

December 16, 2016

VIA ELECTRONIC FILING

Hon. Gina McCarthy, Administrator
U.S. Environmental Protection Agency
c/o E-Docket ID No. EPA–HQ–OAR–2015-0355
William Jefferson Clinton Federal Building
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Re: Comments of the Biogenic CO₂ Coalition – EPA Proposed Revisions to the Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas (GHG) Permitting Regulations and Establishment of a Significant Emissions Rate (SER) for GHG Emissions Under the PSD Program, 81 Fed. Reg. 68110 (Oct. 3, 2016)

Dear Administrator McCarthy:

The Biogenic CO₂ Coalition (“Coalition”)¹ appreciates the opportunity to submit these comments on EPA’s proposed Revisions to the Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas (GHG) Permitting Regulations and Establishment of a Significant Emissions Rate (SER) for GHG Emissions Under the PSD Program, which the agency has proposed under the federal Clean Air Act (referred to herein as the “Significance Rule”).

The Coalition has previously commented on various EPA proposals to regulate greenhouse gases including, principally, EPA’s proposed Standards of Performance for Greenhouse Gas Emissions From Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 1430 (Jan. 8, 2014) (EPA-HQ-OAR-2013-0495) (“NSPS Rule”); Carbon Pollution Emission Guidelines for Existing Sources: Electric Utility Generating Units, 79 Fed. Reg. 34830 (June 18, 2014) (EPA-HQ-OAR-2013-0602) (“CPP Rule”); and Proposed Finding That Greenhouse Gas Emissions From Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated to Endanger Public Health and Welfare and Advance Notice of Proposed Rulemaking, 80 Fed. Reg. 37758 (July 1, 2015) (EPA-HQ-OAR-2014-0828) (“Aircraft Rule”). Our prior comments on all greenhouse gas regulatory policies are incorporated by reference herein. Our comments have concerned primarily the implications of EPA’s policy approach to “biogenic CO₂,” meaning carbon dioxide emitted from the processing or energy use of agricultural feedstocks.

¹ The Coalition consists of the following stakeholders: American Bakers Association, American Farm Bureau Federation, Corn Refiners Association, Enginuity Worldwide, National Corn Growers Association, National Cotton Council of America, National Cottonseed Products Association, National Oilseed Processors Association, and North American Millers’ Association.

The stakeholders represented by the Biogenic CO₂ Coalition grow or process various agricultural crops and farm products, typically short-cycle annual herbaceous crops and crop residues. Together with others in the agricultural community, and supported by federal and state agriculture departments, our members are investing billions of dollars in the “bioeconomy,” which promotes bioenergy technology and pioneering “green chemistry” approaches to produce food, fiber, consumer products, pharmaceuticals, bioplastics, biofuels, commercial chemicals, and a cornucopia of other bioproducts from crop-derived materials. The bioeconomy provides 21st century solutions to economic growth, domestic energy security, jobs, and environmental benefits in the form of bioenergy, biofuels, and bioproducts made from corn, oilseeds, crop residues, farm wastes and other agricultural feedstocks. America’s bioeconomy currently contributes \$393 billion in economic activity, provides 4.2 million American jobs, and is the leading source of domestic renewable energy in the United States. Importantly, the bioeconomy is poised to expand exponentially with the right policy environment. *See* USDA, *An Economic Impact Analysis of the U.S. Biobased Products Industry* (Oct. 2016) (the “2016 Biomass Report”).²

While providing food, fuel and fiber to American families, the bioeconomy also reduces CO₂ by 400 million tons every year through uptake of carbon by growing crops, thus playing a critical role in achieving climate policy goals.³ The benefits of agriculture as a renewable and sustainable resource are widely recognized, and the life-cycle carbon benefits of biogenic emissions from the use or processing of biomass have been universally acknowledged by policymakers and scientists.⁴

Members of the Biogenic CO₂ Coalition are eager to grow and expand the bioeconomy over the coming decades. Naturally, because bioproducts are made from carbon-based organic materials, some amount of carbon in those materials is cycled back into the atmosphere when agricultural feedstocks are used or processed by energy combustion, fermentation, or microbial wastewater treatment (referred to as “crop-derived CO₂” or “biogenic CO₂”). EPA’s current policies and regulations – which in some situations treat biogenic CO₂ the same as fossil fuels and essentially put a carbon tax on farm products – are thwarting investment in the bioeconomy. EPA has failed to put science first by failing to distinguish between fossil-based emissions, which EPA has said contribute to global warming, and crop-derived emissions, which are carbon neutral by nature. Instead of recognizing the natural life cycle of agricultural carbon, EPA instead has inadvisedly labeled biogenic CO₂ as a harmful pollutant under the Clean Air Act.

Farm feedstocks are not the same as fossil fuels or petrochemicals. To the contrary, American farmers growing crop-based feedstocks have already done the hard work of uptaking carbon from the atmosphere during the growth cycle. When agricultural feedstocks are used for energy, turned into bioproducts, or processed for food, fiber and fuel, the “biogenic” emissions from these processes are simply returning carbon to the atmosphere that farmers have already removed from the carbon cycle as part of the natural carbon flow. The science of life-cycle

² Available at www.biopreferred.gov/BPResources/files/BiobasedProductsEconomicAnalysis2016.pdf.

³ *See* 2016 Biomass Board Report at 6 (Feb. 2016).

⁴ *See* 2016 Biomass Board Report at 7 (“Biobased products . . . recycle carbon (CO₂) from the atmosphere, resulting in air quality improvements when compared to fossil fuel-based products”).

emissions shows that emissions of crop-derived CO₂ resulting from energy use or processing of crop-derived feedstocks are harmless from a global warming standpoint and do not contribute to elevated atmospheric concentrations of greenhouse gases. Until this basic science is embraced fully by Administration policy, the bioeconomy will be hobbled from achieving its full promise.

Accordingly, as part of its pending mandate from the Supreme Court to revisit its interpretation of the scope of greenhouse gas regulation under the Clean Air Act (discussed below), EPA should define key terms in its regulations to exclude carbon-neutral biogenic emissions. Similarly, in the context of the proposed Significance Rule, EPA must not deny the scientific reality of life-cycle emissions and should categorize agricultural biogenic emissions as insignificant or *de minimis* for purposes of the PSD and Title V programs, as well as other Clean Air Act programs and policies, including EPA’s Clean Power Plan.

I. UNDER SUPREME COURT MANDATE, EPA MUST REVISIT ITS INTERPRETATION OF THE CLEAN AIR ACT AND SET DE MIMINIS LEVELS FOR “POLLUTANTS”

As EPA acknowledges in the preamble of the proposed Significance Rule,⁵ its proposal is a response to a series of federal court rulemaking challenges to EPA’s greenhouse gas regulations, culminating in the U.S. Supreme Court’s seminal decision in *Util. Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014) (“*UARG*”), and the D.C. Circuit’s amended judgment on remand from *UARG* in *Coalition for Responsible Regulation v. EPA*, No. 09-1322, 606 F. Appx 6, 8 (D.C. Cir. Apr. 4, 2015). These decisions vacated certain aspects of the Obama Administration’s regulation of greenhouse gases under the PSD and Title V permitting programs and announced important principles of law, which EPA must now observe.⁶ In *UARG*, the Supreme Court explicitly recognized the agency’s authority to establish significance (or *de minimis*) levels for regulated pollutants. *See, e.g., UARG*, 134 S. Ct. at 2449 (“EPA may establish an appropriate *de minimis* threshold . . . for a source’s greenhouse-gas emissions”). Importantly, the Supreme Court also ruled that the agency’s interpretation of the statutory term “pollutant” under the Clean Air Act is a context-specific definitional exercise and, as a corollary, directed EPA to interpret the statute in such a way as to give meaning to the context in which pollutants are identified or regulated. *See, e.g., UARG*, 134 S. Ct. at 2439 (“where the term ‘air pollutant’ appears in the Act’s operative provisions, EPA has routinely given it a narrower, context-appropriate meaning”).

The D.C. Circuit echoed this material aspect of the Supreme Court’s opinion by ordering EPA to respect the Supreme Court’s mandate and on remand “consider whether any further revisions to its regulations are appropriate in light of *Util. Air Regulatory Group v. EPA*, 134 S. Ct. 2427, 189 L. Ed. 2d 372, and if so, undertake to make such revisions.”⁷ EPA has acknowledged

⁵ 81 Fed. Reg. at 68110-11.

⁶ The Supreme Court in *UARG* invalidated EPA’s greenhouse gas program to the extent it required stationary sources to obtain permits solely because the sources emit or have the potential to emit greenhouse gases above applicable thresholds, thereby limiting the applicability of permitting to “anyway sources” that would be regulated under the permitting programs regardless of greenhouse gas emissions.

⁷ *Coal. for Responsible Regulation*, 606 F. Appx 6 at 8.

as much in the proposed rule.⁸ Because EPA is under a legal mandate to re-examine its existing policies and regulations affecting greenhouse gas emissions with a context-specific lens – a principle that applies equally to biogenic emissions – the Significance Rule should reflect this watershed directive from the Supreme Court and should establish once and for all an exemption for agricultural biogenic emissions.

Put another way, EPA must consider whether Congress would have intended that biogenic emissions be classified as a subset of the larger set of pollutants within the definition of “any air pollutant.” See *UARG*, 134 S. Ct. at 2448. As discussed below, due to the nature of biogenic emissions and their lack of harmful effect, EPA cannot properly interpret the term “air pollutant” to include biogenic emissions within the context of the Clean Air Act regulatory programs and EPA’s previous endangerment finding. As a corollary, if biogenic emissions are not properly interpreted as harmful pollutants under the category of “air pollutant,” then biogenic emissions would not be considered as “regulated” pollutants and should not be subjected to Clean Air Act programs such as PSD and Title V permitting programs.

