

**Summary Statement of Eugene M. Trisko on behalf of the  
United Mine Workers of America  
September 20, 2012  
In re H.R. 6172**

I am pleased to be here today to testify on behalf of the United Mine Workers of America (UMWA) to support enactment of H.R. 6172.

H.R. 6172 eliminates the threat to advanced new coal generation posed by EPA's proposed "Carbon Pollution Standards Rule." That rule sets a uniform carbon dioxide emission rate of 1,000 pounds of CO<sub>2</sub> per Megawatt-hour applicable to both coal and natural gas combined-cycle generation units. New coal units would need to employ CCS technology to comply, while new natural gas combined-cycle units could comply without CCS. EPA estimates that applying CCS to new coal-based units would increase the cost of electric power produced by 80 percent.

CCS has not been commercially demonstrated in this country, as indicated by the 2010 Interagency Task Force Report on Carbon Capture and Storage. EPA's proposed rule is simply a means of forcing winners and losers in the future market for electric generation. It also ignores 40 years' of EPA regulation under the Clean Air Act by lumping together these two very different sources of electric generation.

The UMWA has supported previous legislation to accelerate the commercial demonstration of CCS technologies. This legislation has not been enacted, and funding available through DOE appropriations and ARRA has not been adequate to support successful large-scale demonstration of CCS technologies.

Coal is an indispensable part of America's energy supply and must be a core element of any "all of the above" energy policy. More than one-third of our nation's electricity is generated by coal, principally in baseload plants. The principal alternatives to coal for future baseload generation are nuclear and natural gas. While natural gas prices have declined recently, substantial uncertainties surround future natural gas prices, particularly in view of the 40-60 year lifetimes of generation assets.

The U.S. should take the lead in establishing the technical and commercial viability of CCS technologies for use both here and abroad. India and China have vast coal reserves, and will continue to rely upon them to support their economic development. Our recoverable coal reserves hold the energy equivalent of the world's proven oil reserves. The U.S. should pursue policies that will accelerate – not stymie – the full range of advanced coal technologies, including commercial-scale demonstration and deployment of CCS. Rethinking the EPA Carbon Pollution Standards Rule is an important step in that direction.

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**Statement on Behalf of the  
United Mine Workers of America, AFL-CIO  
Before the  
Energy and Power Subcommittee  
Committee on Energy and Commerce  
U.S. House of Representatives  
September 20, 2012**

**In re H.R. 6172**

Chairman Whitfield, Ranking Member Rush and distinguished members of the Subcommittee:

I am pleased to be here today to testify on behalf of the United Mine Workers of America (UMWA), the labor union representing the nation's organized coal miners. I have represented the UMWA in clean air and global climate change issues for some 25 years, including participation as an NGO at all major United Nations climate change negotiating sessions since the 1992 Rio Summit. A copy of my bio is Attachment 1, and a summary of my statement is attached to the front cover.

## Background

The UMWA supported the development in 2008 of the Boucher-Rahall bill, H.R. 6258, to facilitate the commercial-scale demonstration of CCS technologies through a non-budget “wires charge” imposed on sales of fossil-based electricity. The bill would have raised \$10 billion over ten years to support the deployment of several commercial-scale demonstration projects, such as the AEP Mountaineer project and others. The union supported similar measures in the Senate. CCS has significant potential for creating jobs as well as mitigating carbon emissions.<sup>1</sup>

For a variety of reasons, these bills were not enacted, and the funding available through DOE and from the 2009 ARRA legislation has not been adequate to support successful large-scale CCS demonstrations.

In recognition of this, the 2010 Report of the Administration’s Task Force on Carbon Capture and Storage concluded that:

CO2 removal technologies are not ready for implementation on coal-based power plants for three primary reasons:

1) they have not been demonstrated at the larger scale necessary for power plant application,

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<sup>1</sup> See, *e.g.*, Keybridge Research LLC and University of Maryland Inforum Modeling Project, Estimating the Economic Impacts of Carbon Capture and Storage (April 2010), available at [http://www.coaltransition.org/filebin/pdf/CCS\\_Jobs\\_Study\\_CATF.pdf](http://www.coaltransition.org/filebin/pdf/CCS_Jobs_Study_CATF.pdf), and BBC Research & Consulting, Employment and Other Economic Benefits from Advanced Coal Electric Generation with Carbon Capture and Storage (2009, sponsored by ACCCE, AFL-CIO Industrial Union Council, IBEW, IBB, and UMWA), available at <http://www.americaspower.org/sites/default/files/BBC-FINAL.pdf>.

2) the energy penalty associated with CO<sub>2</sub> capture would significantly decrease power generating capacity, and

3) if successfully scaled up, they would not be cost effective at their current level of process development.

