

# Backgrounder

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[www.boeing.com](http://www.boeing.com)

## **The Boeing ecoDemonstrator Program**

Boeing launched the ecoDemonstrator program in 2012 to enable a relentless pursuit to improve efficiency, minimize its environmental footprint and enhance safety. With successive airplane platforms, the ecoDemonstrator program takes promising technologies out of laboratories and tests them in an operational environment to help solve real-world challenges for airlines and passengers, and to help mitigate the climate impact of our industry.

A dedicated team of engineers and specialists supports the ecoDemonstrator program, which is part of the Boeing Commercial Airplanes Product Development organization. That team collaborates with experts throughout Boeing and the industry to select technologies to test onboard, which often takes years of preparation. Together, the team and technologists focus on a singular motto





In 2021, the program launched a multi-year partnership with the National Aeronautics and Space Administration (NASA) to collect and analyze data on SAF emissions, and the two partners began [ground testing](#) on engine particles and trace gas emissions with [various blends of SAF](#) on the 2021 ecoDemonstrator, an Alaska Airlines 737-9, conducted alongside a demonstration flight with 100% SAF in one engine. The following year, NASA and Boeing continued [ground emissions testing](#) with SAF on the 2022 ecoDemonstrator, a Boeing-owned 777-200ER (Extended Range) and a 787-10, as reported in [Aviation Week](#). In 2023, the SAF emissions testing took to the skies with [-8 Airborne Science Lab trailing behind the ecoDemonstrator Explorer](#), a 737-10 destined for United Airlines. The team of researchers measured emissions from partners of the German Aerospace Center (DLR), GE Aerospace, and the Federal Aviation Administration.

## 2024 Technologies

The Boeing ecoDemonstrator program continued to leverage a 777-200ER to test new technologies focused on strengthening operational efficiency and sustainability in cabin interiors. These projects included:

**Operational efficiency:** Enhanced capabilities of electronic flight bag

in-flight advisories to improve fuel consumption, and the ability to use real-time and historical data to predict taxi times

**Airport noise:** Quantifying the environmental benefits of flight operation procedures, such as steeper glide slope and continuous descent approach, to reduce community noise, fuel use and emissions

**Waste-reducing materials:** - carpet that reduces weight by 120 pounds (54 kilograms) on a 787-9. It also uses less water, energy and produces less waste in the manufacturing process

More information about the Boeing ecoDemonstrator program and previous flying test-bed airplanes can be found at [boeing.com/ecoDemonstrator](https://www.boeing.com/ecoDemonstrator) commitments and partnerships at <https://www.boeing.com/sustainability>.

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