UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF CONGRESSIONAL
AND INTERGOVERNMENTAL RELATIONS

The Honorable Ed Whitfield
Chairman
Subcommittee on Energy and Power
Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

Dear Chairman Whitfield:

Thank you for your letter of October 25, 2013, to EPA Administrator Gina McCarthy requesting responses to Questions for the Record following the September 18, 2013, hearing before the Subcommittee on Energy and Power entitled, "The Obama Administration's Climate Change Policies and Activities."

The responses to the questions are provided as an enclosure to this letter. If you have any further questions please contact me, or your staff may contact Josh Lewis at lewis.josh@epa.gov or (202) 564 2095.

Sincerely,

Nichole Distefano
Deputy Associate Administrator
for Congressional Affairs

Enclosure

Answers to Questions Submitted by the House Committee on Energy and Commerce Concerning Climate Change, Adaptation and Sustainability

Attachment 1 – Member Requests for the Record

The Honorable Ed Whitfield

1. **During the hearing, you testified that "there are four plants that are planning on and designing in CSS at levels that would beat anything that we had proposed in our earlier proposal." Please list those four plants and for each plant provide (i) currently estimated costs of construction; (ii) the amount(s) of government funding or financial assistance received; (iii) the date on which construction of the plant began; (iv) the date by which construction is expected to be completed; and (v) the date by which each plant is expected to be operational. In addition, please identify the source of EPA's cost and scheduling information relating to these facilities.**

A. CCS projects under construction and/ or in advanced stages of project development that are designed to emit at levels lower than the standard are:
   - Kemper County Energy Facility, Mississippi
   - Boundary Dam, Saskatchewan
   - Texas Clean Energy Project
   - Hydrogen Energy California

   Additional details are provided in the proposed rule (79 FR 1429): https://federalregister.gov/a/2013-28668

The Honorable Joe Pitts

1. **During the hearing, you testified that EPA keeps "close track" of whether climate change-related programs are accomplishing what they were pre-determined to accomplish, and that the Agency makes this information available to the public. Please identify where that information is available and accessible by the public.**

A. The EPA collects information on greenhouse gases (GHGs) through its annual *U.S. Greenhouse Gas Inventory of Emissions and Sinks,* which tracks total annual U.S. emissions and removals by source, economic sector, and GHG going back to 1990. The EPA also collects and publishes emissions data from individual facilities in the United States that emit GHGs in large quantities through the Greenhouse Reporting Program. The EPA publishes progress of our voluntary partnerships through publications such as the *Annual Report of Energy Star and Other Climate Protection Partnerships.* Finally, the EPA tracks the successful implementation of regulatory initiatives (e.g., EPA's vehicle GHG rules) aimed at reducing GHGs using key programmatic metrics such as fuel efficiency and fuel economy standards. More information on these programs and initiatives can be found here: http://www.epa.gov/climatechange/EPAactivities.html.

   Separately, the EPA works with many other federal agencies and organizations to better understand and communicate the causes and effects of climate change. For example, with help from these primarily federal partners, the EPA has compiled a set of indicators for tracking signs of climate change. This set of climate change indicators focuses on the United States, but some

include global trends to provide context or a basis for comparison. Although these indicators are not intended for determining the effect or response of any one program or action to address climate change, they are used to document climate change and its impacts, particularly in the United States. The indicators are based on peer-reviewed data from various government agencies, academic institutions, and other organizations. The EPA selected these indicators based on the quality of the data and other criteria. The EPA publishes the indicators in a comprehensive, publically available report and on the agency's web site: http://www.epa.gov/climatechange/science/indicators/.

Attachment 2—Additional Questions for the Record

The Honorable Ed Whitfield

1. **Recently 17 Attorneys General and a senior environmental regulator sent a white paper to you raising concerns that in developing New Source Performance Standards (NSPS) standards or guidelines applicable to existing fossil fuel-fired power plants that EPA will not properly defer to states in establishing and implementing standards, and will require existing power plants to operate less or shut down.**

    a. **What assurances can you provide that in developing the agency's upcoming greenhouse gas regulations affecting existing fossil fuel-fired plants that the EPA will not force existing coal plants to operate less or shut down?**

A. The EPA will promulgate emission guidelines according to provisions set forth in CAA 111(d). States will then prepare plans and will ultimately be responsible for implementing programs to comply with the emission guidelines. The EPA has initiated and participated in numerous listening sessions and meetings with state representatives and other stakeholders to collect information on proposal development and to solicit suggestions on how the EPA can structure emission guidelines to provide states with the maximum available flexibility to implement the guidelines in ways that make the most sense to them. The EPA intends to develop guidelines that recognize and accommodate existing state programs and the type of measures they have traditionally relied on to reduce carbon emissions from the power sector without affecting the reliability of the grid or mandating the curtailment or shutdown of coal generation not otherwise projected to occur.

2. **According to an Aug. 29 *Bloomberg* press report, certain EU Members sought to exclude from the final summary document for the upcoming IPCC assessment any reference to the global warming "hiatus" that has occurred over the past 15 years. According to that article, U.S. regulators are also trying to make certain changes to the summary documents.**

    a. **What is EPA's role with regard to the development of the IPCC assessment?**

    A. The EPA was involved only in a review capacity for the IPCC Fifth Assessment Report (AR5). Individual EPA scientists reviewed and commented on the first order draft of AR5.

The agency provided input for the second order draft and the Summary for Policymakers as part of the U.S. government review.

b. Did the EPA participate with other U.S. regulators in developing comments on the summary document?

A. The EPA participated in the interagency effort that developed the U.S. government response to the AR5 Summary for Policymakers. EPA staff also reviewed the second order draft and final government distribution of the Working Group 1 report that included the Summary for Policymakers.

c. What changes to the summary document did EPA and U.S. regulators propose?