Other technical challenges associated with the application of these CO<sub>2</sub> capture technologies to coal-based power plants include high capture and compression auxiliary power loads, capture process energy integration with existing power system, impacts of flue gas contaminants (NO<sub>x</sub>, SO<sub>x</sub>, PM) on CO<sub>2</sub> capture system, increased water consumption and cost effective O<sub>2</sub> supply for oxy-combustion systems.<sup>2</sup>

### **Support for H.R. 6172**

The UMWA supports enactment of H.R. 6172, a bipartisan bill introduced by Reps. McKinley, Rahall and several other members. The bill prohibits U.S. EPA from finalizing any rule imposing a standard of performance for carbon dioxide emissions from new or existing fossil-fueled electric generating sources until and unless carbon capture and storage (CCS) technology is found to be technologically and economically feasible. The bill requires this determination to be made by at least 3 of 4 federal officials from the Energy Information Administration, the Comptroller General, the National Energy Technology Laboratory, and the Department of Commerce.

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<sup>2</sup> Report of the Interagency Task Force on Carbon Capture and Storage (August 2010) at A-11, 12 (citations omitted.)

The UMWA recommends that H.R. 6172 be amended in one respect, to clarify that any determination of economic feasibility discounts federal or other financial assistance received to support the design, construction, or operation of CCS projects.

The UMWA views U.S. EPA's recent proposal for limiting carbon dioxide emissions from new coal- and natural gas-based generation sources<sup>3</sup> as a means of forcing winners and losers in the future market for electric generation. The so-called "Carbon Pollution Standards Rule" sets a uniform carbon dioxide emission rate standard of 1,000 pounds of CO<sub>2</sub> per Megawatt-hour applicable to both coal and natural gas combined-cycle generation units. New coal units would need to employ CCS technology to comply, while new natural gas combined-cycle units could comply without CCS.

Based on DOE/NETL data, EPA estimates that applying CCS to new coal-based units would increase the cost of electric power produced by 80 percent.<sup>4</sup> EPA's analysis of the costs of producing electricity from new coal and natural gas units assumes a carbon penalty on new coal units equivalent to \$15/ton of CO<sub>2</sub>, but

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<sup>3</sup> Docket EPA-HQ-OAR-2011-0660, Proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units, 77 FR 22392 (April 13, 2012).

<sup>4</sup> *Id.*, at 22415.

no comparable charge is added to the costs of natural gas combined-cycle units.<sup>5</sup>

Natural gas combined-cycle units emit CO<sub>2</sub> at approximately one-half the rate of pulverized coal units.

For the reasons outlined in UMWA's comments on this proposed rule, included as Attachment 2, the proposed rule is unworkable and unsound. UMWA has recommended that any new source standards for carbon dioxide emissions be set on a separate basis for coal and natural gas combined-cycle units, consistent with some 40 years' of EPA regulation under Section 111 of the Clean Air Act.

### **The Role of Coal in "All of the Above" Energy Policy**

Coal is an indispensable part of America's energy supply. The U.S. has a demonstrated coal reserve base of over 480 billion tons, with an estimated 259 billion tons of recoverable reserves.<sup>6</sup> Our recoverable coal reserves have the energy equivalent of about one trillion barrels of oil, an amount comparable to the world's known oil reserves.

More than one-third of our nation's electricity is generated by coal, principally in baseload plants. Intermittent renewables such as wind cannot replace baseload coal, and usually are backed up with natural gas. To reduce coal in our energy supply mix means using another fuel to replace it for baseload

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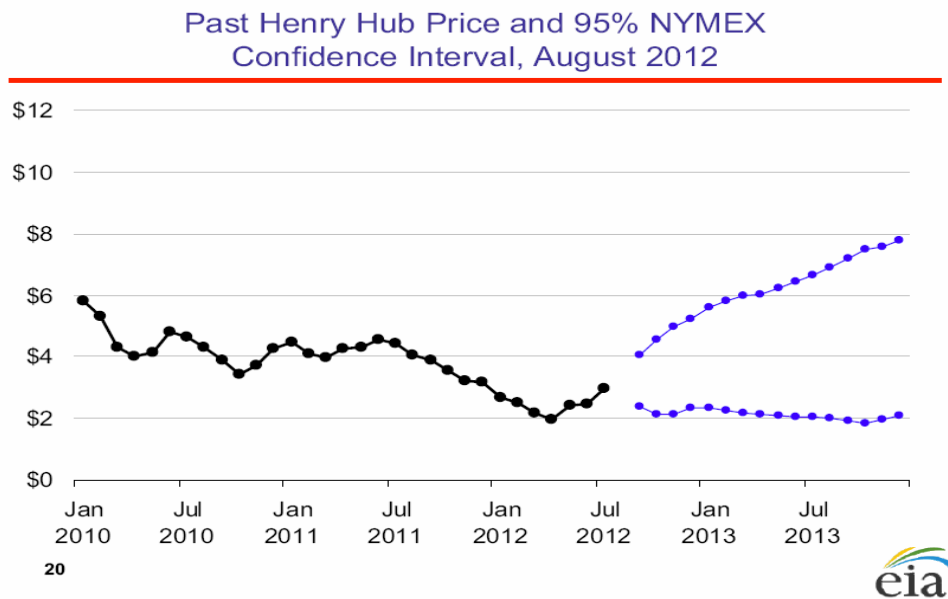
<sup>5</sup> See, EPA, Regulatory Impact Analysis of the Proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units (2012) at 5-15, 16. The carbon penalty is assessed as a 3% adder to the cost of capital for new coal units.