A contrary interpretation would result in exactly the “enormous and transformative expansion in EPA’s regulatory authority without clear congressional authorization” that the Supreme Court sought to avoid in *UARG* by requiring EPA to re-visit its interpretation of “air pollutant” under the Clean Air Act statutory scheme. *UARG*, 134 S. Ct. at 2444, 2448. The agricultural community is legitimately concerned that EPA is using its current policy with regard to biogenic emissions as a basis for (1) regulating natural CO₂ from biological processes like bread baking, (2) attempting to define “sustainability” on the farm field, and (3) disqualifying agricultural feedstocks as low-carbon fuels under its Clean Power Plan. There is no indication in the Clean Air Act that Congress intended that EPA exercise this type of sweeping authority over agricultural production. See *UARG*, 134 S. Ct. at 2444 (courts should be skeptical “when an agency claims to discover in a long-extant statute an unheralded power to regulate a significant portion of the American economy”). The Supreme Court’s ruling in *Michigan v. EPA*, 135 S. Ct. 2699 (2015), is similarly instructive, in that the Court’s admonition that EPA cannot presume from Congressional silence an inability to consider economic ramifications would apply by the same logic to EPA’s apparent position that it can ignore the life-cycle science of biogenic emissions. As in the case of EPA’s overreach in regulating major sources of fossil emissions that was struck down in *UARG*, the concerns repeatedly raised by the agricultural community expressing alarm at the illogical impact of EPA’s regulation on farms and food processors “should have alerted EPA that it had taken a wrong interpretive turn” with respect to biogenic emissions. *UARG*, 134 S. Ct. at 2446.

Because EPA is proposing changes to the definition of “greenhouse gases” in the Significance Rule,⁹ EPA should take the opportunity to re-evaluate its interpretation of the Clean Air Act and endangerment finding based on an acknowledgment that biogenic emissions are part of the natural carbon flow cycle, and should clarify that its regulatory definitions exclude biogenic

⁸ 81 Fed. Reg. at 68112:1.

⁹ 81 Fed. Reg. at 68112.

emissions from those regulatory programs aimed at “harmful” pollution. Clarifying the limitations of EPA’s regulation will avoid an expansive interpretation of the Clean Air Act that would essentially put EPA in the position of regulating the entire agricultural sector, from growing crops on the farm field to baking bread.

Notwithstanding that EPA is under a mandate (issued nearly two years ago) to re-interpret the scope of its greenhouse gas program, the Significance Rule proposal does not currently address crop-derived biogenic CO₂ emissions. Nor has EPA proposed any separate significance level applicable specifically to biogenic emissions. EPA’s failure to respond to the Supreme Court’s mandate puts the agency in contempt of the D.C. Circuit’s explicit remand order and in contempt of the Supreme Court’s clear instructions. Unless EPA takes the actions described in these comments, including an exemption for agricultural biogenic emissions, EPA will not be able to “fully implement” the Court’s mandate as the agency admits that it must do.¹⁰ To the extent that EPA takes a second look at its prior positions concerning biogenic emissions under the *UARG* mandate and revises its flawed interpretive stance by appropriately exempting biogenic emissions, the agency may do so without re-publishing the Significance Rule for a further round of public comment under the Administrative Procedure Act, and therefore could include such an exemption in the final rule.¹¹

II. EPA MUST DISTINGUISH SCIENTIFICALLY BETWEEN BIOGENIC AND FOSSIL EMISSIONS

In its various greenhouse gas regulations applicable to stationary sources, EPA failed to recognize the scientific distinction between CO₂ emissions from biogenic sources, such as annual agricultural crop feedstocks, and fossil-based emissions from combustion of fossil fuels. The basic science of carbon life-cycle analysis establishes that crop-based biogenic emissions are part of the natural carbon “flow,” which is part of the natural biological stocks of carbon in the world’s climate system.¹² In other words, biogenic CO₂ is part of the baseline of roughly 280 parts per million (ppm) of pre-industrial atmospheric CO₂ that is essential for a stable climate and life on Earth.

Under the Clean Air Act, EPA may regulate greenhouse gases from stationary sources only if such sources cause or contribute to “air pollution which may reasonably be anticipated to endanger public health or welfare.”¹³ In its 2009 Endangerment Finding, EPA identified “elevated” levels of CO₂ in the atmosphere, in other words, excess levels above the natural pre-industrial baseline, as the harmful pollutant endangering the environment.¹⁴ However, as

¹⁰ 81 Fed. Reg. at 68112.

¹¹ See *Perez v. Mortgage Bankers Ass’n*, 135 S. Ct. 1199 (2015) (interpretative rules, even changes to previous definitive positions, are not subject to APA informal rulemaking procedures).

¹² See, e.g., Seungdo Kim, Ph.D and Bruce E. Dale, Ph.D, *The Biogenic Carbon Cycle in Annual Crop-Based Products*, Michigan State University (Nov. 22, 2013) (available at www.biogenicCO2.com).

¹³ Clean Air Act § 111(b)(1)(A), 42 U.S.C. § 7411(b)(1)(A).

¹⁴ Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496, 66516 (Dec. 15, 2009) (the “2009 Endangerment Finding”) (“The Administrator finds

discussed below, biogenic CO₂ is part of the baseline of natural flows of carbon dioxide, not excess to the baseline.

Despite this indisputable science, EPA has in a number of settings entirely refused to recognize life-cycle science. For example, in guidance applicable to the PSD and Title V program, Assistant Administrator Janet McCabe stated that “EPA plans to propose revisions to the PSD rules to include an exemption for the [BACT] requirement for GHGs from waste-derived feedstocks and from non-waste biogenic feedstocks derived from sustainable forest or agricultural practices . . . if the applicant can demonstrate that these feedstocks in fact come from sustainably managed lands . . . all other biogenic feedstocks . . . would remain subject to the GHG BACT requirement at this time”¹⁵ This rather backhand phrasing in the McCabe memo means from a legal perspective that biogenic CO₂ emissions are viewed by EPA as harmful pollutants that cause climate change. Similarly, in its controversial Clean Power Plan, EPA again treated biogenic CO₂ from agricultural feedstocks the same as fossil fuels by disqualifying biomass energy feedstocks as low-carbon fuels unless producers meet certain “sustainability” criteria. These phantom criteria, which are nowhere defined in the Clean Power Plan rulemaking and which appear nowhere in the statutory text of the Clean Air Act as authored by Congress, are inscrutable and unworkable, and again assume that biogenic CO₂ is a harmful pollutant.¹⁶ Most recently, EPA stated in its August 2016 final Aircraft Rule in stark categorical terms that “there is no distinction between biogenic and non-biogenic CO₂.”¹⁷

EPA never did propose an exemption for waste-derived or sustainable agricultural feedstocks as it signaled in the 2014 McCabe Memo, nor has it acknowledged the life-cycle carbon neutrality of crop-derived biogenic CO₂ emissions. Rather, the agency has continued to take the position that all biogenic CO₂ from agricultural processes will be regulated as if those emissions were from combustion of fossil fuels. This position has created paralyzing uncertainty in the context of facility permitting in the bioeconomy, as stakeholders have no idea how biogenic CO₂ will be treated in the regulatory context. Many proposed projects, involving millions of investment dollars and hundreds of American jobs, have been unable to proceed in the face of such uncertainty and attendant litigation risk, and the few that have gone forward have bogged down in years of

that *elevated* concentrations of greenhouse gases in the atmosphere may reasonably be anticipated to endanger the public health and to endanger the public welfare of current and future generations.”) (emphasis added).

¹⁵ See Janet McCabe, Assistant Administrator, *Addressing Biogenic Carbon Dioxide Emissions from Stationary Sources*, dated Nov. 19, 2014 (“McCabe Memo”), posted at [http://www.epa.gov/climatechange/downloads/Biogenic-CO₂-Emissions-Memo-111914.pdf](http://www.epa.gov/climatechange/downloads/Biogenic-CO2-Emissions-Memo-111914.pdf).

¹⁶ See *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Final Rule*, 80 Fed. Reg. 64662, 64886 (Oct. 23, 2015) (“Given the importance of sustainable land management in achieving the carbon goals of the President’s Climate Action Plan, sustainably-derived agricultural and forest biomass feedstocks may also be acceptable as qualified biomass in a state plan, if the state-supplied analysis of proposed qualified feedstocks or feedstock categories can adequately demonstrate that such feedstocks or feedstock categories appropriately control increases of CO₂ levels in the atmosphere and can adequately monitor and verify feedstock sources and related sustainability practices.”).

¹⁷ *Finding That Greenhouse Gas Emissions From Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare*, 81 Fed. Reg. 54422 (Aug. 15, 2016).

litigation.¹⁸ All of this has a stultifying effect on investment in the bioeconomy and rural development.

EPA’s policy toward biogenic CO₂, and the unjustified burden placed on the agricultural sector, is not only misguided policy, it is illegal for several reasons. First, as described at greater length below, EPA has never completed an endangerment finding for biogenic CO₂, which is a prerequisite under the Clean Air Act for regulation as a pollutant. Accordingly, EPA should interpret its previous endangerment findings as having excluded biogenic emissions such that biogenic emissions from agricultural sources are not subject to regulation. Second, even if EPA had included biogenic emissions in its endangerment finding (which it did not), science supports a policy determination that biogenic emissions are insignificant and harmless from a global warming perspective. EPA’s failure over the last half decade to acknowledge life-cycle science and its attempt to exert regulatory power over the agricultural system is without precedent and *ultra vires*. Notwithstanding the legal deficiencies in EPA’s existing policies, the situation can readily be resolved by providing a *de minimis* determination for crop-derived biogenic CO₂ emissions in the Significance Rule.

III. EPA HAS NOT MADE AN ENDANGERMENT FINDING WITH RESPECT TO BIOGENIC CO₂ EMISSIONS

Prior to regulating emissions as pollution under the Clean Air Act, EPA must determine that the air emission at issue “causes, or contributes significantly to, air pollution which may reasonably be anticipated to endanger public health or welfare.”¹⁹ In its 2009 Endangerment Finding for greenhouse gases from motor vehicles, EPA determined that “*elevated* concentrations of greenhouse gases in the atmosphere may reasonably be anticipated to endanger the public health and to endanger the public welfare of current and future generations.”²⁰ However, nowhere in this 2009 rulemaking did EPA study and determine with any acceptable level of scientific detail the effect of biogenic emissions on climate change or whether biogenic emissions properly should be considered a harmful pollutant under the Clean Air Act. As noted, biogenic emissions are part of the baseline levels of CO₂ that are necessary for life on Earth, not part of any “elevated” levels ascribed to emissions from fossil fuels.

