

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

SIERRA CLUB,

Plaintiff,

v.

SCOTT PRUITT, in his official capacity as
Administrator of the Environmental
Protection Agency,

Defendant.

Civil Action No. 17-2174 (APM)

**BRIEF OF URBAN AIR INITIATIVE AS *AMICUS CURIAE*
IN SUPPORT OF NEITHER PARTY**

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INTEREST OF *AMICUS CURIAE*¹

Urban Air Initiative, Inc. (UAI) is a social welfare organization dedicated to educating the public about the health threats posed by current formulations of gasoline, and to taking positive steps to reduce the threat to public health by encouraging a change in the formulations of such fuels.² UAI's goal is to improve public health in U.S. urban areas, where citizens are exposed to especially dangerous levels of pollution from motor vehicles.

The purpose of this amicus brief is to aid the Court in its independent duty to evaluate Sierra Club's assertion of standing. UAI does not assert any position in this brief on the merits of Sierra Club's claims in this case, aside from noting here that UAI agrees with Sierra Club that EPA ought to issue an anti-backsliding report and a triennial biofuels report to Congress, consistent with the Energy Independence and Security Act of 2007. UAI believes that such reports ought to reflect the best available science, which demonstrates that higher levels of ethanol blending in gasoline would *reduce* harmful air pollution.

¹ Pursuant to Local Rule 7(o)(5), *amicus curiae* Urban Air Initiative certifies that (1) this brief was authored entirely by counsel for *amicus curiae* and not by counsel for any party, in whole or part; (2) no party or counsel for any party contributed money to fund preparing or submitting this brief; and (3) apart from *amicus curiae* and its counsel, no other person contributed money to fund preparing or submitting this brief.

² Urban Air Initiative, Inc. (UAI) is incorporated in a manner consistent with Section 501(c)(4) of the Internal Revenue Code. No "parent company" or publicly-held company has a 10% or greater ownership interest in UAI.

INTRODUCTION AND SUMMARY OF ARGUMENT

In this case, Sierra Club seeks an order compelling EPA to complete an “anti-backsliding air quality assessment” of “changes in vehicle and engine emissions” resulting from the Renewable Fuel Standard (RFS), pursuant to 42 U.S.C. § 7545(v), and to submit to Congress a report on the environmental effects of the RFS, pursuant to section 204 of the Energy Independence and Security Act of 2007, 121 Stat. 1529, Pub. L. No. 110-140 (2007) (codified at 42 U.S.C. § 7545 note).

Sierra Club’s primary assertion of standing rests on unsupported allegations in its complaint that “one [unnamed] member from Montebello, California in Los Angeles County” has “experienced and continues to experience respiratory health conditions with symptoms including chest tightening, soar [sic] and tingling lungs, heavy congestion, and wheezing and breathing difficulty.” Compl. ¶ 14. Sierra Club alleges that “[t]hese symptoms have worsened in the last 10 years and become exacerbated during the colder winter months.” *Id.* Without any supporting evidence, Sierra Club speculates that these symptoms are attributable to “high ethanol content fuel.” *Id.* ¶ 13.³ In particular, Sierra Club alleges that “[i]n some regions of the country, the pollutant emission levels from vehicles running on high ethanol content fuels are greater than those from vehicles running on high gasoline content

³ Although Sierra Club’s complaint does not define “high ethanol content fuel,” the only high ethanol content fuel sold in California is E85, a mixture containing at least 79% ethanol and 15 to 21% gasoline for use in “flex-fuel” vehicles. *See* 13 C.C.R. § 2294.4 (establishing fuel specifications for E85 fuel sold in California). All other fuel ethanol in California is used in E10, a blend consisting of 90% gasoline and only 10% ethanol.

fuel.” *Id.* Sierra Club further alleges that “[t]his is especially true in urban areas during colder winter conditions.” *Id.* The only air pollutants Sierra Club names are “ozone forming nitrogen oxides [NO_x] and carcinogens such as formaldehyde and acetaldehyde.” *Id.* Sierra Club speculates that its member’s respiratory injuries will be redressed when EPA completes the “anti-backsliding air quality assessment” and then promulgates fuel regulations to mitigate any fuel-related air quality effects of the RFS, pursuant to 42 U.S.C. § 7545(v). Compl. ¶ 15.

