

September 9, 2020

Administrator Andrew Wheeler
U.S. Environmental Protection Agency
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W.
Mail Code: 1101A
Washington, D.C. 20460

**Re: Petition for Rulemaking to Clarify that Carbon Dioxide Emissions from
Agricultural Crops are Exempt from PSD and Title V Permitting Requirements**

Dear Administrator Wheeler:

The Biogenic CO₂ Coalition¹ hereby petitions EPA for a rulemaking to amend its PSD and Title V regulations at 40 C.F.R. § 51.166, 40 C.F.R. § 52.21, 40 C.F.R. § 70.2, and 40 C.F.R. § 71.2 to clarify that carbon dioxide emissions from agricultural crops used in food processing and other manufacturing activities are *de minimis* and therefore are not subject to regulation under those provisions.

When biogenic feedstocks are processed at stationary sources, carbon dioxide emitted from the feedstocks are offset completely by the carbon dioxide that the feedstocks absorbed during photosynthesis. This is particularly true for agricultural crops, as carbon emissions are offset rapidly during the crops' next growing season. There is a broad scientific consensus that, because of photosynthesis, emissions from processing agricultural crops are carbon neutral or *de minimis*. And they accordingly are treated as carbon neutral under regulatory schemes for stationary sources around the world, as well as several other regulatory programs in the United States.

Yet, in the PSD and Title V programs, EPA currently treats biogenic emissions the same as emissions from fossil fuels. The Biogenic CO₂ Coalition therefore respectfully requests that EPA bring its PSD and Title V regulations in line with scientific evidence and the prevailing regulatory treatment of biogenic emissions by exempting carbon dioxide emissions from agricultural crops.

¹ The Biogenic CO₂ Coalition is composed of trade associations that represent a cross-section of interests in agriculture and related industries. It advocates for rational, science-based policies that recognize the carbon benefits of agricultural crops. Members include: American Farm Bureau Federation (AFBF), Corn Refiners Association (CRA), Hemp Industries Association (HIA), National Corn Growers Association (NCGA), National Cotton Council of America (NCC), National Cottonseed Products Association (NCPA), National Farmers Union (NFU), National Grain and Feed Association (NGFA), National Oilseed Processors Association (NOPA), North American Millers Association (NAMA), and the Plant Based Products Council (PBPC).

Doing so would eliminate a roadblock to further development in the United States' agricultural system, which is essential to feeding our country, creating jobs, and developing important bioproducts like medical-grade alcohols and bioplastics. It would also reduce an administrative burden on EPA and state agencies, while retaining those agencies' ability to regulate other emissions from corn mills and similar stationary sources. Furthermore, it would not conflict with EPA's treatment of biogenic emissions under other regulatory programs like the RFS.

This petition discusses the scientific and legal support for such a rule, analyzes the treatment of biogenic CO₂ in other jurisdictions and under other U.S. regulatory programs, and provides an example of potential regulatory language. The Biogenic CO₂ Coalition requests a technical meeting to review the petition with EPA staff and discuss any additional questions they may have regarding this petition or any of those topics.

I. Background

Under EPA's current regulatory framework for the PSD and Title V programs, greenhouse gas emissions from agricultural crops are treated the same as greenhouse gas emissions from fossil fuels. *See* 40 C.F.R. § 51.166; 40 C.F.R. § 52.21; 40 C.F.R. § 70.2; 40 C.F.R. § 71.2. As a result, carbon dioxide emissions from agricultural crops that are processed in fermentation units or other equipment at stationary sources may be subject to PSD and Title V permitting requirements. That regulatory burden has caused facilities that generate food, beverages, fuel, and bioproducts either to incur substantial costs or, in many cases, avoid investments that would expand their operations but require additional permitting and compliance obligations.

EPA can fix that problem. EPA has recognized that emissions from biogenic feedstocks including annual agricultural crops *could* be considered carbon neutral or *de minimis* for purposes of stationary source regulations. In its 2011 rule deferring regulation of biogenic emissions under the PSD and Title V programs (the "Deferral Rule"), EPA acknowledged that biomass feedstocks including agricultural crops could potentially "be used to produce energy or other products" in a way that would "have a negligible impact on the net carbon cycle, or even a positive impact." 76 Fed. Reg. 43,490, 43,499 (July 20, 2011). Nonetheless, EPA chose not to make a determination at that time as to whether emissions from particular biomass feedstocks are carbon neutral or *de minimis*. *Id.*²

Additionally, a 2014 memo authored by Janet McCabe described EPA's intent to promulgate regulations identifying categories of biogenic emissions that would be exempt from Best Available Control Technology (BACT) requirements under the PSD program. EPA has not promulgated such regulations to date.

