ONE HUNDRED ELEVENTH CONGRESS

Select Committee on Energy Independence and Global Warming

U.S. House of Representatives
Washington, DC 20515

EDWARD J. MARKEY, MASSACHUSETTS
CHAIRMAN

May 19, 2009

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

Dear Administrator Jackson:

The Environmental Protection Agency's recent memorandum titled, *Ways in Which Revisions to the American Clean Energy and Security Act Change the Projected Economic Impacts of the Bill*, concludes that "compared to the draft bill, H.R. 2454 would likely result in lower allowance prices, a smaller impact on energy bills, and a smaller impact on household consumption."

Republican staff on the Select Committee on Energy Independence and Global Warming, however, recently issued a report that challenged several of EPA's assumptions, and perhaps more problematically, questioned whether EPA assumed a greater number of allowable offsets than the legislation as drafted would actually allow.

I have attached a copy of the Republican Staff's report. I would appreciate new analysis of the bill that includes more realistic assumptions and limits the allowable offsets to those provided for in the bill.

Sincerely,

F. James Sensenbrenner, Jr.
Ranking Member
House Select Committee on Energy Independence and Global Warming

Enclosure

cc: Edward Markey, Chairman, Select Committee on Energy Independence and Global Warming

Minority Staff Report: EPA Analysis Grossly Underestimates Costs of Waxman/Markey Climate Legislation

House Select Committee on Energy Independence and Global Warming, Republican Staff
Congressman F. James Sensenbrenner (WI), Ranking Member

May 14, 2009

Background:

On February 27, 2009, Democratic staff members from the House Committee on Energy and Commerce approached the Environmental Protection Agency (EPA) and requested analysis of the Committee's draft American Clean Energy and Security (ACES) Act. As of this report's writing, the ACES Act is a 648-page draft of legislation that purports to combat global warming and reduce energy dependence. Its most prominent feature is a carbon trading system.

The draft ACES Act was released to the public on March 31, 2009. EPA issued its analysis of the draft on April 20, 2009.

The House Energy and Commerce Committee held an almost week-long series of hearings on the ACES Act from April 21 to 24 and featured dozens of witnesses including Administration officials, industry representatives, and celebrities, like former Vice President Al Gore and former House Speaker Newt Gingrich.

During the hearings, Members and witnesses frequently cited EPA's analysis as an estimate of the cost of the ACES Act. Vice President Gore described EPA's analysis as the most authoritative estimate available and relied on it to dismiss the costs of a cap-and-tax program. Gore testified, "the study that I think that is most authoritative, before taking into account the savings in their energy use that this bill will occasion, is around 30 cents a day . . . about a postage stamp per day."[1] Why the former Vice President found this report so authoritative is unclear. When asked what study he was relying on, he stated, "I believe it's the EPA study that was produced two days ago, three days ago."[2]

The Select Committee's investigation, however, has found that EPA's analysis significantly underestimated the costs of the bill.

In a letter dated April 24, 2009, Representatives Jim Sensenbrenner, Darrell Issa, Candice Miller, and John Sullivan raised many of these concerns with EPA. This letter (herein April 24 letter) is

[1]Transcript, U.S. House of Rep. Committee on Energy and Commerce, hearing (April 24, 2009).

[2]*Id.*

attached as Appendix 1. EPA responded to the letter on May 7, 2009 and provided a staff briefing on May 8, 2009. EPA's response letter is attached as Appendix 2.

Since its initial release, Democrats have privately negotiated specific provisions of the ACES Act. They are likely to release an updated draft soon. Proponents of the new bill will undoubtedly argue that EPA's analysis is still relevant and that the costs of the new draft will be even lower—as Democrats are likely to weaken several provisions. Far from being authoritative, the Committee's investigation has found that, in several instances, Democratic staff dictated assumptions to EPA in order to create artificially low cost estimates.

Findings:

The Select Committee's investigation of EPA's analysis reveals that it was incomplete due to time constraints and inadequate information and that Democratic staff with the House Energy and Commerce Committee provided questionable assumptions.