A. The U.S. government provided numerous comments and suggestions to the IPCC through the Department of State concerning the Summary for Policymakers. These comments sought to clarify and improve the accuracy of the document. After the full IPCC AR5 report is finalized in 2014, all drafts submitted for formal review, the review comments, and the responses to comments by the authors, will be made available on the IPCC and Working Group websites along with the final report. Even though EPA staff were not part of the U.S. delegation during the final IPCC plenary session to approve the Working Group I Summary for Policymakers, it is our understanding that the U.S. delegation requested explicit information to address recent temperature trends, the so-called "hiatus."

3. For the President's Climate Action Plan, has there been an assessment done of the costs to the government to fully implement the plan? If yes, what is the estimated cost?

A. The President's Climate Action plan consists of actions implemented by multiple departments and agencies under existing executive authorities. Many activities will be undertaken within existing budgetary levels, including by reprioritizing current spending. The EPA is not aware of a comprehensive assessment of the costs to the government to fully implement the plan.

4. For the President's Climate Action Plan, has there been an assessment done of the costs to consumers to fully implement the plan? If yes, what is the estimated cost?

A. The President's Climate Action Plan consists of actions implemented by multiple departments and agencies under existing executive authorities. Many of the elements of the Plan are explicitly designed to save consumers money (see, for example, the section entitled "Cutting Energy Waste in Homes, Businesses, and Factories") or to reduce costs to consumers through better preparation for the impacts of climate change (see, for example, the section on "Building Stronger and Safer Communities and Infrastructure"). Where specific elements of the plan call for new standards, the costs and benefits of those standards will be analyzed and balanced through existing provisions of law requiring regulatory analysis and reasoned decision making that takes that cost-benefit analysis into account.

5. With regard to potential regulation of GHG emissions from aircraft:

a. Which U.S. agencies are involved in international negotiations relating to greenhouse gas emissions from aircraft?

A. The international negotiations on greenhouse gas emissions and climate change from international aviation take place at the International Civil Aviation Organization (ICAO) and are focused on a comprehensive approach to reducing greenhouse gas emissions from aviation. The Federal Aviation Administration (FAA), Department of Transportation (DOT), Department of State and the EPA are involved in these discussions. Lead agencies in direct ICAO negotiations are FAA, DOT and Department of State.

b. What is the current status of international negotiations relating to greenhouse gas emissions from aircraft? What is the schedule for conclusion of those negotiations?

A. The recent ICAO Assembly produced an Assembly resolution that set forth a comprehensive approach to reducing greenhouse gas emissions from aviation, including the development of technology, improvement of aircraft operations, development and deployment of alternative fuels, and the development of a global market-based measure for aviation for decision in 2016.

c. What is the current status of EPA's planned rulemaking to address GHG emissions from aircraft, and what is the agency's current schedule for that rulemaking?

A. In response to a petition and resulting litigation, the EPA is currently initiating an analysis of whether greenhouse gas emissions from aircraft cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. When this analysis is complete, the EPA expects to propose findings regarding this question. The EPA previously estimated that, upon receipt of a court ruling on the merits of its prior greenhouse gas findings regarding motor vehicles in December 2012, a minimum of 22 months would be needed to conduct the analysis, develop a proposal, publish it for comment, review and analyze comments and issue final findings regarding aircraft engine greenhouse gas emissions. A more specific time table for rulemaking can be provided after such a determination is made.

d. What is the range of potential costs to U.S. consumers for any international or domestic GHG emissions standards from aircraft?

A. At this point, in advance of either an endangerment and contribution determination regarding aircraft greenhouse gas emissions or development and consideration of possible regulatory responses to such a determination, if made, it is not possible to assess potential costs of either international or domestic standards.

Answers to Questions Submitted by the House Committee on Energy and Commerce Concerning Climate Change, Adaptation and Sustainability

The Honorable Joe Barton

1. **Describe the climate change related research and technology or activities engaged in by your agency, including programs or activities undertaken with other Federal agencies**.

A. EPA's research related to climate change is focused on ensuring that the agency is able to meet its legislative requirements to protect human health and the environment.

The EPA is investigating the impacts of a changing climate on air quality, including expected increases in ambient ozone and possible increases in ambient particulate matter concentrations. The EPA is developing air quality models that use the results of climate models developed and operated by other federal agencies (Department of Energy, National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration) and "downscaling" those results to time periods and distances relevant to state- and local-scale decision makers. The EPA does not develop or operate global climate models (often known as general circulation models, or GCMs), but focuses on development and use of regional air quality models (e.g., the Community Multi-scale Air Quality model, or CMAQ) that simulate detailed atmospheric chemistry and dispersion. The EPA is also conducting research, including uncertainty and sensitivity analyses, to understand how changes in climate may alter atmospheric conditions, and therefore affect how pollutants are formed and transported in the ambient environment.

EPA's research is also designed to improve our preparedness to protect public and ecosystem health from the impacts of extreme weather events (such as heat waves, severe storms, extreme drought, and floods). These impacts directly affect components of environmental quality that are relevant to EPA's responsibilities, including water quality, air quality, environmental release of hazardous materials, and the consequent impacts to public health. The EPA is also developing tools to guide local decision makers, including the Stormwater Calculator, which is being upgraded to incorporate the impacts of climate change on expected stormwater levels, and the GLIMPSE model, which helps inform air quality managers about effective management strategies that address air quality and climate in a combined way to achieve the greatest benefits. The EPA is also evaluating the potential for other adverse impacts to human health related to climate change, for example heat stress, expanded ranges of pathogens and disease, and potentially increased levels of allergens.