A. EPA Must Distinguish Between Biogenic and Fossil Emissions In Terms of Contribution to “Elevated” Concentrations of Greenhouse Gas

The Clean Air Act and supporting case law provide EPA clear legal authority to distinguish between biogenic CO₂ emissions and greenhouse gas emissions from other sources such as fossil

¹⁸ See, e.g., *Helping Hand Tools v. United States EPA*, 836 F.3d 999 (9th Cir. 2016) (multi-year litigation over whether facility must burn natural gas instead of biomass for electricity on the basis of opponents’ denial of the science of life-cycle emissions).

¹⁹ See, e.g., 42 U.S.C. § 7411(b)(1)(A); see also *National Asphalt Pavement Ass’n v. Train*, 539 F.2d 775, 783 (D.C. Cir. 1976).

²⁰ Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule, 74 Fed. Reg. 66496, 66516 (Dec. 15, 2009) (emphasis added).

fuel combustion. Congress granted authority to EPA to regulate only those emissions that endanger the environment (*i.e.*, harmful emissions) as stationary source pollutants. Unlike CO₂ emissions from fossil sources, biogenic CO₂ emissions do not increase net atmospheric levels of CO₂.²¹ EPA lacks the authority to regulate biogenic CO₂ emissions under the Clean Air Act because biogenic emissions do not adversely affect the environment. But even if EPA had the authority to regulate biogenic CO₂ emissions, it has significant discretion to exclude or provide different treatment for such emissions.

EPA itself has recognized in other contexts the lack of any adverse effect from agricultural biogenic CO₂ emissions. For example, EPA’s Mandatory Reporting of Greenhouse Gases Rule distinguishes biogenic CO₂ from other emissions, and actually exempts reporting of process emissions from the food processing industry.²² Likewise, in its Renewable Fuel Standard 2 rulemaking, EPA explained that “[f]or renewable fuels, tailpipe emissions only include non-CO₂ gases, because the carbon emitted as a result of fuel combustion is offset by the uptake of biogenic carbon during feedstock production.”²³ The Department of Energy and USDA, along with virtually every government agency in the world to take up the issue, similarly have recognized the lack of any adverse effect from biogenic CO₂ emissions.²⁴ It would be remarkable if EPA, alone in the world, regulated biogenic emissions the same as fossil emissions.

B. EPA Did Not Consider Biogenic Emissions in the 2009 Endangerment Finding

In fact, EPA has never actually determined, one way or the other, that biogenic emissions contribute to climate change. EPA has based its regulation of CO₂ emissions from stationary sources, such as power plants, on the predicate of its 2009 Endangerment Finding for “tailpipe” emissions from motor vehicles.²⁵ Whatever the merit of EPA’s position with respect to fossil-based emissions, EPA never specifically addressed biogenic emissions in its 2009 Endangerment Finding.

In its 2009 Endangerment Finding addressing fossil fuel combustion in motor vehicles, EPA concluded that elevated concentrations of six well-mixed greenhouse gases (including CO₂) in the atmosphere are harmful to (*i.e.*, endanger) the environment.²⁶ EPA then determined that this harmful greenhouse gas pollution results directly from emissions of those six greenhouse gases

²¹ As has been well documented, net fluxes of biomass CO₂ to the atmosphere from agricultural sources are, at a minimum, “carbon neutral” in that any CO₂ emissions associated with the combustion of biomass are offset completely by the significant role domestic forests and agriculture play in sequestering carbon as the nation’s leading carbon sink.

²² See generally Mandatory Reporting of Greenhouse Gases, 74 Fed. Reg. 56260 (Oct. 30, 2009).

²³ *Regulation of Fuels and Fuel Additives: Changes to Renewable Fuel Standard Program; Final Rule*, 75 Fed. Reg. 14670, 14,787 (Mar. 26, 2010).

²⁴ See 2016 Biomass Board Report at 7 (“Biobased products . . . recycle carbon (CO₂) from the atmosphere, resulting in air quality improvements when compared to fossil fuel-based products”).

²⁵ 74 Fed. Reg. 66496, 66540 (Dec. 15, 2009).

²⁶ See, *e.g.*, 74 Fed. Reg. at 66497: 2-3, 66498: 1, 66516: 2-3, 66536: 3.

from stationary sources and motor vehicles.²⁷ But it is evident from a review of the 2009 Endangerment Finding that EPA did not address the science of biogenic emissions.

One can search the 2009 Endangerment Finding in vain for any mention of biogenic emissions. The word “biogenic” appears nowhere in the endangerment finding and the term “biomass” is used twice, but neither in reference to the significance of biogenic emissions. There is no substantive discussion at all in the endangerment finding of biogenic emissions or the life-cycle aspects of biogenic feedstocks within the atmospheric and terrestrial carbon cycle. Nor did the endangerment finding, which EPA has asserted as the basis for regulation of all carbon dioxide emissions at stationary sources (including agricultural processing facilities and bioenergy plants) ever discuss the scientific distinction between biogenic emissions and fossil emissions from the perspective of elevated concentrations of greenhouse gas. Therefore, there is simply no extant endangerment finding applicable to agricultural biogenic CO₂ emissions that would justify regulation of biogenic CO₂ emissions as a harmful pollutant under the PSD or Title V program, or any other aspect of the Clean Air Act.

To the contrary, the 2009 Endangerment Finding was based on the IPCC Fourth Assessment Report of 2007 and EPA’s annual *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, both of which exclude biogenic CO₂ emissions on the basis of their carbon neutrality.²⁸ For example, one of EPA’s principal conclusions in support of the 2009 Endangerment Finding was that fossil-based emissions from combusting petroleum fuel in motor vehicles represented twenty-three percent of total U.S. emissions of greenhouse gases.²⁹ But EPA’s assessment of motor vehicle emissions as a share of United States greenhouse gas emissions specifically excluded biogenic CO₂ emissions because it was based on the United States Greenhouse Gas Inventory for year 2009.³⁰ The 2009 Inventory itself states at page 3-1: “Carbon dioxide emissions from [combustion of biomass and biomass-based fuels] are not included in national emissions totals because biomass fuels are of biogenic origin. It is assumed that the C [carbon] released during consumption of biomass is recycled as U.S. forest and crops regenerate, causing no net addition of CO₂ to the atmosphere.” In the absence of a prerequisite endangerment finding applicable to biogenic CO₂ emissions, biogenic emissions from the processing of agricultural feedstocks or use as bioenergy cannot be considered a pollutant under the Clean Air Act or regulated as dangerous industrial pollutants.

A closer review of the history of EPA’s positions with respect to biogenic emissions leading up to the 2009 endangerment finding confirms the interpretation that “harmful” greenhouse gas pollution does not include biogenic emissions. As noted, EPA’s 2009 Endangerment Finding quantifies greenhouse gas emissions by reference to its 2009 Emissions

²⁷ See 74 Fed. Reg. at 66497-99.

²⁸ See, e.g., 74 Fed. Reg. at 66510; 66537.

²⁹ 74 Fed. Reg. at 66540.

³⁰ See 74 Fed. Reg. at 66539 n.41 and 66540; *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (April 2009) p. 2-5 Table 2-1 n. b and p. 3-1 (excluding biogenic CO₂ emissions based on principles of carbon neutrality) (“2009 Emissions Inventory”).

Inventory.³¹ This is also reflected in the technical support documents accompanying the 2009 Endangerment Finding.³² EPA has acknowledged that its 2009 Emissions Inventory conforms to the system of emissions accounting established by the Intergovernmental Panel on Climate Change (IPCC) and articulated in the 2006 IPCC Guidelines.³³ Consistent with the 2006 IPCC Guidelines recommendation that each inventory place emissions of CO₂ from combustion of biomass in the section devoted to forestry and land-use changes, as opposed to the section devoted to energy production, EPA's emissions inventories report emissions from combustion of biogenic feedstocks separately as a "Memo item" in the U.S. GHG Inventory and do not include biogenic emissions in the energy sector calculations.³⁴ Similarly, consistent with the IPCC guidance, any carbon stock changes related to the use of biogenic feedstocks in the energy sector, and the CO₂ emissions associated with those carbon stock changes, are accounted for under the forestry and/or agricultural sectors of the U.S. GHG Inventory.³⁵

The 2006 IPCC Guidelines as they apply to the land-use/forestry sector characterize biogenic emissions as carbon neutral because: "Biomass associated with annual and perennial herbaceous (*i.e.*, non-woody) plants is relatively *ephemeral*, *i.e.*, it decays and regenerates annually or every few years. So emissions from decay are balanced by removals due to re-growth making overall net C [carbon] stocks in biomass rather stable in the long term."³⁶ Consequently, the 2006 IPCC Guidelines recommend that: "The change in biomass is only estimated for perennial woody crops. For annual crops, increase in biomass stocks in a single year is assumed equal to biomass losses from harvest and mortality in that same year - thus there is no net accumulation of biomass stocks."³⁷ As further support for the notion that biomass emissions are carbon neutral, a "Frequently Asked Questions" (FAQ) document on the same IPCC website as the 2006 IPCC Guidelines addresses the question "Do the IPCC Guidelines consider biomass used for energy to

³¹ See, *e.g.*, 74 Fed. Reg. at 66510:2-3; 66537:1 ("To date, the focus of UNFCCC actions and discussions has been on the six greenhouse gases that are the same focus of these [endangerment] findings. As a party to the UNFCCC, EPA annually submits the *Inventory of US. Greenhouse Gas Emissions and Sinks to the Convention*, which reports on national emissions of anthropogenic emissions of the well-mixed greenhouse gases."); 66539-40.

³² EPA, *Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act*; Vol. 4 (Dec. 7, 2009) (EPA-HQ-OAR-2009-0171-11645) ("TSD4") at 2-3 ("Primary GHGs that are directly emitted by human activities in general are reported in EPA's annual *Inventory of US. Greenhouse Gas Emissions and Sinks* and include carbon dioxide . . . The primary effect of these gases is their influence on the climate system by trapping heat in the atmosphere that would otherwise escape to space."); TSD4 at 6 (Table 1.1); TSD4 at 11-12.

³³ 5 IPCC, 2006 IPCC Guidelines for National Greenhouse Gas Inventories (<http://www.ipccnggip.iges.or.jp/public/2006gl/index.html>); 2009 Emissions Inventory, at 1-2:1, 7-1.

³⁴ See 2006 IPCC Guidelines Vol. 1, at 1.5-1.6.

³⁵ See 79 Fed. Reg. at 1441 n.46.

