

Technical Charge to External Peer Reviewers

Contract No. EP-C-17-017

Task Order 68HERH20F0120 (ERG Task 51)

December 2022

External Peer Review of EPA's Draft:

“Biofuels and the Environment: Third Triennial Report to Congress”

INTRODUCTION

Under Section 204 of the 2007 Energy Independence and Security Act (EISA), the U.S. Environmental Protection Agency (EPA) is required to submit, on a triennial basis, a report to Congress on the impacts to date and likely future impacts of the Renewable Fuel Standard (RFS) Program. EPA published *Biofuels and the Environment: First Triennial Report to Congress*,¹ the first report in the Section 204 series, in December 2011. EPA published *Biofuels and the Environment: Second Triennial Report to Congress*,² the second report in the Section 204 series, in June 2018. The draft of the third report in this series, *Biofuels and the Environment: Third Triennial Report to Congress* (RtC3), is the subject of this peer review.

EISA Section 204 specifies that each triennial report should address the RFS Program's impacts to date and likely future impacts on the following:

- Environmental issues, including air quality, effects on hypoxia, pesticides, sediment, nutrient and pathogen levels in waters, acreage and function of waters, and soil environmental quality.
- Resource conservation issues, including soil conservation, water availability, and ecosystem health and biodiversity, including impacts on forests, grasslands, and wetlands.
- The growth and use of cultivated invasive or noxious plants and their impacts on the environment and agriculture.
- The annual volume of imported renewable fuels and feedstocks for renewable fuels, and the environmental impacts outside the United States of producing such fuels and feedstocks.
- Recommendations for actions to address any adverse impacts found.

ERG, an EPA contractor, has selected nine subject matter experts to serve on an independent external review panel. Collectively, these experts have expertise in nine key areas relevant to RtC3: (1) land use change and remote sensing, (2) agronomy (including tillage practices, water use, and chemical applications [including nutrients, pesticides, and herbicides related to biofuel feedstock production]); (3) agricultural economics, including partial and general equilibrium economic modeling, (4) hypoxia and other impairment of water quality related to feedstock and biofuel production; (5) soil science; (6) air quality; (7) ecology, ecosystems, and biodiversity; (8) biofuel conversion processes; and (9) international biofuel trade and international impacts of biofuel production. During their review of RtC3, peer reviewers will address the following charge questions.

¹ U.S. EPA. *Biofuels and the Environment: First Triennial Report to Congress* (Final Report, 2011). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-10/183F, 2011.

² U.S. EPA. *Biofuels and the Environment: Second Triennial Report to Congress* (Final Report, 2018). U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-18/195, 2018.

CHARGE QUESTIONS

Part 1: Background and Drivers (Chapters 1 to 5)

For background at the start of the review, all reviewers should read Chapters 1 and 2. While there are no charge questions associated with Chapters 1-5³, reviewers should incorporate any comments they may have on any of these chapters into their response to the chapter-specific charge questions below, as appropriate, or into their response to Question 5 (additional comments).

Part 2: Chapters 6 and 7: Attribution to the RFS Program

Question 1: In the First and Second Triennial Reports to Congress on Biofuels (RtC1 and RtC2, respectively), the Agency could not separate the effects of the RFS Program from the effects of other factors (e.g., market or other policy effects). Many factors simultaneously influenced the production and use of domestic corn ethanol in the U.S., including the need for fuel oxygenates to replace methyl-tert-butyl-ether (MTBE) in gasoline, the Volumetric Ethanol Excise Tax Credit (VEETC), high oil prices, and dozens of individual state biofuel programs and MTBE bans over this period. Because attribution was identified as a major knowledge gap in previous reports, this report includes a new emphasis on attribution, referred to in this report as an “attribution analysis.” Part 2 in this report (Chapters 6 and 7) covers the attribution analysis of the RtC3. For each chapter that you review:

- a) Please describe your overall impressions of the clarity and technical accuracy of material presented in the chapter.
- b) Are the most important data and recent relevant literature cited and appropriately interpreted? Have any important studies that would affect the conclusions been omitted? Please identify any data, literature, or studies you think should be added and describe why you recommend they be included.
- c) Please comment on the selection and use of models (e.g., econometric models, general and partial equilibrium models), the accuracy of analyses, and accuracy of inferences.
- d) Are the conclusions and recommendations described in the “Chapter Synthesis” section supported by the material presented? Please describe any suggestions for improvement.
- e) Does the chapter identify the uncertainties and limitations associated with its conclusions? Please describe any suggestions for improvement.

Part 3: Chapters 8 to 16: Environmental and Resource Conservation Issues

Question 2: In Part 3, Chapters 8 through 16 characterize scientific evidence on potential impacts of biofuel production on air quality, soil quality, water quality, water use and availability, terrestrial ecosystem health and biodiversity, aquatic ecosystem health and biodiversity, wetland ecosystem health and biodiversity, invasive or noxious plant species, and international effects, respectively. For each chapter you review:

- a) Please describe your overall impressions of the clarity and technical accuracy of the material presented in the chapter.

³ Note there are also no charge questions for Chapter 17, which is a compilation of other chapters.

- b) Are the most important data and recent relevant literature cited and appropriately interpreted? Have any important studies that would affect the conclusions been omitted? Please identify any data, literature, or studies you think should be added and describe why you recommend they be included.
- c) Please comment on the selection and use of models where applicable to a given chapter (e.g., GREET, BEIOM, EPIC, SWAT), the accuracy of analyses, and accuracy of inferences.
- d) Are the conclusions and recommendations described in the “Chapter Synthesis” section supported by the material presented? Please describe any suggestions for improvement.
- e) Does the chapter identify the uncertainties and limitations associated with its conclusions? Please describe any suggestions for improvement.
- f) Are the graphics, glossary, and other supporting material useful in clarifying and supporting the discussion and conclusions in the chapter (and supporting Appendices, if any)? Please describe any suggestions for improvement.

All Chapters

Question 3: Considering all chapters you reviewed, as well as the background chapters in Part 1, does the report address the requirements of Section 204 as set forth in Chapter 1 and as reflected in the scope set forth in Chapter 2? If not, please describe what should be added, removed, or changed.

Executive Summary and Integrated Synthesis

Question 4: The Executive Summary provides a high-level overview of the report, and the Integrated Synthesis provides a more detailed overview, including RtC3 scope and content, the report’s conclusions and recommendations, a comparison of RtC3 conclusions with those of RtC2, and a discussion of future reports under EISA Section 204.

- a) Is the presentation of information in the Executive Summary clear? Is the Executive Summary appropriately distilled down from the Integrated Synthesis and the broader RtC3? Please describe any suggestions for improvement.
- b) Is the presentation of information in the Integrated Synthesis clear? Is the Integrated Synthesis appropriately distilled down from the broader RtC3? Please describe any suggestions for improvement.

General

Question 5. Please provide any additional comments you may have on the draft RtC3.