

**[ORAL ARGUMENT NOT YET SCHEDULED]**

**Case No. 21-1021 (and consolidated cases)**

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**IN THE UNITED STATES COURT OF APPEALS  
FOR THE DISTRICT OF COLUMBIA CIRCUIT**

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CENTER FOR BIOLOGICAL DIVERSITY, FRIENDS OF THE EARTH,  
and SIERRA CLUB,

*Petitioners,*

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al.,  
*Respondents,*

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC. and  
THE BOEING COMPANY,

*Intervenors.*

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On Petition for Review of Final Action  
by the United States Environmental Protection Agency

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**INITIAL OPENING BRIEF FOR PETITIONERS  
CENTER FOR BIOLOGICAL DIVERSITY, FRIENDS OF THE EARTH,  
AND SIERRA CLUB**

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## **CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES**

Petitioners Center for Biological Diversity, Sierra Club, and Friends of the Earth (collectively, “Environmental Petitioners”) incorporate by reference the Certificate of Parties, Rulings, and Related Cases in the State Petitioners’ Opening Brief.

## **CORPORATE DISCLOSURE STATEMENT**

Pursuant to Rule 26.1 of the Federal Rules of Appellate Procedure and D.C. Cir. Rule 26.1, Environmental Petitioners state that they are non-profit conservation organizations, and that none of them has any parent companies, subsidiaries, or affiliates that have issued shares to the public.

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## TABLE OF CONTENTS

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES .....	ii
CORPORATE DISCLOSURE STATEMENT .....	ii
TABLE OF CONTENTS.....	iii
TABLE OF AUTHORITIES .....	v
GLOSSARY.....	ix
INTRODUCTION .....	1
JURISDICTIONAL STATEMENT .....	4
ISSUES PRESENTED.....	4
STATUTES AND REGULATIONS.....	5
STATEMENT OF THE CASE.....	5
I.    FACTUAL BACKGROUND .....	5
A.    Climate Change Threatens Severe and Irreversible Harms.....	5
B.    Aircraft Greenhouse Gas Emissions Are Significant and Growing Steeply .....	7
C.    Technologies and Other Measures Are Available Now to Reduce Greenhouse Gas Emissions from Aircraft .....	8
II.   STATUTORY AND REGULATORY BACKGROUND.....	11
A.    The Clean Air Act.....	11
B.    Regulation of Aircraft Under Section 231 .....	12
C.    The Chicago Convention and the International Civil Aviation Organization.....	14
D.    EPA’s Adoption of ICAO’s Aircraft Standards .....	17
SUMMARY OF THE ARGUMENT .....	21
STANDING .....	22
STANDARD OF REVIEW .....	24

ARGUMENT .....25

I. THE AIRCRAFT RULE IS UNLAWFUL BECAUSE EPA FAILED TO CONSIDER STATUTORY FACTORS AND SUBSTITUTED ITS OWN NON-STATUTORY POLICY GOALS INSTEAD .....25

A. Section 231 Requires EPA to Set Standards Based on the Factors Identified Therein.....27

B. EPA Failed to Set Standards Based on Section 231’s Factors .....32

C. EPA’s “Harmonization” Goal is Contrary to Section 231 .....37

II. EPA’S FAILURE TO CONSIDER REDUCING AIRCRAFT GREENHOUSE GASES IS ARBITRARY AND CAPRICIOUS .....40

CONCLUSION .....41

CERTIFICATE OF COMPLIANCE.....43

CERTIFICATE OF SERVICE .....44

## TABLE OF AUTHORITIES

	Page(s)
<b>Cases</b>	
<i>Am. Elec. Power Co. v. Connecticut</i> , 564 U.S. 410 (2011).....	12
<i>Am. Lung Ass’n v. EPA</i> , 985 F.3d 914 (D.C. Cir. 2021), <i>cert. granted on other grounds</i> .....	12
<i>Ass’n of Am. Railroads v. Costle</i> , 562 F.2d 1310 (D.C. Cir. 1977).....	33
<i>Corley v. United States</i> , 556 U.S. 303 (2009).....	29
* <i>Ctr. for Biological Diversity v. EPA</i> , 794 F. Supp. 2d 151 (D.D.C. 2011).....	12, 27, 28
<i>Delaware Dep’t of Nat. Res. and Env’tl. Control v. EPA</i> , 895 F.3d 90 (D.C. Cir. 2018).....	28
<i>George E. Warren Corp. v. EPA</i> , 159 F.3d 616 (D.C. Cir.1998).....	40
<i>Getty v. Fed. Sav. &amp; Loan Ins. Corp.</i> , 805 F.2d 1050 (D.C. Cir. 1986).....	25, 33
<i>Indep. U.S. Tanker Owners Comm. v. Dole</i> , 809 F.2d 847 (D.C. Cir. 1987).....	25
<i>Kingdomware Technologies, Inc. v. United States</i> , 579 U.S. 162 (2016).....	28
* <i>Massachusetts v. EPA</i> , 549 U.S. 497 (2007).....	11, 26, 38

---

\* Authorities chiefly relied upon are marked with an asterisk.

<i>Michigan v. EPA</i> , 576 U.S. 743 (2015).....	36
<i>Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.</i> , 463 U.S. 29 (1983).....	24
<i>Nat. Res. Def. Council v. EPA</i> , 725 F.2d 761 (D.C. Cir. 1984).....	11, 29
* <i>Nat. Res. Def. Council v. EPA</i> , 777 F.3d 456 (D.C. Cir. 2014).....	26, 32, 34, 39, 40
<i>Nat. Res. Def. Council v. Wheeler</i> , 955 F.3d 68 (D.C. Cir. 2020).....	24
<i>Nat’l Ass’n of Clean Air Agencies v. EPA</i> , 489 F.3d 1221 (D.C. Cir. 2007).....	32, 39, 40
<i>S. Coast Air Quality Mgmt. Dist. v. EPA</i> , 472 F.3d 882 (D.C. Cir. 2006).....	27
<i>Util. Air Regul. Grp. v. EPA</i> , 573 U.S. 302 (2014).....	26, 33
<i>Whitman v. American Trucking Ass’n</i> , 531 U.S. 457 (2001).....	26, 39

## Statutes

42 U.S.C. § 7401(a)(3).....	11
42 U.S.C. § 7401(b)(1).....	11
*42 U.S.C. § 7571 .....	1, 13, 18, 25, 26, 27, 28, 32, 34, 35, 36
42 U.S.C. § 7571(a)(1).....	12, 13, 36
42 U.S.C. § 7571(a)(1)(A) .....	27

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\* Authorities chiefly relied upon are marked with an asterisk.

42 U.S.C. § 7571(a)(1)(B) .....	13, 27, 35
42 U.S.C. § 7571(a)(2).....	36
42 U.S.C. § 7571(a)(2)(A) .....	18, 27, 34
42 U.S.C. §7571(a)(2)(B) .....	13, 27
42 U.S.C. § 7571(b) .....	13, 28, 29, 36
42 U.S.C. § 7573 .....	14
42 U.S.C. § 7607(b)(1).....	4
42 U.S.C. § 7607(d)(6)(A).....	32
42 U.S.C. § 7607(d)(9).....	24

### **Federal Register**

37 Fed. Reg. 26,488 (Dec. 12, 1972) .....	30, 31
38 Fed. Reg. 19,088 (July 17, 1973).....	31
41 Fed. Reg. 34,722 (Aug. 16, 1976).....	31
43 Fed. Reg. 12,615 (Mar. 24, 1978).....	31
62 Fed. Reg. 25,356 (May 8, 1997) .....	31
70 Fed. Reg. 69,664 (Nov. 17, 2005).....	13
73 Fed. Reg. 44,354 (July 30, 2008).....	10
80 Fed. Reg. 37,758 (July 1, 2015).....	9
*81 Fed. Reg. 54,422 (Aug. 15, 2016) .....	2, 5, 7, 17
86 Fed. Reg. 2136 (Jan. 11, 2021) .....	1, 3, 8, 9, 13, 17, 18, 19, 20, 21, 22, 23, 25, 26, 28, 29, 32, 33, 34, 35, 36, 37, 39

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\* Authorities chiefly relied upon are marked with an asterisk.