³⁶ 2006 IPCC Guidelines Vol. 4, at 2.11 (emphasis added).

³⁷ *Id.* at 5.7 (§ 5.2.1.1) (emphasis added); see also *id.* at 5.26 ("In subsequent years, change in biomass of annual crops is considered zero because carbon gains in biomass from annual growth are offset by losses from harvesting.").

be carbon neutral?”³⁸ The answer given by the FAQ with respect to annual herbaceous crop-derived biomass is: “For annual crops, the IPCC Guidelines assume that biomass carbon stock lost through harvest and mortality equal 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.”³⁹

The IPCC indisputably views biogenic CO₂ emissions from annual crops as carbon neutral because biogenic emissions are inconsequential to the global warming process on a life-cycle basis. Consistent with the *2006 IPCC Guidelines*, EPA’s *2009 Emissions Inventory*, which as noted is the foundation of its 2009 Endangerment Findings, accounts for emissions from agricultural lands only to the extent of “changes in organic C stocks in mineral and organic soils due to land use and management, and emissions of CO₂ due to the application of crushed limestone and dolomite to managed land (*i.e.*, soil liming and urea fertilization).”⁴⁰ EPA’s approach to emissions accounting expressly excludes any quantification of the carbon flux attributable to growth, harvest, and fate of agricultural crop material, because that flux is “relatively small and ephemeral.”⁴¹ EPA’s use of the term “ephemeral” is a clear reference to the *2006 IPCC Guidelines* and the IPCC’s recognition that biogenic emissions are insignificant from the standpoint of increases in atmospheric greenhouse gas concentrations that cause global warming.

The U.S. Department of Agriculture has similarly concluded that biogenic CO₂ emissions are insignificant on a life-cycle basis as their effect is ephemeral. In July 2014, USDA, through its Office of Chief Economist, issued Technical Bulletin 1939,⁴² which stated at page 3.43 of that bulletin that: “Both IPCC (2006) and U.S. Environmental Protection Agency (2011) consider herbaceous biomass carbon stocks to be ephemeral, and recognize that there are no net emissions to the atmosphere following crop growth and senescence during one annual crop cycle (West et al., 2011).” Similarly, in May 2014, the World Resources Institute (WRI) and World Business Council on Sustainable Development (WBCSD), which are recognized private-sector leaders in formulating greenhouse gas emissions inventory guidance, issued guidance⁴³ which at page 62 states: “The biomass associated with annual and perennial herbaceous vegetation is relatively ephemeral – reductions in these biomass stocks from harvesting, the burning of crop residues, or the integration of crop residues into soils, are balanced by stock increases from plant re-growth over a period of only one to a few years. Consequently, companies should also not report any sequestration in herbaceous biomass stocks.” The use of the term “ephemeral” in both of the above-quoted passages is no accident. The term was originally used by the IPCC in its 2006 emissions inventory guidance to characterize CO₂ emissions from combustion or microbial treatment of herbaceous crop-derived material and was later repeated in the IPCC’s FAQ

³⁸ See Q2-10, at 9 (<http://www.ipcc-nggip.iges.or.jp/faq/FAQ.pdf>).

³⁹ *Id.*

⁴⁰ *2009 Emissions Inventory* at 7-1.

⁴¹ *2009 Emissions Inventory* at 7-27:2, 7-39:1, 7-43:1, 7-47:2.

⁴² USDA, *Quantifying Greenhouse Gas Fluxes in Agriculture and Forestry: Methods for Entity-Scale Inventory* (http://www.usda.gov/oce/climate_change/estimation.htm).

⁴³ WRI/WBCSD, *GHG Protocol Agricultural Guidance* (<http://www.ghgprotocol.org/standards/agriculture-guidance>).

document, which equated “ephemeral” in this context with carbon neutral – a scientific view being echoed now by USDA and WRI/WBCSD.

In sum, because EPA excluded biogenic emissions from its *2009 Emissions Inventory*, and because EPA’s 2009 Endangerment Finding defined “harmful” pollution by reference to those greenhouse gases in the 2009 Emissions Inventory (*i.e.*, those emissions that the global scientific community had identified as elevated concentrations of greenhouse gas), biogenic emissions were never part of EPA’s 2009 Endangerment Finding and there is no predicate for regulation of biogenic emissions as harmful pollution under the Clean Air Act. This conclusion is consistent with the scientific consensus that emissions of crop-based biogenic CO₂ are inconsequential to the global warming process – they effect no change in carbon stocks and, therefore, cause no harm.

The position that biogenic CO₂ emissions are insignificant and do not warrant an endangerment finding comports with numerous other EPA pronouncements regarding the carbon-neutral or *de minimis* nature of agricultural feedstock emissions. For example, the final rule for EPA’s 2007 Renewable Fuel Standard Program (RFS1) required the exclusion of CO₂ from the combustion by motor vehicles of corn ethanol in comparisons of the lifecycle greenhouse gas emissions of such fuel against the lifecycle emissions of gasoline.⁴⁴ As EPA explained in that rule: “[I]n the long run 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. *Thus ethanol’s carbon can be thought of as cycling from the environment into the plant material used to make ethanol and, upon combustion of the ethanol, back into the environment from which it came.* As a result, CO₂ emissions from biomass-based fuels combustion are not included in their lifecycle emission results and are not used in the CO₂ displacement index calculations shown above.”⁴⁵ Similarly, EPA’s proposal in May 2009 of the current Renewable Fuel Standard Program (RFS2) took the same position not only with respect to combustion by motor vehicles of corn ethanol, but also with respect to combustion of biomass in boilers to produce the corn ethanol.⁴⁶ EPA explained in that rulemaking, which was contemporaneous with its work on the 2009 endangerment finding, that “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.”⁴⁷

Three months after promulgation of the 2009 Endangerment Finding, EPA reiterated in the final RFS2 rule its position that biogenic CO₂ emissions are insignificant.⁴⁸ The final RFS2 rule, which EPA was finalizing at the same time that it promulgated the 2009 endangerment finding, relied on emission factors in the Argonne National Laboratory’s spreadsheet analysis tool known

⁴⁴ See 72 Fed. Reg. 23900, 23982-83 (May 1, 2007).

⁴⁵ *Id.* (emphasis added).

⁴⁶ See 74 Fed. Reg. 24904, 25039: 3, 25040:1 (May 26, 2009).

⁴⁷ *Id.* at 25040:1.

⁴⁸ See 75 Fed. Reg. 14670, 14787:2 (Mar. 26, 2010).

as “Greenhouse gases, Regulated Emissions, and Energy use in Transportation” (GREET).⁴⁹ The GREET model assigns a zero value to all CO₂ emissions from (i) combustion of annual herbaceous crop-derived biomass to generate steam at a fuel ethanol plant; (ii) fermentation of biomass to generate fuel ethanol; and (iii) combustion of the fuel ethanol by motor vehicles.⁵⁰ In fact, the EPA study explains (at page 76): “Conversion of corn starch to ethanol produces excess CO₂ emissions. Because the CO₂ generated is from the atmosphere during the photosynthesis process, it should not be classified as CO₂ emissions . . . In this study, we assume that lignin is burned in cellulosic ethanol plants to provide steam needed for ethanol production and electricity. While combustion of lignin undoubtedly produces CO₂ emissions, these emissions come from the atmosphere through the photosynthesis process for biomass growth. Thus, the CO₂ emissions from biomass combustion are treated as zero in the GREET model. For the same reason, the CO₂ emissions from ethanol combustion in ethanol vehicles are treated as zero.” Consistent with the GREET model, EPA’s Regulatory Impact Analysis for the final RFS2 rule echoes conclusions in the final RFS2 rule, noting that: “The emission factors for the different fuel types are from GREET and were based on assumed carbon contents of the different process fuels . . . The emissions from combustion of biomass fuel source are not assumed to increase net atmospheric CO₂ levels. Therefore, CO₂ emissions from biomass combustion as a process fuel source are not included in the lifecycle GHG inventory of the biofuel production plant.”⁵¹ Likewise, in administering the RFS2 program, EPA has continued to exclude biogenic emissions from combustion and fermentation of agricultural feedstocks from its comparisons of the lifecycle emissions of newly-proposed biofuels against the lifecycle emissions of corresponding fossil fuels.⁵²

EPA has continued to maintain the position that biogenic emissions are harmless in other contexts subsequent to the 2009 Endangerment Finding, such as its Climate Leaders voluntary greenhouse gas reduction program⁵³ and its 1605(b) voluntary reporting program which it co-administers with the Department of Energy. The government’s position in these programs has been simply that “carbon dioxide emissions of biogenic fuels do not ‘count’ as anthropogenic emissions.”⁵⁴ Consistent with this position, EPA has continued using the same language regarding

⁴⁹ See 75 Fed. Reg. at 14769:3, 14782:2.

⁵⁰ See M.Q. Wang, *GREET 1.5 - Transportation Fuel-Cycle Model, Vol. 1: Methodology, Development, Use, and Results*, at 76 (ANL/ESD-39, Vol. 1) (Aug. 1999) (<https://www.anl.gov/energy-systems/publication/greet-15-transportation-fuel-cycle-model-volume-1-methodology-development>).

⁵¹ See EPA, *Renewable Fuel Standard Program (RFS2) Regulatory Impact Analysis*, at 424 (Feb. 2010) (EPA-420-R-10-006) (<https://www.epa.gov/sites/production/files/2015-08/documents/420r10006.pdf>) (“RFS2 RIA”).

⁵² See, e.g., Wang *et al.*, *Energy and greenhouse gas emission effects of corn and cellulosic ethanol with technology improvements and land use changes*, *Biomass and Bioenergy*, Vol. 35, at 1885, 1891:2, 1892:2 (2011) (“A positive energy balance by corn ethanol is possible because only fossil energy used to produce ethanol is taken into account in energy balance calculations. The energy for corn plant growth via photosynthesis is solar energy and is not considered.”).

⁵³ EPA, *Climate Leaders, Greenhouse Gas Inventory Protocol Core Module Guidance, Direct Emissions from Stationary Sources*, § 1.2 (May 2008) (EPA-430-K-08-003) (“[I]t is assumed that combustion of biofuels do not contribute to net addition of CO₂ to the atmosphere.”).