In addition to the impacts of extreme weather events, the EPA is also evaluating how gradual changes in average temperature can adversely impact environmental quality for which the EPA has responsibility, including how increasing air temperatures impact rivers and oceans that support economically important species, such as salmon.

The EPA is conducting research to evaluate and develop more cost-effective methods to accurately measure greenhouse gases emissions, including methane, from fugitive and area sources to provide better means for industries to reduce emissions and improve efficiency.

EPA's climate-related research program is also examining how advances in energy production and use technologies might influence emissions of air pollutants. Use of scenarios of energy technology development provides insight into the potential environmental impacts of such development to enable policy makers to better anticipate the potential costs and benefits of different energy futures.

These efforts, plus other research planning activities, are coordinated with those of other Federal agencies through the US Global Change Research Program.

The EPA is also working with several other federal agencies to reduce emissions of black carbon, a potent climate-forcing pollutant, from use of home stoves for cooking and heating. As noted in the 2012 Report to Congress on Black Carbon, reducing these emissions through collaborations with the Departments of State and Energy represents one of the most cost-effective means of reducing climate forcing internationally and, at the same time, improving public health, especially for women and children.

2. **Describe the climate change adaptation, mitigation, or sustainability related activities engaged in by your agency, including activities undertaken with other Federal agencies.**
A number of EPA programs are related to climate change mitigation, including our public-private partnership programs (e.g., ENERGY STAR, Natural Gas STAR, Landfill Methane Outreach Program, Combined Heat and Power Partnership, Green Chill, Smart Way, etc). Through the U.S.-China Climate Change Working Group, we work with the State Department and the Department of Transportation on bilateral cooperation with China on heavy duty and other vehicles and greenhouse gas management and monitoring. In addition, the EPA has been engaged in a number of climate change adaptation related activities, including: developing draft adaptation implementation plans for agency programs and regions (currently out for public comment[1]); supporting a grant to provide training to Native American tribes on the climate adaptation planning process; developing actionable science information; and, communicating climate change to the public through a variety of mechanisms (e.g., EPA's Climate Change Website and the Climate Change Indicators Report). Additional interagency work includes research with the Army to implement their NetZero Initiative that will increase the energy and cost efficiency of water treatment at Ft. Riley.

3. **Identify all climate change related interagency task forces, advisory committees, working groups, and initiatives in which your agency currently participates or has participated since January 2005.**

A. Since 2005, the EPA has participated in several climate change interagency activities, including the Committee on Climate Change Science and Technology Integration (CCCSTI) and its subsidiary bodies; the Interagency Climate Change Adaptation Task Force; the Department of State-led delegations and preparatory meetings to the United Nations Framework Convention on

[1] See http://www.epa.gov/climatechange/impacts-adaptation/fed-programs/EPA-impl-plans.html

Climate Change (UNFCCC); the Department of State-led U.S. government process to develop the national reports required under the UNFCCC which includes the quadrennial Climate Action Report and the Biennial Report; the U.S. Global Change Research Program (USGCRP) and several associated Working Groups; the Department of State's U.S.-China Climate Change Working Group; the Department of Interior Climate Change Adaptation Working Group – Advisory Committee on Water Information; the Interagency Working Group on the Social Cost of Carbon; Review Committees for the IPCC 4th and 5th Assessment Reports; interagency discussions to improve data on land-use, land-use change, and forestry and reduce methane emissions; the Interagency Task Force on Carbon Capture and Storage (led by DOE and EPA); and interagency discussions to inform development of the President's Climate Action Plan.

4. Identify all climate change or clean energy related funding, grants or financial assistance programs in which your agency currently participates or has participated, and the amounts of climate change or clean energy related funding, grants, or financial assistants distributed by your agency, if any, since January 2005

A. In the FY 2013 Final Enacted Budget, the EPA climate change related funding amounted to $153.9M. The EPA annually submits this information to the Appropriation Committees. Please see the attached chart for funding levels from FY 2005 through the FY 2014 President's Request.

5. Identify all climate change related regulations or guidance documents, including regulations or standards to reduce greenhouse gas emissions, issues, or proposed by your agency since January 2005, and/or under development by your agency.

A.

- Final Rulemaking: Model Year 2012-2016 Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards – Published May 7, 2010
- Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule (Tailoring Rule) – Published June 3, 2010
- Final Rulemaking: Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles – Published September 15, 2011
- Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule Step 3 and GHG Plantwide Applicability Limits (Tailoring Step 3) – Published July 12, 2012
- PSD and Title V Permitting Guidance for Greenhouse Gases – Originally released November 2010; Updated March 2011
- Interim Permitting Guidance for GHG Emissions from Bioenergy Production – March 2011
- GHG permitting Questions and Answers – series of Q&A's available online at http://www.epa.gov/nsr/ghgpermitting.html
- GHG Control Measures White Papers – series of technical "white papers" for specific industrial sectors available online at http://www.epa.gov/nsr/ghgpermitting.html
- Deferral for CO2 emissions from Bioenergy and Other Biogenic Sources under the Prevention of Significant Deterioration (PSD) and Title V Programs – July 20, 2011 (Rule vacated by the D.C. Circuit on July 12, 2013 decision – mandate yet to issue)

- EPA/NHTSA Final Rulemaking to Establish 2017 and Later Model Years Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards – Published October 15, 2012
- On January 8, 2014, the EPA issued a new proposal for carbon pollution from new power plants (79 FR 1429).
- The EPA is currently developing guidelines for existing power plants.

6. Identify all climate change related international negotiations, agreements, partnerships, working groups, or initiatives in which your agency currently or has previously participated, and the role of your agency in those activities, since January 2005.