## Legislative History

H.R. Rep. No. 91-1783 (Dec. 17, 1970) .....	14, 30
Motor Vehicle Air Pollution Control Act of 1965, Pub. L. 89-272, § 202(a), 79 Stat. 992 (Oct. 20, 1965) .....	13, 29
Pub. L. 91-604, 84 Stat. 1676 (Dec. 31, 1970) .....	13, 14, 29, 30
S. Rep. No. 91-1196 (Sept. 17, 1970) .....	14, 30, 31

## Other Authorities

<i>Airplane Greenhouse Gas Standards Technical Support Document</i> EPA-HQ-OAR-2018-0276-0024 .....	18, 19, 20
Brandon Graver et al., <i>CO<sub>2</sub> emissions from commercial aviation, 2018</i> (2019), EPA-HQ-OAR-2018-0276-0151 .....	7
Convention on International Civil Aviation (Ninth Edition, 2006), EPA-HQ-OAR-2018-0276-0006 .....	15, 16, 17, 37
Intergovernmental Panel on Climate Change, <i>Global Warming of</i> <i>1.5°C</i> 12 (2018), EPA-HQ-OAR-2018-0276-0151 .....	6
Kharina, A. et al., <i>Cost Assessment of Near and Mid-Term</i> <i>Technologies to Improve New Aircraft Fuel Efficiency</i> 28 (2016), EPA-HQ-OAR-2018-0276-0151 .....	9
Sola Zheng & Dan Rutherford, <i>Fuel burn of new commercial jet</i> <i>aircraft: 1960 to 2019</i> (2020), EPA-HQ-OAR-2018-0276-0151 .....	7, 8
U.S. Global Change Research Program, <i>Impacts, Risks, and</i> <i>Adaptation in the United States: Fourth National Climate</i> <i>Assessment</i> , EPA-HQ-OAR-2018-0276-0151 .....	5, 6

## GLOSSARY

Aircraft Rule	<i>Control of Air Pollution From Airplanes and Airplane Engines: GHG Emission Standards and Test Procedures</i> , 86 Fed. Reg. 2136 (Jan. 11, 2021)
Endangerment Finding	<i>Finding That Greenhouse Gas Emissions From Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare</i> , 81 Fed. Reg. 54,422 (Aug. 15, 2016)
EPA	Environmental Protection Agency
ICAO	International Civil Aviation Organization
JA	Joint Appendix
Section 231	42 U.S.C. § 7571

## INTRODUCTION

Section 231 of the Clean Air Act, 42 U.S.C. § 7571, requires the Environmental Protection Agency (“EPA”) to issue standards addressing the harm aircraft greenhouse gas emissions inflict on public health and welfare. EPA must analyze the extent of the harm and assess what technology is or will be available to reduce it, while taking into account safety, noise, and the lead time and cost required to develop and apply the technology. EPA’s rule under review, *Control of Air Pollution from Airplanes and Airplane Engines: GHG Emission Standards and Test Procedures*, 86 Fed. Reg. 2136, 2164, 2167 (Jan. 11, 2021) (“Aircraft Rule” or “Rule”), did *none* of this analysis. Instead, EPA adopted an international standard all aircraft subject to the Rule already meet, refusing even to *consider* a rule that would reduce emissions, even though cost-effective emission-reduction technologies have been in commercial use for years.

Aviation is one of the fastest-growing emitters of carbon dioxide, the air pollutant primarily responsible for dangerously destabilizing our climate. Over the last ten years alone, carbon dioxide and other greenhouse gas emissions from commercial aircraft increased by 44 percent, and they are expected to *triple* from

2015 levels by mid-century, despite short-term disruptions caused by the COVID-19 pandemic. The United States is by far the world's largest aviation carbon polluter. Without strong action by EPA, aircraft will emit an ever-larger amount of greenhouse gases.

In its 2016 endangerment finding for aircraft, *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. 54,422 (Aug. 15, 2016) (“Endangerment Finding”), EPA determined that aircraft greenhouse gas emissions cause or contribute to pollution that increases the likelihood and severity of extreme events like devastating wildfires, flooding, and drought; degrades air and water quality; causes health disorders and premature deaths; and impacts sectors ranging from food production to infrastructure to ecosystems and wildlife. Yet in response to this finding, EPA finalized a rule that, by design, has no effect whatsoever on aircraft greenhouse gas pollution.

Instead, EPA adopted aircraft emission standards the International Civil Aviation Organization (“ICAO”) issued in 2017 that *lag a decade behind* current technical development. EPA's express purpose in promulgating the Aircraft Rule

was to “promote international harmonization of aviation standards” and “avoid placing U.S. manufacturers at a competitive disadvantage.” 86 Fed. Reg. at 2144. But those goals are untethered to Section 231’s requirements and, as EPA applied them, contravene the statute’s pollution-reduction purpose. Agencies possess no authority to jettison congressional mandates in favor of an international body’s separate and different goals. And EPA has not explained why “harmonization” with ICAO’s lowest-common-denominator standard justifies this radical departure from the plain text and structure of Section 231.

Because EPA failed to consider the statutory factors and instead substituted its own extra-statutory rationale for adopting the ICAO standard, this Court should grant the petitions for review and hold the Aircraft Rule is unlawful and arbitrary. To avoid duplication, Environmental Petitioners address the Rule’s unlawfulness and State Petitioners address its arbitrariness. The Environmental Petitioners’ brief includes a Statement of the Case and Standard of Review that is applicable to both briefs. Environmental Petitioners incorporate the State Petitioners’ brief by reference.

## **JURISDICTIONAL STATEMENT**

This Court has jurisdiction under Section 307(b)(1) of the Clean Air Act, 42 U.S.C. § 7607(b)(1), to review “any standard under section 7571,” which includes the Aircraft Rule. Environmental Petitioners filed their petition for review within 60 days of the Aircraft Rule’s publication.

## **ISSUES PRESENTED**

1. Whether EPA acted unlawfully in promulgating aircraft greenhouse gas emission standards that do nothing to mitigate the danger of greenhouse gas pollution from aircraft, based not on its consideration of the statutory factors in Section 231, but solely on its desire to promote “regulatory uniformity throughout the world” and avoid unspecified competitive disadvantages?

2. Whether EPA acted arbitrarily and capriciously by refusing to adopt or even consider emission standards that mitigate the danger of greenhouse gas pollution at all; failing to consider the full potential of feasible and cost-effective technologies and strategies to reduce emissions; and failing to meaningfully address environmental justice and States’ federalism concerns?

## STATUTES AND REGULATIONS

Pertinent statutes and regulations are reproduced in an addendum to this brief. *See* Addendum of Statutes and Regulations.

### STATEMENT OF THE CASE

#### I. FACTUAL BACKGROUND

##### A. Climate Change Threatens Severe and Irreversible Harms.

Greenhouse gas emissions that drive climate change have increased at an unprecedented rate as a result of human activities. Endangerment Finding, 81 Fed. Reg. at 54,444. The United States government, and EPA in particular, has repeatedly recognized that climate change is causing and will continue to cause increasingly widespread, severe harms. *Id.* The impacts of more frequent and extreme weather events, intensifying droughts, hazardous air quality associated with wildfire and ozone pollution, and sea level rise “are already being felt in communities across the country.” U.S. Global Change Research Program, *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment (“Fourth Assessment”), Volume II 25* (2018), EPA-HQ-OAR-2018-0276-0151, JA\_\_\_. EPA and sister agencies have concluded that if we do not begin to significantly reduce greenhouse gases now, by the end of this century thousands of American lives and hundreds of billions of dollars in health-related economic costs will be lost *each year*. *Id.* at 541, 1358-60, JA\_\_\_.

