United States Senate
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
WASHINGTON, DC 20510–6175

November 7, 2011

The Honorable Lisa Jackson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

The Honorable Cass R. Sunstein
Administrator
Office of Information and Regulatory Affairs,
Office of Management and Budget
Eisenhower Executive Office Building
1650 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear Administrators Jackson and Sunstein:

I am seeking information concerning assumptions made by the Environmental Protection Agency (EPA) about the use of Dry Sorbent Injection systems (DSI) to comply with EPA's proposed emission control requirements for hazardous air pollutants from coal- and oil-fired electric generating units (Utility MACT). This information will assist the Committee in analyzing whether Utility MACT assumptions about DSI are based on sound scientific fact.

EPA is very optimistic about DSI market penetration, forecasting that 56 gigawatts of coal-fired units will install new DSI retrofits to meet the Utility MACT's 2015 compliance deadline.[1] I agree that DSI could, with further research and in certain circumstances, prove to be an economical pollution control system. However, I am concerned that in EPA's exuberance for DSI's potential, the Agency has overlooked the technology's limits. According to the *New York Times*, EPA is betting the Utility MACT's success on the private sector's ability to incorporate DSI into their operations.[2] Such is disconcerting since EPA data indicate not a single power-plant currently complying with all proposed Utility MACT requirements through DSI alone. The implications are serious, both for the economy and the environment. As the *New York*

[1] EPA, AN ASSESSMENT OF THE FEASIBILITY OF RETROFITS FOR THE TOXICS RULE pg. 5 (March 6, 2011).

[2] Gabriel Nelson, *Fate of Old Coal Plants May Hinge on New Toxic-Cutting Technology*, N.Y. TIMES (April 13, 2011).

Times cautions, "the number of retirements [resulting from the Utility MACT] will hinge on whether an emerging technology called dry sorbent injection can be put to wide use by the power sector."[3]

According to the rule's support documentation, EPA predicated Utility MACT base case assumptions for DSI sulfur dioxide (SO_2) and hydrochloric acid (HCl) removal rates on a study by Solvay Chemicals Incorporated, a major supplier of sorbents used in DSI.[4] It is alarming that, rather than independently analyzing this important issue, EPA simply incorporated information from a company that, by EPA's calculations, stands to profit greatly from the Utility MACT. Yet not only was the Solvay Chemicals study potentially biased, it was also far from a broad-based analysis of the electricity industry. The Solvay Chemicals study constituted research done during a three-week trial run at one 80 megawatt (MW) power-plant. EPA relies on this single study to support its assumption that DSI controls will be installed on 56,000 MW of power-plant capacity on a permanent basis. Even more perplexing is that EPA cites the Solvay Chemicals study, which utilized sodium bicarbonate as a sorbent, to support the Agency's SO_2 and HCl removal rate assumptions for a completely different sorbent called trona. Whatever the insights gleaned from the Solvay Chemicals study's trial conclusions, they are certainly not enough to provide credible scientific support for EPA's DSI assumptions. Quite simply, EPA's calculations concerning DSI's SO_2 and HCl removal rates lack scientific rigor and cannot be taken seriously.

Furthermore, EPA has provided little data to support its assertion that power-plants can install DSI to reduce SO_2 and HCl while, at the same time, complying with Utility MACT mercury (Hg) requirements. Instead, EPA summates a disjointed series of examples where DSI has reduced SO_2, HCl, and Hg individually to presume DSI can do the same for all three emissions at once. However, the data do not fully support this assumption. Indeed, DSI trials at the Presque Isle power-plant revealed that increasing trona injections to achieve SO_2 reductions resulted in lower Hg removal efficiency.[5] In other words, installing DSI to reduce one Utility MACT emission undermined the plant's ability to reduce another Utility MACT emission. EPA has not properly addressed the possibility that such offsetting results may undermine DSI's ability to comply with all Utility MACT's requirements.

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[3] *Id.*

[4] EPA, DOCUMENTATION SUPPLEMENT FOR EPA BASE CASE V. 4.10_PTOX - UPDATES FOR PROPOSED TOXICS RULE pg. 57 (June, 2011) ("In EPA Base Case v.4.10_FTransport the DSI sorbent feed rate and variable O&M costs are based on assumptions that a fabric filter and in-line trona milling are used, and that the SO_2 removal rate is 60%. The corresponding HCl removal effect is assumed to be 90% based on information from Solvay Chemicals.").

[5] DOE/NETL, TOXECON RETROFIT FOR MULTI-POLLUTANT CONTROL ON THREE 90-MW COAL FIRED BOILERS (Aug. 25, 2008).

This weak and illogical foundation explains why the Agency cannot point to any power-plant that currently complies with Utility MACT requirements through DSI alone. Commenters have noted that of the 28 coal-fired units installed with DSI, only two operate without supporting wet scrubbers and can provide the data necessary for a comprehensive analysis. But even this data is of limited value: both of those units currently burn MACT compliant coal, meaning the units would be in compliance even in the absence of DSI. Indeed, no currently operating power-plant utilizes DSI alone to comply with the Utility MACT's proposed HCl requirements. Therefore, EPA not only lacks a scientific basis, but also real-world evidence to support its assumptions about DSI.