- **EPA's analysis relies on incorrect offset numbers.**

The analysis assumes that covered entities can offset up to 2 billion tons of their annual emissions through projects to reduce emissions outside the scope of the cap. The draft ACES Act, however, never allows for offsets that even approach these levels.

By EPA's own admission, the availability of offsets drastically affects the cost of compliance. In its analysis, EPA wrote, "[w]ithout international offsets the allowance price would increase 96 percent."[3] Further, in EPA's briefing with Select Committee Republican staff, EPA officials stated that offsets were one of the biggest drivers of compliance costs. In other words, the offset levels that they relied on were one of the key reasons they were able to estimate such low costs.

Rather than allowing offsets of 2 billion tons, the draft adopts a complicated formula to determine offset levels. It allows offsets of 2 billion tons divided by the sum of 2 billion plus the number of emission allowances for each calendar year (multiplied by 100 to get a percentage). The calendar year allowances for 2012 are 4.77 billion tons. They gradually reduce to 1.04 billion tons in 2050 and for each year thereafter. The number of offsets is further reduced by the requirement that, for each ton of CO_2 being offset, covered entities must recoup an offset credit of 1.25 tons to allow for the uncertainty of offset project successes.

In practical terms, this means that the ACES draft never allows 2 billion tons of offsets in a single year. In 2012, the Act allows approximately 1.14 billion tons, or just over half of EPA's

[3] *EPA Preliminary Analysis of the Waxman-Markey Discussion Draft the American Clean Energy and Security Act of 2009 in the 111th Congress*, p. 3 (April 20, 2009), available at http://www.epa.gov/climatechange/economics/pdfs/WM-Analysis.pdf.

assumption.[4] The annual offset level then increases slightly to a high of approximately 1.19 billion tons in 2016, before steadily reducing to 0.55 billion tons in 2050 and succeeding years.[5]

To its credit, EPA recognized the discrepancy in offset levels. In a footnote, the agency noted that "page 372 of WM-Draft [Waxman/Markey Draft] seems to indicate that the limit on offsets usage declines over time, however, committee staff have indicated to EPA that their intent is for the limit to be constant over time."[6]

In the briefing, Select Committee Republican staff questioned why EPA assumed offsets of 2 billion tons, when the Act expressly did not allow for these levels. EPA responded that they were directed by Majority staff from the House Energy and Commerce Committee to assume offsets of 2 billion tons. It is unclear if staff misread their own bill or if they intentionally provided false information in an attempt to falsify EPA's results. It is clear, however, that the offset levels EPA relies on grossly underestimate the costs of the ACES Act.

- **EPA assumed a significantly lower GDP growth rate than the Obama Administration relied on for its recent Budget Blueprint.**

On February 26, 2009, the President's Fiscal Year 2010 budget assumed a growth rate of 3.3% between 2010 and 2019. EPA, however, assumed a growth rate of 2.5% for the same period. The lower growth rate is significant. EPA's growth assumption results in a U.S. GDP that is $1.22 trillion smaller in 2019. The cumulative loss in GDP over the 10 year period would be nearly $8 trillion dollars.

As the current economic downturn has proven, emissions correlate with economic growth. As economies grow, their emissions increase. Further, under a cap-and-tax program, the lower the business as usual projections for emissions, the lower the projected cost of compliance. This is because the legislation predetermines the cap (the overall allowable level of emissions) and requires industries to make reductions to meet it. If projected emissions are lower, then the necessary reductions will be lower, and the costs of compliance will decrease.

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[4]For 2012, ACES allows 2 billion tons divided by 6.77 billion tons (the sum of 2 billion tons + 4.77 billion tons). The result is 30%. This total must then be multiplied by 0.8 to account for the 1.25 offset requirement. The result is 24%. In other words, to offset 24% of emissions, one has to buy offset credits totaling 30% of emissions. In year 2012, if every single emitter maxed out on offset credits, they could only offset up to a maximum of 24% of 4.77 billion tons, which is around 1.14 billion tons.