Rapid reductions across all major fossil-fuel-burning sources are necessary to address climate change. *Fourth Assessment, Volume I* 32, 83 (2017), EPA-HQ-OAR-2018-0276-0151, JA\_\_\_. Because of greenhouse gas emissions' cumulative effects, reductions that occur in the next decade are more effective in reducing harm than reductions that may occur later in the century. *Fourth Assessment, Volume II* at 1488, JA\_\_\_. A 2018 report made clear that global industrial sectors must decarbonize by mid-century to keep warming to 1.5° Celsius and avoid increasingly dire climate damages. Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C* 12 (2018), EPA-HQ-OAR-2018-0276-0151, JA\_\_\_ (to meet the 1.5° Celsius target, global carbon dioxide emissions must be cut by about half by 2030 and reach near zero by 2050).<sup>1</sup> Exceeding a 1.5° to 2° Celsius rise would cause even more deadly heatwaves, droughts, and flooding; increased risk of multi-meter sea level rise; widespread species extinctions; enhanced thawing of permafrost and the associated release of the super-polluting greenhouse gas methane; increased respiratory illnesses and premature deaths; the proliferation of diseases; and expose up to several hundred million more people to climate-related harms and poverty by 2050. *Id.* at 7-14, JA\_\_\_. These harms would fall

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<sup>1</sup> Similarly, the Fourth National Climate Assessment states that “substantial” carbon dioxide emission cuts before 2040 are needed to limit warming to 2°C, and emissions “likely” must “become zero” in the following decades. U.S. Global Change Research Program, *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* 1352 (2018), JA\_\_\_.

disproportionately on low-income communities and communities of color. 81 Fed. Reg. at 54,454.

**B. Aircraft Greenhouse Gas Emissions Are Significant and Growing Steeply.**

Aviation pumps greenhouse gases, including carbon dioxide and smaller amounts of nitrous oxide, into the atmosphere. 81 Fed. Reg. at 54,424. Globally, in 2018, commercial aviation contributed 2.4 percent of carbon dioxide emissions from fossil fuel use. Brandon Graver et al., *CO<sub>2</sub> emissions from commercial aviation, 2018* 1 (2019), EPA-HQ-OAR-2018-0276-0151, JA\_\_.

The United States is by far the largest aviation carbon polluter; its aircraft emissions “are about 6 times higher than aircraft greenhouse gas emissions from China,” which is ranked second in the world in aircraft emissions. 81 Fed. Reg. at 54,468 (2015 data). Emissions from domestic flights and international flights departing from the United States outrank the total greenhouse gas emissions, from *all* sources, of more than 150 countries. *Id.*

Aviation is also one of the *fastest-growing* sources of greenhouse gas emissions. Over the last ten years, global aviation emissions increased by 44 percent. Sola Zheng & Dan Rutherford, *Fuel burn of new commercial jet aircraft: 1960 to 2019* 1 (2020), EPA-HQ-OAR-2018-0276-0151, JA\_\_. According to ICAO, greenhouse gas emissions from aircraft were recently on pace to triple

between 2015 and 2045. *Id.* The Aircraft Rule describes a similar upward trend, anticipating emission growth from domestic and United States-departing flights of 40 to 53 percent above 2015 levels by 2040. 86 Fed. Reg. at 2163. Even with a slowdown in activity related to the COVID-19 pandemic, EPA “expect[s] that commercial aviation will continue to be a growth industry over the long term.” Aviation Greenhouse Gas Standards Response to Comments at 136 (2020), EPA-HQ-OAR-2018-0276-0228, JA\_\_.

Aircraft also emit criteria and hazardous air pollutants that harm residents living close to airports or under flight paths, causing premature death, respiratory and cardiovascular disorders, and other serious health effects. Comments of Environmental Pet’rs. at 14, EPA-HQ-OAR-2018-0276-0151, JA\_\_. Failing to rein in aviation greenhouse gas emissions also leaves harmful criteria co-pollutant emissions unabated. Comments of State Pet’rs. at 17, EPA-HQ-OAR-2018-0276-0176, JA\_\_.

**C. Technologies and Other Measures Are Available Now to Reduce Greenhouse Gas Emissions from Aircraft.**

Many airplanes in commercial use today already meet ICAO’s—and now EPA’s—greenhouse gas standards for new aircraft to be delivered in 2028; indeed, a recent report found that the average new commercial jet already met the 2028 standard six years ago, in 2016. Zheng & Rutherford at 15, JA\_\_. By 2019, the

average new jet surpassed the standard by 6 percent, with multiple aircraft designs exceeding EPA's standards for 2028 by up to 25 percent. *Id.*

Commenters pointed out that EPA's standards should, at a minimum, reflect the current state of technology, and that EPA could incorporate additional strategies to further reduce emissions. First, standards could account for existing and expected design improvements to new planes that reduce the fuel burned per mile traveled. Comments of International Council on Clean Transportation at 3, EPA-HQ-OAR-2018-0276-0168, JA\_\_.<sup>2</sup> Examples of design improvements include using advanced materials and new manufacturing processes, improving propulsion and aerodynamics, reducing drag, and improving combustion and engine cycle refinements. *Proposed Endangerment Finding*, 80 Fed. Reg. 37,758, 37,797 (July 1, 2015).<sup>3</sup>

Second, standards could incorporate controls that go beyond the stringency levels that design technologies support. EPA has long recognized that its Section 231 authority applies to both new and in-service aircraft, and EPA has previously

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<sup>2</sup> According to EPA, new aircraft designs and some redesigns “typically yield large fuel burn reductions—10 percent to 20 percent over the prior generation.” 86 Fed. Reg. at 2147.

<sup>3</sup> Collectively, these measures could reduce greenhouse gas emissions from new aircraft by 2.2 percent per year or more through 2034, equivalent to a 40 percent reduction of emissions from new aircraft in 2034 relative to 2015. Comments of International Council on Clean Transportation at 3, JA\_\_; Kharina, A. et al., *Cost Assessment of Near and Mid-Term Technologies to Improve New Aircraft Fuel Efficiency* 28 (Sept. 27, 2016), EPA-HQ-OAR-2018-0276-0151, JA\_\_.

discussed employing operational controls in addition to aircraft and engine controls. *Id.* at 37,791 n.203 (July 1, 2015) (“section 231 of the CAA does not restrict the EPA’s authority to set standards for only new aircraft.”); *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. 44,354, 44,474 (July 30, 2008) (EPA could “consider efficiencies gained by use of improved operational controls”). Operational improvements to reduce emissions without engine and airframe modifications include reducing engine thrust and reverse during take-off and landing; optimizing timetables, route networks, and flight frequencies to reduce stopovers and select fuel-efficient routes; minimizing engine idling time on runways; and weight reduction strategies like reducing the amount of excess fuel carried. Comments of Environmental Pet’rs. at 26, JA\_\_.

Third, standards could combine various controls for new and in-service aircraft in “a declining fleet average emissions program” for airlines, which would ratchet down emissions across the entire sector. *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. at 44,472-73; *see also* Comments of International Council on Clean Transportation at 4, JA\_\_ (noting that regulating emissions from in-service aircraft would incentivize the retirement of older, more polluting aircraft in favor of newer, more efficient aircraft).<sup>4</sup> Such standards could

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<sup>4</sup> The combined potential effect of these technologies, operational measures, and regulatory tools is large, as reflected by current performance gaps between the

also incorporate fuel-related improvements, including the use of emerging hybrid and all-electric technology likely to be developed in the next twenty years.

Comments of Center for Biological Diversity, Att. A at 7-10, EPA-HQ-OAR-2018-0276-0154, JA\_\_.

In short, a plethora of existing, feasible technologies, operational measures, and regulatory tools exist to address greenhouse gas emissions from aircraft.

## II. STATUTORY AND REGULATORY BACKGROUND

### A. The Clean Air Act

Congress enacted the Clean Air Act “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” 42 U.S.C. § 7401(b)(1). The Act’s “primary goal” is to encourage “pollution prevention,” which Congress defined as the “reduction or elimination, through any measure, of the amount of pollutants produced or created at the source.” 42 U.S.C. § 7401(a)(3); *see Nat. Res. Def. Council v. EPA*, 725 F.2d 761, 770 (D.C. Cir. 1984) (“the primary emphasis of any air pollution control program must be on the reduction of air pollution”).

Greenhouse gases are among the pollutants EPA must regulate to protect “the public health and welfare.” *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007)

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worst- and best-performing air carriers (26 percent for domestic air carriers) arising from aircraft efficiency and age, flight routes, and passenger numbers carried per flight. Comments of Environmental Pet’rs. at 26, JA\_\_.

(“greenhouse gases fit well within the Clean Air Act’s capacious definition of ‘air pollutant’”); *see also Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 424 (2011) (“emissions of carbon dioxide qualify as air pollution subject to regulation under the [Clean Air] Act”). In doing so, EPA must approach greenhouse gas pollution with due recognition for the catastrophic consequences of inaction and delay. *Am. Lung Ass’n v. EPA*, 985 F.3d 914, 994-95 (D.C. Cir. 2021), *cert. granted on other grounds* (EPA’s failure to consider whether “prolonging public exposure to ongoing [greenhouse gas] pollutants ... could be justified consistent with the core objectives of the Clean Air Act” is “irrational”).