<sup>6</sup> <http://www.eia.gov/coal/annual/pdf/table15.pdf>

generation, most likely a combination of nuclear and natural gas. Such a fundamental shift in U.S. energy policy would bring into question the cost of natural gas supplies. Substantial increases in demand for natural gas from the utility and transportation sectors likely would lead to higher electric generation costs and electric rates for consumers.

An “all of the above” energy policy requires that new advanced coal generation employing state-of-the-art Best Available Control Technologies for reducing criteria and hazardous air pollutants be available as part of our future energy mix. Environmental policies that drive electric utilities away from coal conflict with the goal of maintaining a reliable, low-cost mix of generating sources.

The uncertainty associated with natural gas futures prices underscores the need for a balanced future mix of electric generation capacity, particularly given the 40-60 year lifetimes of generating assets. The chart below shows EIA’s August 2012 assessment of the 95% confidence interval surrounding the NYMEX futures contract through December 2013. The indicated range of prices in December 2013 is from \$2/MMBTU to \$8 per MMBTU:



Source: U.S. DOE/EIA, Short Term Energy Outlook (August 7, 2012).

### **EPA’s Proposed GHG NSPS Rule May Delay CCS Demonstrations**

CCS technology can store carbon dioxide emissions from power plants underground in deep storage sites, such as saline aquifers and shale formations. The U.S. is estimated to have several hundreds of years of storage potential at many locations across the nation.

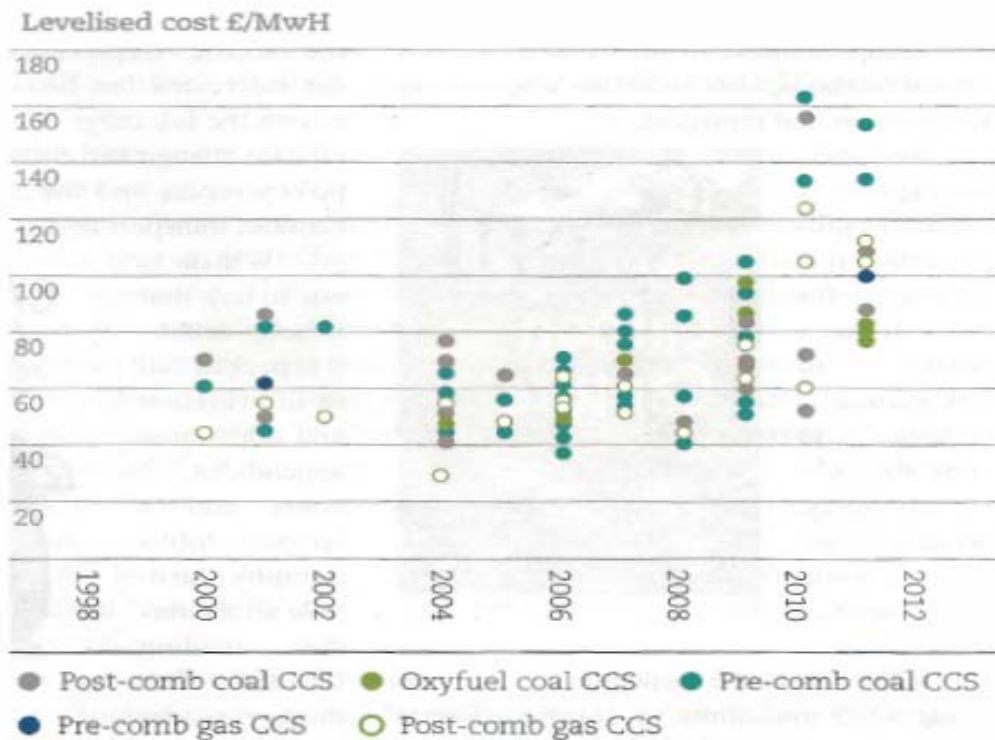
Unfortunately, EPA’s proposed GHG NSPS rule likely would have the counterproductive effect of indefinitely delaying investments in CCS technologies, by focusing new generation investments on natural gas combined-cycle plants. As UMWA pointed out in its attached comments on the proposed rule, natural gas and coal generation are roughly comparable in life-cycle greenhouse gas emissions.