[5]In year 2050, the Act allows 2 billion tons, divided by 3.04 billion tons (the sum of 2 billion tons + 1.04 billion tons), which equals approximately 66%. This is then multiplied by 0.8 to get approximately 53%. In other words, to offset 53% of emissions, one has to buy offset credits totaling 66% of emissions. In 2050, if every single emitter maxed out on offset credits, they could only offset up to a max of 53% of 1.04 billion tons, which is approximately 0.55 billion tons.

[6]*See supra*, note 3 at Appendix p.4.

Thus, by assuming a low-growth rate, EPA significantly lowered its findings on the cost of complying with the draft ACES Act. EPA's assumed growth rate is below the U.S. average and lower than the estimate that the Obama Administration used just two months before in its FY 2010 budget blueprint.

In response to the April 24 letter, EPA wrote:

> "EPA derives its economic growth assumptions from the Energy Information Administration's Annual Energy Outlook, because EPA also uses the AEO's projections of energy demand and use. In December 2008, EIA released its 2009 AEO projections, which EPA used in its April 20th analysis. EPA's understanding is that OMB [the Office of Management and Budget] does not rely as heavily on the AEO's economic growth assumptions in preparing the President's budget request, in part because the budget request does not focus as specifically on the energy sector as EPA's analysis of an energy-climate bill does."[7]

EPA's response admits that the Administration alters its assumptions to suit its areas of analysis. GDP growth is GDP growth and should remain constant whether one is developing a budget or analyzing the energy sector.

- **EPA analysis did not consider the effects of the draft ACES Act's renewable energy standard.**

EPA titled its Analysis, "EPA Analysis of the Waxman-Markey Discussion Draft: The American Clean Energy and Security Act of 2009." The title implies that EPA performed comprehensive analysis of the draft's effects. However, EPA only analyzed the effects of the draft's carbon trading scheme. Other major provisions, like the Renewable Energy Standard (RES), were ignored.

The RES was the focus of considerable debate during hearings before the House Energy and Commerce Committee. The actual numbers are therefore likely to change, but the initial draft would mandate that 25% of energy be produced from renewable sources by 2025.[8] This would represent a drastic change in our Nation's energy sources, forcing power plants to produce energy from more expensive sources.

EPA acknowledged that the RES would have an effect. In its reply to the April 24, 2009 letter, EPA wrote, "[t]here would be a cost associated with implementing the ACES renewable energy standard. Due to time limitations, EPA did not estimate that cost."[9]

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[7]Letter, Elizabeth Craig, EPA to U.S. House Members (May 6, 2009) (attached as appendix 2).

[8]Discussion Draft. American Clean Energy and Security Act of 2009, available at http://energycommerce.house.gov/Press_111/20090331/acesa_discussiondraft.pdf.

[9]*See supra* note 7.

- **EPA's assumptions for carbon capture and sequestration are unrealistic. If technological progress does not match EPA's assumption, consumer costs will increase.**

EPA's analysis assumes 3 gigawatts (GW) of coal generation with carbon capture and sequestration (CCS) are deployed by 2015 and 55 GW by 2030. No such CCS plants currently exist. Thus, EPA assumes that CCS plants will increase 0 to 3 GWs in the next 6 years and that 100 coal plants of 500 megawatts each will sequester 100% of their CO_2 emissions by 2030. This assumption was directly contradicted by Energy Secretary Steven Chu this March when he testified before the House Science and Technology Committee that CCS technology would take roughly ten years to prove, let alone implement.[10]

If, as most experts predict, CCS technology develops more slowly than EPA assumed, power plants would have higher emissions and would be required to purchase more allowances. This would substantially increase consumer costs. Citing time constraints, EPA did not analyze any scenarios that included less ambitious assumptions.[11] EPA's prior analysis of the Lieberman-Warner Act, however, found that "not allowing CCS until after 2030 increased allowance prices by ~80%."[12]

- **EPA's analysis assumes a nationwide impact. The actual impacts of the draft ACES Act, however, will be regional.**