### **B. Regulation of Aircraft Under Section 231**

In Section 231, Congress applied the Clean Air Act’s purpose of pollution prevention to aircraft emissions. Section 231 provides “a comprehensive scheme for the regulation of harmful aircraft emissions,” of which paragraph 231(a)(2)(A)—the requirement that EPA regulate air pollutants “which may reasonably be anticipated to endanger public health or welfare”—is the “centerpiece.” *Ctr. for Biological Diversity v. EPA*, 794 F. Supp. 2d 151, 160 (D.D.C. 2011).

The goal of harm reduction animates each of Section 231’s provisions. Section 231(a)(1) instructs that EPA “shall” study and investigate aircraft pollutant emissions and determine “(A) the extent to which aircraft emissions affect air

quality ... throughout the United States, and (B) the technological feasibility of controlling such emissions.” 42 U.S.C. § 7571(a)(1). Section 231(a)(1)(B)’s technology feasibility analysis is forward-looking: in setting the effective date of regulations, EPA must “permit the development and application of the requisite technology.” 42 U.S.C. § 7571(b). As EPA admits, “a technology-forcing standard would not be precluded by section 231, in light of section 231(b)’s forward-looking language.” 86 Fed. Reg. at 2157; *see also Control of Air Pollution from Aircraft and Aircraft Engines; Emission Standards and Test Procedures*, 70 Fed. Reg. 69,664, 69,676 (Nov. 17, 2005) (EPA “is not limited in identifying what is ‘technologically feasible’ as what is already technologically achieved”). EPA must also consult with the Federal Aviation Administration to ensure the standards will not “significantly increase noise and adversely affect safety.” 42 U.S.C. § 7571(a)(2)(B)(ii). And EPA must give “appropriate consideration to the cost of compliance.” 42 U.S.C. § 7571(b).

Section 231’s legislative history confirms that Congress intended EPA to focus on harm reduction using existing as well as yet-to-be developed technology. When Congress amended Section 231 in 1970, Pub. L. 91-604, 84 Stat. 1676 (Dec. 31, 1970), it rejected House language that instructed EPA to calibrate aircraft emission standards by giving “appropriate consideration to technological feasibility and economic costs.” Motor Vehicle Air Pollution Control Act of 1965,

Pub. L. 89-272, § 202(a), 79 Stat. 992 (Oct. 20, 1965); *see* Pub. L. 91-604, 84 Stat. 1703-1704. Congress adopted the Senate’s bill instead, which omitted this language and substituted three new requirements, all found in Section 231 today: (1) the investigation and determination of the effect of aircraft emissions on air quality and the technological feasibility of controlling them, (2) public hearings in regions most affected by aircraft emissions, and (3) effective dates that allow sufficient lead time to develop and apply the requisite technology. H.R. Rep. No. 91-1783, 91st Cong. at 55 (Dec. 17, 1970) (Conf. Rep.); *see* Pub. L. 91-604, 84 Stat. 1703-1704. As the Senate report accompanying its bill explained, aircraft emission standards “should be a function of the degree of control required, not the degree of technology available today.” 128 S. Rep. No. 91-1196, 91st Cong. at 24 (Sept. 17, 1970); *see* S. 4358, 91st Cong. § 202(a) (Sept. 17, 1970).

Aircraft emission standards promulgated under Section 231 apply uniformly nationwide—states are preempted from adopting or attempting to enforce “any standard respecting emissions of any air pollutant from any aircraft or engine thereof” unless it is “identical” to the EPA standard. 42 U.S.C. § 7573.

### **C. The Chicago Convention and the International Civil Aviation Organization**

The 1944 Convention on International Civil Aviation, known as the Chicago Convention, codifies the international rules of air navigation, aircraft registration,

and safety, and seeks mutual consent among member nations to allow each other's civil aircraft to fly in their airspaces and land at their airports. Member nations agree to certain principles and arrangements so that international civil aviation "may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically." Convention on International Civil Aviation (Ninth Edition, 2006), EPA-HQ-OAR-2018-0276-0006 at Preamble, JA\_\_.

In 1947, the Chicago Convention created the International Civil Aviation Organization ("ICAO"), a UN specialized agency, to manage the administration and governance of the Chicago Convention and support member nations' diplomacy and cooperation on civil aviation. ICAO's purpose is to "build aviation capacity" to "achieve the sustainable growth of the global civil aviation system"<sup>5</sup> and facilitate seamless navigation through uniform standards to guide, for example, air traffic control practices, airworthiness of aircraft, and aircraft registration. In 1993, ICAO in turn created the Committee on Aviation Environmental Protection to develop and recommend standards related to air pollution and noise. Unlike EPA, neither ICAO nor this committee has a mandate to protect public health and welfare from the impacts of aircraft air pollution. Instead, ICAO member nations

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<sup>5</sup> ICAO, Vision and Mission, <https://www.icao.int/about-icao/Council/Pages/vision-and-mission.aspx> (last visited Jan. 28, 2022).

and industry come to consensus on standards and practices that *all* member nations can meet. *See* Chicago Convention, art. 37, JA\_\_ (the Convention seeks “the highest practicable degree of uniformity in regulations, standards, procedures, and organization in relation to aircraft, personnel, airways and auxiliary services in all matters in which such uniformity will facilitate and improve air navigation”). In the air pollution context, this means that ICAO standards are generally set at stringency levels that the most polluting fleet can achieve.

However, ICAO’s standards are a floor, not a ceiling. The Chicago Convention requires member nations to adopt standards at least as stringent as ICAO’s “minimum” standards to retain permission to fly in each other’s territories. Chicago Convention, art. 33, JA\_\_ (member states recognize each other’s airworthiness certificates if they are “equal to or above the minimum standards which may be established ... pursuant to this Convention”). But any member nation that “deems it necessary” may adopt *more* stringent standards with notice to ICAO. *Id.* at art. 38, JA\_\_ (“Any nation ... which deems it necessary to adopt regulations or practices differing in any particular respect from those established by an international standard shall give immediate notification to [ICAO].”).

Indeed, the United States has opted in the past to adopt standards that are more stringent than ICAO’s. Comments of Environmental Pet’rs. at 17, JA\_\_ (quoting Federal Aviation Administration, Interagency Comments on Proposed

NPRM at 1 (May 15, 2020) (“While we strive to make sure our aviation regulations are in line with ICAO standards per Article 37, we sometimes decide not to follow the ICAO standard and instead opt to file a difference per Article 38”)).

#### **D. EPA’s Adoption of ICAO’s Aircraft Standards**

ICAO adopted its carbon dioxide<sup>6</sup> standards in 2017. The ICAO standards establish the structure and scope of emissions limits and set stringency levels for different classes of aircraft based on size. EPA’s Aircraft Rule adopts ICAO’s standards—structure, scope, and stringency—wholesale. 86 Fed. Reg. at 2144.

The ICAO standards are based on an emission metric that uses fuel efficiency as a proxy for carbon dioxide emitted over a given distance, and test procedures that measure fuel efficiency only while the aircraft is at “cruise”—*i.e.*, not during the fuel-intensive takeoff and landing phases. *Id.* at 2145, 2155.<sup>7</sup> The ICAO metric and test procedures, which the Rule adopts in full, measure “the performance of the whole airplane rather than the airplane engines alone,” taking

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<sup>6</sup> While EPA determined in 2016 that “emissions of [] six well-mixed greenhouse gases” from aircraft “contribute to air pollution that ... endanger public health and welfare,” 81 Fed. Reg. at 54,423, the ICAO standard addresses only one of those greenhouse gases: carbon dioxide.

