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Highlights

Highlights of [GAO-08-706T](#), a testimony before the Subcommittee on Aviation, Committee on Transportation and Infrastructure, House of Representatives

Why GAO Did This Study

Collaboration between the federal government and the aviation industry has led to reductions in aviation emissions, but growing air traffic has partially offset these reductions. The Federal Aviation Administration (FAA), together with the National Aeronautics and Space Administration (NASA), the Environmental Protection Agency (EPA), and others, is working to increase the efficiency, safety, and capacity of the national airspace system and at the same time reduce aviation emissions, in part, by transforming the current air traffic control system to the Next Generation Air Transportation System (NextGen). This effort involves new technologies and air traffic procedures that can reduce aviation emissions and incorporates research and development (R&D) on emissions-reduction technologies. Reducing aviation emissions is important both to minimize their adverse health and environmental effects and to alleviate public concerns about them that could constrain the expansion of airport infrastructure and aviation operations needed to meet demand.

This testimony addresses (1) the scope and nature of aviation emissions, (2) the status of selected key federal efforts to reduce aviation emissions, and (3) next steps and challenges in reducing aviation emissions. The testimony updates prior GAO work with FAA data, literature reviews, and interviews with agency officials, industry and environmental stakeholders, and selected experts.

To view the full product, including the scope and methodology, click on [GAO-08-706T](#). For more information, contact Gerald L. Dillingham at (202) 512-2834 or dillingham@gao.gov.

AVIATION AND THE ENVIRONMENT

NextGen and Research and Development Are Keys to Reducing Emissions and Their Impact on Health and Climate

What GAO Found

Aviation contributes a modest but growing proportion of total U.S. emissions, and these emissions contribute to adverse health and environmental effects. Aircraft and airport operations, including those of service and passenger vehicles, emit ozone and other substances that contribute to local air pollution, as well as carbon dioxide and other greenhouse gases that contribute to climate change. EPA estimates that aviation emissions account for less than 1 percent of local air pollution nationwide and about 2.7 percent of U.S. greenhouse gas emissions, but these emissions are expected to grow as air traffic increases.

Two key federal efforts, if implemented effectively, can help to reduce aviation emissions—NextGen initiatives in the near term and research and development over the longer term. For example, NextGen technologies and procedures, such as satellite-based navigation systems, should allow for more direct routing, which could improve fuel efficiency and reduce carbon dioxide emissions. Federal research and development efforts—led by FAA and NASA in collaboration with industry and academia—have achieved significant reductions in aircraft emissions through improved aircraft and engine technologies, and federal officials and aviation experts agree that such efforts are the most effective means of achieving further reductions in the longer term. Federal R&D on aviation emissions also focuses on improving the scientific understanding of aviation emissions and developing lower-emitting aviation fuels.

Next steps in reducing aviation emissions include managing NextGen initiatives efficiently; deploying NextGen technologies and procedures as soon as practicable to realize their benefits, including lower emissions levels; and managing a decline in R&D funding, in part, by setting priorities for R&D on NextGen and emissions-reduction technologies. Challenges in reducing aviation emissions include designing aircraft that can simultaneously reduce noise and emissions of air pollutants and greenhouse gases; encouraging financially stressed airlines to purchase more fuel-efficient aircraft and emissions-reduction technologies; addressing the impact on airport expansion of more stringent EPA air quality standards and growing public concerns about the effects of aviation emissions; and responding to proposed domestic and international measures for reducing greenhouse gases that could affect the financial solvency and competitiveness of U.S. airlines.

Sources of Aviation Emissions



Source: FAA.