We also are concerned by recent international analyses indicating major



increases in the costs of CCS technologies. Historically, the costs of conventional pollution controls such as scrubbers have declined as a result of “learning-by-doing,” economies of scale, and other factors. CCS, at this relatively early stage of development, appears to be increasing in cost. The chart below summarizes the findings of an independent, interdisciplinary study of the viability of CCS technologies conducted by researchers at four U.K. universities. It suggests a trend of increasing costs per Megawatt-hour of CCS capacity across five different CCS technologies for coal and natural gas units:

### Costs of CCS Technologies, 2000-2012



Source: “CCS – Realizing the Potential?” *Carbon Capture Journal* (July-August 2012) at 11.

## **Relationship of CCS to Climate Change Mitigation**

The U.S. should take the lead in establishing the technical and commercial viability of CCS technologies for use both here and abroad. The world's ability to stabilize global CO<sub>2</sub> concentrations – the long-term goal of the U.N. Framework Convention on Climate Change (FCCC) - depends largely upon the willingness of major developing economies like India and China to accept meaningful and legally-binding commitments to reduce their future rate of emissions. These countries have vast coal reserves, and will continue to rely upon them to support their economic development. China alone consumes three times more coal than the United States. To date, however, the U.N. climate process has not produced a workable framework for a binding global climate change agreement that could achieve the long-term goal of the FCCC.

The Intergovernmental Panel on Climate Change has recognized the critical role that CCS needs to play in any future scenario to reduce global GHG emissions:

In most scenarios for stabilization of atmospheric greenhouse gas concentrations between 450 and 750 ppmv CO<sub>2</sub> and in a least-cost portfolio of mitigation options, the economic potential of CCS would amount to 220–2,200 GtCO<sub>2</sub> (60–600 GtC) cumulatively, which would mean that CCS contributes 15–55% to the cumulative mitigation effort worldwide until 2100, averaged over a range of baseline scenarios.<sup>7</sup>

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<sup>7</sup> IPCC Special Report on Carbon Dioxide Capture and Storage (2005) at 12.

The U.S. should pursue policies that will accelerate – not stymie – the full range of advanced coal technologies, including the commercial-scale demonstration and deployment of CCS technologies. Rethinking EPA’s Carbon Pollution Standards Rule is an important first step in this direction.

### **Conclusion**

H.R. 6172 is an appropriate response to EPA’s premature Carbon Pollution Rule. It would help to ensure that new advanced coal units employing Best Available Control Technologies can be constructed. The bill is not a substitute for legislation to advance the commercial demonstration of CCS, which should be considered separately.

The UMWA thanks the Chairman, the Ranking Member, and the Subcommittee for their consideration of its views.

Attachment 1

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Mr. Trisko has a B.A. in economics and politics from New York University (1972) and a J.D. degree from Georgetown University Law Center (1977). He is admitted in the District of Columbia, and has appeared before the U.S. Court of Appeals for the D.C. Circuit in matters concerning the Clean Air Act. He has lectured on the Clean Air Act and climate change at Penn State University and West Virginia University College of Law.

Mr. Trisko was active on behalf of the United Mine Workers of America in the reauthorization of the 1990 Clean Air Act Amendments. He has participated as an NGO on behalf of the UMWA in all United Nations climate change negotiating sessions since the 1992 Rio Earth Summit. In 2006 and 2007, he represented the UMWA in mercury proceedings in Pennsylvania, and in the Illinois Climate Change Advisory Group. In 2010, he represented the Illinois AFL-CIO, the UMWA and IBEW local unions in the Midwest Governors' Association climate change process.

Mr. Trisko was a member of U.S. EPA's Clean Air Act Advisory Committee from 2003 to 2010. He served on EPA's Mercury MACT Work Group from 2003 to 2005, and on the Advanced Coal Technology Working Group in 2007-08. In 2000 and again in 2007, he was appointed by the U.S. Department of State to represent U.S. labor and stationary source interests as a member of the U.S. Delegation in bilateral air quality negotiations with Canada.

Mr. Trisko is the author of more than 25 articles on energy, climate and clean air policy issues published in environmental and law journals. Before entering private practice, he served as an attorney with the Federal Trade Commission, and as an energy economist with Robert R. Nathan Associates. He has appeared as an expert witness on utility cost of capital before several state public service commissions.