<sup>7</sup> As the State Petitioners explain in their brief, this metric excludes a host of emission reduction strategies beyond fuel efficiency, and Petitioners thus explicitly disagree with ICAO’s and EPA’s premise that fuel efficiency is necessarily “directly related to CO<sub>2</sub> emitted by aircraft engines.” 86 Fed. Reg. at 2145; *see* State Pet’rs.’ Br. at 25-29.

into account “[a]erodynamics, airplane weight, and engine propulsion technologies” in determining overall carbon dioxide emissions. *Id.*

EPA’s Rule replicates the scope of the ICAO standard, which is limited to “new type designs” (*i.e.*, new aircraft models) and “in-production aircraft” (*i.e.*, new aircraft manufactured from existing models). The Rule also does not apply to “in-service” airplanes, which typically operate for 20 to 30 years. *Id.* at 2138, 2146; EPA, *Airplane Greenhouse Gas Standards Technical Support Document* at 86 (“Technical Support Document”), EPA-HQ-OAR-2018-0276-0024, JA\_\_; *cf.* 42 U.S.C. § 7571(a)(2)(A) (instructing EPA to set standards for “any class or classes of aircraft”).

The ICAO standards applicable to new aircraft designs went into effect in 2020, but no new designs are currently in development, and EPA expects none for at least ten years. 86 Fed. Reg. at 2148; *see also* Technical Support Document at 40, JA\_\_.

ICAO’s (and EPA’s) standards applicable to new in-production aircraft do not go into effect until 2028, 86 Fed. Reg. at 2151—a lead time of ten years from 2017, when ICAO finalized its standards—even though all new in-production aircraft already meet them. Zheng & Rutherford at 15, JA\_\_. EPA also adopts ICAO’s “exemption” procedures that allow in-production planes to be modified between 2023 and 2028 without triggering any emission reduction obligations as

long as the modification at issue does not increase emissions by more than 1.5 percent. *Id.* There is no apparent limit to the number of separate modifications an in-production airplane may undergo.

EPA's Rule adopts ICAO's stringency levels. ICAO designed its methodology for determining stringency to find a stringency level that global fleets *already meet*. For both in-production and new type design airplanes, ICAO considered a range of stringency options and compared the existing and projected performance of global fleets against these levels. *See* Technical Support Document at 122, JA\_\_\_. ICAO then selected different stringency levels for in-production and new-type aircraft and, within those categories, for aircraft above and below certain weight thresholds. "The level adopted for *new type designs* was set to reflect ... the performance and technology *achieved by existing airplanes*." 86 Fed. Reg. at 2150 (emphasis added). Thus, the standard does not require future aircraft designs to make any emissions improvements over designs already in operation today. Similarly, the levels adopted for in-production aircraft "reflect the emission performance of current in-production and in-development airplanes." *Id.* at 2153; *see also* Technical Support Document at 107, JA\_\_\_ ("all the airplanes in the [] fleet either meet the stringency or are out of production when the standards take effect"). In adopting ICAO's carbon dioxide emission standards as its own, EPA emphasizes that its standards also "are *meant* to be technology following

standards” and “reflect[] the performance and technology achieved by existing airplanes.” 86 Fed. Reg. at 2137 (emphasis added). In other words, the stringency of ICAO’s standard by its very design results in zero emissions reduction beyond business-as-usual.

In addition to the ICAO standards (labeled scenario 1 in EPA’s rulemaking), EPA considered two alternate scenarios (scenarios 2 and 3), which moved implementation dates forward and slightly tightened stringency by 2 to 7 percent. Technical Support Document at 129, JA\_\_\_. EPA examined the existing airplane fleet and its projected evolution and ultimately admits that neither the Final Rule nor either of the two alternatives would reduce greenhouse gas emissions or lead manufacturers to incur any costs. *See id.* at 133-135, JA\_\_\_. Even scenario 3, “the most stringent option analyzed,” results in “no costs and no emission reductions” because any reductions are the result of “impacts on a single airplane model, the Airbus A380,” a model Airbus discontinued in 2021. Technical Support Document at 126, 134-35, JA\_\_\_.

Petitioners submitted detailed comments urging EPA to adopt a standard that would reduce aircraft greenhouse gas emissions to address the harm climate change inflicts on public health and welfare. *See, e.g.*, Comments of Earthjustice et al., EPA-HQ-OAR-2018-0276-0147, JA\_\_\_. However, EPA’s response fails to address whether the standards were commensurate with—or ever even intended to

have any effect upon—the impacts of climate change. Nor does EPA contest that higher stringency was feasible. Instead, EPA claims broad discretion to adopt standards with “zero” emission reductions and no costs or benefits, 86 Fed. Reg. at 2164, solely because of its interest in “harmonization” with ICAO and the avoidance of unspecified competitive disadvantage to U.S. aircraft, *id.* at 2138. EPA provides no meaningful response to Petitioners’ comments on EPA’s environmental justice analysis or to State Petitioners’ federalism concerns.

### **SUMMARY OF THE ARGUMENT**

The Aircraft Rule violates Section 231 of the Clean Air Act and is arbitrary and capricious.

1. Section 231 creates a mandatory duty to regulate aircraft emissions EPA determines contribute to dangerous pollution based on factors Congress set forth in the statute, including the extent to which the emissions harm public health and welfare and the technological feasibility, cost, and safety of systems available to reduce them. EPA’s failure to consider these statutory factors and its choice instead to base the Aircraft Rule on its own non-statutory goal of uniformity with international standards was unlawful.

2. Extensive record evidence demonstrates that greenhouse gas emissions inflict harm, and that effective, feasible technology is available to reduce airplanes’ contribution to those emissions. EPA’s failure to engage with this

evidence and consider standards that reduce aircraft greenhouse gas emissions was arbitrary and capricious. EPA's reliance on non-statutory considerations of "harmonization" with ICAO standards and aircraft manufacturers' competitive position was arbitrary and unsupported by the record.

3. EPA's disregard for and failure to adequately respond to comments concerning how the impacts of unabated aircraft greenhouse gas emissions will disproportionately affect disadvantaged and vulnerable communities was arbitrary and capricious.

Point 1, above, is addressed herein. Points 2-3 are addressed in State Petitioners' brief, State Pet'rs.' Br. at 10-43, which Environmental Petitioners incorporate by reference.

### **STANDING**

Environmental Petitioners represent millions of members whose health, livelihoods, well-being, and recreational enjoyment are harmed by greenhouse gases and other co-pollutants emitted by aircraft. *See* Addendum of Standing Declarations.

The Aircraft Rule allows steeply rising greenhouse gas emissions from aviation to remain unabated. 86 Fed. Reg. at 2162. Even with business-as-usual technology improvements, emissions from domestic and United States-departing flights are expected to increase by 40 percent above 2015 levels by 2040—emitting

the same amount of carbon dioxide as about 52 coal plants next year and 62 coal plants in 2040. *Id.* The Final Rule will also result in increased airplane noise, as well as emissions of sulfur dioxides, nitrogen oxides, carbon monoxide, and particulates. Comments of Environmental Pet'rs. at 14, JA\_\_ ; Fleming Decl. ¶¶7-30. These emissions threaten the health of those who live near airports, where rates of cancer, cardiovascular disease, and respiratory issues are already disproportionately high. *Id.* And the emissions will contribute to smog and soot pollution that impacts tens of millions of people (many of whom are Environmental Petitioners' members). Comments of South Coast Air Quality Management District at 1, EPA-HQ-OAR-2018-0276-0144, JA\_\_.

Some of Environmental Petitioners' members live and work near and under airport flight paths, where they will be exposed to increased localized air pollution and noise.<sup>8</sup> Some members live or own property in areas that experience concrete and serious effects of climate change, like wildfires, severe storms, and coastal flooding.<sup>9</sup> And some members enjoy recreational activities, including birdwatching, hiking, walking, and gardening, in areas that will be degraded by smog pollution and by wildfires, tidal flooding, extreme heat and storm events, species extinctions, and other climate change impacts to which increased aviation

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<sup>8</sup> Isenberg Decl. ¶¶3-6; Sabatino Decl. ¶¶5-6, 12; Thiruvengadam Decl. ¶¶4-5, 9, 13, 15; Fleming Decl. ¶31.

<sup>9</sup> Isenberg Decl. ¶8; Sabatino Decl. ¶13; Thiruvengadam Decl. ¶¶17-19.

emissions contribute.<sup>10</sup> Members are concerned about the effect of aviation emissions on their health and, in some cases, spend less time outdoors due to those concerns.<sup>11</sup> These members' interests are germane to Environmental Petitioners' organizational purposes, which include the protection of public health, wild places, and the environment.<sup>12</sup>

A ruling in Petitioners' favor would require that EPA take steps to reduce harmful greenhouse gas and associated co-pollutant emissions and would therefore redress these injuries. *See Nat. Res. Def. Council v. Wheeler*, 955 F.3d 68, 77-78 (D.C. Cir. 2020). Environmental Petitioners have standing.

