

July 26, 2016

MEMORANDUM

SUBJECT: Response to Office of Inspector General's draft report, *EPA Has Not Met Statutory Requirements to Identify Environmental Impacts of Renewable Fuel Standard*" (No. OPE-FY16-0005).

FROM: Janet G. McCabe
Acting Assistant Administrator
Office of Air and Radiation

Thomas A. Burke
Deputy Assistant Administrator
Office of Research and Development

TO: Carolyn Copper, Assistant Inspector General
Office of Program Evaluation
Office of Inspector General

The EPA's Office of Air and Radiation and Office of Research and Development appreciate the opportunity to review and comment on the OIG's draft report titled "*EPA Has Not Met Statutory Requirements to Identify Environmental Impacts of Renewable Fuel Standard*" (Draft Report).

Congress created the renewable fuel standard (RFS) program in an effort to reduce greenhouse gas emissions and expand the nation's renewable fuels sector while reducing reliance on imported oil. The RFS program was authorized under the Energy Policy Act of 2005 and expanded under the Energy Independence and Security Act of 2007. EPA's Office of Transportation and Air Quality, within the Office of Air and Radiation, is responsible for implementing the RFS program, and coordinates closely with other offices, including the Office of Research and Development, on relevant areas of research and program implementation.

The RFS program is designed to increase the amount of biofuel used in the United States. The production and use of biofuels, like other bio-based energy sources, has broad and often complex environmental and economic impacts. In establishing the regulations to implement the program, EPA conducted significant analysis on the potential impacts of the RFS program, both economic and environmental, as the Draft Report acknowledges, and OAR continues to engage in significant scientific and technical analysis related to biofuel use and expansion. EPA's Office of Research and Development issued a first statutorily-required triennial Report to Congress in 2012 that looked broadly at the environmental impacts of the program.

EPA's Air Office continues to work closely with industry and other stakeholders to monitor the state of biofuel-related science and conduct various analyses, as needed. With respect to air quality impacts, as the OIG noted in the report and OAR agrees, additional work needs to be done before a comprehensive anti-backsliding study can be conducted. However, OAR has

already made important progress in this area by recently conducting extensive analysis in a variety of key areas, including an evaluation of the impacts of gasoline properties on vehicle exhaust emissions, and updating the fuel effects model for estimating motor vehicle emissions (discussed further below).

OAR continues to monitor the science regarding lifecycle GHG emissions associated with biofuels. As OAR does lifecycle assessments for new fuel pathways, the most recent science and data are incorporated where possible. For example, OAR has updated the analysis to reflect new data on forest carbon stocks, projected yields, and agricultural inputs as appropriate. OAR's analyses have also incorporated advances in process technology efficiencies as biofuel facilities demonstrate improvements in their GHG emissions.

Below are ORD's and OAR's responses to the OIG's specific recommendations. In the technical comments attachment, we provide suggested additional detailed wording changes in the form of a markup.

Deputy Assistant Administrator, Office of Research and Development

Recommendation 1: "Provide triennial reports to Congress on the impacts of biofuels as required by EISA."

Response 1: ORD agrees with this recommendation.

Planned completion date: FY18 Q1 (end of calendar 2017)

Acting Assistant Administrator, Office of Air and Radiation

Recommendation 2: "Complete the anti-backsliding study on the air quality impacts of RFS as required by EISA."

Response 2: OAR agrees with this recommendation, and we acknowledge the statutory obligation for an anti-backsliding study under Clean Air Act section 211(v) (as amended by EISA section 209). EPA has already taken a number of time-consuming and resource-intensive steps that are important prerequisites for the anti-backsliding study. For example, OAR conducted a vehicle emissions test program designed to evaluate the impacts of gasoline properties (including aromatics and ethanol concentration) on vehicle exhaust emissions, <https://www3.epa.gov/otaq/models/moves/epact.htm>. This study is the largest, most comprehensive, and most carefully designed and implemented study to date on the impacts of fuel changes on emissions from recent model year gasoline vehicles. Using the data from this study, OAR then updated the fuel effects model in its tool for estimating motor vehicle emissions, the Motor Vehicle Emissions Simulator (MOVES). This update was released in 2014. However, as the OIG report correctly notes, there are multiple intermediate research steps that still need to be completed before OAR can plan, fund and conduct a comprehensive anti-

backsliding study. These steps include development of baseline, current, and projected scenarios for how renewable fuels have and might be produced, distributed, and used to fulfill the RFS requirements, generation of emissions inventories, and air quality modeling, all of which are time-consuming and resource-intensive. Furthermore, this work must be conducted on top of other statutorily-required actions under the RFS program, many of which are carried out by the same group of staff and managers.