⁵⁴ U.S. DOE, *Technical Guidelines, Voluntary Reporting of Greenhouse Gases (1605(b)) Program*, at 51 (“By accounting convention, though, carbon dioxide emissions of biogenic fuels do not ‘count’ as anthropogenic

the harmless nature of biogenic emissions and relying on the same IPCC guidance in its greenhouse gas emission inventories.⁵⁵

EPA’s position that biogenic CO₂ emissions are insignificant is securely rooted in fundamental science. As explained by leading experts in life-cycle emissions from Michigan State University, Dr. Seungdo Kim and Bruce E. Dale, in the attached technical report (Attachment A, hereto), each carbon atom released in the form of CO₂ directly from combustion, fermentation or wastewater treatment of agricultural crop-based materials is the same carbon atom that the herbaceous plants incorporated into that matter through photosynthesis. Those processes merely return to the atmosphere carbon atoms that were already there only a short time ago. Thus, biogenic emissions cause no change in carbon stocks, do not contribute to elevated concentrations of greenhouse gases, and cause no harm through the global warming process.⁵⁶

It was in the context of this regulatory history that EPA finalized its 2009 Endangerment Finding, which assumed that biogenic CO₂ emissions were insignificant and not part of the “harmful” greenhouse gas pollution identified as endangering the environment. The context and EPA’s contemporaneous positions with regard to biogenic CO₂ also explain the complete lack of any discussion of biogenic emissions in the 2009 Endangerment Finding. In other words, EPA felt no need to discuss biogenic emissions since it was not making an endangerment finding that implicated emissions from agricultural feedstocks. Any other interpretation of the 2009 Endangerment Finding ignores the history of EPA’s rulemaking and program administration and the contextual setting in which biogenic emissions have been considered carbon neutral by global consensus.

The only indication that EPA ever considered biogenic emissions in its 2009 Endangerment Finding comes from EPA’s response-to-comments document (“2009 RTC”), which was issued by EPA in conjunction with the 2009 endangerment finding. In the 2009 RTC, a stakeholder asked EPA to exclude biogenic CO₂ emissions from the endangerment finding on the grounds that biogenic emissions do not contribute to endangerment of health and welfare. In its response, EPA rejected that request, stating that “all CO₂ emissions, regardless of source, influence radiative forcing equally once it reaches the atmosphere and therefore there is no distinction between biogenic and non-biogenic CO₂ regarding the CO₂ and other well-mixed GHGs within the

emissions under the Framework Convention on Climate Change because the carbon embedded in biogenic fuels is presumed to form part of the natural carbon cycle.”); 77 (“Reporters that operate vehicles using pure biofuels within their entity should not add the carbon dioxide emissions from those fuels to their inventory of mobile source emissions because such emissions are considered biogenic and the recycling of the carbon is not credited elsewhere.”) (Jan. 2007) (<http://www.eia.gov/oiaf/1605/January2007/1605bTechnicalGuidelines.pdf>).

⁵⁵ See, e.g., *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2011*, at 7-1, 7-31, 7-44, 7-49, 7-54 (Apr. 12, 2013) (EPA-430-R-13-001), available at (<https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2013-Main-Text.pdf>); *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*, at 7-1, 7-35, 7-49, 7-54, 7-60 (Feb. 21, 2014), available at (<https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2014-Main-Text.pdf>).

⁵⁶ See S. Kim, PhD and B. Dale, PhD, *The Biogenic Carbon Cycle in Annual Crop-Based Products* (Nov. 20, 2013) (Attachment A, hereto).

definition of air pollution that is reasonably anticipated to endanger public health and welfare.”⁵⁷ However, in light of the absence of any such discussion of biogenic emissions in the proposed endangerment finding or the final 2009 Endangerment Finding itself, it is apparent that the EPA staff member who prepared that response was mistaken as to the definitional foundation of the 2009 Endangerment Finding. Moreover, as discussed at length above, EPA had based the endangerment finding on the IPCC and emissions inventory approaches, which acknowledged the scientific principle that biogenic emissions are carbon neutral on a life-cycle basis and are not counted as part of the “elevated” concentration of greenhouse gases which results from society’s burning of fossil fuels. Accordingly, EPA’s response that molecules of CO₂ are identical was non-responsive to the core question of whether biogenic CO₂ contributes to “elevated” levels of atmospheric CO₂ compared to pre-industrial concentrations. As noted, it is only the elevated concentration that EPA has determined endangers the environment, which is understandable as the non-elevated concentration of CO₂ in the atmosphere keeps the earth at habitable temperatures. In short, a single response to a stakeholder comment, which is inconsistent with and divorced from the record basis for the agency action, cannot form a rational basis to interpret the 2009 Endangerment Finding as concluding that biogenic emissions are harmful and cause global warming. To the contrary, the 2009 Endangerment Finding supports the conclusion that biogenic emissions are harmless.

Despite EPA’s recent assertions in the McCabe memo, Clean Power Plan and elsewhere that there is no distinction between biogenic CO₂ and fossil CO₂, EPA has nonetheless recognized in other contexts that there is indeed a scientific distinction. As a striking example, EPA’s ill-fated “Deferral Rule” itself evidences that EPA never actually determined in the 2009 Endangerment Finding whether biogenic CO₂ emissions are “dangerous” pollutants, such that the agency is free to decide whether and how biogenic CO₂ emissions should be regulated going forward. Two years following its 2009 Endangerment Finding for fossil fuel emissions from motor vehicles, and in response to a stakeholders petition for administrative reconsideration, EPA attempted to defer application of its greenhouse gas regulations to biogenic CO₂ emissions from stationary sources under the PSD and Title V rules until it could complete a scientific review of the climate effects of biogenic emissions.⁵⁸ At the same time, EPA began developing an accounting process for evaluating the life-cycle of biogenic feedstocks know as the Biogenic Accounting Factor framework, and charged its Science Advisory Board with supporting its study of biogenic emissions.⁵⁹ That review process has now taken more than six years and appears nowhere close to completion. But the fact that EPA constituted the scientific review process in the first place

⁵⁷ See EPA, *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act: EPA’s Response to Public Comments, Vol. 9: The Endangerment Finding*, at 5 (2009) (EPA-HQ-AR-2009-0171-11676) (“2009 RTC Vol. 9”).

⁵⁸ *Deferral for CO₂ Emissions From Bioenergy and Other Biogenic Sources Under the Prevention of Significant Deterioration (PSD) and Title V Programs*, 76 Fed. Reg. 43490 (July 20, 2011).

⁵⁹ EPA Office of Air and Radiation, Office of Atmospheric Programs, Climate Change Division, *Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources* (2d Draft) (Nov. 2014) (“BAF Framework”); see also Office of Atmospheric Programs, *Accounting Framework for Biogenic CO₂ Emissions from Stationary Sources* (Sept. 2011) ([https://www3.epa.gov/climatechange/Downloads/ghgemissions/Biogenic-CO₂-Accounting-Framework-Report-Sept-2011.pdf](https://www3.epa.gov/climatechange/Downloads/ghgemissions/Biogenic-CO2-Accounting-Framework-Report-Sept-2011.pdf)) (“Biogenic Accounting Framework”).

illustrates that EPA never reached a definitive conclusion in the 2009 Endangerment Finding as to the nature of biogenic CO₂ as a harmful pollutant.

The Deferral Rule was originally intended for a period of three years; however, at about the time the rule expired of its own terms, the D.C. Circuit vacated the rule by rejecting the administrative law doctrines that EPA had invoked to defend the rule.⁶⁰ Importantly, however, EPA had (somewhat mystifyingly) expressly declined to rely on any scientific basis for its authority to exempt insignificant or *de minimis* emissions from regulation in defending the Deferral Rule.⁶¹ In light of this procedural history, the D.C. Circuit’s invalidation of the Deferral Rule presents no precedential impediment for EPA either to properly interpret the 2009 Endangerment Finding as having not addressed biogenic emissions or to exempt biogenic emissions under its general authority to exempt insignificant emissions on the basis of sound science.⁶² Put simply, it seems obvious that EPA would not have needed a deferral rule, nor embarked on a multi-year scientific study of biogenic emissions, if it had already studied the issue sufficiently in its 2009 Endangerment Finding.

In short, EPA’s 2009 Endangerment Finding did not actually address the science of biogenic CO₂ in determining whether biogenic CO₂ from agricultural sources was “harmful” such that it should be regulated as a “pollutant.” Accordingly, under the Supreme Court’s precedent, any regulation of biogenic CO₂ under the Clean Air Act would be *ultra vires*, arbitrary, and capricious until EPA completes a thorough, meaningful and scientifically informed endangerment finding specific to biogenic CO₂ sources, considering the context of Congress’s use of the term “pollutant” in the Clean Air Act. EPA should acknowledge this fact in the Significance Rule rulemaking and either determine that biogenic CO₂ emissions are not currently subject to a predicate endangerment finding or include an exemption for biogenic CO₂ emissions from short-cycle agricultural biomass feedstocks.

IV. EPA MUST DEFINE KEY TERMS TO CLARIFY THE EXCLUSION OF BIOGENIC EMISSIONS

In order to fully implement the Supreme Court’s mandate, EPA must define key regulatory terms such as “any pollutant”, “greenhouse gases”, and “subject to regulation” in the proper context, considering the scientific nature of biogenic emissions. This context necessarily includes

⁶⁰ *Ctr. for Biological Diversity v. EPA*, 722 F. 3d 401 (D.C. Cir. 2013).

⁶¹ 722 F.3d at 409.

⁶² Indeed each of the panel judges in the Deferral Rule litigation suggested that EPA retained the broad authority described above to permanently exclude biogenic CO₂ emissions, provided the Agency justified its decision in the rulemaking record. 722 F.3d at 412 (“leav[ing] for another day the question whether the agency has authority under the Clean Air Act to permanently exempt biogenic carbon dioxide sources from the PSD permitting program”); 722 F.3d at 420 (Henderson, J. dissenting) (recognizing the “availability of a *de minimis* exception” to permanently exclude biogenic CO₂ emissions). Even Judge Kavanaugh’s concurring opinion, which asserted that EPA’s regulatory discretion was limited by the agency’s prior interpretation of its Clean Air Act authority suggested that EPA retained at some limited options to permanently exclude biogenic CO₂ emissions. 722 F.3d at 413 n.1 (Kavanaugh, J. dissenting) (suggesting that EPA could exempt biogenic CO₂ emissions by amending or reinterpreting its Endangerment Finding).

acknowledgement that EPA has not thoroughly considered the *de minimis* nature of biogenic emissions and has not made an endangerment finding specific to biogenic emissions, which is a predicate to regulation under the Clean Air Act. Accordingly, EPA must revisit the definitions in its PSD program (and elsewhere in the Clean Air Act) with these limitations in mind, and must craft regulatory definitions in a manner so as to effectively exclude biogenic emissions from regulation under all portions of the Clean Air Act.