### STANDARD OF REVIEW

This Court must set aside actions that are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law.” 42 U.S.C. § 7607(d)(9). An action that “runs counter to the evidence before the agency” is arbitrary and capricious. *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). And an agency may not “rel[y] on factors which Congress has not intended it to consider,” or “entirely fail[] to consider an important aspect of the problem.” *Id.*

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<sup>10</sup> Evans Decl. ¶¶7-13, 15-17; Isenberg Decl. ¶¶6-7; Sabatino Decl. ¶¶7-8, 10, 13-14.

<sup>11</sup> Evans Decl. ¶¶9-12, 15; Isenberg Decl. ¶¶6-7; Sabatino Decl. ¶¶6-10, 14-15; Thiruvengadam Decl. ¶¶9-13.

<sup>12</sup> Garcia Decl. ¶¶3-5; Siegel Decl. ¶¶2-3; Templeton Decl. ¶¶3-9.

Agency action is unlawful, arbitrary, and capricious when an agency fails to consider a factor identified in the statute it implements, or where it provides only a “conclusory recitation” of a statutory requirement instead of engaging in “*reasoned* consideration” of the factor. *Getty v. Fed. Sav. & Loan Ins. Corp.*, 805 F.2d 1050, 1057 (D.C. Cir. 1986). While an agency may consider factors that are not delineated in the governing statute, it may not “substitute new goals in place of the statutory objectives without explaining how these actions are consistent with [its] authority under the statute.” *Indep. U.S. Tanker Owners Comm. v. Dole*, 809 F.2d 847, 854 (D.C. Cir. 1987).

## ARGUMENT

### **I. THE AIRCRAFT RULE IS UNLAWFUL BECAUSE EPA FAILED TO CONSIDER STATUTORY FACTORS AND SUBSTITUTED ITS OWN NON-STATUTORY POLICY GOALS INSTEAD.**

Section 231 creates a mandatory duty to seek to reduce dangerous aircraft emissions based on the factors Congress set forth in the statute. 42 U.S.C. § 7571. In a sharp departure from settled legal principles, EPA jettisons this duty in favor of EPA’s own, extra-statutory policy choice—to “secure the highest practicable degree” of international uniformity in aviation regulations—that leaves steeply rising, dangerous aircraft emissions unabated. 86 Fed. Reg. at 2136, 2138.

EPA’s decision to override its Congressional mandate with its own policies is unlawful and beyond its statutory authority. The agency’s own finding that

aircraft greenhouse gas emissions inflict harm on the public's health and welfare triggered a duty to seek to reduce them by analyzing the factors Congress ordered it to consider, including the technological feasibility, timing, cost, and safety of bringing emissions down. 42 U.S.C. § 7571. But because EPA makes uniformity with ICAO's technology-lagging, zero-benefits standards the express *purpose* of its regulatory action, 86 Fed. Reg. at 2137, it never engages with the tasks Congress instructed it to accomplish: the analysis of what technology might be applied or developed to reduce emissions, what time might be needed to do so, or what costs and benefits might ensue. "EPA may not construe [a] statute in a way that completely nullifies textually applicable provisions meant to limit its discretion." *Whitman v. American Trucking Ass'n*, 531 U.S. 457, 485 (2001). Instead, EPA must "'ground its reasons for action or inaction in the statute,' rather than on 'reasoning divorced from the statutory text.'" *Nat. Res. Def. Council v. EPA*, 777 F.3d 456, 468 (D.C. Cir. 2014) ("*NRDC*") (quoting *Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 318 (2014) and *Massachusetts*, 549 U.S. at 532, 535).

EPA determined that aircraft greenhouse gas emissions are harmful to public health and welfare but decided, for reasons unrelated to the statute, to issue a rule that would not reduce those emissions. Because EPA's reasoning is "untethered to Congress's approach," it exceeds EPA's statutory authority and is contrary to the

Clean Air Act. *NRDC*, 777 F.3d at 469 (quoting *S. Coast Air Quality Mgmt. Dist. v. EPA*, 472 F.3d 882, 894 (D.C. Cir. 2006)).

**A. Section 231 Requires EPA to Set Standards Based on the Factors Identified Therein.**

Section 231’s text, structure, context, legislative history, and prior agency interpretation require EPA to seek to reduce aircraft greenhouse gas emissions by applying a rigorous analysis of each of the factors. *See, e.g., Ctr. for Biological Diversity*, 794 F. Supp. 2d at 160 (Section 231(a)(2)(A) “cannot be understood without reference to the provisions around it”). EPA sidesteps those requirements.

*The statutory text.* Section 231 prescribes the steps EPA must take to regulate harmful aircraft pollution and the factors it must consider in doing so. First, Congress requires that EPA “shall” investigate emissions of aircraft pollutants to “determine (A) the extent to which such emissions affect air quality ... and (B) the technological feasibility of controlling such emissions.” 42 U.S.C. § 7571(a)(1)(A), (B). Guided by what it so determines, EPA “shall” then propose standards for any pollutant that it finds contributes to pollution endangering the public health and welfare. 42 U.S.C. § 7571(a)(2)(A). EPA must consult with the Federal Aviation Administration and may not adopt standards that would significantly increase aircraft noise or adversely affect safety. 42 U.S.C. §7571(a)(2)(B)(i), (ii). Lastly, EPA must make its regulation effective “after such

period as the Administrator finds necessary ... to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance.” 42 U.S.C § 7571(b).

Section 231 is unambiguous: EPA must consider the listed statutory factors to determine how dangerous aircraft pollution might be reduced. *See Kingdomware Technologies, Inc. v. United States*, 579 U.S. 162, 172 (2016) (“[I]t is generally clear that ‘shall’ imposes a mandatory duty.”); *Ctr. for Biological Diversity*, 794 F. Supp. 2d at 160 (Section 231’s “provisions, all of which use compulsory language, together create a comprehensive scheme for the regulation of harmful aircraft emissions;” “Congress’s use of ‘shall’ throughout subsection 231(a) suggests that it intended to mandate a certain outcome—the regulation of harmful aircraft emissions.”). EPA itself acknowledges this fundamental statutory duty: “As *required* by the [Clean Air Act], the EPA has been engaged *in reducing harmful air pollution* from airplane engines for over 40 years.” 86 Fed. Reg. at 2142 (emphasis added).

Section 231(b)’s direction that EPA consider and analyze not only existing technologies but also those that can be developed in time is equally clear. Interpreting the statute otherwise would render its lead time provision superfluous. *See Delaware Dep’t of Nat. Res. and Envtl. Control v. EPA*, 895 F.3d 90, 99 (D.C. Cir. 2018) (“[W]e strive to construe statutes ‘so that effect is given to all its

provisions, so that no part will be inoperative or superfluous, void or insignificant.”) (quoting *Corley v. United States*, 556 U.S. 303, 314 (2009)). And indeed, EPA itself admits that the statute encompasses setting technology-*forcing* standards “in light of section 231(b)’s forward-looking language.” 86 Fed. Reg. at 2157.

*Legislative history.* Section 231’s legislative history similarly leaves no doubt about Congress’s intent to require forward-looking technology-based regulation to reduce air pollution. *See Nat. Res. Def. Council v. EPA*, 725 F.2d at 770 (legislative history shows the Clean Air Act’s primary emphasis is air pollution reduction).

The current statutory language is the result of a conference reconciliation of differing texts provided by the House and the Senate as part of the 1970 Clean Air Act amendments, Pub. L. 91-604, 84 Stat. 1676 (Dec. 31, 1970). The House bill would have done no more than preserve previous statutory language requiring only “*appropriate consideration to technological feasibility and economic costs.*” Motor Vehicle Air Pollution Control Act of 1965, Pub. L. 89-272, § 202(a), 79 Stat. 992 (Oct. 19, 1965) (emphasis added); *see* Pub. L. 91-604, 84 Stat. 1703-1704. The Senate bill, however, pushed EPA much further—it omitted this House language and instead prioritized harm reduction and attention to future technological feasibility by adding three new requirements that appear in Section

231 today. EPA must: (1) study and determine the effect of aircraft emissions on air quality and the technological feasibility of controlling them, (2) hold public hearings in regions where aircraft emissions most affect air quality, and (3) set effective dates that provide the time needed to develop and apply the requisite technology. H.R. Rep. No. 91-1783, at 55 (Dec. 17, 1970) (Conf. Rep.); *see* Pub. L. 91-604, 84 Stat. 1703-1704. The report accompanying the Senate bill made the intent behind these changes clear: aircraft standards should be “*a function of the degree of control required, not the degree of technology available today.*” 128 S. Rep. No. 91-1196, at 24 (Sept. 17, 1970) (emphasis added).