Sierra Club lacks standing because its member’s asserted injury is not caused by “high ethanol content fuel” and because that injury would not be redressed by an anti-backsliding study or by any regulations that follow. High ethanol content fuel does not increase emissions of all the pollutants Sierra Club complains of, and those pollutants do not cause the health conditions that Sierra Club describes. The opposite is true: In reality, ethanol blending *reduces* the incidence of respiratory ailments by reducing emissions of the most harmful motor vehicle pollution, including particulate matter. High ethanol content fuel reduces, or has no effect on, NO_x. And NO_x does not cause the wintertime respiratory effects that Sierra Club identifies. Likewise, concentrations of formaldehyde and acetaldehyde in the air, including any emissions from high ethanol content gasoline, are far too low to cause the alleged respiratory injury. Sierra Club’s asserted injury is therefore not traceable to EPA’s inaction and would not be redressed by an anti-backsliding air quality assessment and the fuel regulations that Sierra Club hopes EPA might promulgate in response.

Sierra Club's other standing theories also fail.

Sierra Club's theory of informational injury standing is fatally flawed, because Sierra Club is seeking to enforce statutory provisions that by their terms do not "require the public disclosure of information." *Friends of Animals v. Jewell*, 828 F.3d 989, 993 (D.C. Cir. 2016).

Sierra Club's theory of recreational injury from increased water pollution fares no better. Sierra Club has not shown any causal connection between the nutrient water pollution allegedly affecting its member's recreational activities and EPA's challenged inaction, nor has Sierra Club shown that the relief it seeks would redress its recreational injuries. *See Fla. Audubon Soc'y v. Bentsen*, 94 F.3d 658, 664–65, 667–70 (D.C. Cir. 1996) (en banc).

Because Sierra Club lacks standing, this Court cannot grant Sierra Club the declaratory and injunctive relief it seeks. The Court should dismiss this case for lack of jurisdiction.

ARGUMENT

To obtain any relief from this Court—including "procedural relief" through a consent order—Sierra Club must show standing to sue. *In re Idaho Conservation League*, 811 F.3d 502, 508 (D.C. Cir. 2016). "[I]t is well established that the court has an independent obligation to assure that standing exists, regardless of whether it is challenged by any of the parties." *Summers v. Earth Island Inst.*, 555 U.S. 488, 499 (2009). Sierra Club may demonstrate "associational standing" by establishing that at least one of its members has standing to sue in her own right. *Sierra Club v.*

FERC, 827 F.3d 36, 43 (D.C. Cir. 2016). To do so, Sierra Club must “clearly allege facts” showing that its member has “suffered an injury in fact” that is “fairly traceable to the challenged conduct of the defendant” and redressable by the court. *Spokeo, Inc. v. Robins*, 136 S. Ct. 1540, 1547 (2016).

Even when a plaintiff like Sierra Club alleges a procedural injury—here, EPA’s failure send a report to Congress, to conduct an anti-backsliding study, and to promulgate fuel regulations based on that study—the plaintiff must show that it is “substantially probable” that the challenged conduct causes or at least contributes to its alleged injury. *Fla. Audubon Soc’y*, 94 F.3d at 664–65, 669. To obtain the “procedural relief” Sierra Club seeks from this Court, Sierra Club must establish “each of these elements ‘by affidavit or other evidence.’” *Idaho Conservation League*, 811 F.3d at 508 (quoting *Sierra Club v. EPA*, 292 F.3d 895, 899 (D.C. Cir. 2002)). “Bare allegations are insufficient.” *Sierra Club*, 292 F.3d at 898.

As a threshold matter, Sierra Club does not meet this burden because it fails to “name[,] the individuals who were harmed” by EPA’s inaction, or to provide any evidence in support of its unsworn allegations. *Summers*, 555 U.S. at 498. But even if Sierra Club had identified its affected members and submitted the requisite evidence, Sierra Club could not possibly demonstrate standing on the facts it has alleged.

I. SIERRA CLUB HAS NOT DEMONSTRATED STANDING BASED ON RESPIRATORY INJURY, BECAUSE “HIGH ETHANOL CONTENT FUEL” REDUCES RISKS TO RESPIRATORY HEALTH.

High ethanol content fuel reduces emissions of the pollutants that contribute to respiratory conditions. Sierra Club lacks standing because its member’s respiratory ailments are not caused by high ethanol content fuel and would not be redressed by the relief Sierra Club seeks.

A. High Ethanol Content Fuel Does Not Increase Ozone-Forming Nitrogen Oxide Gases.

Sierra Club’s principal theory of standing rests on a half-truth: Atmospheric (ground-level) ozone does contribute to respiratory ailments, especially in urban areas. EPA has found “that a ‘causal’ relationship exists between short-term exposure to [ozone] in ambient air and effects on the respiratory system,” including asthma, decreases in lung function, and lung inflammation. *See National Ambient Air Quality Standards for Ozone*, 80 Fed. Reg. 65,292, 65,302 (Oct. 26, 2015). Long-term exposure to ground-level ozone is also likely to cause respiratory injuries. *Id.*

But high ethanol content fuel is not the cause of high ozone levels. Ground-level ozone is formed through complex, non-linear reactions between non-methane organic gases (NMOG) and NO_x as they mix in stagnant air during periods of prolonged heat and sunlight. *Id.* at 65,300. For that reason, ozone levels are highest during the summer. *See* 40 C.F.R. § 80.27(a)(2)(ii) (defining the “high ozone season” as “the period from June 1 to September 15”). EPA and California regulate NO_x from motor vehicles to reduce ozone. *See id.* § 86.1811-17(b)(2); 13 C.C.R. 1961.2(a)(1).