# United Mine Workers of America

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June 25, 2012

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Attn: Docket EPA-HQ-OAR-2011-0660

Proposed Standards of Performance for Greenhouse Gas Emissions for New Stationary Sources: Electric Utility Generating Units

Ladies & gentlemen:

These comments are submitted on behalf of the United Mine Workers of America, AFL-CIO (UMWA). UMWA represents active and retired coal miners across the United States whose welfare will be critically impacted by U.S. EPA's decisions regarding the proposed New Source Performance Standards (NSPS) for greenhouse gas (GHG) emissions from fossil-fueled electric generating units.

For the reasons outlined below, we request that EPA re-propose this rule to provide a basis for the construction of well-controlled new coal generation facilities meeting Best Available Control Technology (BACT) Standards for GHGs and other air pollutants, consistent with the agency's current GHG BACT Guidance.<sup>1</sup> As proposed, the rule imposes an unworkable and infeasible carbon dioxide (CO<sub>2</sub>) emission limitation that would require the application of carbon capture and storage (CCS) technology during the commercial lifetime of any new coal generation unit.

The UMWA has actively supported legislation to provide funding for the commercial demonstration of CCS technology. To date, however, Congress has not acted

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<sup>1</sup> U.S. EPA, "PSD and Title V Permitting Guidance for Greenhouse Gases" (November 10, 2010).

beyond the relatively modest funding provided for programs operated by DOE's Office of Fossil Energy. As a result, CCS technology has not been commercially demonstrated at utility scale applications in this country. The 2010 Report of the Interagency Task Force on CCS<sup>2</sup> recognizes this fact. The International Energy Agency's recent report, "Golden Rules for a Golden Age of Natural Gas,"<sup>3</sup> assumes that CCS will not be deployed until 2035.

The proposed rule envisions that new coal plants would be able to meet an average emission limit of 1,000 lbs CO<sub>2</sub>/MWH by installing CCS ten years after initial operation of a new coal plant. This is an unrealistic assumption. Plant owners would be unable to obtain financing for the future application of CCS technology due to the inherent uncertainties associated with securing all of the legal, regulatory, and permitting approvals associated with the application of an undemonstrated technology ten or more years after initial commercial operation of a new coal generation unit. We doubt that engineering and construction contractors would even be willing to bid on the future construction of CCS facilities so far in advance of construction and operations.

Our most fundamental objection to the proposed rule is its unprecedented combination of coal-based steam electric and natural gas combined cycle (NGCC) units into one category, requiring these very different generation technologies to meet the same standard of 1,000 lbs. CO<sub>2</sub> per MWH. NGCC units can meet this limit with no additional controls. EPA acknowledges that the CCS requirement would raise the cost of electricity at coal plants by 80 percent. Faced with this magnitude of generation cost increase, no prospective plant developer could be assured of a future market for the output of the plant. State utility commissions are not likely to issue certificates of "convenience and necessity" for uneconomic generation facilities.

UMWA members are suffering significant job losses due to current low natural gas prices and the hundreds of coal plant retirements announced in response to EPA's Utility MATS rule. An NSPS rule that effectively bans the construction of new coal plants is fundamentally inconsistent with the Administration's commitment to an "all of the above" energy policy, and will deprive coalfield communities in dozens of states of any prospects for recovery from the job losses they are now experiencing.

We therefore respectfully urge EPA to re-propose the GHG NSPS rule on a basis that provides separate, achievable standards for steam-electric coal and NGCC technologies. As discussed below, we recommend that the standards for new coal-based units be based on the performance of supercritical or ultra-supercritical technologies equipped with scrubbers and other state-of-the-art emission controls.

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<sup>2</sup> **Report of the Interagency Task Force on Carbon Capture and Storage** (August 2010).

<sup>3</sup> International Energy Agency, "Golden Rules for a Golden Age of Gas," (World Energy Outlook Special Report on Unconventional Gas, 2012) pp. 91-92.

## Coal and Natural Gas Require Separate GHG NSPS

The proposed NSPS combine natural gas combined cycle and steam electric coal-based generation into a single category for purposes of meeting a 1,000 lb. CO<sub>2</sub>/MMBTU emission standard over the lifetime of a new fossil-based electric generating facility. The “best system of emission reduction” EPA chose to set this standard is natural gas combined cycle generation, with no controls for CO<sub>2</sub> emissions. Coal units are offered an alternative NSPS based on the application of CCS meeting either “day one” compliance or a 30-year average emission rate of 1,000 lbs/MMBTU.