Section 231’s legislative history thus confirms what the text of Section 231 plainly requires: EPA is to set standards by analyzing not merely presently available technology, but the degree of harm aircraft pollution inflicts and the technology that can be developed and applied to reduce it.

*Past practice.* EPA’s past practice regulating other aircraft emissions under Section 231 demonstrates that EPA understood that Congress meant to subject aircraft to “a program of control compatible with their significance as pollution sources,” such that “emissions from aircraft and aircraft engines should be reduced to the extent practicable with present and prospective technology.” *Control of Air Pollution from Aircraft and Aircraft Engines: Proposed Standards*, 37 Fed. Reg.

26,488, 26,488 (Dec. 12, 1972).<sup>13</sup> In its very first Section 231 rulemaking in 1972, EPA proposed standards to reduce nitrogen oxides emissions based on its “*best estimates of achievable technology by 1979*,” which EPA expected industry to “translate ... into practice with reasonably aggressive and imaginative research and development programs,” 37 Fed. Reg. at 26,488 (emphasis added); *see also* 38 Fed. Reg. at 19,088 (“[e]xhaust emission standards ... will be based on the best available combustor design technology expected in 1979 and later”); 41 Fed. Reg. at 34,722 (the “standards are ... ‘the most stringent that can be imposed by [the 1980 compliance date] ... [and] reflect the emission control technology currently under development and expected to be available’”).<sup>14</sup>

In sum, Section 231’s text, structure, context, legislative history, and prior agency interpretation all confirm EPA’s mandate to assess what technology is or can be available to reduce harmful aircraft emissions, while taking into account the time needed to develop and apply the technology, the rule’s costs and benefits, safety, and noise.

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<sup>13</sup> *See also Control of Air Pollution from Aircraft and Aircraft Engines: Emission Standards and Test Procedures for Aircraft*, 38 Fed. Reg. 19,088, 19,089 (July 17, 1973); *Control of Air Pollution from Aircraft and Aircraft Engines: Supersonic Aircraft*, 41 Fed. Reg. 34,722, 34,722 (Aug. 16, 1976); *Control of Air Pollution from Aircraft and Aircraft Engines: Proposed Amendments to Standards*, 43 Fed. Reg. 12,615, 12,617 (Mar. 24, 1978); *Control of Air Pollution from Aircraft and Aircraft Engines: Emission Standards and Test Procedures*, 62 Fed. Reg. 25,356, 25,358 (May 8, 1997).

<sup>14</sup> *See also* Comments of State Pet’rs. at 24-25, JA\_\_.

**B. EPA Failed to Set Standards Based on Section 231's Factors.**

EPA does not consider Section 231's factors, much less ground the Aircraft Rule in them. Instead, explaining that the ICAO standards it meant to adopt are "technology following" and do not reduce emissions, 86 Fed. Reg. at 2142, 2164, EPA makes adopting the ICAO standards the goal of its rulemaking and works backwards to achieve that goal.

EPA is frank about this choice. Required by the Clean Air Act to provide a "statement of basis and purpose" for its Rule, 42 U.S.C. § 7607(d)(6)(A), EPA proclaims that purpose to be "to secure the highest practicable degree of international uniformity in aviation regulations and standards," 86 Fed. Reg. at 2138. But international uniformity is *not* a factor Congress directed EPA to consider, nor the purpose of Section 231. *See* 42 U.S.C. § 7571. And in this case, where achieving "uniformity" with ICAO necessitated leaving dangerously rising emissions unabated regardless of widely available means to reduce them, adopting ICAO standards runs counter to Section 231's mandate and is unlawful. While EPA has discretion to consider extra-statutory factors, *Nat'l Ass'n of Clean Air Agencies v. EPA*, 489 F.3d 1221, 1230 (D.C. Cir. 2007) ("*NACAA*"), it possesses no discretion to employ them to nullify a statute's specified factors, *see NRDC*, 777 F.3d at 468 (invalidating attainment deadlines where EPA's "policy assessment" of how quickly areas should achieve compliance "lack[ed] any

grounding in the statute”); *Util. Air Regul. Grp.*, 573 U.S. at 328 (“[A]n agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate.”). And while EPA may adopt standards that also meet ICAO’s floor in light of ICAO certification requirements, EPA is wrong in claiming that harmonization with ICAO alone—without assessing the ICAO standard against the requirements of Section 231—“fulfills [its] obligations” under Section 231. *See* 86 Fed. Reg. at 2139.

EPA’s complete misapprehension of its obligation turns its discussion of Section 231’s factors into an unlawful, *post hoc* justification of its predetermined decision. *See Getty*, 805 F.2d at 1057 (D.C. Cir. 1986) (agency action “exceed[s] its statutory authority” when it provides only “conclusory recitation,” rather than “*reasoned* consideration,” of a specified factor); *Ass’n of Am. Railroads v. Costle*, 562 F.2d 1310, 1319, 1321 (D.C. Cir. 1977) (agency’s misinterpretation of its statutory mandate to secure its own policy objective exceeded its discretion).

*The extent to which aircraft greenhouse gas emissions affect air quality.* In a few terse paragraphs, the Rule acknowledges that in its 2016 Endangerment Finding, EPA determined that elevated atmospheric greenhouse gas concentrations endanger public health and welfare, and that aircraft emissions cause or contribute to that air pollution. 86 Fed. Reg. at 2143. Otherwise, the Rule gives no serious consideration to the harm aircraft greenhouse gas emissions inflict on the public.

To the contrary, EPA provides numerous assurances that the Aircraft Rule will *not* reduce emissions. *See, e.g., id.* at 2139 (“EPA is not projecting emission reductions associated with these GHG regulations”); *id.* at 2164 (the standards “will not result in reductions in ... GHG emissions beyond the baseline”). The Rule presents graphics showing that the aviation sector’s market-driven “continuous improvement” in fuel efficiency is completely overwhelmed by massively rising emissions through 2040. *Id.* at 2162-64. But this alarming fact failed to prompt EPA to consider what might be done to mitigate that outcome. Instead, EPA points out that its sensitivity studies *proved* its “no cost-no benefit” conclusion about its own standards to be “quite robust” since emission reductions from the Aircraft Rule would “still be zero” even if market-based improvements were to cease altogether. *Id.* at 2164. In other words, EPA proves that its Rule would accomplish nothing in response to its determination that rising aircraft emissions endanger public health and welfare. EPA also fails to evaluate any alternative that *would* reduce emissions. *See* State Pet’rs.’ Br. at 16-29. EPA’s hollow analysis is entirely “untethered to” Section 231’s statutory command to regulate dangerous pollution. *NRDC*, 777 F.3d at 469; 42 U.S.C. § 7571(a)(2)(A).

*Technological feasibility.* That the Aircraft Rule requires no technological response is undisputed—indeed, it is its very point. *See, e.g.,* 86 Fed. Reg. at 2137 (“[t]he rule reflects the performance and technology achieved by existing

airplanes”); *id.* (“the standards adopted here are meant to be technology following standards”); *id.* at 2165 (the standards “will not impose an additional burden on manufacturers”).

EPA conducts a “technology assessment,” but instead of attempting to analyze the “technological feasibility of controlling [] emissions,” 42 U.S.C. § 7571(a)(1)(B), it imposes a crucial restriction: it assesses only the “technology responses, improvements, and production assumptions *in response to the market and this rule*,” 86 Fed. Reg. at 2149 (emphasis added). The very purpose of “this rule,” however, is to mirror ICAO’s standards, which require *no* technology deployment. As EPA observes, the lack of any emission reductions based on a technical assessment so constricted “makes sense” because all planes either “meet the standard” or will be “out of production” when the standards take effect. 86 Fed. Reg. at 2164. In other words, EPA’s technological assessment measures only the technology response to a rule that was designed to require no technology response.

