





*The Next Generation Air Transportation System, or NextGen, is a transformative change in the management and operation of how we fly, which will reduce delays, save fuel and lower carbon emissions. This comprehensive initiative integrates new and existing technologies, including satellite navigation and advanced digital communications. Airports and aircraft in the U.S. National Airspace System (NAS) will be connected to NextGen's advanced infrastructure and will continually share information in real-time to improve air transportation's safety, speed, efficiency and environmental impacts. The combined initiatives that make up NextGen will provide a better travel experience.*

[www.faa.gov/nextgen](http://www.faa.gov/nextgen)

## NEXTGEN AND THE ENVIRONMENT

The FAA's environmental vision for NextGen is to provide environmental protection that allows sustained aviation growth. Although there are a range of environmental issues associated with aviation, noise, air quality, climate, energy and water quality are considered to be the environmental aspects with the greatest potential to constrain aviation capacity, efficiency and flexibility. We have established environmental and energy goals to address each of these aspects.

ENVIRONMENTAL ASPECT	AVIATION ENVIRONMENTAL AND ENERGY GOALS
 <p>Noise</p>	<p>Reduce the number of people exposed to significant noise around U.S. airports in absolute terms, notwithstanding aviation growth, and provide additional measures to protect public health and welfare and our national resources.</p>
 <p>Air Quality</p>	<p>Achieve an absolute reduction of significant air quality health and welfare impacts attributable to aviation, notwithstanding aviation growth.</p>
 <p>Climate</p>	<p>Limit the impact of aircraft carbon dioxide emissions on the global climate by achieving carbon neutral growth by 2020 compared to 2005<sup>1</sup> and net reductions of the climate impact from all aviation emissions over the longer term (by 2050).</p> <p><small><sup>1</sup> Carbon neutral growth means no higher carbon dioxide emissions in 2020 than is reported in 2005.</small></p>
 <p>Energy</p>	<p>Improve NAS energy efficiency by at least two percent per year and develop and deploy alternative jet fuels for commercial aviation.</p>
 <p>Water Quality</p>	<p>Limit the adverse aviation discharges to U.S. waters and reduce aviation's contribution to significant water quality impacts.</p>



## FIVE PILLARS

Our five-pillar approach provides the foundation for addressing the environmental and energy impacts of aviation in the United States. Every one of FAA’s environmental initiatives is linked to one or more of the five pillars, ensuring that our programs support our goals.

Better Scientific Understanding and Improved Tools for Integrated Environmental Analysis

Mature New Aircraft Technologies

Develop Aviation Alternative Fuels

Develop and Implement Clean, Quiet, and Energy/Efficient Operational Procedures

Policies, Environmental Standards, Market Based Measures, and Environmental Management System

## NEXTGEN’S ENVIRONMENTAL BENEFITS

NextGen will produce environmental benefits. We are developing NextGen capabilities that will guide and track aircraft more precisely and efficiently in the air and on the ground to save fuel, decrease emissions and manage the impact of noise on communities. In addition, we are advancing efforts to reduce aircraft fuel burn, emissions and noise through innovative aircraft technologies and to reduce aviation lifecycle emissions through the development of alternative aviation fuels.

**FAA is developing the NextGen Environmental Management System (EMS) Framework** to identify and manage aviation-related environmental issues and enhance environmental collaboration among aviation stakeholders. EMS will integrate environmental protection objectives into NextGen plans and facilitate National Environmental Policy Act (NEPA) reviews. EMS aims to ensure that the environmental benefits of NextGen are maximized while constraints are identified and reduced or avoided. The FAA also plans to use the EMS framework to improve NEPA processes and coordination.

**The Continuous Lower Energy, Emissions, and Noise (CLEEN) program** will reduce the environmental impact of aircraft through new engine and airframe technologies and by advancing the use of sustainable alternative aviation fuels. Our aim is to accelerate development of quieter commercial aircraft that burn less fuel and produce lower emissions than existing technology.

**The Aviation Environmental Design Tool (AEDT)** is a software system that dynamically models aircraft performance in space and time to more effectively evaluate aircraft noise, fuel consumption and emissions. AEDT will allow airspace designers and environmental planners to analyze the environmental impacts of potential airspace changes and use that information to optimize airspace redesign.

**Fuel-saving Performance Based Navigation (PBN)** capabilities and procedures create more direct, fuel efficient routes that will reduce emissions, including greenhouse gas emissions. Enabled by satellite and other technologies, PBN routes and procedures free aircraft from ground-based navigation and can be altered in response to changing conditions, such as bad weather.

**The FAA sponsors the Commercial Aviation Alternative Fuels Initiative (CAAFI)**, which focuses on enhancing energy security and environmental sustainability for aviation by exploring the use of alternative jet fuels. CAAFI aims to promote the development and deployment of alternative fuels that offer equivalent levels of safety and compare favorably with petroleum-based jet fuel on cost and environmental bases. CAAFI is co-sponsored by the Aerospace Industries Association, Airlines for America and Airports Council International–North America. Its stakeholders include U.S. government agencies, the international commercial aviation industry, fuel suppliers and universities.