



EPA Targets Aircraft for Greenhouse Gas Emissions, Further Regulations Possible

On June 10, 2015, the United States Environmental Protection Agency (“EPA”) proposed an endangerment finding that it calls “a preliminary but necessary first step to begin to address GHG emissions from the aviation sector” under the Clean Air Act (“CAA”).¹ EPA also issued an Advance Notice of Proposed Rulemaking (“ANPR”), proposing domestic adoption of the forthcoming International Civil Aviation Organization (“ICAO”) rules, which are expected in February 2016. The proposed finding that greenhouse gas (“GHG”) emissions from certain classes of aircraft engines contribute to climate change and endanger public health and welfare is in response to a citizen petition and exempts military and smaller aircraft, including most private aircraft. It is not clear from the finding whether EPA is seeking to regulate only domestic operators or whether it will also attempt to regulate international parties operating in the United States. While the Obama administration likely will not have time to promulgate regulations before leaving office, once EPA finalizes the endangerment finding, the CAA requires the new administration’s EPA to issue standards of some kind regulating aircraft emissions from the identified classes of engines.

Path to Rulemaking

Before EPA can issue regulations under the CAA, the Administrator must make two preliminary determinations: first, she must find that GHGs endanger public health and welfare, and second, she must find that aircraft emissions cause or contribute to GHGs. The proposed aircraft endangerment finding relies on two recent GHG endangerment findings regarding automobiles² and power plants³ from 2009 and 2014 respectively. In particular, the aircraft finding relies on the definition of “air pollution” taken from the 2009 automobile endangerment finding to support the determination that GHGs generally endanger human health and welfare. The automobile finding’s analysis of health and welfare has been upheld in the face of repeated challenges, including by the U.S. Supreme Court in *Massachusetts v. EPA*.⁴

As for the second finding—that aviation causes or contributes to this danger—EPA cites data indicating that aviation is responsible for 3 percent of total GHGs in the United States and 11 percent of GHGs from the transportation sector. While the endangerment finding figures demonstrate that aviation is the largest

unregulated source of GHGs in the transportation sector, they also indicate that in 2013, aircraft emitted less than one-seventh the amount of GHG emissions from automobiles, which constituted 23 percent of overall United States GHG emissions. According to data on EPA's website,⁵ power plants are responsible for more than 13 times the amount of carbon dioxide emissions as the aviation industry, as they make up 40 percent of total United States carbon dioxide emissions. Thus, the proposed aviation finding represents a continuing commitment by the agency to seek regulatory control over GHG emissions from diverse industries.

Rulemaking Process

Assuming the endangerment finding is finalized, which EPA anticipates will happen in 2016, the agency will begin the rulemaking process—including mandated time for public comment—before any standards are put in place. While a new presidential administration will likely be responsible for adopting the ultimate rule and may seek significant changes to the Obama administration's proposals, it is certain that there will be regulation of some kind. In *Massachusetts v. EPA*, the Supreme Court held that if EPA makes an endangerment finding, "the Clean Air Act requires the Agency to regulate emissions" regardless of competing policies, and that "[t]o the extent that this constrains agency discretion to pursue other priorities of the Administrator or the President, this is congressional design."⁶ Thus, a finalized endangerment finding will obligate the successor administration to promulgate aircraft emission standards in some form.

The ANPR does not include projected compliance costs to the industry. In crafting its regulation, EPA has the authority to consider such factors as cost. *Sierra Club v. Costle*, 657 F.2d 298 (D.C. Cir. 1981). Indeed, the ANPR specifically calls for comment on cost-effectiveness analysis and cites ICAO criteria of technical feasibility, environmental benefit, cost-effectiveness, and impacts of interdependencies.⁷ Recently, in *Michigan v. EPA*,⁸ the Supreme Court held that EPA must consider compliance costs at the first stage of the agency's regulatory analysis when regulating hazardous air pollutant emissions from power facilities under 42 U.S.C. § 7412. Because the proposed aviation endangerment finding is promulgated under 42 U.S.C. § 7571, within a separate title of the Clean Air Act, the case does not directly apply to the aircraft

endangerment finding and subsequent emission standards. Nevertheless, while not directly applicable, the recent decision indicates that consideration of costs may be an inherent requirement in EPA's analysis for promulgating emission standards under the CAA.