As the Deferral Rule and the 2014 McCabe memo recognized, EPA has authority to determine that biogenic carbon emissions from certain feedstocks are *de minimis* and therefore

² The Deferral Rule was later vacated by the D.C. Circuit Court in *Ctr. for Biological Diversity v. EPA*, 722 F.3d 401, 404 (D.C. Cir. 2013) for reasons unrelated to EPA's authority to exempt biogenic carbon dioxide emissions from the PSD and Title V programs.

exempt from requirements under the PSD and Title V programs. That authority was further noted in *UARG v. EPA*, 573 U.S. 302, 333 (2014), in which the Supreme Court acknowledged that “EPA may establish an appropriate *de minimis* threshold below which BACT is not required for a source’s greenhouse-gas emissions.” Indeed, the Supreme Court held that EPA *must* make such a *de minimis* determination because “EPA may require an anyway source to comply with greenhouse-gas BACT *only* if the source emits more than a *de minimis* amount of greenhouse gases.” *Id.* (emphasis added).

EPA should promulgate a rule that clarifies that carbon dioxide emissions from agricultural crops are not subject to the requirements of the PSD and Title V programs, including BACT. As explained in further detail below, such a rule would provide significant economic and administrative benefits, is supported by abundant scientific evidence, and would be consistent with both other countries’ treatment of biogenic emissions from stationary sources and with other regulatory programs in the United States.

II. Scientific Consensus Regarding Emissions from Agricultural Crops

There is scientific consensus that emissions from agricultural crops are carbon neutral when comparing the uptake of carbon dioxide by those crops to the emissions from a stationary source. A recent literature review found that 104 out of 108 peer-reviewed scientific articles consider emissions from agricultural crops and other biomass to be carbon neutral.³ Notably, the authors of those articles took several different approaches to assessing the emissions from biogenic sources, including input-output approaches, modified Global Warming Potential (“GWP”) assessment, and neutrality approaches, and every one either concluded or assumed that biogenic emissions were carbon neutral.⁴

The few articles that have questioned the carbon neutrality of biogenic emissions suffer from methodological uncertainties and rely on oversimplified modeling. As Dr. Seungdo Kim of Michigan State University has explained, models that have concluded biogenic emissions add carbon to the atmosphere “struggle[] with uncertainties related to inconsistent system boundaries, selection of periods for evaluation, economic conditions and weather dependence.”⁵ In particular, those models assume that all changes in agricultural systems are a result of biofuel and bioenergy use despite a myriad of factors that can contribute to those changes.⁶ For example, factors such as changes in demand for agricultural products or improvements in the yields of crops can offset or obscure any relationship between biofuels and land use.⁷

³ Seungdo Kim, *Literature Review of Biogenic CO2 Emissions From Industrial Processes Associated with Annual Crops* (July 21, 2020) (attached as Exhibit A).

⁴ *Id.*

⁵ *Id.*

⁶ *Id.*

⁷ *See id.*; Dermot Hayes, *Land Use Impacts of a Reform of the U.S. Environmental Agency Rule Associated with Carbon Dioxide Emissions from Processing of Annual Crops* at 3 n.3 (2020) (attached as Exhibit B) (acknowledging that “I and several of my coauthors on the Searchinger

The consensus view that biogenic emissions are carbon neutral is reflected in the guidelines of the Intergovernmental Panel on Climate Change (“IPCC”) for greenhouse gas inventories. The IPCC’s guidelines, which are based on the common understanding of scientists from around the world, exclude biogenic emissions when assessing national or sectoral carbon emissions.⁸ Following the IPCC’s Guidelines, EPA’s Inventory of Greenhouse Gas emissions for the United States likewise do not include biogenic emissions in the emissions totals for the energy sector.⁹