We disagree with this proposed combination of source types for three reasons: 1) NGCC is not a “system of emission reduction” but is a form of electric generation technology that emits CO<sub>2</sub> and other pollutants, and is itself potentially subject to the application of CCS technologies; 2) applying CCS only to coal units, but exempting natural gas, discriminates against the construction of new coal units and lacks any environmental justification; and 3) the selective application of CCS to new coal units is contrary to the Clean Air Act’s requirement that NSPS be “adequately demonstrated.”

EPA has not provided any justification for limiting the application of CCS to new coal-based units. However, CCS technology is potentially available to reduce CO<sub>2</sub> emissions from NGCC units,<sup>4</sup> at estimated costs below those associated with the application of CCS to coal units.<sup>5</sup> While we are not now advocating for the application of CCS to natural gas units – for the same reasons that we do not support its application to coal units – the record of this rulemaking appears deficient in the absence of a justification for applying CCS solely to new coal units.

We note in this regard research by Dr. Tom Wigley of the National Center for Atmospheric Research<sup>6</sup> and the recent assessment by the International Energy Agency of policies encouraging the substitution of natural gas for coal in the electric generation sector.<sup>7</sup> This body of research illustrates that methane leakage associated with natural gas production, transportation, and generation produces lifetime greenhouse gas emissions and concentrations roughly equivalent to coal generation.

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<sup>4</sup> See, [http://www.netl.doe.gov/energy-analyses/pubs/deskreference/B\\_NGCC\\_051507.pdf](http://www.netl.doe.gov/energy-analyses/pubs/deskreference/B_NGCC_051507.pdf)

<sup>5</sup> See, Ron Edelstein, Gas Technology Institute, “Natural Gas and Carbon Capture and Sequestration,” (presented at NARUC 122d Annual Conference, Atlanta, GA, November 2010); <http://naruc.org/meetingpresentations.cfm?7>

<sup>6</sup> Tom M.L. Wigley (2011), Coal to gas: the influence of methane leakage, *Climatic Change* DOI 10.1007/s10584-011-0217-3.

<sup>7</sup> International Energy Agency, “Golden Rules for a Golden Age of Gas,” (World Energy Outlook Special Report on Unconventional Gas, 2012) pp. 91-92.

## CCS is Not Adequately Demonstrated

CAA section 111(a)(1) defines a “standard of performance” as a “standard for emissions of air pollutants which reflects the degree of emission reduction which (taking into account ... cost ... and any nonair quality health and environmental impact and energy requirements) ... has been adequately demonstrated.”

In the proposed rule, EPA argues that “...CCS is technologically feasible for implementation at new coal-fired power plants and its core components (CO<sub>2</sub> capture, compression, transportation and storage) have already been implemented at commercial scale.”<sup>8</sup> The agency cites DOE’s National Energy Technology Lab findings that the application of CCS may cause the cost of electricity from pulverized coal power plants to increase by “around 80 percent.”<sup>9</sup>

In contrast, EPA’s November 2010 Guidance on GHG BACT in the NSR permitting process recognized CCS as an “available” technology option but declined to recommend its application, citing uncertainties about CCS commercial availability noted by the Administration’s Interagency Task Force Report:

For the purposes of a BACT analysis for GHGs, EPA classifies CCS as an add-on pollution control technology that is “available” for large CO<sub>2</sub>-emitting facilities including fossil fuel-fired power plants and industrial facilities with high-purity CO<sub>2</sub> streams (*e.g.*, hydrogen production, ammonia production, natural gas processing, ethanol production, ethylene oxide production, cement production, and iron and steel manufacturing). For these types of facilities, CCS should be listed in Step 1 of a top-down BACT analysis for GHGs. This does not necessarily mean CCS should be selected as BACT for such sources. Many other case-specific factors, such as the technical feasibility and cost of CCS technology for the specific application, size of the facility, proposed location of the source, and availability and access to transportation and storage opportunities, should be assessed at later steps of a top-down BACT analysis. However, for these types of facilities and particularly for new facilities, CCS is an option that merits initial consideration and, if the permitting authority eliminates this option at some later point in the top-down BACT process, the grounds for doing so should be reflected in the record with an appropriate level of detail.<sup>10</sup>

The Interagency Task Force on CCS reached the following conclusions on the commercial readiness of CCS technologies:

Current technologies could be used to capture CO<sub>2</sub> from new and existing fossil energy power plants; however, they are not ready for widespread

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<sup>8</sup> 77 FR 22392 at 22417.

<sup>9</sup> *Id.*, at 22415.