A. Since the 1990s, the EPA has participated in a number of international forums addressing climate change. These include participation in State Department-led delegations to the United Nations Framework Convention on Climate Change; as contributors and reviewers to the IPCC assessment, and special reports; Climate and Clean Air Coalition initiative leads; Interagency Working Group on the Social Cost of Carbon; Organization of Economic Co-operation and Development's Climate Change Working Group; the U.S.-China Climate Change Working Group; Global Methane Initiative; Montreal Protocol negotiations with the Department of State; meetings supporting the President's Climate Action Plan; and the U.S. Global Change Research Program.

7. Provide the approximate amount of annual agency funds attributed to climate change activities for each of the years 2005 through 2012.

A. The FY 2012 Enacted budget was $168.4M. The EPA submits this information annually to the Hill. Please see the attached chart for funding levels from FY 2005 through the FY 2014 President's Request.

8. Describe the actions your agency has undertaken to respond to Executive Order 13514 including the approximate costs, personnel, and other resources dedicated by your agency to implementing this executive order.

A. EO 13514 touched on many energy conservation, green building, and environmental performance measures and programs that were already required under previous executive orders (i.e., EO 13423) and previous legislation (i.e., Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007). In some cases, EO 13514 applied existing annual reduction goals beyond fiscal years covered under previous EOs and legislation, FY 2016-FY 2020; these extensions did not have a material impact on spending. Thus, EO 13514 represented a limited increase in energy conservation and sustainable facility spending, specifically in the area of GHG inventory development and Strategic Sustainable Performance Plan development.

New requirements under EO 13514:

- Set targets on GHG Scope 1 and 2 emissions for FY 2020
- Set targets on GHG Scope 3 emissions for FY 2020
- Develop a FY 2008 GHG emissions baseline, including business travel, commuter travel and leased space (optional)
- Develop, maintain and report an inventory of annual GHG Scope 1, 2 and 3 emissions, including business travel, commuter travel, leased space (optional), and supply chain emissions
- Develop and update EPA's Annual Strategic Sustainable Performance Plan

The EPA augmented its environmental stewardship program work after the issuance of EO 13514 in the specific areas referenced above. The agency had to develop baseline GHG emissions estimates and examine various scenarios to evaluate and set FY 2020 GHG emissions targets, for both Scope 1 and 2, and certain Scope 3 emissions. Augmentation of Scope 1 and 2 GHG emissions work included additional data collection and review of green power purchases. New scope 3 GHG emissions work included business air and ground travel, employee commuting, leased space (optional reporting category), and supply chain emissions (optional reporting category). Executive Order 13514 also required the development of the EPA's first Strategic Sustainable Performance Plan, as well as updating that plan annually for submission to the CEQ and OMB. This work was done through existing personnel or via an increase in technical support spending. We estimate that about $475K was spent during Fiscal Years 2010-2013 in technical support contracts.

There has been no increase in EPA personnel spending as a result of EO 13514. Acquisition has shown a $240K cost annually, whereas electronics has not shown any cost annually for EO 13514 efforts.

9. Provide a list of each sub-agency, division and/or program office within your agency that is currently engaged in climate change related activities, and provide an estimate of the approximate number of your agency employees and/or contractors currently engaged part-time or full-time in climate change related activities.

A. Many activities at the EPA are impacted and related to climate change, even if climate change is not the primary focus of the activity. As such, it is not possible to determine all of the program offices and quantify the number of employees are working on climate change related activities. The EPA's Office of Air and Radiation is responsible in large part for EPA's regulatory activity on climate change. Other offices directly and indirectly have activities related to climate change such as the Office of Water.

<u>The Honorable David B. McKinley</u>

Administrator McCarthy, during the September 18, 2013 hearing on the Obama Administration's Climate Change Policies and Activities before the House Committee on Energy and Commerce, an

analysis of the minimal impacts of unrealistic draconian reductions in U.S. greenhouse gas emissions was mentioned. The analysis was conducted using the Model for the Assessment of Greenhouse Gas Induced Climate Change (MAGICC) that uses the United Nations Intergovernmental Panel on Climate Change (UNIPCC) Fourth Assessment Report (AR4) model results and UNIPCC emission assumptions.

However, we need to understand how your agency has used MAGICC and what the model projects under a range of different scenarios.

Please provide answer to the following:

1. **A description of the version of MAGICC in current use by the EPA, including the emissions module, the temperature module and the seal level rise module.**

2. **A description of the climate model run library, including the specific models from the Coupled Model Intercomparison Project (CMIP3) archive.**

3. **The observational data used by EPA to validate MAGICC prior to its use for policy, including the results of the model runs.**

4. **The name(s) of the individuals responsible for validating the model under EPA's Information Quality Act guidelines.**

5. **The results (both graphic and table data) of all MAGICC model runs used in any policy activities since January 20, 2009 including:**

    a. **U.S and global CO2 emissions (with and without policy change);**

    b. **Global-mean surface air temperature projection (with and without policy change);**

    c. **Sea level rise projection (with and without policy change); and**

    d. **A list of all input settings for each run**

6. **A description of the use of MAGICC in the two recent Social Cost of Carbon reports (2010, 2013).**

Additionally we would also like to understand what MAGICC projects under the following scenarios:

7. **Results (both graphic and table data) for a base case using Energy Information Administration (EIA) 2013 and International Energy Outlook (IEO) 2013 reference forecast emissions through 2040 and Business as Usual emissions beyond 2040 for the following Climate Sensitivities (CS):**

a. **3.0**

b. **1.5**

c. **1.0**

d. **0.5**

8. **Results for the Case 7.a. CS above assuming ALL CO2 energy emissions, including coal, natural gas and oil combustion emissions, go to zero in 2014**

9. **Results for the Annual Energy Outlook 2013 GHG25 (assumes a fee on CO2 emissions that starts at $25 per metric ton in 2014 and increases by 5 percent per year through 2040) restricted coal side case emissions use the Case 7.a. CS.**