Rather than increasing “ozone forming nitrogen oxides,” as Sierra Club alleges, high ethanol content fuel has been shown to reduce NO_x emissions. A leading study of high ethanol content fuel (E85) exhaust emissions, analyzing certification data from 114 flex-fuel vehicles, found that E85 reduces NO_x emissions by 19%.⁴ Another study by Ford Motor Company found that NO_x emissions “were highest with the E0 gasoline,” decreased slightly with E10, and decreased significantly more with the addition of more ethanol, so that E80 had lower NO_x emissions than both E10 and E0 gasoline.⁵ Other studies confirm that high ethanol content fuel reduces NO_x emissions.⁶ This effect has a scientific explanation:

⁴ Janet L. Yanowitz & Robert L. McCormick, *Effect of E85 on Tailpipe Emissions from Light-Duty Vehicles*, 59 J. Air & Waste Manage. Assoc. 172, 179, Table 3 (2009).

⁵ Carolyn Hubbard et al., *Ethanol and Air Quality: Influence of Fuel Ethanol Content on Emissions and Fuel Economy of Flexible Fuel Vehicles*, 48 Environ. Sci. & Tech. 861, 864 (2014)

⁶ See, e.g., Hosuk H. Jung et al., *Effect of Ethanol on Part Load Thermal Efficiency and CO₂ Emissions of SI Engines*, 6 SAE Int'l J. of Engines 456 (2013) (finding a 25% to 45% decrease in NO_x emissions, depending on speed and load, from E85 relative to E0); M. Bahattin Celik et al., *Experimental Determination of Suitable Ethanol-Gasoline Blend Rate at High Compression Ratio for Gasoline Engine*, 28 Applied Thermal Engineering 396 (2008) (finding a 33% decrease in NO_x emissions from E50 relative to E0); Koichi Nakata et al., *The Effect of Ethanol Fuel on a Spark Ignition Engine*, SAE Tech. Paper 2006-01-3380 (finding a 25% decrease in NO_x emissions from E50 relative to E0).

Ethanol’s “lower flame temperature in the combustion process. . . contribut[es] to lower NO_x emissions.”⁷

Moreover, the fact that Sierra Club’s alleged respiratory symptoms “become exacerbated during the colder winter months,” Compl. ¶ 14, strongly suggests that the alleged respiratory injuries are not caused by ozone-forming NO_x pollution, because harmful ozone levels occur during hot weather, not cold weather. 80 Fed. Reg. at 65,300.

B. Acetaldehyde and Formaldehyde Emissions from High Ethanol Content Fuel Cannot Plausibly Cause the Respiratory Injuries Alleged in This Case.

Next, Sierra Club turns to emissions of “carcinogens such as formaldehyde and acetaldehyde.” Compl. ¶ 13.⁸ But these emissions are not responsible for Sierra Club’s asserted injury.

As a threshold matter, Sierra Club has pleaded a *respiratory* injury, not an increased risk of cancer. *Id.* ¶ 14. But Sierra Club’s complaint does not even allege that formaldehyde and acetaldehyde contribute to the alleged respiratory injury. The Court may not “accept inferences that are unsupported by the facts set out in the complaint.” *See Food & Water Watch, Inc. v. Vilsack*, 808 F.3d 905, 913 (D.C.

⁷ Georgios Karavalakis et al., *Impacts of Ethanol Fuel Level on Emissions of Regulated and Unregulated Pollutants From a Fleet of Gasoline Light-Duty Vehicles*, 93 *Fuels* 549, 552 (2012) (hereinafter Karavalakis, *Impacts of Ethanol D*).

⁸ Acetaldehyde is not a proven carcinogen. EPA has classified acetaldehyde as a “probable human carcinogen” based on what it describes as “inadequate human cancer studies and animal studies that have shown nasal tumors and laryngeal tumors in hamsters.” EPA, Acetaldehyde Hazard Summary <https://www.epa.gov/sites/production/files/2016-09/documents/acetaldehyde.pdf>.

Cir. 2015). Even if Sierra Club had alleged a respiratory harm from acetaldehyde or formaldehyde, that allegation would not support standing.