EPA’s technology assessment thus is meaningless, a Potemkin village. EPA nowhere considers the “technological feasibility” of reducing emissions that contribute to dangerous air pollution, 42 U.S.C. § 7571(a)(1)(B), either through a more frequent or different application of technology already available, or through

the “development and application” of other technology after sufficient lead time, 42 U.S.C. § 7571(b); *see also* State Pet’rs.’ Br. at 16-29.

*Cost, lead time, noise, and safety.* That the Final Rule creates no “cost of compliance,” 42 U.S.C. § 7571(b), for industry is similarly undisputed. *See, e.g.*, 86 Fed. Reg. at 2159 (the Rule “will not impose an additional burden on manufacturers”). By deliberately promulgating a rule that accomplishes no emissions reductions and imposes no costs—a “no cost-no benefit” rule, *id.* at 2164—EPA flouts its duty to determine what it would cost to reduce emissions, and to balance that cost against the benefits of decreasing the dangerous pollution. *Michigan v. EPA*, 576 U.S. 743, 753 (2015) (“[R]easonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions.”).

Because EPA decided at the outset on a rule that would not call for any additional or new technology, EPA never considers assessing what lead time might be needed to reduce emissions. For the same reason, EPA does not assess whether emissions mitigation technologies would have any impact on noise or safety.

EPA’s failure to engage with factors Congress requires it to consider violates Section 231. *See* 42 U.S.C. § 7571(a)(1), (a)(2).

**C. EPA’s “Harmonization” Goal is Contrary to Section 231.**

EPA fails to identify *any* statutory basis for its decision to prioritize harmonization with ICAO’s standards “to the maximum extent possible” over Section 231’s statutory factors. *See* 86 Fed. Reg. at 2148. Nor could it, as international harmonization does not appear in Section 231 or anywhere else in the Clean Air Act.

The United States signed the Chicago Convention in 1944 and has been a member of ICAO since its creation in 1947. Yet, when Congress amended the Clean Air Act in 1970, it made no mention of international emission standards, much less required that domestic law be harmonized with them. As discussed above, the legislative history of the Clean Air Act instead demonstrates Congress’ intent to protect public health and welfare by achieving pollution reduction through the application of forward-looking technologies. *See supra* pp. 31-33.

Moreover, there is no obligation under any international law or treaty to cap U.S. emission standards at ICAO’s minimum standards. To the contrary, the Chicago Convention expressly permits any member to exceed them. *See* Chicago Convention, art. 33, JA\_\_ (member nations must recognize airworthiness certificates showing compliance with standards “equal to or above the minimum standards” established by ICAO); *id.*, art. 38, JA\_\_ (any member nation that “deems it necessary” may adopt more stringent standards with notice to ICAO).

And past practice demonstrates that the United States has, indeed, done that. *See supra* pp. 33-34.

The United States' desire to certify that its planes meet ICAO's minimum international standards does not override EPA's mandate to determine how, when, and at what costs and benefits the aviation sector's emissions should be reduced to address dangerous air pollution. *See Massachusetts*, 549 U.S. at 531-32 (EPA may not shirk its own responsibility to protect the public from the danger of greenhouse gases because of the wholly independent mandate of another agency). As the Supreme Court found in *Massachusetts*, EPA's interest in promoting international negotiations to foster efforts to control emissions does not authorize "the refusal to execute domestic law." *Id.* at 534. EPA's similar justification here—seeking the highest degree of international "harmonization" in emission standards and supporting ICAO negotiations—fares no better.

EPA also asserts that exceeding ICAO's standards would create unspecified international competitive disadvantages for the United States aviation industry. At a minimum, preventing competition among nations to reduce climate change-causing aviation emissions by tying them all to the status quo fails to advance Section 231's statutory purpose. As EPA applies it here, the competitiveness concern directly undermined and nullified Congress' mandate that EPA seek to reduce United States aviation's dangerous pollution. But even assuming EPA had

articulated a legitimate concern, the agency produces no evidence or monetary estimate of that conjectural disadvantage and makes no attempt to explain how or why it trumps Congress' mandate under Section 231. *See* State Pet'rs.' Br. at 36-38. Instead, EPA's focus on a single industry's purported competitive disadvantage at the expense of great harm to public health and welfare construes Section 231 "in a way that ... nullifies textually applicable provisions meant to limit its discretion" and far exceeds the agency's authority. *NRDC*, 777 F.3d at 461 (quoting *Whitman*, 531 U.S. at 485); *see also id.* at 468 (holding EPA rule unlawful where its rationale "r[an] counter to all indicia of congressional intent").

EPA relies on *NACAA* to support its assertion that it has "an unusually broad degree of discretion ... to adopt aircraft engine emission standards as the Agency determines are reasonable." 86 Fed. Reg. at 2157 (citing *NACAA*, 489 F.3d at 1229-30). But that case does not license EPA to disregard the factors Congress prescribed for its aircraft standards.

In *NACAA*, EPA issued a rule increasing the stringency of aircraft nitrogen oxide emissions standards by 16 percent and bringing the United States' standard in line with the ICAO standard. 489 F.3d at 1225. Petitioner challenged the rule, arguing that Section 231 requires EPA to set technology-forcing standards, demands that EPA prioritize emission reductions over any of the other specific statutory factors, and prohibits EPA from considering any factors not listed in the

statute. *Id.* at 1229-30. The court rejected this interpretation of the statute, observing that “in the absence of clear congressional direction to the contrary, we will not deprive the agency of the power to fine-tune its regulations.” *Id.* at 1230 (quoting *George E. Warren Corp. v. EPA*, 159 F.3d 616, 623-24 (D.C. Cir.1998)). The court deferred to EPA’s interpretation that Section 231 “require[s] [EPA] to identify a reasonable balance of specified emissions reduction, cost, safety, noise, and other factors,” *id.* at 1226, 1230, and held that EPA’s rule tightening emissions standards by 16 percent was reasonable, *id.* at 1230.

EPA does not reasonably balance those statutory factors here. In fact, EPA does not consider those factors at all. Rather than using non-statutory considerations of international uniformity to “fine-tune” its balanced consideration of the statutory factors, EPA jettisons those factors altogether and instead bases the Aircraft Rule exclusively on adopting the ICAO standards. That failure to “identify a reasonable balance of specified emissions reduction, cost, safety, noise, and other factors” is unlawful. *Id.* at 1226; *NRDC*, 777 F.3d at 468.

## **II. EPA’S FAILURE TO CONSIDER REDUCING AIRCRAFT GREENHOUSE GASES IS ARBITRARY AND CAPRICIOUS.**

Given the exhaustively detailed threats to public health and welfare from greenhouse gas emissions, and the availability of effective, feasible technology to reduce airplanes’ contribution to those emissions, the Aircraft Rule’s failure to

adopt or even consider adopting a standard that reduces aircraft greenhouse gas emissions is unreasonable and an abuse of discretion. *See* State Pet'rs.' Br. at 10-40. EPA's disregard for environmental justice concerns was also arbitrary and capricious. *Id.* at 40-43.

### CONCLUSION

For the foregoing reasons, and for the reasons stated in the State Petitioners' brief, the Aircraft Rule is unlawful, arbitrary, and capricious. The Court should grant the petitions for review and direct EPA to propose greenhouse gas emissions standards supported by Section 231's statutory factors and the record.

Respectfully submitted,

DATED: February 28, 2022

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## CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing Initial Opening Brief for Petitioners Center for Biological Diversity, Friends of the Earth, and Sierra Club complies with the requirements of Rule 32 of the Federal Rules of Appellate Procedure and the Circuit Rules of this Court.

I further certify that this brief contains 8,874 words as counted by the Microsoft Word software used to prepare this brief, and that the combined words of this brief and that filed by State Petitioners do not exceed the 18,000 word limit set by this Court's briefing order issued on January 10, 2022.

DATED: February 28, 2022

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**CERTIFICATE OF SERVICE**

I, Sarah Burt, hereby certify that the foregoing Opening Brief for Petitioners Center for Biological Diversity, Friends of the Earth, and Sierra Club has been served through the Court's CM/ECF system on all registered counsel this 28th day of February, 2022.

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