

EPA Issues Notice of Data Availability Concerning Renewable Fuels Produced from Grain Sorghum Under the RFS Program

The U.S. Environmental Protection Agency (EPA) is issuing a Notice of Data Availability (NODA) to release its lifecycle greenhouse gas (GHG) analysis of grain sorghum used as a feedstock to produce ethanol under the Renewable Fuel Standard (RFS) program. The release of the NODA provides the public an opportunity to comment on EPA's analysis.

EPA's analysis shows that grain sorghum, when used to make ethanol at facilities that use natural gas, will meet the lifecycle greenhouse gas emissions reduction threshold of 20% required by the Energy Independence and Security Act (EISA) of 2007 for conventional renewable fuel. When grain sorghum is used to make ethanol at facilities that use biogas digesters in combination with combined heat and power technology, it will meet the lifecycle greenhouse gas emissions reduction threshold of 50% required by EISA for advanced renewable fuel.

Background

In the final RFS2 rule, published in March 2010, EPA assessed the lifecycle GHG emissions of multiple renewable fuel pathways (defined as feedstock, fuel type, and fuel production process). Assessment of lifecycle GHG emissions is necessary to determine which fuel pathways meet the GHG reduction thresholds for the four renewable fuel categories specified in Clean Air Act (CAA) Section 211 (o), as amended by the Energy Independence and Security Act of 2007 (EISA). The CAA

requires a 20% reduction in lifecycle GHG emissions for renewable fuel produced at new facilities (those constructed after EISA enactment), a 50% reduction for biomass-based diesel or advanced biofuel, and a 60% reduction for cellulosic biofuel.

Assessing whether a fuel pathway meets these thresholds requires a comprehensive evaluation of the lifecycle GHG emissions of the renewable fuel as compared to the lifecycle GHG emissions of the gasoline or diesel fuel that it replaces. The CAA defines lifecycle GHG emissions as follows:

The term ‘lifecycle greenhouse gas emissions’ means the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Administrator, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.¹

In the final rule, EPA focused our lifecycle analysis on fuels that were anticipated to contribute relatively large volumes of renewable fuel by 2022, and thus did not cover all fuels that either are contributing or could potentially contribute to the program. In the preamble to the final rule, EPA indicated that we would continue to examine several additional pathways not analyzed for the final rule, including those from grain sorghum, and would complete this process through a supplemental rulemaking process. This NODA presents our analysis of potential pathways for ethanol produced from a grain sorghum feedstock.

Lifecycle Analysis

In order to calculate lifecycle GHG emissions for the NODA regarding grain sorghum biofuel pathways, EPA utilized models developed for the final (RFS2) rule. These models take into account energy and emissions inputs for fuel and feedstock production, distribution, and use, as well as economic models that predict changes in agricultural markets.

EPA used the same general approach to estimate global land use change GHG emissions from using grain sorghum as a feedstock as we have used to analyze other biofuel pathways.

Pathway Determinations

EPA’s analysis found that ethanol produced from grain sorghum have an estimated lifecycle GHG emissions reduction of 32% when produced at dry mill ethanol facilities that use natural gas, and 53% when produced at dry mill ethanol facilities that use biogas in combination with combined heat and power technology, compared to the baseline gasoline fuel it would replace. Therefore, grain sorghum ethanol produced at plants using natural gas meets the minimum 20% GHG emissions reduction threshold for conventional biofuels, and grain sorghum ethanol

¹ Clean Air Act Section 211(o)(1)

produced at plants using biogas in combination with combined heat and power technology meets the 50% GHG emissions reduction threshold for advanced biofuels as required by EISA.

Administrative Process

With this NODA, EPA is soliciting comments on our analysis of the pathways for ethanol produced from grain sorghum. We will consider all relevant comments received and will inform the public of any resulting revisions in our analyses. Public notification could be accomplished in one of several formats, such as Federal Register notice, a rulemaking action or a guidance document. The appropriate form of public notification will depend on the outcome of any reanalysis we deem appropriate after consideration of public comments.

For More Information

For more information, please visit the RFS website at:

www.epa.gov/otaq/fuels/renewablefuels/index.htm

To submit a question on the RFS program, and to view Frequently Asked Questions, please visit:

www.epa.gov/otaq/fuels/renewablefuels/compliancehelp/index.htm