EPA's analysis assumes one cost nationwide. Actual costs, however, would vary by region.[13] Washington State, for example, receives only 11% of energy from coal, instead relying heavily on nuclear, wind, and hydro. Conversely, Indiana generates 95% of its energy from coal. ACES will have dramatically different effects on these two states. Citizens of coal-dependent states, like Indiana, West Virginia, Wisconsin, and Wyoming, cannot rely on nationwide estimates. The regional disparities will increase further if, as discussed above, EPA's assumption on CCS prove too ambitious.[14]

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[10]Testimony of Steven Chu, *New Directions for Energy Research and Development at the U.S. Department of Energy*, House of Rep. Committee on Science and Technology (March 17, 2009).

[11]*See supra* note 7.

[12]*See supra* note 3 at 15.

[13]*See Comprehensive Staff Analysis of the Economic Impact of the Waxman/Markey Cap-and-Trade Legislation*, U.S. House of Rep., Committee on Oversight and Government Reform, minority, p. 8-9 (April 18, 2009) (finding gross regional disparities in the impacts of climate change negotiations), available at http://republicans.oversight.house.gov/media/pdfs/20090428CapTrade.pdf.

[14] EPA did account for some regional differences in an appendix to its report. In its response to the April 24 letter, EPA wrote, "[a]ppendix 5 of EPA's analysis of the Waxman-Markey discussion draft presents U.S. regional modeling results. Impacts across most regions are close to U.S. averages. The plains region appears to experience

- **EPA assumes that nuclear energy will increase by 150% by 2050.**

EPA's analysis assumes a dramatic increase in the use of nuclear power. Because production of nuclear energy is carbon-free, an increase in nuclear energy will dramatically mitigate the costs under a cap-and-tax program. EPA wrote that "[i]n EPA's S. 2191 analysis, restricting nuclear and biomass electricity to reference case levels increased allowance prices by ~30%."[15]

Representative Greg Walden (R-OR) noted this during hearings on the ACES Act. Following his testimony, Vice President Al Gore claimed that adopting a cap-and-tax scheme would cost families just 30 cents per day. Rep. Greg Walden pointed out that Gore was relying on the EPA Analysis, which assumed a 150% increase in the use of nuclear power.

In the staff briefing, EPA officials explained that its modeling predicted this increase. EPA considered the current cost of nuclear energy. Because nuclear energy does not create any carbon emissions, EPA assumed that cost would remain constant after legislation placed a cost on carbon. The cost of other energy, however, would increase. Under the models, this made nuclear power more attractive and its use proliferated.

The primary hurdle for nuclear power, however, is not cost, but political opposition. Many proponents of carbon trading schemes are long-time opponents of nuclear power. The ACES Act conspicuously lacks any provisions that specifically encourage the development of nuclear power. As a result, few energy experts predict growth in nuclear power that approaches the levels that EPA assumed. In the staff briefing, EPA officials conceded that these levels were unlikely.

- **The ACES Draft is silent on many specifics of the cap-and-tax program. EPA relied entirely on estimates from Democratic staff on the Energy and Commerce Committee to develop its analysis.**

While Chairmen Henry Waxman (D-CA) and Ed Markey (D-MA) intentionally omitted key numbers to allow for negotiations, the Majority staff of the Energy and Commerce Committee provided EPA with numbers for its analysis. It is unclear what these numbers are based on or whether they bear any similarities to numbers that will be included in legislation. In its analysis, EPA stated that House Energy and Commerce Committee staff directed it to use the following assumptions:

- CCS Bonus Allowances: 2% 2012-2016; 5% 2017-2050
  - Included in all scenarios.
- International Forest Carbon: 5% through 2025, 3% through 2030, 2% through 2050.

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impacts that are above average." *See supra* note 7. These regional differences are not, however, factored into EPA's publicly cited findings.

[15] *See supra* note 3 at 15.