First, there is no evidence to support the claim that blending ethanol into gasoline pursuant to the RFS has increased acetaldehyde levels in California's air. In fact, the California Air Resources Board (CARB) has concluded the opposite, finding that acetaldehyde concentrations have declined as ethanol content has increased.⁹ CARB found that "other components of California gasoline, such as aromatic and alkenes, were . . . primarily responsible for the formation of acetaldehyde." *Id.* And increased ethanol blending has reduced concentrations of aromatics and alkenes (olefins) in gasoline.¹⁰

Second, even if the addition of ethanol to gasoline or the sale of high ethanol content fuel in California has caused some marginal increase in acetaldehyde levels, the amount of acetaldehyde in the air is far too small to cause or contribute to the asserted injuries.

At extremely high exposure levels, acetaldehyde may cause "coughing," "pulmonary edema," and "necrosis." EPA, Acetaldehyde Hazard Summary

⁹ Ralph Propper et al., *Ambient and Emission Trends of Toxic Air Contaminants in California*, 49 *Environ. Sci. & Tech.* 11,329, 11,334 (2015) (concluding that there was no increase in "acetaldehyde concentrations between 2002 and 2004, when MTBE in gasoline was replaced with ethanol in California").

¹⁰ See EPA, Fuel Trends Report: Gasoline 2006-2014 29 (Oct. 2017), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockkey=P100T5J6.pdf> ("As high octane ethanol increased in the gasoline pool, it displaced . . . aromatics in the gasoline pool."); *id.* ("Ethanol dilutes olefins causing a reduction in that gasoline property.").

<https://www.epa.gov/sites/production/files/2016-09/documents/acetaldehyde.pdf>. But no adverse respiratory effects from acetaldehyde have been observed below 273 milligrams per cubic meter of air, equivalent to roughly 152,000 parts per billion (ppb). *Id.*¹¹ California's Office of Environmental Health Hazard Assessment's (OEHHA's) estimate of the lowest level at which exposure to acetaldehyde may cause bronchoconstriction (constriction of the lungs resulting in coughing, wheezing, and shortness of breath) is 260 ppb. OEHHA, TSD for Noncancer RELs App'x D 6 (Dec. 2008, updated July 2014), <https://oehha.ca.gov/media/downloads/crnrr/appendixd1final.pdf>. The concentration of acetaldehyde in California's air is far too low to cause these effects. California's comprehensive review of acetaldehyde's hazards in 1993 found that average acetaldehyde concentrations in the South Coast Air Basin were 2.81 ppb. CARB, *Acetaldehyde as a Toxic Air Contaminant* (1993), <https://oehha.ca.gov/media/downloads/air/document/acetaldehyde.pdf>. Based on this information, OEHHA "concluded that it is unlikely that noncarcinogenic adverse health effects would be caused at the average levels of acetaldehyde currently found in the ambient air." *Id.* at 14.

Since 1993, acetaldehyde levels have fallen significantly to approximately 1 ppb on average in California's South Coast Air Basin, where Sierra Club's member resides, even as ethanol concentration in gasoline has increased. *See Propper, supra*

¹¹ 1 part per million (ppm) of acetaldehyde is equal to 1.8 milligrams per cubic meter. EPA, *Acetaldehyde Hazard Summary*. 273 milligrams per cubic meter divided by 1.8 is equal to 152 ppm. Multiplying 152 ppm by 1,000 to convert ppm to ppb results in 152,000 ppb of acetaldehyde.

note 9, at 11,332 & Supp. Info. S13. A study by the South Coast Air Quality Management District (“SCAQMD”) found that acetaldehyde concentrations average 1.25 ppb and never exceed 2.61 ppb at its Pico Rivera site near Montebello, Los Angeles, where Sierra Club’s member lives. SCAQMD, MATES-IV Report, App’x IV, at 3, Table IV-1 (May 2015), <http://www.aqmd.gov/home/air-quality/air-quality-studies/health-studies/mates-iv>; Complaint ¶ 14. Even in the worst hotspots of Los Angeles, acetaldehyde concentrations do not exceed 32 ppb, well below the threshold for respiratory effects. EPA, *Acetaldehyde Hazard Summary*.

As to formaldehyde, even if Sierra Club could demonstrate that high ethanol content fuel has increased California’s ambient formaldehyde concentrations, those concentrations are still too low to cause the asserted respiratory injury. OEHHA’s estimate of the lowest level at which exposure to formaldehyde may cause “lower airway discomfort” is 7 ppb. OEHHA, TSD, *supra* page 10, at 384. Current levels in southern California are only 3 ppb. *See* Propper, *supra* note 9, at 11,332 & Supp. Info. S12. At the Pico Rivera site near Montebello, Los Angeles, where Sierra Club’s member lives, formaldehyde concentrations average 2.81 ppb and never exceed 6.32 ppb. SCAQMD, MATES-IV Report, App’x IV, *supra*, at 3, Table IV-1. A recent

OEHHA report confirms that formaldehyde levels are too low to threaten the respiratory health of Sierra Club's member.¹²

Sierra Club's allegation that acetaldehyde and formaldehyde from high ethanol content fuel is causing respiratory harms to its member is unmoored from reality. The Court "cannot treat such speculation as sufficient for standing." *Fla. Audubon Soc.*, 94 F.3d at 668.