MAGICC versus Integrated Assessment Models (IAM):

10. **Please provide the detailed comparison between each of the Integrated Assessment Models (DICE, FUND, PAGE) used in the 2013 Social Cost of Carbon Technical Source Document and EPA's reference MAGICC case for:**

    a. **Global-mean surface air temperature projections,**

    b. **Sea level rise projections,**

    c. **U.S. CO2 emissions, and**

    d. **Global CO2 emissions through year 2100**

11. **Identify the individual(s) responsible for validating the IAM models used by EPA under EPA's Information Quality Act guidelines.**

A. MAGICC (Model for the Assessment of Greenhouse-gas Induced Climate Change) is a publicly available computer model that emulates larger more complex climate models in order to calculate future global concentrations, temperatures, and sea level rise, given an input emissions scenario. MAGICC has been a central tool of the climate change science community since the early 1990s. It is well designed for policy and uncertainty analysis because as an energy-balance model it is computationally efficient, can be used to simulate multiple climate sensitivities, and can be used to examine the climate impacts of marginal changes in emissions.

The EPA used MAGICC version 5.3v2 for the preparation of the Vehicle Greenhouse Gas Emissions and Corporate Fuel Economy Standards for 2012-2016 Light Duty Vehicles, 2017 and later Light Duty Vehicles, and Heavy-Duty Vehicles. Global emissions input for the model were

provided by the Pacific Northwest National Laboratory's Global Change Assessment Model (GCAM). The MAGICC model was used to calculate carbon dioxide (CO_2) concentrations, surface temperatures, and sea level rise for the reference emissions case and for a policy case using emissions reductions associated with the rule. A sensitivity analysis was performed using multiple climate sensitivities. These results were presented in the RIAs for these rules as a complement to the monetized value provided by the Social Cost of Carbon (SCC), but were not used directly in standard setting.

MAGICC use for the SCC was limited. The SCC uses four emissions scenarios. One of the four emissions scenarios (the Integrated Model to Assess the Global Environment, or IMAGE, scenario) did not include its own carbon dioxide concentration pathway. MAGICC was used to calculate future CO_2 concentrations for this one scenario.

In using the MAGICC model, the agency acted consistently with its *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility and Integrity of Information Disseminated by the Environmental Protection Agency*. The MAGICC model has been used by the US Climate Change Science Program (2007), the Intergovernmental Panel on Climate Change (Second, Third, and Fourth Assessment Reports in 1995, 2001, and 2007, respectively), and the National Research Council (2003). The USGCRP, IPCC, and NRC processes for preparation and review of their reports demonstrate a formal and sustained commitment to transparency and rigor in report development, review, acceptance, and approval. These assessment reports represent the best available science and supporting studies conducted in accordance with sound and objective scientific practices, are peer reviewed, and adhere to standards of quality based on objectivity, utility, and integrity. Further, many peer-reviewed publications over the past two decades have compared MAGICC to more complex models as well as observations. The EPA acted in a manner consistent with its information quality guidelines by: 1) using a model that had been extensively applied in scientific, peer-reviewed climate change science and impacts studies, 2) ensuring that the model possesses sufficient methodological documentation in peer-reviewed model validation publications, 3) confirming that the model has been independently verified and validated, and 4) ensuring that the model is sufficiently flexible and capable of evaluating important sources of uncertainty for climate analysis.

<u>The Honorable Cory Gardner</u>

The Energy Star program has been used by consumers for many years as a guideline to purchase sensible, energy efficient products. In your previous role as Assistant Administrator for Air, you oversaw the entire Energy Star program. Historically, industry and retailers in the Windows, Doors, and Skylights sector have strongly supported the program. However, today virtually all are questioning both the process for revising product standards and, as a result, the standards themselves.

Manufacturers and retailers believe that, in the name if saving the most energy possible, the EPA proposed Energy Star standards can only be met by products too expensive for consumers to justify

the added expense. This is especially true when the payback period is significantly longer than the average length of time a homeowner stays in their house.

1. **If manufacturers and retailers, who are closer to the consumer than Energy Star technicians, believe there is a problem, how can the program be successful?**

2. **Isn't it in the interest of the retailers and manufacturers to promote the most efficient AND economically efficient product possible?**

3. **Energy Star products cost more than other products. So, if the President believes that everyone has a role in reducing greenhouse gas emissions, then how does it make sense to discourage consumers from purchasing Energy Star products, since they won't see that added investment paid back for a decade or more?**

A. The ENERGY STAR windows, doors, and skylights program has been tremendously successful. Currently, about 80% of the residential windows sold in the U.S. earn the ENERGY STAR label.[2] Given the advances that this success reflects, the EPA believes it is time to update the ENERGY STAR requirements for windows, doors and skylights so the label continues to serve its important role, making it easy for consumers to identify the best performing models in the market.

Over the past three years, the EPA has led an open and transparent process, including multiple opportunities for formal stakeholder comment, to establish new requirements that are reflective of top performance in today's market. Throughout the revision process, the EPA received input and responded to comments from more than 80 different stakeholders, representing a variety of views related to the proposed new requirements. These include product manufacturers, component manufacturers, trade associations, utility programs, and other interested parties. Comments ranged from supportive of EPA's proposed criteria, to requests to make the requirements even more stringent than the EPA had proposed, to concerns that EPA's proposed requirements were too stringent.

The EPA's analysis of the proprietary cost data submitted voluntarily by product manufacturers to help guide the specification revision process indicates that the new proposed levels offer the shortest payback period for consumer (typically 7 - 10 years or less in most markets for lower and average costs products). Further, EPA's review of the current windows marketplace indicates that many proven, cost-effective technologies are readily available to help manufacturers meet the proposed specification (such as better glass or frames) and that more expensive technologies are not necessary to comply.