Planned Completion Date: No later than Q4, FY2024.

Recommendation 3: “Determine whether additional action is needed to mitigate any adverse air quality impacts of RFS as required by EISA.”

Response 3: OAR agrees with this recommendation, and we acknowledge the statute’s requirement to determine whether additional action is needed to mitigate any adverse air quality impacts in light of the anti-backsliding study. That study, discussed above, would need to be completed prior to any such determination taking place.

Planned Completion Date: No later than Q4, FY2024.

Recommendation 4: “Develop or identify the process for evaluating the science relevant to lifecycle analysis and determining whether revisiting the original GHG threshold determinations is necessary.”

Response 4: OAR agrees with this recommendation and currently has a process in place to determine whether the lifecycle analysis (LCA) GHG threshold determinations should be revisited. In our current process, OAR actively monitors the peer-reviewed and other literature associated with lifecycle GHG emissions of biofuels. Staff routinely meet with other experts across the federal government, the State of California, industry, academia, and non-government organizations to discuss new developments in LCA science. In addition, through OAR’s new pathways assessment process, OAR regularly receives input on our lifecycle analysis methodology and assumptions. These inputs in and of themselves provide us with a continuous flow of data and other information necessary to inform consideration of the need for any re-evaluation of the GHG determinations. In addition, OAR will review existing processes and determine within two years whether revisions are needed.

Planned Completion Date: Q4, FY2018.

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Finally, although the Draft Report’s first recommendation is directed to ORD, OAR notes that OAR and ORD closely coordinate on such work and OAR supports ORD’s agreement with the recommendation to complete further triennial reports to Congress.

If you have any questions regarding this response, please contact Benjamin Hengst, Associate Director, Office of Transportation and Air Quality, at (202) 564-1495.

Attachment

Cc: Betsy Shaw
Chris Grundler
Maureen Hingeley
Heather Cursio

TECHNICAL COMMENTS ATTACHMENT

OAR offers these requests, corrections, and comments for OIG review:

Title: Request change

- As presented, the title suggests that all of the issues raised are statutorily required when in fact as the report notes, there is no statutory requirement to re-analyze the lifecycle analysis.
- Suggested new title: “EPA Has Not Met **Certain** Statutory Requirements to Identify Environmental Impacts of Renewable Fuel Standard”
- Where applicable, this change should be made in other areas of the document as well (see following recommendation).

At A Glance

- *“We also recommend that the Assistant Administrator for Air and Radiation complete the anti-backsliding study as required, determine if additional mitigation is needed, and identify criteria for updating greenhouse gas threshold determinations.”*

By lumping the requirements together, the report implies that all of these actions are required by law. OAR suggests the following to clarify the statement, consistent with request to change the title of the report:

- *We also recommend that the Assistant Administrator for Air and Radiation complete the anti-backsliding study as required and determine if additional mitigation is needed. Although not required by statute, we also recommend that the Assistant Administrator for Air and Radiation identify criteria for updating greenhouse gas threshold determinations.*

Page 8: GHG versus non-GHG lifecycle analysis

- *“While EISA does not require the consideration of non-GHG lifecycle impacts, such impacts could be useful to inform OAR’s decision to exercise its general waiver authority in cases of severe environmental harm. Those impacts can inform setting RFS volumes after 2022. Examples of non-GHG lifecycle impacts of biofuel production and use include changes in land use, fertilizer use, runoff, water use and quality, local pollutant emissions from vehicles utilizing biofuels, and use of forestland biomass. OAR did examine impacts of the RFS program on some non-GHG pollutants, as well as impacts on water quality and quantity, as part of its 2010 RIA (which included the 2010 GHG lifecycle analysis). However, it has not done so since. Reports subsequent to OAR’s 2010 analysis emphasize the importance of analyzing non-GHG lifecycle impacts. Both ORD’s 2011 Report to Congress and the 2011 NAS study referenced the importance of lifecycle assessments for biofuels (see blue box).”*

The above discussion is not relevant to the title of the section “RFS lifecycle GHG threshold analysis.” OAR suggests removing, moving into the Section 204 discussion, or adding new section headers and separating this as its own section.