C. Ethanol Reduces Fine Particle Pollution from Motor Vehicles, Lowering the Risk of Respiratory Harm.

The wintertime respiratory conditions of Sierra Club's member are much more likely to be caused by particulate matter emissions, which high ethanol content fuel reduces. Instead of redressing the asserted injury, the fuel regulations that Sierra Club seeks would be more likely to worsen its member's health.

1. Particulate matter pollution from gasoline harms respiratory health during the winter.

Gasoline exhaust is a "ubiquitous source of particulate matter." *Control of Hazardous Air Pollutants from Mobile Sources*, 72 Fed Reg. 8428, 8440 (Feb. 26, 2007). Airborne particles can be "emitted directly from sources and are also formed through atmospheric chemical reactions: the former are often referred to as 'primary' particles and the latter as 'secondary' particles." *Control of Air Pollution*

¹² OEHHA, Gasoline-Related Air Pollutants in California, Trends in Exposure and Health Risk 1996 to 2014, at 209 (2018) (estimating a "hazard quotient" of 0.13 for formaldehyde in the South Coast Air Basin where Sierra Club's member lives), <https://oehha.ca.gov/media/downloads/air/report/oehhagasolinereportjanuary2018final.pdf>. "A hazard quotient above one indicates a potential health concern." *Id.* at v.

from Motor Vehicles: Tier 3 Motor Vehicle Emission and Fuel Standards, 79 Fed. Reg. 23,414, 23,429 (Apr. 28, 2014) (hereinafter Tier 3 Rule).

Fine particles of less than 2.5 micrometers (PM_{2.5}) are associated with “respiratory-related morbidity effects,” including “increased respiratory symptoms, and asthma development.” *Id.* at 23,430.¹³ EPA reports that studies have linked fine particle pollution to the following respiratory effects, including the symptoms suffered by Sierra Club’s member:

- Coughing, phlegm, and wheezing;
- Acute, reversible reduction in pulmonary function;
- Inflammation of the airways and lung;
- Bronchial hyperreactivity;
- Acute phase reaction;
- Respiratory infections;
- Respiratory emergency department visits;
- Respiratory hospitalizations;
- Decreased lung function growth in children;
- Chronic loss of pulmonary function in adults;
- Asthma development; and
- Premature mortality in people with chronic lung disease.

¹³ PM_{2.5} causes a host of other adverse health effects as well, including cardiovascular problems, developmental delay, lung cancer, and premature death. *Id.* at 23,430.

EPA, Particle Pollution and Respiratory Health, <https://www.epa.gov/particle-pollution-and-your-patients-health/health-effects-pm-patients-lung-disease>.

PM_{2.5} levels in Los Angeles, where Sierra Club's member lives, continue to exceed national ambient air quality standards. *See* CARB, Review of the 2016 Air Quality Management Plan for the South Coast Air Basin and Coachella Valley 6 https://www.arb.ca.gov/planning/sip/planarea/scabsip/2016AQMP_ARBstaffreport.pdf. In contrast to ozone, which is a summer pollutant, “[t]he highest PM_{2.5} levels in the South Coast [Los Angeles] tend to occur during the late fall and early winter, when colder, more stagnant conditions lead to the formation and accumulation of PM_{2.5}.” *Id.*

Sierra Club's allegation that its member's respiratory symptoms “become exacerbated during the colder winter months,” Compl. ¶ 14, is therefore consistent with respiratory harm from exposure to PM_{2.5} pollution, and not ozone. But Sierra Club does not complain that high ethanol content fuel contributes to particulate pollution—and for good reason: ethanol blending reduces PM.