<sup>10</sup> U.S. EPA, “PSD and Title V Permitting Guidance for Greenhouse Gases” (November 10, 2010) at 33-34 (footnotes omitted.)



implementation primarily because they have not been demonstrated at the scale necessary to establish confidence for power plant application. Since the CO<sub>2</sub> capture capacities used in current industrial processes are generally much smaller than the capacity required for the purposes of GHG emissions mitigation at a typical power plant, there is considerable uncertainty associated with capacities at volumes necessary for commercial deployment.<sup>11</sup>

The proposed rule's unprecedented combination of fossil generation sources ignores 40 years' of EPA regulation under Section 111 of the Clean Air Act. It would create severe market distortions favoring natural gas over coal even if the price of natural gas rises to the point that advanced coal-based generation becomes the clear economic choice for utility investments in 40-50 year generating capacity.

The history of establishing separate NSPS for coal-based steam electric generation began with the promulgation of the 1971 NSPS limiting sulfur dioxide (SO<sub>2</sub>) emissions from coal generation to 1.2 lbs. SO<sub>2</sub> per MMBTU,<sup>12</sup> proceeded through the 1979 NSPS setting a sliding-scale SO<sub>2</sub> percentage reduction requirement for new coal generation sources,<sup>13</sup> continued through the 2006 NSPS revisions for SO<sub>2</sub>, NO<sub>x</sub>, and particulate matter (PM) emissions for steam-electric generating units,<sup>14</sup> and concluded most recently with fuel-neutral revised NSPS for SO<sub>2</sub>, PM and NO<sub>x</sub> emissions from steam electric generating units, including coal-based sources.<sup>15</sup> The specific emission limitations that EPA set in the 2012 NSPS reflect the application of scrubbers, fabric filters, selective catalytic reduction and other technologies to coal-based generation sources.<sup>16</sup>

In all of these rulemakings, EPA set NSPS limitations reflecting the performance of commercially-available control technologies that the agency determined to represent

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<sup>11</sup> **Report of the Interagency Task Force on Carbon Capture and Storage** (August 2010) at 34-35.

<sup>12</sup> 36 FR 24876 (December 23, 1971).

<sup>13</sup> 44 FR 33580 (June 11, 1979).

<sup>14</sup> 71 FR 9866 (February 27, 2006).

<sup>15</sup> 77 FR 9304 (February 16, 2012). The SO<sub>2</sub> emission limit for new and reconstructed EGUs is 130 ng/J (1.0 lb/MWh) gross energy output or 97 percent reduction regardless of the type of fuel burned. *Id.*, at 9423. In the initial proposal of the revised NSPS, EPA explained that coal-based units provided the bases for the Best Demonstrated Technology standards adopted as NSPS in the final MATS rule: "To develop a fuel- and technology neutral emission limit, we first analyzed data on emission control performance from coal-fired units to establish an emission level that represents BDT for units burning coal. We adopted this approach because the higher sulfur, nitrogen, and ash contents for coal compared to oil or gas makes application of BDT to coal-fired units more complex than application of BDT to either oil- or gas-fired units. Because of these complexities, emission levels selected for coal-fired steam generating units using BDT would also be achievable by oil- and gas-fired EGUs." 76 FR 24976 at 25062 (May 3, 2011).

<sup>16</sup> *See*, 76 FR 24976 at 25060-63.

Best Demonstrated Technology (BDT). The same policy rationale should apply to the limitation of GHG emissions from sources employing different fossil fuels and entirely different combustion technologies.

### **Coal-Based NSPS Should Reflect State-of-the-Art Generation Efficiency**

CCS is not an adequately demonstrated technology, and is not economic in the absence of a carbon market or other financial program to defray its incremental costs. Consequently, EPA should establish NSPS for new coal generation plants reflecting state-of-the-art generation technology and emission control for criteria and hazardous pollutants. In the event that natural gas prices do not conform to current expectations, this would avoid locking in power providers to natural gas as their dominant generation choice.

We concur with EPA that supercritical and ultra-supercritical coal-based generation technologies offer superior energy efficiency at competitive costs:

In determining the “best system of emission reduction” for this category of boilers and combined cycle units, we considered a range of natural gas-fired and coal-fired generation technologies, with available controls. We considered modern supercritical and ultra-supercritical coal-fired boilers. This technology is available — it is currently deployed in Europe and is now being widely deployed in Asia (especially China). ... These supercritical and ultra-supercritical boilers have CO<sub>2</sub> emissions of approximately 1,800 lb/MWh and provide the lowest overall costs for conventional coal-based electricity.<sup>17</sup>

As an alternative to the proposed rule, UMWA supports a coal-based NSPS for CO<sub>2</sub> emissions reflecting the performance of supercritical or ultrasupercritical units equipped with the emissions controls needed to comply with other applicable CAA requirements (e.g., scrubbers, SCRs, fabric filters, activated carbon injection.) Such an alternative would be consistent with the energy-efficiency emphasis of current GHG BACT Guidance, and could be revised in subsequent NSPS rulemakings to incorporate CCS technology if warranted.