A. Definition of “Any Pollutant”

First, EPA must interpret the phrase “any air pollutant” as it appears in the Clean Air Act to exclude biogenic emissions, in light of the fact that EPA has not made an endangerment finding specific to biogenic emissions. There is no indication in the Clean Air Act that Congress would have intended that phrase to encompass emissions that are not actually harmful on a life-cycle basis. Nor would Congress have allowed EPA to simply ignore life-cycle science. As EPA acknowledges in the proposal, greenhouse gases are “unique.”⁶³ Accordingly, any attempt to regulate these unique emissions should be based on careful consideration by the agency of the biological carbon cycle of CO₂ emissions and the necessity to human life and welfare of a baseline concentration of CO₂ in the atmosphere, both of which are core aspects of the unique nature of greenhouse gases.

B. Definition of “Greenhouse Gases”

Similarly, the definition of “greenhouse gases” or “GHGs” should be phrased in EPA’s regulations in each instance of use to exclude biogenic CO₂. For example, the proposed definition under 40 C.F.R. § 51.166(b)(31) in the Significance Rule should read as follows, with the addition of the italicized phrasing: “Greenhouse gases (GHGs) means the air pollutant defined in § 86.1818-12(a) of this chapter as the aggregate group of six greenhouse gases: Carbon dioxide, nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride, *excluding biogenic emissions from agricultural feedstocks.*” 81 Fed. Reg. at 68142:2.

C. Definition of “Subject to regulation”

The definition of “subject to regulation” should also be phrased in EPA’s regulations in each instance of use to exclude biogenic CO₂. For example, the proposed definition under 40 C.F.R. § 51.166(b)(48) should read as follows with the addition of the italicized phrasing: “Subject to regulation means, for any air pollutant, that the pollutant is subject to either a provision in the Clean Air Act, or a nationally-applicable regulation codified by the Administrator in subchapter C of this chapter, that requires actual control of the quantity of emissions of that pollutant, and that such a control requirement has taken effect and is operative to control, limit or restrict the quantity of emissions of that pollutant released from the regulated activity. Pollutants subject to regulation include, but are not limited to, greenhouse gases as defined in paragraph (b)(31) of this section, *but excluding biogenic emissions from agricultural feedstocks.*” 81 Fed. Reg. at 68142:3.

⁶³ 81 Fed. Reg. at 68122:2 (“The EPA’s judgment at this time is that the approaches we have previously used to establish SERs are not workable for the establishment of a GHG SER due the unique nature of GHG emissions”).

V. IF BIOGENIC EMISSIONS ARE CURRENTLY SUBJECT TO REGULATION, EPA SHOULD DETERMINE THAT CROP-BASED BIOGENIC EMISSIONS ARE INSIGNIFICANT

A. EPA Has Authority to Exempt Crop-Based Biogenic Emissions as Insignificant

As EPA recognizes in its proposed Significance Rule, it has discretion to determine that certain emissions are *de minimis* and to exempt such emissions from Clean Air Act regulatory programs.⁶⁴ In its landmark decision addressing greenhouse gases in *Massachusetts v. EPA*, the Supreme Court, although holding that EPA has the authority to regulate greenhouse gas emissions as “air pollution” generally, also recognized that “an agency has broad discretion to choose how best to marshal its limited resources and personnel to carry out its delegated responsibilities.”⁶⁵ Similarly, in *Alabama Power Co. v. Costle*, 636 F.2d 323, 360-61, 400 (D.C. Cir. 1979), the D.C. Circuit recognized EPA’s discretion “to exempt from PSD review some emission increases on grounds of *de minimis* or administrative necessity” where regulation would “yield a gain of trivial or no value.” The Supreme Court’s flagship *Chevron* decision also addressed EPA’s discretion to define the scope of Clean Air Act permitting programs, overturning a D.C. Circuit decision that failed to defer to EPA’s interpretation of what constitutes a “stationary source” subject to special permitting conditions in nonattainment areas.⁶⁶ And as discussed above, the Supreme Court has reminded EPA more recently in *UARG* that the agency must interpret statutory provisions in practical context.

In reliance on this broad discretion, EPA has previously interpreted the Clean Air Act with a contextual lens in analogous situations. Notably, EPA has limited PSD permitting to those pollutants that are “subject to regulation” under the Clean Air Act, notwithstanding that the statute itself refers to “any pollutant.”⁶⁷ Likewise, even though the Clean Air Act may be read to require

⁶⁴ 81 Fed. Reg. at 68120.

⁶⁵ *Massachusetts v. EPA*, 549 U.S. 497, 527-29, 533 (2007) (citing *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-845 (1984)); see also *Am. Coke & Coal Chems. Inst. v. EPA*, 452 F.3d 930, 941-42 (D.C. Cir. 2006) (“The court owes particular deference to EPA when its rulemakings rest upon matters of scientific and statistical judgment within the agency’s sphere of special competence and statutory jurisdiction.”). Courts have noted EPA’s discretion regarding the timing and approach to the regulation of pollutants following the Court’s decision in *Massachusetts v. EPA*. For example, in the remand from the Supreme Court’s decision, Judge Tatel observed that “nothing in section 202, the Supreme Court’s decision in *Massachusetts v. EPA*, or our remand order imposes a specific deadline by which EPA must determine whether a particular air pollutant poses a threat to public health or welfare.” *Massachusetts v. EPA*, No. 03-1361, separate statement of Tatel, J. concurring in part and dissenting in part from denial of petition, June 26, 2008, at 1. Similarly, the Northern District of California also rejected an argument that EPA is compelled to regulate all forms of greenhouse gases following *Massachusetts*. See *S.F. Chapter of A. Philip Randolph Inst. v. EPA*, 2008 U.S. Dist. LEXIS 27794 at 10-11 (N.D. Cal. Mar. 28, 2008). Consistent with the D.C. Circuit’s conclusion, the California district court recognized that “[t]he Supreme Court was careful not to place a time limit on the EPA, and indeed did not even reach the question whether an endangerment finding had to be made at all.”

⁶⁶ *Chevron, U.S.A., Inc. v. NRDC*, 467 U.S. 837, 841-42 (1984).

⁶⁷ See *Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 134-35 (D.C. Cir. 2012) (*per curiam*) (finding that the Clean Air Act does not require EPA to regulate “a ‘physical, chemical, [or] biological’ substance

PSD permitting for any change to a major source that increases emissions of any air pollutant by any amount, *see* Clean Air Act §§ 111(a)(4), 169(2)(C), EPA has limited the permitting requirements to modifications that result in a “significant” net increase in actual emissions.⁶⁸ For example, carbon monoxide emissions increases of up to 99 tons per year are considered insignificant (*de minimis*) under EPA’s implementing regulations.⁶⁹ Thus, EPA has a long-standing policy of applying the *de minimis* doctrine to exclude from regulation under the PSD and Title V permitting programs those sources whose emissions increases are deemed insignificant from an air quality perspective, despite the fact that the literal language of the Clean Air Act requires permits for *any* emissions increase.⁷⁰

EPA has also exercised its discretion to distinguish among various families of chemical compounds to exclude regulation of those emissions that have negligible environmental impacts. For example, EPA excludes emissions of certain volatile organic compounds (VOCs) as smog precursors because they don’t react in the atmosphere like other compounds and do not cause environmental impacts regardless of the fact that these compounds are both “volatile” and “organic” and therefore meet EPA’s definition of VOCs.⁷¹ Likewise, EPA has distinguished among different categories of particulate matter (PM) based on differences in environmental and public health impacts.⁷² Thus, EPA has distinguished between fine and coarse PM and established distinct significance levels for particulate matter smaller than 10 microns in diameter and smaller than 2.5 microns in diameter based on the particle size’s impact on public health.

In the greenhouse gas context, EPA exercised its discretion to limit the scope and reach of its greenhouse gas regulations by choosing to limit the pollutants that qualify as “greenhouse gases” to “the aggregate group of six” specified chemicals and excluded other chemicals that also have climate impacts.⁷³ In fact, EPA limited the “pollutant” greenhouse gas to these six

EPA had determined was harmless”), *reversed in part by UARG v. EPA*; *see also Alabama Power*, 636 F.2d at 352 n.57.

⁶⁸ *See* 40 C.F.R. §§ 52.21(b)(2)(i), 52.21(i); *see also United States v. DTE Energy Co.*, 711 F.3d 643, 645 (6th Cir. 2013).

⁶⁹ 40 C.F.R. § 52.21(b)(23)(i); *see also* 45 Fed. Reg. 52676, 52705-09 (Aug. 7, 1980) (setting significance levels for PSD permitting programs based on *de minimis* exception).

⁷⁰ *See* 40 C.F.R. § 52.21(b)(23)(i) and (j)(2); 45 Fed. Reg. at 52722; *Alabama Power*, 636 F.2d at 405.

⁷¹ *See* 40 C.F.R. § 51.100(s); 40 C.F.R. §§ 52.21(b)(2)(ii) and 52.21(b)(30); 40 C.F.R. § 51.100(d); 57 Fed. Reg. 3941, 3943-44 (Feb. 3, 1992) (disagreeing with comment that definition exceeded EPA’s statutory authority, asserting that “it is an administrative necessity and reasonable to define VOC to include all organic compounds except those EPA has determined to be negligibly reactive.”).

⁷² 40 C.F.R. § 52.21(b)(23)(i); *Alabama Power*, 636 F.2d at 369 n.134 (“EPA has discretion to define the pollutant termed “particulate matter” to exclude particulates of a size or composition determined not to present substantial public health or welfare concerns.”).