2. Ethanol reduces primary tailpipe particulate emissions from motor vehicles.

“[T]he reduction of PM emissions with the addition of ethanol . . . has been demonstrated in many studies and is supported by fundamental combustion

chemistry considerations.”¹⁴ Tailpipe PM emissions from motor vehicles are caused by incomplete combustion of the fuel-air mixture and the resulting impingement of fuel droplets on the engine’s cylinder walls, a phenomenon that is strongly correlated with the presence of aromatic hydrocarbons, which are added to gasoline to increase octane rating.¹⁵

Ethanol is a high-octane additive that refiners use to replace gasoline aromatics for economic reasons. EPA, Fuel Trends Report, *supra* note 10, at 24, 29. In contrast to the aromatic hydrocarbons it replaces, ethanol does not contribute to tailpipe PM emissions. *See* Stein et al., *supra* note 14, at 11. Instead, blending ethanol into gasoline reduces the likelihood of incomplete combustion and resulting PM emissions by lowering the distillation temperature of the fuel. *Id.* Ethanol’s higher oxygen content also tends to “reduce soot [carbonaceous PM] formation by limiting the formation of aromatic precursors to soot.” *Id.*

¹⁴ James Anderson et al., *Issues with T50 and T90 as Match Criteria for Ethanol-Gasoline Blends*, 7 SAE Int’l J. Fuels & Lubr. 1027, 1031 & nn.1, 13, 14, 15, 16, 17 (2014) (citing ten “particularly well documented” studies); *see also* Robert A. Stein et al., *An Overview of the Effects of Ethanol-Gasoline Blends on SI Engine Performance, Fuel Efficiency, and Emissions*, SAE Tech. Paper 2013-01-1635, at 12 & nn.24, 44, 49, 52, 53, 54 (“Numerous studies have shown reduced PM emissions with increasing ethanol content in blends with gasoline.”).

¹⁵ *See* Koichiro Aikawa et al., *Development of a Predictive Model for Gasoline Vehicle Particulate Matter Emissions*, 3 SAE Int’l J. Fuels & Lubr. 610, 611 (2010); *see also* Georgios Karavalakis et al., *Evaluating the Effects of Aromatics Content in Gasoline on Gaseous and Particulate Matter Emissions from SI-PFI and SIDI Vehicles*, 49 Environ. Sci. & Tech. 7021, 7027 (2015) (finding “higher PM emissions with increasing aromatics in the fuel,” consistent with the bulk of available studies) (hereinafter Karavalakis, *Effects of Aromatics*).

Ethanol's PM-reducing effects are particularly pronounced in the high ethanol content fuels that Sierra Club complains about. For example, a 2014 study conducted by the University of California and funded by the California Energy Commission and the SCAQMD showed that "higher alcohol fuels would decrease PM mass and number emissions" in new (model year 2013) vehicles.¹⁶ The study tested gasoline and two "ethanol fuels that would be utilized in California"—E10 and two E85 blends. Karavalakis, *Impacts of Ethanol II*, *supra* note 16, at 14,017. The results "showed statistically significant decreases" in PM_{2.5} emissions "of 61% and 59%" for the E85 blends compared to E10. *Id.* at 14,021. The PM emissions reductions observed in the scientific literature are even greater when gasoline with no ethanol is compared to E85.¹⁷ High ethanol content fuel therefore *reduces* Sierra Club's member's risk of respiratory harm from exposure to PM_{2.5} pollution.

¹⁶ Georgios Karavalakis et al., *Assessing the Impacts of Ethanol and Isobutanol on Gaseous and Particulate Emissions from Flex-Fuel Vehicles*, 48 *Environ. Sci. Technol.* 14,016, 14,023 (2014) (hereinafter Karavalakis, *Impacts of Ethanol II*).

¹⁷ See, e.g., M.A. Costagliola et al., *Combustion Efficiency and Engine Out Emissions of a S.I. Engine Fueled With Alcohol/Gasoline Blends*, *Applied Energy* 1, 6 (2012) (finding that PM emissions fall by 98% when E85 emissions are compared to E0 emissions); Dabrina Dutcher et al., *Emissions from Ethanol-Gasoline Blends: A Single Particle Perspective*, 2 *Atmosphere* 195 (2011) (finding a 65% reduction in PM emissions when E85 emissions are compared to E0 emissions).

3. Adding ethanol to gasoline reduces the formation of secondary organic particle pollution from gasoline.

Much of the PM attributable to motor vehicles in urban areas is “secondary” PM, in the form of secondary organic aerosols (SOA) “formed through atmospheric chemical reactions” of precursor gases (*i.e.*, sulfur oxides, NO_x, and organic gases) in the ambient air. Tier 3 Rule, 79 Fed. Reg. at 23,429.¹⁸ Like other forms of PM_{2.5}, SOA from gasoline causes “respiratory symptoms” like those suffered by Sierra Club’s member.¹⁹

SOA concentrations in urban areas are produced primarily by gasoline aromatic emissions, particularly single-ring aromatic emissions: benzene, toluene, ethylbenzene, and xylene (BTEX). Gentner et al., *supra* note 18, at 1078. Smog chamber studies and studies of “air pollution events in [California’s] South Coast air basin” identify “aromatic compounds” as “key anthropogenic precursors with prevalent emissions from motor vehicles.” *Id.* at 1075. Some studies find that “96% of SOA” from gasoline “arise from single-ring aromatics” while others have attributed the *entire* SOA-forming potential of gasoline to BTEX. *Id.* at 1078.²⁰

¹⁸ See Drew R. Gentner et al., *Review of Urban Secondary Organic Aerosol Formation from Gasoline and Diesel Motor Vehicle Emissions*, 51 *Environ. Sci. & Tech.* 1074, 1078 (Dec. 21, 2016).