[2] Ducker Worldwide LLC, ENERGY STAR Window & Door Tracking Program, 2013, Page 4.

Based on technical data provided by stakeholders during the comment process, the EPA made a number of important adjustments to the program requirements since the initial documents were first issued in 2010. And in January of this year, the agency issued the final requirements.[3]

The Honorable H. Morgan Griffith

1. **EPA issued a rule to defer regulation of CO2 emissions from biomass because it recognized that biogenic carbon wasn't considered in the endangerment finding and it might need different treatment to reflect the natural carbon cycle of biomass. In July, the DC Circuit Court overturned the rule that deferred regulation of CO2 emissions from biomass combustion under the air permitting program, although the Court's mandate has not been formally issued. When does the EPA plan to issue the Accounting Framework it has been working on for two years? And when will EPA revise the current Tailoring rule to permanently address the treatment of biogenic emissions in the air permitting program?**

A. As a point of clarification, the EPA did not defer regulation of CO_2 emissions from biomass "because it recognized that biogenic carbon wasn't considered in the endangerment finding", as the question suggests. Instead, the EPA stated in the Endangerment Rulemaking that biogenic CO_2, like all forms of CO_2, was included in the air pollution that the EPA determined was reasonably anticipated to endanger public health and welfare.

The EPA issued the deferral rule in order to provide the agency time to conduct a detailed examination of the science and technical issues associated with biogenic CO_2 emissions from stationary sources so that we can better address the treatment of biogenic CO_2 emissions in EPA programs. The EPA is working on revisions to EPA's 2011 *Accounting Framework for Biogenic CO_2 Emissions from Stationary Source* (Framework) in light of the Science Advisory Board's September 28, 2012 Peer Review. As detailed in the President's Climate Action Plan, part of the strategy to address climate change will include fostering expansion of renewable resources and responsible forest management. A scientifically sound approach to considering biogenic CO_2 emissions in the air permitting program is a priority for the EPA. While the technical and methodological considerations are complex, the agency is continuing to explore an approach that is based on a variety of factors. The D.C. Circuit decision does not prevent the EPA from progressing towards assessing approaches for addressing biogenic CO_2 emissions under the PSD and title V programs. The EPA was already working towards such activities.

2. **Does EPA need any additional statutory authority to retain the internationally accepted principle of carbon neutrality for biomass?**

A. The EPA is not aware of any internationally accepted principle of carbon neutrality that is embodied in the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories. The IPCC has stated that: "The IPCC Guidelines do not automatically consider biomass used for energy as "carbon neutral," even if the biomass is thought to be produced sustainably."[4] In its Peer Review of EPA's 2011 draft Accounting

[3] For more information, please see http://www.energystar.gov/index.cfm?c=revisions.residential_windows_spec
[4] From the IPCC National Task Force on Greenhouse Gas Inventories, at http://www.ipcc-nggip.iges.or.jp/faq/faq.html.

Framework, the Science Advisory Board agreed further that carbon neutrality for biomass could not be assumed. Specifically, the Panel explained that, "Carbon neutrality cannot be assumed for all biomass energy *a priori*. There are circumstances in which biomass is grown, harvested and combusted in a carbon neutral fashion but carbon neutrality is not an appropriate *a priori* assumption; it is a conclusion that should be reached only after considering a particular feedstock's production and consumption cycle." EPA's focus in revising the Framework is to closely consider that feedback to develop a scientifically sound approach to considering biogenic CO_2 emissions in the air permitting program.

3. If EPA has determined that CCS is the best system of emission reductions, then shouldn't CCS apply to all power generation, regardless of fuel type?

A. EPA concluded that we lacked sufficient information on the application of CCS to new natural gas-fired combustion turbines to make a determination that full or partial CCS is the best system of emission reduction (BSER) for natural gas-fired combustion turbines.

4. In his first year in office, the President outlined a goal of 17 percent reduction in 2005 greenhouse gas levels by 2020. He mentioned this same goal in his climate speech in June at Georgetown University. I assume he picked that number—17 percent—because he believes it's achievable and economical. Can you provide a total of greenhouse gas reduction benefit of EPA's programs and policies over the last 5 years? If that number is unavailable, wouldn't you agree that we can't possibly set policies that set a target number for 7 years from now if we don't know where we are today?

A. The EPA's FY 2014 Annual Performance Plan and President's Budget provides a blueprint for accomplishing EPA priorities. Figure 1 is a snapshot of a table from the agency's Performance Plan and President's Budget that identifies the EPA's GHG reduction targets and performance measures for the agency's climate change programs and policies. This table can be found on pages 881-882 of that document.

Figure 1: EPA's Strategic Goals and Performance Measures to Address Climate Change

PERFORMANCE: STRATEGIC GOALS 1-5 EIGHT-YEAR ARRAY

(Boxes shaded gray indicate that a measure has been terminated for FY 2013 and beyond, therefore, data are no longer collected.)

Goal 1: Taking Action on Climate Change and Improving Air Quality

Reduce greenhouse gas emissions and develop adaptation strategies to address climate change, and protect and improve air quality

Objective 1 - Address Climate Change: Reduce the threats posed by climate change by reducing greenhouse gas emissions and taking actions that help communities and ecosystems become more resilient to the effects of climate change

Program Area	Performance Measures and Data
(1) Address Climate Change	**Strategic Measure:** By 2015, additional programs from across EPA will promote practices to help Americans save energy and conserve resources, leading to expected greenhouse gas emissions reductions of 740.1 MMTCO2Eq.From a baseline without adoption of efficient practices. This reduction compares to 500.4 MMTCO2Eq. Reduced in 2008. (Baseline FY 2008: ENERGY STAR 140.8 MMTCO2Eq., Industrial Programs1 314.2 MMTCO2Eq., SmartWay Transportation Partnership 5.9 MMTCO2Eq., Pollution Prevention Programs 6.5 MMTCO2Eq., Sustainable Materials Management Programs2 34.3 MMTCO2Eq., WaterSense Program 0.4 MMTCO2Eq., Executive Order 135143 GHG Reduction Program 0.0 MMTCO2Eq.)