The science is particularly clear for annual crops because of their short lifecycle. Any emissions from fermentation or other processing of agricultural crops are quickly offset by the carbon absorbed during those crops’ next growing season. As the IPCC has explained, the biomass stock of agricultural crops lost due to harvesting and processing “equal[s] biomass carbon stock gained through regrowth in that same year and so there are no net CO₂ emissions or removals from biomass carbon stock changes.”¹⁰ Relying in part on the IPCC’s analysis, USDA has also found that there are no net carbon dioxide emissions from the lifecycle of agricultural crops.¹¹ And researchers from Michigan State University have specifically found that processing of annual crops through activities such as wet and dry milling of corn is not a net source of carbon emissions.¹²

While EPA has previously noted its 2014 *Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources* that “[c]arbon neutrality cannot be assumed for all biomass energy a priori,”¹³ that statement was based on considerations other than the balance between emissions from stationary sources and the uptake of carbon by crops. In particular, the 2014 Framework considered “biological carbon cycle effects related to leakage, such as indirect land use change induced by displaced feedstock or feedstock substitute production.”¹⁴ The 2014 Framework was

report I later showed that the key Searchinger land use result could be offset if higher corn prices induced higher corn yields.”)

⁸ See 2006 IPCC Guidelines for National Greenhouse Gas Inventories Vol. 2 at 2.3.3.4.

⁹ EPA, *Inventory of Greenhouse Gas Emissions and Sinks 1990-2018*, ES-9 (2020); see also *id.* at ES-9 (“In line with the reporting requirements for inventories submitted under the UNFCCC, CO₂ emissions from biomass combustion have been estimated separately from fossil fuel CO₂ emissions and are not included in the electricity sector totals and trends.”)

¹⁰ IPCC, *Frequently Asked Questions - IPCC Task Force on National Greenhouse Gas Inventories (TFI), General Guidance and Other Inventory Issues*, <https://www.ipcc-nggip.iges.or.jp/faq/FAQ.pdf> (last visited May 31, 2020).

¹¹ USDA, Office of Chief Economist, *Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory*, at 3-43 (July 2014), available at http://www.usda.gov/oce/climate_change/estimation.htm.

¹² See, e.g., S. Kim and B. Dale, *The Biogenic Carbon Cycle in Annual Crop-Based Products*, Department of Chemical Engineering and Materials Science Michigan State University (Nov. 22, 2013).

¹³ EPA, *Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources* (Nov. 2014), available at <https://archive.epa.gov/epa/sites/production/files/2016-08/documents/framework-for-assessing-biogenic-co2-emissions.pdf>.

¹⁴ *Id.* at 7.

thus considering indirect emissions attributed to use of biomass, not just the emissions from the processing or combustion of biomass itself.

The 2014 Framework did not dispute that emissions from agricultural crops are carbon neutral when comparing uptake by crops to emissions from stationary sources. It also acknowledged that “the scope for assessing the net atmospheric contributions of biogenic CO₂ emissions can be narrow or quite broad, depending on the purposes and objectives of assessment.”¹⁵ As discussed in further detail Section V, the appropriate scope for purposes of the PSD and Title V programs is to recognize that any carbon dioxide emissions from agricultural crops at a stationary source are offset entirely by the uptake of carbon from growing crops.

Indeed, EPA’s Science Advisory Board recently criticized the failure of the 2014 framework to “identify the specific metric of climate impact (or ‘objective’) with resulting regulations that [Biogenic Assessment Factor] estimate should reflect.”¹⁶ The Science Advisory Board also explicitly noted that carbon dioxide emissions from agricultural feedstocks “have no net impact on above-ground carbon stocks” because “the time lag between harvest, CO₂ emissions from conversion to energy, and regrowth on land is likely to be close to one year.”¹⁷

Moreover, even if potential indirect land use changes are considered, carbon emissions from agricultural crops at stationary sources nonetheless would be *de minimis*. A recent analysis by Professor Dermot Hayes of Iowa State University found that, if EPA exempted carbon dioxide emissions from agricultural crops from PSD and Title V regulations, it would trigger at most an annual increase in land conversion of about 24,500 hectares per year, which would be equivalent to carbon emissions of about 28,000 tons per year.¹⁸ That total amount is less than the 75,000 tons per year that EPA has considered *de minimis* for a *single stationary source*.¹⁹

III. Treatment of Agricultural Emissions in Other Jurisdictions and Other U.S. Regulatory Programs

The scientific consensus is that emissions from agricultural crops are not a significant source of GHGs. That consensus is reflected in the stationary source regulations of other countries and jurisdictions and in other regulatory programs in the United States.