¹⁹ See Katherine Von Stackelberg et al., *Public Health Impacts of Secondary Particulate Formation from Aromatic Hydrocarbons in Gasoline*, 12 *Environ. Health* 1, 10 (2013).

²⁰ J.R. Odum et al., *The Atmospheric Aerosol-Forming Potential of Whole Gasoline Vapor*, 276 *Science* 96, 96 (1997) (“[T]he atmospheric organic aerosol formation potential of whole gasoline vapor can be accounted for solely in terms of the aromatic fraction of the fuel.”).

Displacing aromatics by adding ethanol to gasoline reduces SOA formation, thereby reducing the risk of respiratory harm from PM_{2.5}. Adding ethanol to gasoline has been shown to significantly reduce BTEX precursor emissions, particularly with high ethanol content fuels like E85. *See* Karavalakis, *Impacts of Ethanol II*, *supra* note 16, at 14,021 (finding reductions in BTEX emissions ranging from 60 to 85% when comparing E85 fuels to E10). Indeed, studies have confirmed that high ethanol content fuel dramatically reduces SOA, thereby reducing PM_{2.5} pollution and promoting respiratory health.²¹ (In addition, ethanol’s displacement of aromatics reduces emissions of benzene, “a known human carcinogen.” Tier 3 Rule, 79 Fed. Reg. at 23,433).

High ethanol content fuel therefore reduces the threat of secondary particle pollution in urban areas, mitigating respiratory ailments like those alleged by Sierra Club’s member.

II. SIERRA CLUB HAS NOT DEMONSTRATED STANDING BASED ON INFORMATIONAL INJURY, BECAUSE THE STATUTE DOES NOT REQUIRE PUBLIC DISCLOSURE OF THE REPORT OR THE STUDY.

In addition to the alleged respiratory injury, Sierra Club claims that its “members experience informational injury year after year as a result of EPA’s years-long delay in completing the required environmental and air quality studies of the RFS program.” Compl. ¶ 16.

²¹ *See, e.g.,* Hilkka Timonen et al., *Influence of Fuel Ethanol Content on Primary Emissions and Secondary Aerosol Formation Potential for a Modern Flex-Fuel Gasoline Vehicle*, 17 *Atmos. Chem. Phys. Discuss.* 5311, 5325 (2017) (“As the ethanol content of the fuel increased, secondary aerosol formation was observed to decrease significantly.”).

Even if Sierra Club had identified an affected member and provided evidence of his or her desire to use the requested information, Sierra Club cannot possibly demonstrate informational injury because the statutes it seeks to enforce do not give its members any right to information.

To demonstrate informational injury, Sierra Club must show that: “(1) it has been deprived of information that, on its interpretation, the statute requires the government or a third party to disclose to it, and (2) it suffers, by being denied access to that information, the type of harm Congress sought to prevent by requiring disclosure.” *Friends of Animals*, 828 F.3d at 992.

Sierra Club’s informational injury theory does not satisfy the first requirement, because Sierra Club “is seeking to enforce a statutory deadline provision that by its terms does not require the public disclosure of information.” *Id.* at 993. The Energy Independence and Security Act of 2007 (EISA), § 204, requires that EPA “assess and report *to Congress*” the environmental and resource conservation impacts of the Renewable Fuel Standard every three years. 42 U.S.C. § 7545 note (Pub. L. 110–140, title II, § 204, 121 Stat. 1529 (Dec. 19, 2007)) (emphasis added). Nothing in EISA requires that EPA release the Report *to the public*. As Sierra Club concedes, the “purpose of the” Report to Congress is “to make *Congress* aware of the program’s impacts,” not to inform the public. Compl. ¶ 27 (emphasis added); *see also id.* ¶ 15 (“Without information provided by the Report, *Congress* cannot meaningfully review the statute and make necessary changes to

the law” (emphasis added)); *id.* ¶ 43 (report is meant to “inform *Congress*” (emphasis added)).

The same is true of the “anti-backsliding” study. 42 U.S.C. § 7545(v)(1). It is meant to inform EPA’s own policy judgment, not the public, as Sierra Club also acknowledges. *See id.* ¶ 15 (alleging that EPA needs this information to carry out certain statutory functions).