(PM G02) Million metric tons of carbon equivalent (MMTCO2E) of greenhouse gas reductions in the buildings sector.

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	Unit
Target	107.8	118.8	130.2	143.0	156.9	168.7	182.6	196.2	MMTCO2e
Actual	132.4	140.8	143.4	163.5	189.0	Data Avail 12/2013			

Additional Information: The baseline in 2004 is 89.5 million metric tons of carbon dioxide equivalent reductions. To serve as a basis for comparison in future years, EPA used the 2004 baseline to project into the future assuming no impact on greenhouse gas emissions from U.S. climate change programs. The baseline was developed as part of an interagency evaluation of the U.S. climate change programs in 2002, which built on similar baseline forecasts developed in 1993 and 1997 in the U.S. Climate Change Action Report (2002). Baseline data for carbon emissions related to energy use is based on data from the Energy Information Agency (EIA) and from EPA's Integrated Planning Model of the U.S. electric power sector. Baseline data for non-carbon dioxide (CO2) emissions, including nitrous oxide and other high global warming potential gases are maintained by EPA.

(PM G06) Million metric tons of carbon equivalent (MMTCO2E) of greenhouse gas reductions in the transportation sector.

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	Unit
Target	2.2	3.3	5.5	15.4	23.7	28.0	33.0	37.0	MMTCO2e
Actual	2.2	4.2	5.9	16.5	23.6	Data Avail 12/2013			

Additional Information: Starting with FY 2012, new program tools allow closer alignment with FY cycle and cumulative approach. These tools use real data so variations between modeled projections and actuals are to be expected. Synchronization applied to prior years. The baseline in 2004 is 0.7 million metric tons of carbon dioxide equivalent reductions from the SmartWay program. To serve as a basis for comparison in future years, EPA projected from the 2004 baseline into the future assuming no impact on greenhouse gas emissions from U.S. climate change programs. The baseline was developed as part of an interagency evaluation of the U.S. climate change programs in 2002, which built on similar baseline forecasts developed in 1993 and 1997 in the U.S. Climate Change Action Report (2002). Baseline data for carbon emissions related to energy use is based on data from the Energy Information Agency (EIA) and from EPA's Integrated Planning Model of the U.S. electric power sector. Baseline data for non-carbon dioxide (CO2) emissions, including nitrous oxide and other high global warming potential gases are maintained by EPA.

(PM G16) Million metric tons of carbon equivalent (MMTCO2E) of greenhouse gas reductions in the industry sector.

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	Unit
Target	229.6	248.3	267.3	304.0	346.2	372.9	421.9	461.8	MMTCO2e
Actual	267.3	289.7	293.7	362.8	386.4	Data Avail 12/2013			

Additional Information: The baseline in 2004 is 201 million metric tons of carbon dioxide equivalent reductions from ENERGY STAR for the Industrial Sector, Non-CO2 Partnership Programs, Combined Heat and Power Partnership, Significant New Alternatives Policy (SNAP), and the Landfill Rule. To serve as a basis for comparison in future years, EPA projected from the 2004 baseline into the future assuming no impact on greenhouse gas emissions from U.S. climate change programs. The baseline was developed as part of an interagency evaluation of the U.S. climate change programs in 2002, which built on similar baseline forecasts developed in 1993 and 1997 in the U.S. Climate Change Action Report (2002). Baseline data is based on data from the Energy Information Agency (EIA) and from EPA's Integrated Planning Model of the U.S. electric power sector. Baseline data for non-carbon dioxide (CO2) emissions, including nitrous oxide and other high global warming potential gases are maintained by EPA.

The Honorable John D. Dingell

1. **Does the EPA see a future for coal as a viable source in light of the impending greenhouse gas regulations?**

A. Yes, according to the U.S. Energy Information Administration (EIA), about 37% of U.S. electricity generation is from sources using coal and we expect coal to remain a vital fuel for power production in the future.

2. **I understand that there will be a different proposal for modified sources (units that have been updated) and for existing sources (that have not been modified).**

   a. **Can you tell me if EPA is reaching out to all stakeholders concerned about both components of the greenhouse gas rule?**

A. In September, the EPA proposed new source performance standards for emissions of greenhouse gases from new fossil fuel-fired plants. These proposed standards are practical, flexible, and achievable and ensure that power companies investing in new fossil fuel-fired power plants will use modern technologies that limit emissions of harmful carbon pollution. The EPA will finalize these standards in a timely manner, after considering public comments on the proposal. The EPA will accept written comments on the proposal until May 9, 2014.

As we consider guidelines for existing power plants, the EPA is engaged in vigorous and unprecedented outreach with the public and with key stakeholders as well as with the states. The eleven listening sessions the EPA held throughout the country were attended by thousands of people, representing many states and a broad range of stakeholders, including many from the coal industry. In addition, we have been meeting with industry leaders and CEOs from the coal, oil, and natural gas sectors; state, tribal, and local government officials from every region of the country; and environmental and public health groups, faith groups, labor groups, and others. Our meetings with state governments have encompassed leadership and staff from state environment departments, state energy departments and state public utility commissions.