### **International Considerations**

The UMWA was the first U.S. labor union to engage the United Nations climate change negotiation process, immediately following the negotiation of the 1992 Rio Framework Convention on Climate Change. We have participated as a separately-accredited NGO at every major UN FCCC negotiation session over the past 20 years.

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<sup>17</sup> 77 FR 22392 at 22417.

We have consistently urged that domestic actions to reduce greenhouse gas emissions should occur in the context of a multilateral framework for reducing GHG emissions from major industrial and developing economies. Developing nations will account for 70% of global energy-related greenhouse gas emissions by 2050.<sup>18</sup> Without meaningful long-term commitments from these nations, unilateral domestic emissions reductions would do little to reduce global concentrations of greenhouse gases.<sup>19</sup>

Participation in a global climate change mitigation program, with access to international offsets, also could significantly reduce U.S. compliance costs and other economic impacts. EPA estimated that the marginal cost of GHG abatement under the proposed 2010 American Power Act would increase by 89% in the absence of international offsets.<sup>20</sup>

The “Durban Platform” agreed to in December 2011 at 17th Conference of the Parties (COP-17) to the FCCC sets in motion a three-year negotiation process intended to produce a global agreement “with legal force” applicable to all parties to the FCCC:

*The Conference of the Parties,*

*Recognizing* that climate change represents an urgent and potentially irreversible threat to human societies and the planet and thus requires to be urgently addressed by all Parties, and acknowledging that the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, with a view to accelerating the reduction of global greenhouse gas emissions ...

1. *Decides* to extend the Ad Hoc Working Group on Long-term Cooperative Action under the Convention for one year in order for it to continue its work and reach the agreed outcome pursuant to decision 1/CP.13 (Bali Action Plan) ...

2. *Also decides* to launch a process to develop a protocol, another legal instrument or an agreed outcome with legal force under the United Nations Framework Convention on Climate Change applicable to all Parties, through a subsidiary body under the Convention hereby established and to be known as the Ad Hoc Working Group on the Durban Platform for Enhanced Action; ...

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<sup>18</sup> OECD, *OECD Environmental Outlook to 2050*, (November 2011, Ch. 3) at 5.

<sup>19</sup> See, e.g., EPA, *Analysis of the American Power Act (2010)* at 21 (adding US action based on the APA to the reference case scenario lowers global CO<sub>2</sub>e concentrations in 2100 from 932 ppm to 868 ppm.)

<sup>20</sup> *Id.*, at 31 (scenario 7 versus scenario 2, H.R. 2454)

4. *Decides* that the Ad Hoc Working Group on the Durban Platform for Enhanced Action shall complete its work as early as possible but no later than 2015 in order to adopt this protocol, legal instrument or agreed outcome with legal force at the twenty-first session of the Conference of the Parties and for it to come into effect and be implemented from 2020.

...<sup>21</sup>

Successful negotiation of a global climate agreement would provide a pathway for the U.S. to join its major international trade partners in a program covering both industrial and developing nations. The participation of developing nations is critical not only from the perspective of climate change mitigation, but also for reducing the domestic costs of compliance with any agreed targets and timetables through access to low-cost international offsets and other flexibility mechanisms. With the costs of CCS applied to new coal-based power plants likely to exceed \$70 per ton of CO<sub>2</sub> captured and stored, access to international offsets would substantially reduce U.S. costs of reducing GHGs.

As noted in EPA's analysis of the proposed 2010 American Power Act:

If international offsets were not allowed, the allowance price would increase 34 to 118 percent relative to the core policy scenario, and household consumption losses would increase 31 to 114 percent, the large range due to the differing international offset core scenario usage projections of EPA's two models.<sup>22</sup>

Rational design of a global climate change program should coordinate policies governing the future application of CCS across utility and industrial sources on a multilateral basis, consistent with agreed targets and timetables for GHG emission reductions, including flexibility mechanisms such as offsets, credits for reducing deforestation, and emissions trading.

These international considerations, coupled with the fact that CCS is not "adequately demonstrated" for purposes of establishing GHG NSPS, support deferring judgment on the need to apply CCS technology to either coal or natural gas generation at this time.

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<sup>21</sup> Decision FCCC/CP.17/2011/LX, Establishment of an Ad Hoc Working Group on the Durban Platform for Enhanced Action, December 10, 2011 at 1-2.

<sup>22</sup> EPA, Analysis of the American Power Act (2010) at 4.

For these reasons, UMWA urges EPA to re-propose this rule on a basis that provides separate, achievable NSPS for NGCC and coal-based electric generating units.

Thank you.

Sincerely,

A handwritten signature in black ink that reads "Cecil E. Roberts". The signature is written in a cursive, flowing style with a large initial "C" and "R".

Cecil E. Roberts