The failure to fully investigate rapid DSI deployment may also prove to have environmental consequences. For example, DOE testing revealed that DSI increased particulate matter (PM) emissions at one plant by 50%.[6] In another case, trona injections from DSI reacted with nitrous oxide (NOx) to cause a noticeable "brown cloud" in downwind areas.[7] These are just some of the environmental issues associated with DSI. This technology, like any other, has trade-offs, and EPA has not sufficiently investigated these factors to determine whether forcing rapid DSI utilization is best for the environment.

EPA's fervent belief in DSI's ability to meet Utility MACT requirements verges on an article of faith, short of scientific backing. In so doing, the Agency risks forcing DSI into a role this still-maturing technology may not be prepared to fill. Absent actual evidence that DSI alone can satisfy all of Utility MACT's stringent requirements, EPA relies on a "Hail Mary" mentality to support its assumptions. Yet, with high unemployment across the country, Americans are owed more proof to support EPA's hasty generalizations before regulations are put in place that will cost billions, cut thousands of jobs, and endanger electricity reliability. The economy should not be gambled on EPA's dreams; energy security must be more than an Agency aspiration. Indeed, given the potential consequences that the limited research on DSI suggests could arise from rapid utilization, such as increased PM and NOx complications, the environment could suffer even as the economy is harmed.

As such, we would like to better understand EPA's assumptions concerning DSI, including the Agency's response to concerns that DSI may not be able to meet proposed emission limits, and the implications on the economy and energy if EPA's assumptions are incorrect. Accordingly, please provide written responses to the following questions by December 1, 2011:

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[6] DOE, REPORT DOE/SEA-04 SPECIAL ENVIRONMENTAL ANALYSIS (November, 2006).

[7] DOE, DOE/NETL-2002/1160 INTEGRATED DRY NOX AND SO_2 EMISSION CONTROL SYSTEM A DOE ASSESSMENT (October, 2001).

1. Given the weakness in EPA's assumptions concerning DSI, please provide analysis of unit-level Utility MACT compliance strategies without presuming the wide-scale utilization of DSI. How many power-plants will be forced to retire due to Utility MACT if DSI is not included as a compliance method?

2. Does EPA agree with the *New York Times* assessment that the success of Utility MACT depends largely on whether DSI is as deployable as EPA claims?

3. Does EPA feel it was proper to base Utility MACT assumptions on studies performed by a company that will greatly benefit from the Utility MACT?

4. Please provide all communications, analysis and records sent to and received from Solvay Chemicals Incorporated concerning Utility MACT.

5. Please explain how utilizing a potentially biased study detailing a three-week DSI trial run where DSI was used in a manner inapplicable to the industry at-large meets standards of scientific rigor to substantiate the assumptions EPA has made about DSI.

6. How does EPA justify its assumptions about DSI's widespread deployability to meet Utility MACT requirements when the Agency cannot point to a single verifiable instance where DSI alone has been used to comply with those standards?

7. What research has EPA done to support the Agency's assumption that DSI could be used to comply with all Utility MACT requirements simultaneously?

8. Commenters have noted that meeting EPA's DSI projections will require DSI sorbent production to increase ten to twenty times the current capacity. Did EPA incorporate this factor in the Agency's feasibility assessment for DSI?

9. Please explain how EPA's feasibility assessment for DSI addressed transportations costs and capacity constraints for DSI sorbents.

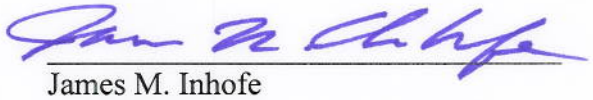
10. Please detail all research EPA has conducted on the effects of constrained sorbent capacity on DSI's feasibility for Utility MACT compliance. Did EPA analyze the impact of DSI sorbent constraints on electricity reliability? Given the sudden expansion of DSI in EPA projections, does EPA believe sorbent suppliers can safely and sufficiently meet increased demand?

11. Please provide all records, documents, and analysis utilized by EPA to determine potential environmental consequences of using DSI, both on a limited basis and on a wide-scale.

As noted in my letter dated October 31, 2011, concerning the Agency's apparent disregard for Data Quality Act requirements, EPA continues to be non-responsive to

requests for information by this Committee. Indeed, I asked Assistant Administrator Gina McCarthy questions related to the Agency's technology assumptions to supplement the record of a June 30, 2011, hearing on the Utility MACT rule. The fact that those questions remain unanswered and that the Agency continues to disregard legitimate requests for information, leads one to believe that the Agency is either unwilling or unable to provide the requested information. Neither excuse is acceptable, especially when one considers the devastating consequences this rule could impose on our economy. I look forward to your prompt reply.

Sincerely,



James M. Inhofe
Ranking Member
Committee on Environment and Public Works