In fact, EPA has considered costs in its previous GHG emissions regulations. Following its 2009 automobile endangerment finding, EPA considered cost-effectiveness and technological feasibility when promulgating its final rules for light automobiles in 2010⁹ and again when it updated its light automobile standards in 2012.¹⁰ Specifically, the 2010 rule projected industry costs of \$51.8 billion for model years 2012 through 2016. The 2012 rule projected costs of \$150 billion for model years 2017 through 2025. EPA is also considering cost-effectiveness in its hotly contested proposed power plant regulation, the Clean Power Plan,¹¹ which has been criticized as entailing exorbitant or unreasonable costs compared to its benefits. Yearly cost estimates for implementing the Clean Power Plan range from \$5.5 billion in 2020 to \$8.8 billion in 2030.

Scope of the Proposed Rulemaking and Support for International Regulation

The endangerment finding and ANPR do not specify whether EPA plans to apply any forthcoming standards only to domestic commercial aircraft or to both domestic and international operators. Any attempt by EPA to regulate international providers would likely meet some backlash, as did the European Union's attempts to implement emission reductions via the Emissions Trading System ("EU ETS").¹²

The EU ETS places a cap on the amount of carbon emission allowances available each year to regulated industries, but individual firms within the regulated industries can trade these allowances to allow companies to choose the most cost-effective options to address their emissions.¹³ Under the original EU ETS framework, any flight landing or taking off from EU jurisdictional airspace would be subject to the EU ETS for the entire flight, regardless of the portion of the flight that occurred outside of the jurisdictional airspace. The EU's initial scheme to apply the ETS scheme to international airlines was eventually modified in the face of concerted diplomatic opposition by the United States, China, India, and Russia. These countries, among others, opposed

EU ETS on the grounds that Europe did not have jurisdiction to tax international airlines operating outside of EU airspace.¹⁴ Ultimately, the EU modified the original scheme in the face of mounting pressure such as legislation by the challenging countries that would ban their domestic airlines from participating. In the United States, President Obama signed such a bill into law on November 27, 2012.¹⁵

For more than four years, EPA and the Federal Aviation Administration (“FAA”) have cooperated with ICAO’s efforts to develop uniform international standards, “which the EPA could then consider proposing for adoption under its section 231 authority of the CAA.” The ANPR expressly states EPA’s “continued support” of an international carbon dioxide emissions standard expected to be released by ICAO in February 2016. The ANPR further recognizes that “[h]istorically ... international emission standards have first been adopted by ICAO, and subsequently the EPA has initiated rulemakings under CAA section 231 to establish domestic standards equivalent to ICAO’s standards where appropriate.” While EPA recognizes that it does not operate in a vacuum in regulating aircraft emissions, and the ANPR takes pains to express EPA’s support of ICAO, the ANPR also notes that ICAO member states “may adopt their own unique standards that are more stringent than ICAO standards” and requests comment on the potential adoption of stricter regulations.¹⁶

There has been concern that ICAO will not be able to meet its February 2016 deadline. In the long term, ICAO predicts that improved technology will be sufficient to reduce carbon emissions, but it has recognized that market-based measures are necessary in the interim.¹⁷ These market-based measures have proven controversial, particularly because ICAO must address disparities between its developing and developed member states. One proposal is a *de minimis* exception for routes to and from developing states whose share of international aviation revenue ton kilometers is less than 1 percent.¹⁸ The United States objected to this proposal, calling for the exception to be based on the aviation activities of states, rather than airline routes, on the grounds that the proposed standard would exempt a majority of countries from a global market-based measure and distort the market.¹⁹ Further complicating the issue, Brazil, Russia, India, and China (“BRIC nations”), which would not fall into the *de minimis* exemption, have called for leniency on the grounds that even-handed

measures across the board will allow developed nations to “preserve their leading positions in the industry.”²⁰ BRIC nations instead called for common but differentiated responsibilities, through which developed countries would offset the carbon emissions of the developing world.²¹ These proposals resulted in the establishment of the Environmental Advisory Group, made up primarily of developing nations, to oversee the development of market-based measures.