For example, all biogenic emissions are treated as carbon neutral under Europe’s Emissions Trading System. Europe’s Emissions Trading System is a cap-and-trade program that sets an overall cap on emissions from covered sources and then allows companies to purchase or sell

¹⁵ *Id.*

¹⁶ EPA Science Advisory Board, *SAB review of Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources*, EPA-SAB-19-002, 1 (Mar. 5, 2019).

¹⁷ *Id.* at 13.

¹⁸ Dermot Hayes, *Land Use Impacts of a Reform of the U.S. Environmental Agency Rule Associated with Carbon Dioxide Emissions from Processing of Annual Crops* at 9 (2020) (attached as Exhibit B).

¹⁹ *Id.*

emissions allowances.²⁰ Operators of stationary sources and other covered sources must calculate their GHG emissions based on the releases from their activities, multiplied by an “emissions factor” specific to the type of industrial activity and fuel used.²¹ The Emissions Trading System directive sets the emissions factor for all biomass at zero.²² As a result, “no allowances for emissions stemming from biomass have to be surrendered, and the associated costs are avoided.”²³

Similarly, Canada excludes biogenic emissions from its regulations governing emissions from certain Electrical Generation Units (“EGUs”). Specifically, Canada’s regulations subtract the amount of biogenic emissions from the calculation of the carbon dioxide emitted by an EGU.²⁴ In response to comments on those regulations, Canada’s Governor General in Council explained that Canada’s treatment of biogenic emissions is based on the determination in the IPCC’s 2006 guidelines that “CO₂ emissions from biomass combustion are not accounted for because they are assumed to be reabsorbed by vegetation during the next growing season.”²⁵

EPA also has considered biogenic emissions to be carbon neutral in other contexts. As discussed above, EPA does not include biogenic emissions in the energy sector totals of its National Inventory of Greenhouse Gases.²⁶ In addition, EPA’s regulations implementing the Renewable Fuel Standard (“RFS”) program treat tailpipe emissions from automobiles as carbon neutral when assessing the lifecycle emissions of biofuels. 75 Fed. Reg. 14,670, 14,787 (Mar. 26, 2010). EPA reasoned that including those emissions would be inaccurate “because the carbon emitted as a result of fuel combustion is offset by the uptake of biogenic carbon during feedstock production.” *Id.*; see also 74 Fed. Reg. 24,904, 25040 (May 26, 2009) (“[O]ver the full lifecycle of the fuel, the CO₂ emitted from biomass-based fuels combustion does not increase atmospheric CO₂ concentrations, assuming the biogenic carbon emitted is offset by the uptake of CO₂ resulting from the growth of new biomass.”)

The Argonne National Laboratory’s Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (“GREET”) model, which EPA relied on in developing its RFS regulations, likewise assumes that carbon emissions from fermentation or combustion of

²⁰ See European Commission, *EU Emissions Trading System*, https://ec.europa.eu/clima/policies/ets_en (last visited Aug. 10, 2020).

²¹ Directive 2003/87/EC of the European Parliament and of the Council, Annex IV (Oct. 13, 2003), available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32003L0087&from=EN>.

²² *Id.*

²³ European Commission, *Guidance Document: Biomass issues in the EU ETS* (Nov. 17, 2017), available at https://ec.europa.eu/clima/sites/clima/files/ets/monitoring/docs/gd3_biomass_issues_en.pdf.

²⁴ Government of Canada, Reduction of Carbon Dioxide Emissions from Coal-fired Generation of Electricity Regulations, P.C. 2012-1060 (Aug. 30, 2012), available at <http://www.gazette.gc.ca/rp-pr/p2/2012/2012-09-12/html/sor-dors167-eng.html>.