    - Included in all scenarios.
- Energy Efficiency: 12.5%
    - Included in all scenario 3.
- Output-Based Rebate: 15% through 2020, should decline at 10% per year after that.
    - Included in all scenario 4.
- Necessary allowances for deficit neutrality[16]
    - Included in all scenarios.
- Remaining allowance value is recycled to households lump sum.
    - Included in all scenarios.
- The following assumptions about the CCS bonus allowance provisions were also given:
- CCS bonus allowance provisions should be modeled as specified in the Dingell-Boucher discussion draft.
- No set bonus allowance rate. The number of bonus allowances given for each ton sequestered is determined so that the value of the bonus allowances is equal to $90 for the first 3 GW of CCS, $70 for the second 3 GW of CCS, and $50 for the rest (values are in 2005 dollars).
- If the program is oversubscribed, then you can borrow from future period allocations until the total pool of bonus allowances is used."[17]

Conclusion:

EPA's analysis of the draft ACES Act was rushed, incomplete, and relied on numerous questionable assumptions that were provided by Democratic staff. The Select Committee Republican staff have documented several instances when the EPA acknowledged that it did not analyze aspects of the ACES Act because of time limitations. Consequently, EPA either ignored major cost-influencing factors or assumed certain figures recommended by the Democratic staff of the Energy and Commerce Committee. These assumptions and political meddling lead to a drastic underestimation of the draft ACES Act's costs and undermine the legitimacy of EPA's conclusions.

[16]At a briefing with Committee staff, EPA stated that these were set at 25% of allowances.

[17]*See Supra* note 3 at Appendix p. 6.

APPENDIX 1

Congress of the United States
Washington, DC 20515

April 24, 2009

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

Dear Administrator Jackson:

We are writing to seek clarification of the Environmental Protection Agency's (EPA) recent analysis of the Waxman-Markey American Clean Energy and Security (ACES) Act.

In EPA's analysis, the agency assumed U.S. GDP growth for 2010 to 2019 at a rate of 2.5% per year. In contrast, President Obama's budget proposal, released just 2 months ago, relied on assumed GDP growth of 3.3% for the same period. The discrepancy is significant. The different growth rates lead to different economic scenarios for the U.S. – a difference of approximately $1.22 trillion dollars of GDP. This diminished GDP drastically affects the analysis of the ACES Act. A smaller GDP would mean lower greenhouse gas emissions, and lower compliance costs.

EPA's analysis also relies on incorrect offset numbers. The analysis assumes that covered entities can offset up to 2 billion metric tons of their annual emissions through projects to reduce emissions outside the scope of the cap. The ACES Act, however, never allows for these levels. By EPA's own admission, the use of offsets drastically affects the cost of compliance. "Without international offsets," EPA wrote, "the allowance price would increase 96 percent."

Further, the assumptions for carbon capture and sequestration are unrealistic. The analysis assumes 3 Gigawatts (GW) of carbon capture by 2015 and 55 GW by 2030. These assumptions would require us to increase carbon capture from 0 to 3 GW in just 6 years and have 100 coal plants sequestering 100% of their CO_2 emissions by 2030. This assumption was directly contradicted by Energy Secretary Steven Chu this March when he testified before the House Science and Technology Committee that carbon capture and storage technology would take roughly ten years to prove.

Finally, EPA's analysis assumes a nationwide impact. It is undisputed, however, that the actual impacts of the ACES Act would be regional.

Congress relies on quality analysis to make informed decisions. Therefore, please respond to the following:

- What was the basis for EPA's growth rate assumption?
- Why is it lower than the growth rate used in the President's budget proposal?
- EPA's analysis does not consider the effects of the ACES Act renewable energy standard. Will this standard increase consumer costs?

- Why did EPA rely on incorrect offset levels?
- What effect would accurate offset levels have on compliance costs?
- Are the carbon capture and sequestration assumptions technologically feasible?
- If technological progress does not match EPA's assumption, what effect will this have on consumer costs?
- Does EPA expect regional disparities in the consumer costs of the ACES Act?

