually reduce emissions and build a future with lower CO₂ concentrations, not force reductions in any one year. A restrictive limit today will effectively remove coal from our fuel supply, limit our access to energy, and stilt the economic growth that is a necessary prerequisite to an innovation economy. The more we innovate, the sooner we can deliver our low carbon future.

Thank you for the opportunity to express our views to EPA on this important issue. If you have any questions about our comment, please do not hesitate to contact us via phone or email.