²⁵ *Id.*

²⁶ EPA, *Inventory of Greenhouse Gas Emissions and Sinks 1990-2018*, ES-9 (2020).

agricultural feedstocks is zero.²⁷ The Argonne National Laboratory explained that while processes such as the conversion of corn starch to ethanol “produce[] excess CO2 emissions,” they “should not be classified as CO2 emissions” “because the CO2 generated is from the atmosphere during the photosynthesis process.”²⁸

IV. Benefits of Recognizing the *De Minimis* Nature of Emissions from Agricultural Crops

The U.S. agricultural system feeds the nation and provides important bioproducts made from corn, oilseeds, agricultural residues, and other agricultural feedstocks, including medical-grade alcohol and bioplastics. As of 2016, America’s bioeconomy was valued at \$495 billion and provided 4.65 million American jobs, with each job creating an additional 1.78 jobs in other sectors across rural America. Sound regulatory policies that maximize certainty would help facilitate further growth in that important economic sector going forward.

EPA’s current policy regarding biogenic carbon emissions creates an unnecessary burden that discourages investment in the bioeconomy. In order to avoid compliance and permitting costs, companies have canceled or modified their plans for new or expanded facilities. Promulgating a rule exempting carbon dioxide emissions from agricultural crops from PSD and Title V requirements would eliminate that roadblock and help unleash additional investments. Without the burden of those costs, companies that process agricultural crops would be able to expand operations in ways that would provide additional high-paying jobs and would have significant positive impacts on the rural economy. In addition, those companies would have more opportunity to innovate, including through developing new bioplastics or other beneficial bioproducts. Companies might also invest in efficiency measures that would reduce GHG emissions and emissions of other pollutants per unit output.

Moreover, EPA’s current regulations create a competitive disadvantage for the U.S. bioeconomy because they present additional hurdles and costs not faced by manufacturers of bioproducts, food, and beverages in Europe or other jurisdictions. Bringing the United States’ treatment of carbon emissions from agricultural crops in line with the prevailing treatment of those emissions around the world would level the playing field.

Another benefit of exempting carbon dioxide emissions from agricultural crops from PSD and Title V permitting requirements would be preserving administrative resources. It would eliminate the obligations of EPA and state agencies to develop complicated quantification and control measures for biogenic emissions from a variety of different crops and processing activities. It would also reduce the burdens of permit review that typically fall on state agencies, many of which already have strained resources. And such a rule would not hinder the ability of EPA and state agencies to regulate other emissions at corn mills and other processing facilities—such facilities would still need to comply with PSD and Title V requirements for GHG emissions from fossil fuels and for emissions of other pollutants, as well as state permitting requirements

²⁷ See M.Q. Wang, *REET 1.5 - Transportation Fuel-Cycle Model, Vol. 1: Methodology, Development, Use, and Results*, at 76 (ANL/ESD-39, Vol. 1) (Aug. 1999), available at <https://reet.es.anl.gov/publication-20z8ihl0>.

²⁸ *Id.*

and reporting obligations.

V. Relationship to Other Regulatory Programs

Other regulatory programs in the United States analyze or quantify aspects of biogenic carbon emissions in different ways. But that does not mean that promulgating a rule exempting carbon dioxide emissions from agricultural crops from PSD and Title V permitting requirements would be inconsistent with those programs. Rather, those programs are tackling different problems using different statutory authorities.

Such a rule would not conflict with the RFS. The RFS is an incentive program designed to encourage adoption of biofuels, rather than a regulatory program like PSD and Title V that establish permitting requirements and technological controls for emissions from stationary sources. Under the RFS, EPA assesses emissions associated with a variety of components of the broader renewable fuel economy, including the energy inputs of growing feedstocks and the energy used in transporting feedstocks and fuels.²⁹ That type of lifecycle analysis is mandated by the RFS statute, which requires EPA to assess GHG emissions “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.” 42 U.S.C. § 7545(o)(1)(H). The RFS is a different statutory scheme than the statutory scheme for PSD and Title V programs, which focus on permitting and emissions limitations for major stationary sources. *See* 42 U.S.C. § 7475(a)(1); 42 U.S.C. § 7661c. And it is different in an important way: the RFS compares all of the energy used to produce, transport, and distribute renewable fuels to the same energy inputs for petroleum. In contrast, the PSD and Title V programs only assess the emissions of fossil fuels *from stationary sources*—considering factors like the energy used to transport agricultural crops and other biomass under PSD and Title V would therefore be inappropriate when those factors are not considered for fossil fuels.