Given the speed with which the ACES Act is expected to move through the House, we would appreciate a written response to this inquiry no later than Friday, May 8, 2009. Additionally, we would like to arrange a briefing with our staff to clarify these issues in the analysis. Please contact Raj Bharwani with the Select Committee on Energy Independence and Global Warming at (202) 225-0188 to arrange the briefing.

Sincerely,

F. James Sensenbrenner, Jr.
Ranking Member
House Select Committee on
Energy Independence and Global Warming

Darrell Issa
Ranking Member
House Committee on
Oversight & Government Reform

Candice Miller
House Select Committee on
Energy Independence and Global Warming

John Sullivan
House Committee on
Energy and Commerce

APPENDIX 2

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

MAY - 7 2009

OFFICE OF
AIR AND RADIATION

The Honorable F. James Sensenbrenner, Jr.
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Sensenbrenner:

Thank you for your letter dated April 24, 2009, to Administrator Jackson involving the issues concerning EPA's recent analysis of the Waxman-Markey American Clean Energy and Security (ACES) Act. The Administrator asked me to respond to your letter.

We have arranged a briefing with your staff for this Friday, May 8th. In addition, we have prepared responses to the questions in your letter in the attached document.

Again, thank you for your letter. If you have further questions, please contact me or your staff may call Cheryl Mackay, in EPA's Office of Congressional and Intergovernmental Relations, at (202) 564-2023.

Sincerely,

Elizabeth Craig

Elizabeth Craig
Acting Assistant Administrator

Attachment

Responses to questions on EPA's analysis of the Waxman-Markey American Clean Energy and Security Act (ACES)

1. What was the basis for EPA's growth rate assumption? Why is it lower than the growth rate used in the President's budget proposal?

EPA derives its economic growth assumptions from the Energy Information Administration's Annual Energy Outlook, because EPA also uses the AEO's projections of energy demand and use. In December 2008, EIA released its 2009 AEO projections, which EPA used in its April 20th analysis. EPA's understanding is that OMB does not rely as heavily on the AEO's economic growth assumptions in preparing the President's budget request, in part because the budget request does not focus as specifically on the energy sector as EPA's analysis of an energy-climate bill does.

2. EPA's analysis does not consider the effects of the ACES renewable energy standard. Will this standard increase consumer costs?

There would be a cost associated with implementing the ACES renewable energy standard. Due to time limitations, EPA did not estimate that cost.

3. Why did EPA rely on incorrect offset levels? What effect would accurate offset levels have on compliance costs?

EPA's analysis of ACES did not rely on incorrect offset levels. Staff of the authors of the discussion draft have confirmed that EPA's modeling inputs accurately reflect the ACES offsets provisions.

4. Are the carbon capture and sequestration assumptions technologically feasible?

Yes. CCS technology exists today and has been deployed in the United States and in other countries. There are about a dozen demonstration or larger-scale commercial CCS projects currently moving forward in the United States, utilizing various capture technologies. Other analysts in government, academia, and the private sector have also found that the technology is feasible and would be widely available and deployed in the long-term as a result of a national climate change policy with carbon prices. For example, EPRI's PRISM analysis[1] shows extensive deployment of coal plants with CCS after 2020, fully displacing uncontrolled coal by 2040.

In EPA's analysis, based on the CCS demonstration and early deployment provisions (about $1 billion per year for 10 years), modest amounts of carbon capture and sequestration (CCS) (3 gigawatts) would be built in the near-term. In the long-term, because of the CCS bonus allowances, EPA projects larger amounts of CCS capacity.

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[1] See page 4-5 of EPRI's 2007 paper, online at http://mydocs.epri.com/docs/public/DiscussionPaper2007.pdf

5. If technological progress does not match EPA's assumption, what effect will this have on consumer costs?

Due to time limitations, EPA did not analyze alternative scenarios reflecting different limits on technology penetration.

6. Does EPA expect regional disparities in the consumer costs of the ACES Act?

Appendix 5 of EPA's analysis of the Waxman-Markey discussion draft presents U.S. regional modeling results. Impacts across most regions are close to U.S. averages. The plains region appears to experience impacts that are above average.