There has been industry concern that, because EPA must act on a finalized endangerment finding, if ICAO fails to meet its February 2016 deadline, EPA will be forced to promulgate its own rules. This would result in precisely the piecemeal regulation ICAO’s international efforts seek to avoid.²²

Industry Initiatives

The aviation industry has been proactive in reducing carbon emissions. The International Air Transport Association (“IATA”), the world’s largest aviation trade group, has set goals to stabilize net carbon dioxide emissions by 2020 and halve carbon dioxide emissions by 2050.²³ To accomplish this goal, IATA calls for a commitment from all industry stakeholders in pursuit of its “four pillars of the aviation industry strategy”: improved technology, more efficient aircraft operations, infrastructure improvements, and interim market-based measures. Like ICAO, in the long term, IATA seeks to drive emissions reduction through technology, but it does support interim market-based measures, provided these measures are global in nature.²⁴

In the area of technology, IATA believes that aviation biofuels can reduce carbon dioxide emissions by up to 80 percent over their full lifecycle.²⁵ While the first commercial biofuel flights were achieved in 2011, the development of aviation biofuels has faced challenges with building financial infrastructure and coordinating with the agricultural industry without displacing other agricultural needs.²⁶ On July 8, 2015, Boeing and a collection of Japanese aviation industry stakeholders unveiled an initiative that seeks to develop sustainable biofuels for use by commercial airlines in time for the 2020 Tokyo Summer Olympics.²⁷

In the area of operations efficiency, Boeing, Alaska Airlines, the Port of Seattle, and FAA have worked together on the Greener Skies over Seattle program to reduce emissions by

improving flight protocols, with the goal of using these protocols as a template for improving efficiency across the United States.²⁸ Under the program, satellite-based navigation arrival procedures allow airplanes landing in Seattle to go from cruising altitude to landing with a continuous descent, rather than the traditional stair-step pattern. Boeing recently reported that the project produced emission reductions of one metric ton per flight—28 percent greater than 2010 predictions—and Alaska Airlines estimates that the procedures save about \$200 in fuel per flight while reducing flight time.²⁹

Next Steps

In its call for input, EPA is taking comment on when carbon standards should take effect, how stringent they should be, and whether standards should apply only to newly designed aircraft or to designs already in production. Comments are due by August 31, 2015 at 11:59 p.m., EST. A public hearing will be held in Washington, D.C. on August 11, 2015.

Lawyer Contacts

For further information, please contact your principal Firm representative or one of the lawyers listed below. General email messages may be sent using our “Contact Us” form, which can be found at www.jonesday.com/contactus/.

Charles T. Wehland

Chicago

+1.312.269.4388

ctwehland@jonesday.com

John A. Rego

Cleveland

+1.216.586.7542

jreg@jonesday.com

Rebecca MacPherson

Washington

+1.202.879.4645

rmacpherson@jonesday.com

Jennifer M. Hayes

Pittsburgh

+1.412.394.7992

jhayes@jonesday.com

Endnotes

- 1 [Proposed Finding That Greenhouse Gas Emissions From Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare and Advance Notice of Proposed Rulemaking](#), 80 Fed. Reg. 37,758 (July 1, 2015) (to be codified at 40 Cfr. Pts. 87, 1068).
- 2 [Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202\(a\) of the Clean Air Act; Final Rule](#), 74 Fed. Reg. 66,496 (Dec. 15, 2009).
- 3 [Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units](#), 79 Fed. Reg. 34,830 (June 18, 2014) (to be codified at 40 CFR pt. 60).
- 4 549 U.S. 497 (2007).
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- 9 [Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards: Final Rule](#), 75 Fed. Reg. 25,324 (May 7, 2010), <http://www.gpo.gov/fdsys/pkg/FR-2010-05-07/pdf/2010-8159.pdf>
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