3. **The debate about climate change is not just about air, but also water. You may know that the Great Lakes contain 20 percent of the world's fresh water. Luckily, water levels are up slightly this year after years of inadequate ice cover on the Lakes and too little rain and snow. Lower lake levels affect not only shipping and boating recreation but also make it easier for algae blooms to form, endanger fishery habitats, and threaten drinking water sources as well as cooling water intakes. -**

   In dealing with water quality, do you believe EPA has adequate clarification of its jurisdiction under the Clean Water Act to ensure protection of water sources?

A. The EPA shares the concern being raised by many that Supreme Court decisions have resulted in confusion about the geographic scope of waters protected by the Clean Water Act. Since 1972, the Clean Water Act has protected our health and environment by reducing the pollution in streams, lakes, rivers, wetlands and other waterways. But over the past decade, interpretations of Supreme Court rulings have removed some waters from federal protection, and caused confusion about which waters and wetlands remain protected. To provide greater consistency, certainty,

and predictability nationwide, the EPA and the U.S. Army Corps of Engineers are working to develop a proposed rule to clarify where the Clean Water Act applies.

4. **You may have seen a recent map published in National Geographic showing what would happen if all of the world's ice were to melt. While this is a somewhat drastic scenario that shows almost all of Florida and New Jersey submerged, it was what was not on the map that intrigued me the most. The map showed little or no effect on the Great Lakes. Do you believe that EPA, along with other federal agencies, have the tools necessary to predict what effects climate change might have on the Great Lakes region?**

   A. The EPA believes that, together with its state and federal partners – especially the National Oceanic and Atmospheric Administration – we have the basic tools necessary to project climate change effects on the Great Lakes, particularly on a large scale. Federal funding, including some Great Lakes Restoration Initiative funding, has been enabling improved downscaling of Regional Climate Model scenarios to a scale more useful to resource managers across the Great Lakes region. Uncertainties remain, and continued refinement is necessary as more impacts, such as the potential expansion and contraction of ranges for native and invasive species, become evident, but that should not be a reason for not acting on the information we do have.

Climate Change Funding

EPA Climate Change Funding ($000s)	FY 2005 Enacted	FY 2006 Enacted	FY 2007 Enacted	FY 2008 Enacted	FY 2009 Enacted	FY 2010 Enacted	FY 2011 Enacted	FY 2012 Enacted	FY 2013 Enacted	FY 2014 PresBud
EPA	**127,508**	**125,119**	**119,269**	**126,315**	**127,404**	**192,398**	**177,248**	**$168,418**	**$153,941**	**$176,452**
Research: Air, Climate, and Energy (Global Change)	19,578	18,619	16,224	18,127	17,886	20,822	20,448	18,213	16,960	20,440
Climate change grants to local governments	0	0	0	0	0	10,000	0	0	0	0
Climate Protection Program: Energy Star	47,500	49,600	45,900	48,200	49,700	53,606	53,304	49,668	49,323	52,915
Climate Protection Program: Global Methane Initiative	0	0	5,000	0	0	4,569	4,565	5,013	3,459	4,803
GHG Reporting Registry				3,400	6,400	16,685	17,889	15,757	13,825	18,865
GHG Reporting Registry - Grants	0	0	0	0	0	0	0	0	0	0
Climate Protection Program: Automotive technologies	20,400	18,600	12,900	18,300	16,700	18,797	16,828	16,319	15,894	0
Climate Protection Program: GHG Certification (transferred from CAT)	0	0	0	0	0	0	0	0	0	8,313
Climate Protection Program: Cap and trade technical assistance	0	0	0	0	0	5,000	0	0	0	0
Climate Protection Program: Carbon Capture and Storage	0	0	0	0	0	1,400	2,306	534	456	0
Climate Protection Program: other programs *	40,000	38,200	38,700	36,200	35,300	32,784	29,466	28,359	24,934	29,616
Clean Energy	-	-	-	-	-	6,555	5,732	4,142	3,655	3,391
Methane Programs	-	-	-	-	-	6,455	5,889	5,645	4,474	6,169
Modeling and Analysis	-	-	-	-	-	8,190	7,104	7,619	6,920	8,341
High GWP Programs	-	-	-	-	-	1,774	1,014	1,271	1,056	1,298
GHG Accounting and International Capacity Building	-	-	-	-	-	3,944	3,504	3,710	3,679	4,197
State & Local Capacity Building	-	-	-	-	-	3,187	3,055	2,496	2,139	2,524
SmartWay	1,600	2,200	2,600	2,500	2,800	2,679	2,420	2,733	2,329	2,696
OEI - web tools/technology infrastructure	0	0	0	0	0	0	250	446	436	500
OCFO - Green conferencing	0	0	0	0	0	0	498	297	246	500
Federal Vehicle and Fuels Standards and Certification						21,327	19,985	24,283	21,651	23,229
Federal Stationary Source Regulations: GHG New Source Performance Standards						0	3,272	5,412	3,770	7,165
Federal Support for Air Quality Management: GHG Permitting						0	1,895	3,408	3,190	5,601
State and Local Air Quality Management: GHG Permitting						0	0	0	0	4,500
Research: Safe and Sustainable Water Resources (Carbon Sequestration)	0	0	0	0	0	3,927	3,212	132	0	0
EISA Enforcement	0	0	0	0	0	881	878	200	0	400
Drinking Water Permits - Carbon Sequestration	30	100	545	2,088	1,418	2,600	3,200	1,120	479	605

* The climate change chart was restructured in 2011 and the programs were not detailed in the same way prior to that time. The resources reported on the "Other Programs" line for FY 2005-2009 are the total for the voluntary programs for Climate Change. The "Other Programs" line for FY 2005-2009 are the total for the voluntary programs for Climate Change.

** The grayed out area indicates the regulatory programs. EPA did not make the GHG determination until 2009 and so the chart was not modified to include those programs until the determination was made. Charts prior to 2010 did not include these program areas.