Moreover, EPA’s RFS regulations recognize that biogenic emissions from automobile tailpipes are carbon neutral because they are canceled out by the uptake of carbon by biofuel feedstocks. 75 Fed. Reg. 14,670, 14,787 (Mar. 26, 2010); *see* Section III, *supra*. As discussed above, the emissions from the tailpipes of cars are the part of the renewable fuel lifecycle that is most analogous to emissions from stationary sources. What causes renewable fuels to have positive net lifecycle emissions values for RFS purposes are other factors, particularly the energy inputs of transporting feedstocks and finished products. The emissions from mobile sources transporting biomass are not properly regulated under Title V and PSD, which are programs that regulate only emissions from stationary sources.

Nor would such a rule be in tension with EPA’s mandatory GHG reporting regulations. While those regulations require reporting of biogenic GHG emissions for certain stationary sources, they are clear that such reporting is not a trigger for any particular control or permitting

²⁹ *See* EPA, *Lifecycle Analysis of Greenhouse Gas Emissions under the Renewable Fuel Standard*, <https://www.epa.gov/renewable-fuel-standard-program/lifecycle-analysis-greenhouse-gas-emissions-under-renewable-fuel> (last visited Aug. 15, 2020).

obligation. 74 Fed. Reg. 56,260, 56,351 (Oct. 30, 2009). Moreover, the way biogenic emissions are treated in the GHG reporting rule recognizes their unique nature—biogenic emissions are not counted for purposes of a facility’s reporting threshold, and once a facility meets the threshold based solely on non-biogenic GHG emissions, it then reports biogenic emissions as a separate category. *Id.* In the preamble to the GHG reporting rule, EPA described its system as consistent with the IPCC’s treatment of biogenic emissions. *Id.* EPA explained that while the IPCC guidelines and other national inventories account for biogenic emissions “as part of a comprehensive system-wide tracking of carbon dioxide emissions and sequestration in the land-use, land-use change and forestry sector and the agriculture sector, rather than at the point of fuel combustion,” it is nonetheless useful to collect information on both biogenic and non-biogenic GHG emissions because such information is “useful and informative.” *Id.*

As EPA has recognized, different approaches to quantifying biogenic carbon emissions can be appropriate in different contexts.³⁰ For the PSD and Title V programs, the appropriate approach is to recognize that the carbon dioxide emissions attributable to processing of agricultural crops at stationary sources is offset by the uptake of carbon by crops and is therefore *de minimis*.

VI. Conclusion

For the foregoing reasons, EPA should amend its regulations to clarify that carbon dioxide emissions from agricultural crops processed at stationary sources are not subject to the requirements of the PSD and Title V programs.

One way to accomplish such an amendment would be to insert the following language in paragraph (b)(49)(ii)(a) of 40 C.F.R. § 52.21, paragraph (b)(48)(ii)(a) of 40 C.F.R. § 51.166, paragraph (2) of 40 C.F.R. § 70.2, and paragraph (2) of 40 C.F.R. § 71.2:

For purposes of this paragraph, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions attributable to agricultural crops (including agricultural products, by-products, residues, and wastes) used in food processing or manufacturing activities such as: (a) fermentation; (b) baking; or (c) other methods used to generate food, fuel, beverages, or bioproducts.

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If you have any questions regarding the issues raised in this petition, please do not hesitate to contact John Bode at (202) 534-3499.

³⁰ EPA, Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources (Nov. 2014), *available at* <https://archive.epa.gov/epa/sites/production/files/2016-08/documents/framework-for-assessing-biogenic-co2-emissions.pdf>.

Respectfully Submitted,



John Bode
President & CEO, Corn Refiners Association
Chairman, Biogenic CO2 Coalition

Enclosures:

Exhibit A—Seungdo Kim, *Literature Review of Biogenic CO2 Emissions From Industrial Processes Associated with Annual Crops* (July 21, 2020).

Exhibit B—Dermot Hayes, *Land Use Impacts of a Reform of the U.S. Environmental Agency Rule Associated with Carbon Dioxide Emissions from Processing of Annual Crops* (2020).