⁷³ *See* 75 Fed. Reg. 25324, 25397 (May 7, 2010) (identifying the six compounds as “[t]he primary greenhouse gases of concern”); *id.* at 25398-99 (describing light-duty vehicle emissions standards as regulating “the single air pollutant” constituting the aggregate of the six identified gases).

compounds despite its findings that they only account for 75% of total anthropogenic heating.⁷⁴ Similarly, in its rulemaking restricting emissions of carbon dioxide from new electric power plants, EPA acknowledged that it has broad discretion to exclude from regulation not only subcategories of a particular source categories, but also particular emissions. Thus, EPA excluded from that rule all emissions of non-CO₂ greenhouse gases, including methane and other powerful greenhouse gases, and to justify its position, EPA explained that such emissions “represent less than 1 percent of total estimated GHG emissions” from electric power plants.⁷⁵

In its proposed Significance Rule, EPA identifies various factors that would support a *de minimis* finding for greenhouse gases: (1) the regulatory context, including the nature of the pollutant and the dangers caused by increases in that pollutant; (2) the nature and purposes of the regulatory program; and (3) the administrative and implementation burdens of, and the gain achieved from, regulating the activities at or below a certain level. 81 Fed. Reg. at 68121:1. Because the science dictates that biogenic CO₂ emissions are part of the natural annual carbon cycle and do not increase atmospheric CO₂ concentrations, each of these factors commands that EPA exclude biogenic emissions as *de minimis* for all Clean Air Act purposes.

B. Science Supports a De Minimis Determination Because Biogenic Emissions Are Not Harmful

As discussed above, biogenic emissions from agricultural feedstocks are not harmful to the environment because they do not contribute to elevated levels of greenhouse gas concentrations. For the same scientific reasons, biogenic CO₂ emissions are clearly insignificant, whether from the perspective of net life-cycle effect on atmospheric greenhouse gas concentrations or as a fraction of nationwide greenhouse gas emissions, which are dominated by fossil fuel combustion. For illustration, looking only at the electricity sector, direct stack emissions of CO₂ from bioenergy sources are at most 0.04 percent of the direct emissions of CO₂ from combustion of fossil fuels, based on conservative calculations using statistics published by the U.S. Energy Information Administration.⁷⁶ Specifically, the amount of CO₂ emitted in 2012 by the electric power sector through combustion of coal, natural gas, petroleum liquids and petroleum coke was nearly 1,982,000 million kilograms, whereas the amount of CO₂ emitted in that year by that sector through combustion of “other waste biomass” (*i.e.*, agricultural crop byproducts, straw, sludge waste and other biomass, excluding wood and wood-derived fuels) was 817 million kilograms, or approximately 0.04 percent of the fossil CO₂ emissions. There are no comprehensive statistics on biogenic emissions from all sources, but the volume of emissions from bioenergy is vastly smaller in volume than the 1 percent threshold that EPA used to justify the exclusion of five greenhouse

⁷⁴ 74 Fed. Reg. at 66517, 66520 (excluding other gases because they are not thought to be a primary driver of radiative heating, or because their climate impact is unknown).

⁷⁵ 79 Fed. Reg. 1430 at 1446:1-2 (Jan. 8, 2014).

⁷⁶ Calculations based on EIA, *Electric Power Annual 2012*, tables 5.1.D, 5.2.D, 5.3.D, 5.4.D, 5.8.E (Dec. 2013) (<http://www.eia.gov/electricity/annual/epa.pdf>) (statistics on fuel consumption by btu) and EPA’s Climate Leaders Program, *Emission Factors for Greenhouse Gas Inventories*, at 1 (Nov. 7, 2011) (https://www.epa.gov/sites/production/files/2015-11/documents/emission-factors_2011.pdf) (emission factor for GHG emissions per btu).

gases, other than carbon dioxide, from the reach of its new source performance standards (NSPS) rulemaking for new or modified electric power plants.⁷⁷

EPA’s own Biogenic Accounting Framework, which the agency issued in revised form on November 19, 2014, strongly corroborates the Coalition’s position as it relates to CO₂ emissions.⁷⁸ The 2014 BAF repeatedly treats as a scientifically sound working assumption the proposition that the CO₂ emissions resulting *directly* from the combustion of such biomass are carbon neutral.⁷⁹ In fact, in the 2014 BAF, EPA provided hypothetical examples to illustrate how the BAF would operate in the case of corn stover combustion, concluding that any factor combustion of corn stover would be zero or tiny.⁸⁰ Similarly, emissions of biogenic CO₂ associated with processing agricultural crops, assuming they should legally be considered (which is not the case), are also harmless from a global warming standpoint.

Although EPA has identified some questions regarding life cycle analysis of long-rotation biomass from forest products, EPA does not need to study emissions from the agricultural sector further. In fact, the Biogenic CO₂ Coalition has on numerous occasions inquired of EPA whether it needs additional information regarding the life-cycle emissions profile of short-rotation agricultural biomass, and the agency has not indicated that more data is needed. Indeed, as reviewed in the report by Professors Kim and Dale, which has been presented to EPA in comments submitted by the Biogenic CO₂ Coalition in various rulemakings,⁸¹ the data currently before the agency is more than adequate to support a finding that biogenic CO₂ emissions from agricultural crops are insignificant on a life-cycle basis. The Kim-Dale Report examined the biogenic carbon cycle for combustion of crop residues using corn stover as an example of agricultural feedstocks under three different scientifically accepted methodologies: (i) life cycle biogenic carbon balance; (ii) mass balance; and (iii) EPA’s proposed *Biogenic Accounting Framework*. See Kim-Dale Report pp. 30-35). The report studied the release and sequestration of biogenic carbon during agricultural production of corn and corn stover, the transportation and storage of corn and corn stover, and the ultimate combustion of the corn stover for bioenergy. The report found under all

⁷⁷ See 79 Fed. Reg. at 1446:1-2 (excluding all emissions of non-CO₂ greenhouse gases on the basis that such emissions “represent less than 1 percent of total estimated GHG emissions” from EGUs).

⁷⁸ See EPA Office of Atmospheric Programs, *Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources*, (Nov. 2014) (“2014 BAF”)(<http://www.epa.gov/climatechange/ghgemissions/biogenicemissions.html>).

⁷⁹ See, e.g., 2014 BAF, *Appendix D: Feedstock Categorization and Definitions*, at D-10 (“[T]he net atmospheric biogenic contribution from the growth and harvest of the feedstock itself [*i.e.*, “conventional crops”] is in balance”); *Appendix I: Illustrative Forestry and Agriculture Case Studies Using a Retrospective Reference Point Baseline*, at 1-14 (“GROW is set to 0 because the ratio of net growth to removals is 0.”); *Appendix L: Illustrative Forestry and Agriculture Case Studies Using a Future Anticipated Baseline*, at L-17 (“The GROW term defaults to 0 for agricultural biomass sources in this methodology. The assumption is that, with annual crops, biogenic CO₂ ‘growth’ in this context equals what is harvested (removed) from the system for energy generation.”); 2014 BAF, at 6 n.18, 16 (§2.4.1.), 43 (§4.4).

⁸⁰ See 2014 BAF *Appx I*, at 1-14 to 1-15; *Appx M*, at M-10 (Table M-5 and §6.1); *Appx M*, at M-11 (Table M-6, last row).

⁸¹ See, e.g., Seungdo Kim, Ph.D and Bruce E. Dale, Ph.D, *The Biogenic Carbon Cycle in Annual Crop-Based Products*, Michigan State University (Nov. 22, 2013) (available at www.biogenicCO2.com).

three methods that the indirect biogenic carbon emissions were net negative – *i.e.*, that the biogenic carbon cycle yields a net sequestration of carbon (and a net benefit to the environment). As discussed above, both IPCC and EPA, as well as private sector organizations, consider herbaceous biomass carbon stocks to be ephemeral in the inventory context, and recognize that there are no net emissions to the atmosphere during the annual crop cycle.

Interestingly, EPA admits in the Significance Rule that it actually has no way to determine the impact of greenhouse gases on the global environment,⁸² and thus EPA has no way to determine the danger posed by any level of emissions, whether biogenic or fossil. In light of that admission, it is difficult to understand how EPA made the 2009 endangerment finding with respect to fossil fuels, but certainly EPA now concedes that it could not have made any endangerment findings with respect to harm from biogenic emissions. Regardless, for the reasons discussed herein, biogenic emissions can be found to present no danger due to their net carbon-neutral nature. Therefore EPA can properly determine biogenic emissions to be insignificant or de minimis, regardless of the amount of emissions, provided that the biogenic emissions are from short-rotation agricultural feedstocks.

C. The PSD Program Is Not Suited for Regulation of Biogenic Emissions

The PSD program, at its core, was designed by Congress to prevent air quality from eroding in areas that were relatively clean where the more stringent requirements applicable to nonattainment areas were not triggered. Because biogenic emissions are not harmful and do not adversely affect either ambient air or global greenhouse gas concentrations, it serves no regulatory purpose to consider them in the PSD context. As the Supreme Court has chastened EPA, “the Act does not envision an elaborate, burdensome permitting process for . . . harmless airborne substances.” *UARG*, 134 S. Ct. at 2440.

D. Regulation of Biogenic Emissions Is Burdensome With No Gain

Because biogenic emissions are scientifically harmless, there would be no gain achieved by regulating biogenic emissions as greenhouse gas pollution under the Clean Air Act. Any emissions reduction that could be achieved at the end of the day through application of BACT under the PSD program, could not actually be required under the balancing factors in the Clean Air Act, as any cost of control technology would be uneconomic compared to the lack of any benefit from reducing biogenic emissions since biogenic emissions do not cause harm. EPA cannot use the PSD program to force stationary sources to provide environmental benefits, as opposed to reducing environmental harms associated with emissions from that facility.

For the same reasons, any administrative or implementation burden would outweigh the non-existent gain from such regulation. However, it is worth noting that EPA seems to severely underestimate the regulatory burden caused by applying the PSD permitting program and Clean Power Plan rules to biogenic feedstocks. As discussed further in Parts VI and VII, below, the

⁸² 81 Fed. Reg. at 68123:1 (“current climate modeling tools are not capable of isolating the precise correlations between singular, incremental facility-specific GHG emissions changes, ambient CO₂ concentrations, and climate impacts”).

uncertainty associated with permitting fermentation units and other sources of biogenic emissions from feedstock processing has deterred investment in the bioeconomy and thrown up unnecessary barriers to construction or expansion projects. Similarly, the Obama Administration’s current approach to biogenic emissions in its Clean Power Plan effectively disqualifies renewable bioenergy as a solution to reducing fossil fuel greenhouse gas emissions. As noted above, EPA has taken the position that other aspects of the PSD program such as ambient impacts analysis would not apply to greenhouse gases, but as noted that conclusion is subject to question following the *UARG* decision and may lead to litigation.