Sierra Club lacks standing to assert an informational right that belongs to the political branches. *See Bauer v. Marmara*, 774 F.3d 1026, 1030 (D.C. Cir. 2014) (holding that where there is no statutory assignment of an informational interest, the plaintiff “has no standing to . . . enforce the Government’s interests”). The Court must therefore reject Sierra Club’s attempt to act as the self-appointed agent of Congress.

III. SIERRA CLUB HAS NOT DEMONSTRATED STANDING BASED ON RECREATIONAL INJURY, BECAUSE IT CANNOT TRACE THE RELEVANT “NUTRIENT POLLUTION” TO EPA’S INACTION.

Sierra Club also attempts to show associational standing by asserting that “one [unnamed] Sierra Club member . . . recreates in Kansas lakes, including Perry, Milford, Melvern, Pomona, Kanapolis, and Wilson.” Compl. ¶ 11. Sierra Club claims that “[i]mpaired water quality at these lakes due to nutrient pollution from adjacent farmland runoff has caused unusually high algal growth and has impaired this member’s enjoyment of the area. It has prevented her from returning to these sites for camping and wildlife viewing.” *Id.*

Sierra Club's recreational standing fails because Sierra Club has not shown that the asserted recreational injury was caused by EPA's inaction or would be redressed by an order of this Court.

First, Sierra Club cannot establish recreational standing, because it has not shown any causal connection between the nutrient water pollution allegedly affecting its member's recreational activities and EPA's challenged inaction. Sierra Club has not "provided competent evidence that corn farmers in particular areas" near the lakes visited by Sierra Club's anonymous member have increased nutrient discharge into those lakes, impairing their water quality. *Fla. Audubon Soc'y*, 94 F.3d at 668 (rejecting assertion of recreational standing to challenge a rule that allegedly would have increased the demand for ethanol, increased corn production, and harmed areas visited by the organization's members). Even if it had, Sierra Club has not alleged, much less demonstrated, that any diminution in the lakes' water quality is traceable to fertilizer runoff from corn grown as a result of EPA's inaction "rather than any one of other innumerable farming considerations, including weather, the availability of credit, and existing subsidy programs." *Id.* at 670. Accordingly, Sierra Club has failed to show causation.

Second, Sierra Club's cannot establish recreational standing because the relief it is seeking would not redress its recreational injuries. Sierra Club speculates that if the Court compelled EPA to report to Congress, Congress would act to "alter[] renewable fuel volume targets, to address adverse environmental and health impacts that harm Sierra Club members." Compl. ¶ 15. But "it is not even

conceivable that” Sierra Club’s members “could have standing if redress of their injuries hinged on action by Congress.” *Utah v. Evans*, 536 U.S. 452, 513 (2002) (Scalia, J., dissenting).

In a closely analogous case, the D.C. Circuit held that an environmental organization lacked standing to challenge an agency’s failure to submit a statutorily mandated report, because “[e]ven if this court were to order” the agency to submit the report, “it would still be up to Congress to decide whether to” act on it.

Wilderness Soc’y v. Norton, 434 F.3d 584, 591 (D.C. Cir. 2006). The court reasoned that the plaintiff’s environmental injury was not redressable, because “Congress has no obligation to consider [the report], let alone act upon [it]. And no order from this court . . . will change this situation.” *Id.* (citing *Guerrero v. Clinton*, 157 F.3d 1190, 1191 (9th Cir. 1998) (holding that where “reports [to Congress] themselves trigger no legal consequences,” any injury allegedly incurred by the absence of reporting “is . . . not redressable”)).

Sierra Club also fails to explain, much less demonstrate, how an order compelling EPA to conduct an anti-backsliding study and to decide whether fuel regulations are necessary to mitigate “adverse impacts on *air* quality,” would redress Sierra Club’s recreational injury from alleged *water* quality impacts. 42 U.S.C. § 7545(v) (emphasis added).

For the same reason, Sierra Club’s recreational lake-user member is not “within the class of plaintiffs whom Congress has authorized to sue” to enforce EISA’s anti-backsliding requirements. *Lexmark Int’l, Inc. v. Static Control*

Components, Inc., 134 S. Ct. 1377, 1387 (2014). “Identifying the interests protected by” EISA’s anti-backsliding provisions “requires no guesswork.” *Id.* at 1389. The statute is concerned with “air quality” impacts, not water quality. *See* 42 U.S.C. § 7545(v)(1)(A), (2)(A). Sierra Club’s lake-user member therefore falls outside of the zone of interests protected by EISA’s anti-backsliding statute.

CONCLUSION

For the foregoing reasons, the Court should deny Sierra Club’s prayer for declaratory and injunctive relief and should dismiss this suit for lack of jurisdiction.

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Respectfully submitted,

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