

EPA Takes First Steps to Address GHG Emissions from Aircraft Engines

The EPA Administrator is proposing to find that greenhouse gas (GHG) emissions from certain classes of engines used in aircraft contribute to the air pollution that causes climate change and endangers public health and welfare under section 231(a) of the Clean Air Act (CAA or the Act). The EPA is not at this time proposing aircraft engine GHG emission standards.

The EPA is also issuing an Advance Notice of Proposed Rulemaking that provides information on the process for setting an international CO₂ emissions standard for aircraft at the International Civil Aviation Organization (ICAO), and describes and seeks input on the potential use of section 231 of the Clean Air Act to adopt and implement the corresponding international aircraft engine CO₂ emissions standard domestically.

The Clean Air Act and Aircraft Regulation

The EPA has been engaged in reducing harmful air pollution from aircraft engines since 1973. Section 231 of the Clean Air Act directs the EPA to issue standards addressing aircraft engine pollutant emissions, if in the Administrator's judgment they cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare. Under the Clean Air Act, the EPA consults with the Federal Aviation Administration as we develop aircraft engine emission standards, ensuring that any standards set do not adversely affect safety or increase noise. Section 232 of the Clean Air Act then requires that the FAA ensure compliance with the emissions standards set by the EPA.

The EPA and the FAA have traditionally worked within the International Civil Aviation Organization (ICAO), a specialized body of the United Nations focused on aviation and comprised of 191 member states, to first establish international emission standards. Subsequently, the EPA has initiated rulemakings under Clean Air Act section 231 to establish domestic standards equivalent to ICAO's standards. Aircraft

engine standards for other exhaust pollutants including hydrocarbons, oxides of nitrogen, carbon monoxide, and smoke already exist and were developed in accordance with this international process. The proposed GHG cause and contribution findings for aircraft engines are an initial step toward potentially aligning future international and U.S. standards for CO₂ emissions from aircraft engines.

Background

In 2009 the EPA issued findings under Clean Air Act section 202 that GHG emissions from motor vehicles cause or contribute to the air pollution that causes climate change endangering public health and welfare. Subsequent to this finding, EPA adopted GHG emission standards for motor vehicles under section 202 of the Act. We are not reopening or revising our prior finding under CAA section 202(a) in this proposed action.

To address GHG emissions from aircraft, EPA would first issue a separate and final finding under section 231 of the Act concluding that GHGs from aircraft engines contribute to the pollution that causes climate change thus endangering public health and welfare. In this proposed action, the EPA relies upon the extensive scientific and technical evidence in the record supporting the 2009 finding, and builds on it with more recent major scientific assessments. Since 2009, the science on climate change has strengthened lending further support to the judgment that GHGs in the atmosphere endanger public health and welfare for purposes of section 231.

The Administrator's proposed findings come in response to a citizen petition submitted by Friends of the Earth, Oceana, the Center for Biological Diversity, and Earthjustice (Petitioners) requesting that the EPA issue a GHG endangerment finding and standards under section 231(a)(2)(A) of the Act for GHG emissions from aircraft engines. Further, the EPA anticipates that ICAO will adopt a final international aircraft CO₂ emissions standard in February 2016. This proposal and any final GHG endangerment and cause or contribute findings for aircraft engines are part of preparing for a possible subsequent domestic rulemaking process to adopt the corresponding international aircraft CO₂ emissions standard under CAA section 231.

Aircraft GHG Emissions

The U.S. transportation sector is a significant contributor to total U.S. and global anthropogenic GHG emissions. Aircraft remain the single largest GHG-emitting transportation source not yet subject to GHG standards in the U.S.

U.S. aircraft emit:

- **11 percent** of GHG emissions from the transportation sector in the U.S.
- **3 percent** of total U.S. GHG emissions.
- **29 percent** of GHG emissions from all aircraft globally.
- **0.5 percent** of total global GHG emissions.

Proposed Endangerment and Cause and Contribute Findings

The EPA Administrator is proposing to find that GHG emissions from certain classes of engines used primarily in commercial aircraft contribute to the air pollution that causes climate change and endangers public health and welfare. Specifically, she proposes to find that GHG concentrations in the atmosphere endanger the public health and welfare of current and future generations within the meaning of section 231(a) of the Clean Air Act. She proposes to make this finding specifically with respect to the same six well-mixed GHGs -- carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride -- that together were defined as the relevant air pollution in the 2009 Endangerment Finding under section 202(a) of the Clean Air Act. The Administrator is also proposing to find that GHG pollutant emissions from certain classes of engines used in aircraft are contributing to this mix of GHGs in the atmosphere.

Proposed Scope of Covered Aircraft Engines

The Administrator proposes to find that GHG emissions from engines used in U.S. subsonic jet aircraft with a maximum takeoff mass (MTOM) greater than 5,700 kilograms and in subsonic propeller driven (e.g., turboprop) aircraft with a MTOM greater than 8,618 kilograms, contribute to the GHG air pollution that endangers public health and welfare. Examples of covered aircraft would include smaller jet aircraft such as the Cessna Citation CJ2+ and the Embraer E170, up to and including the largest jet aircraft - the Airbus A380 and the Boeing 747. Other examples of covered aircraft would include larger turboprop aircraft, such as the ATR 72 and the Bombardier Q400.

The Administrator is not at this time proposing a contribution finding for GHG emissions from engines used in military aircraft or smaller aircraft such as smaller turboprops, smaller jet aircraft, piston-engine aircraft, and helicopters.

Advance Notice of Proposed Rulemaking (ANPR)

Over the past five years, the International Civil Aviation Organization (ICAO), a specialized body of the United Nations with 191 member states, has been working with the aviation industry and environmental groups to develop a coordinated, international CO₂ emissions standard for aircraft. EPA and the Federal Aviation Administration (FAA) represent the United States on ICAO's Committee on Aviation Environmental Protection (CAEP), and are working to ensure that CAEP develops an international standard that achieves meaningful CO₂ emissions reductions through policies that are equitable across national boundaries. This international standard is expected to be adopted in early 2016.

Today's notice is an initial step in the process for EPA to adopt CO₂ standards promulgated by ICAO in the future. It provides the public and stakeholders with information on the ICAO standard-setting process and requests input on the setting of these standards. The EPA is seeking

comments from all interested parties, including small businesses, on a variety of issues related to setting CO₂ standards for aircraft, including:

- The appropriate effective dates for the potential international CO₂ standard
- The appropriate stringency levels for the CO₂ standard
- Whether international standards should apply to new in-production aircraft as well as new aircraft types

Participation

We welcome your comments on these proposed endangerment and contribution findings and ANPR. Comments will be accepted for 60 days beginning when this proposal is published in the Federal Register. All comments should be identified by Docket ID No. EPA-HQ-OAR-2014-0828 and submitted by one of the following methods:

Internet: www.regulations.gov

E-mail: A-and-R-Docket@epa.gov

Mail:

Environmental Protection Agency
Air and Radiation Docket and Information Center (6102T)
1200 Pennsylvania Avenue NW
Washington, DC 20460

Hand Delivery:

EPA West building
EPA Docket Center (Room 3340)
1301 Constitution Avenue NW
Washington, DC

You should consult the Federal Register notice for this proposal for more information about how to submit comments, when the comment period will close, and about where and if a public hearing will be held.

For More Information

You can access the proposal and ANPR on EPA's Office of Transportation and Air Quality (OTAQ) Website:

www.epa.gov/otaq/aviation.htm

For more information on this proposal and ANPR, please contact the U.S. Environmental Protection Agency, Office of Transportation and Air Quality at:

E-mail: otaq@epa.gov