Accordingly, new source review for biogenic CO₂ emissions under the PSD program, and BACT review in particular, would be a pointless exercise since the outcome would be predetermined – there is simply no appropriate BACT for biogenic emissions. Making the PSD applicable to biogenic emissions would simply compound the administrative burden for facilities going through new source review for other emissions and would expose the facility to (unfortunately) real litigation risks such as have been documented in recent years.

VI. EPA HAS NOT SATISFIED THE REGULATORY FLEXIBILITY ACT

EPA’s proposed rule includes a certification of no effect on small business. 81 Fed. Reg. at 68140. EPA also concluded that the proposed significant emissions rate of 75,000 tpy would relieve regulatory burdens. However, EPA did not undertake a sufficient analysis of economic impacts in the context of biogenic emissions.

EPA’s failure to distinguish between fossil emissions and biogenic emissions effectively disqualifies bioenergy as a low carbon energy source and imposes burdens on all biogenic sources, including small businesses that are engaged in entrepreneurial development of biomass technologies, such as low carbon and renewable fuels. Similarly, if EPA fails to amend its current policies as required by the Supreme Court mandate, its PSD regulations would continue to impose unnecessary permitting burdens on small businesses that may have emissions of biogenic CO₂ in excess of the proposed (or final) significant emissions rate.

It is obvious from the proposed Significance Rule that EPA has not studied the regulatory impact on biogenic source categories at all. The proposed rule summarizes EPA’s review of fossil-fuel combustion sources and certain non-combustion facilities such as landfills, cement production and petroleum refineries. However, EPA neglected to assess emissions from fermentation units such as those that process agricultural feedstocks used to produce bioproducts. 81 Fed. Reg. at 68132. EPA did not request information relating to such plants from stakeholders nor apparently did EPA make any effort to characterize this sector. Emissions from large fermentation units, while carbon neutral, can nominally be well in excess of EPA’s proposed significant emissions rate of 75,000 tons pr year.

Similarly, in evaluating regulatory burdens, EPA only looked at PSD permits that were applied for and advanced through the regulatory process. 81 Fed. Reg. at 68128. This approach suffers from a critical flaw in overlooking projects that have been deterred by EPA’s hostile policies with regard to biogenic emissions, and therefore never entered the PSD system. Accordingly, EPA’s conclusion in the Significance Rule proposal that “PSD has not imposed unreasonable administrative and enforcement burdens,” 81 Fed. Reg. at 68137:2, is patently

arbitrary and capricious because EPA never examined those still-born projects that never advanced to the permitting stage precisely because of the weight of those anticipated burdens.

EPA also apparently failed to recognize that the national GHG inventory and greenhouse gas reporting rules exempt biogenic emissions or distinguish such emissions from fossil-based greenhouse gases, particularly as applied to the food processing sector. 81 Fed. Reg. at 68132. EPA’s assessment of biomass energy focused on forest-derived biomass in the pulp and paper sector and appears to have overlooked biomass opportunities from agricultural biomass and residues. 81 Fed. Reg. at 68129:3.

Finally, EPA oddly acknowledges that it did not actually determine a *de minimis* level for greenhouse gas emissions; rather it has merely proposed a finding that smaller projects (with non-GHG emissions near the lower most applicability thresholds) would have *de minimis* associated greenhouse gas emissions.⁸³ In other words, EPA did not study whether a higher significance level would be appropriate pursuant to the Supreme Court’s *UARG* mandate, nor did EPA consider whether a higher significance level should be established for biogenic emissions (the Coalition posits that such a level should, in effect, be set at infinity).

Because EPA has not studied sources of biogenic emissions at all, it cannot determine whether the assumed regulatory costs in the proposed rule would be applicable to such sources. For example, EPA’s assertion that the average cost to undergo BACT review for greenhouse gases is only \$24,000 is implausible based on the experience of Coalition members. 81 Fed. Reg. at 68136. This is particularly concerning given the lack of clarity as to how BACT review must be conducted, lack of data on available control technologies or techniques in the context of the carbon neutral life cycle of biogenic emissions, and potential costs of litigation (which unfortunately is quite likely based on past experience).⁸⁴

In sum, unless EPA recognizes the *de minimis* nature of any level of biogenic emissions, it must conduct a more thorough regulatory impacts review under applicable law.

VII. EPA HAS NOT SATISFIED E.O. 13211 ENERGY SUPPLY REVIEW

Because EPA has not considered the effect of its current regulations on bioenergy sources, EPA has not complied with Executive Order 13211 with respect to agency actions affecting energy supply. 81 Fed. Reg. at 68141. EPA’s failure to distinguish between fossil emissions and biogenic

⁸³ 81 Fed. Reg. at 68122:2 (“The proposed SER is not a level of GHGs below which the EPA has concluded there is a *de minimis* impact on the global climate. Rather, the *de minimis* level proposed in this rule reflects only a level of GHG emissions from an ‘anyway source’ below which the EPA is proposing to find that there would be trivial or no value in applying the BACT requirement”).

⁸⁴ For example, the Supreme Court’s decision in *UARG* strongly suggested that an impacts analysis would be required for all sources triggering PSD review, which EPA incorrectly assumes is not applicable but would add significant additional costs if stationary sources were forced into new source review for biogenic emissions. *See UARG*, 134 S. Ct. at 2457 (Alito, J., concurring in part and dissenting in part) (noting that EPA may not ignore the statutory text of section § 165 of the Clean Air Act requires “an analysis of the ambient air quality . . . at the site of the proposed major emitting facility and in the area potentially affected by the emissions from such facility for each pollutant regulated under [the Clean Air Act]).”

emissions effectively disqualifies bioenergy as a low carbon energy source and imposes burdens on bioenergy stationary sources, which in turn significantly limits the quantity and diversity of American energy supply, distribution and use. Unless EPA exempts biogenic emissions, as requested in these comments, EPA must undertake the evaluation required by E.O. 13211.

* * * * *

For the legal and scientific reasons detailed above, the Coalition views any regulation of emissions of crop-derived CO₂ as unlawful and unjustifiably burdensome. Accordingly, the Coalition respectfully requests that EPA: (1) categorically exclude from the Clean Air Act, including the definition of “pollutant” and Clean Air Act regulations generally, those CO₂ emissions resulting from the combustion or processing of agricultural feedstocks derived from short-rotation herbaceous crops; (2) determine that such biogenic CO₂ emissions are insignificant and *de minimis*, regardless of amount, in recognition of the established science on life-cycle carbon flow; and (3) expressly confirm that such exclusion and significance determination excludes biogenic CO₂ from treatment as “a pollutant subject to regulation” for purposes of the PSD and Title V permitting programs under the Clean Air Act.

The undersigned associations appreciate the opportunity to comment on this proposal. If you have any questions, please contact John Bode, Chair of the Biogenic CO₂ Coalition, at (202) 534-3498 or JBode@corn.org.

Respectfully submitted,



John Bode, Chair

Biogenic CO₂ Coalition

American Bakers Association

American Farm Bureau Federation

Corn Refiners Association

Enginuity Worldwide

National Corn Growers Association

National Cotton Council of America

National Cottonseed Products Association

National Oilseed Processors Association

North American Millers' Association

Biogenic CO₂ Coalition Members

American Bakers Association (ABA) is a national association that represents the interests of bakers before the U.S. Congress, federal agencies, and international regulatory authorities. ABA advocates on behalf of more than 700 baking facilities and baking company suppliers.



American Farm Bureau Federation (AFBF) is an independent, non-governmental, voluntary organization governed by and representing farm and ranch families united for the purpose of analyzing their problems and formulating action to achieve educational improvement, economic opportunity and social advancement and, thereby, to promote the national well-being.



Corn Refiners Association (CRA) is the national trade association representing the corn refining (wet milling) industry of the United States. CRA and its predecessors have served this important segment of American agribusiness since 1913. Corn refiners manufacture starches, sweeteners, corn oil, bioproducts (including ethanol), and animal feed ingredients.



Enginuity Worldwide makes an engineered solid biomass fuel, using agricultural residues and woody wastes as the feedstocks, that can be used to co-fire with coal in power plants to produce base load energy. Using carbon neutral farm-based biomass provides an immediate carbon benefit that can help power companies comply with their GHG reduction targets.



National Cotton Council of America (NCC) aims to ensure the ability of all U.S. cotton industry segments to compete effectively and profitably in the raw cotton, oilseed and U.S.- manufactured product markets at home and abroad. NCC serves as the central forum for consensus-building among producers, ginners, warehousemen, merchants, cottonseed processors/dealers, cooperatives and textile manufacturers. The organization is the unifying force in working with the government to ensure that cotton's interests are considered.



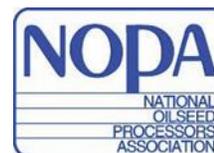
National Corn Growers Association (NCGA) represents more than 40,000 dues-paying corn farmers nationwide and the interests of more than 300,000 growers who contribute through corn checkoff programs in their states. NCGA and its 48 affiliated state organizations work together to create and increase opportunities for corn growers.



National Cottonseed Products Association (NCPA) is an organization of firms and individuals engaged in the processing of cottonseed and the marketing of cottonseed products, as well as cottonseed. These include oil mills, refiners, product dealers and product brokers.



National Oilseed Processors Association (NOPA) is a national trade association that represents 13 companies engaged in the production of food, feed, and renewable fuels from oilseeds, including soybeans, sunflower seed, canola, flaxseed and safflower seed. NOPA's member companies process more than 1.6 billion bushels of oilseeds annually at 63 plants located in 19 states throughout the country, including 57 plants that process soybeans.



North American Millers' Association (NAMA) represents millers of wheat, corn, oats and rye in the US and Canada. NAMA members take the raw grain and, through grinding and crushing, create flour and other products that are used to make such favorite foods as bread, pasta, cookies, cakes, and snack foods.



Comments of Biogenic CO₂ Coalition
EPA Significance Rule Proposal (EPA-HQ-OAR-2015-0355)
December 16, 2016

Attachment A

Michigan State University Technical Report