Mack DeGeurin

Small electric aircrafts are making inroads, but tech limitations mean long flights are still decades away

Article

The news: **NASA** is reportedly nearing completion of its long-anticipated **X-57 Maxwell** all-electric aircraft, which could serve as a model for private firms attempting to make zero-emissions aviation a reality, per The Verge.

- The X-57 Maxwell—effectively a heavily modified **Tecnam P2006T** outfitted with 12 electrical motors and propellers and an 800-pound battery—will have a r**ange of about 100 miles** (about the distance from New York to Philadelphia) with a cruising speed of around 172 miles per hour, according to NASA Administrator Bill Nelson.
- NASA's electric plane has been in development for over five years. While it's conducted numerous grounded tests, it's expected to lift off for its inaugural flight in spring 2022.
- Nelson says NASA is sharing data from its test results with others in the aviation community, which means advances in battery and other technology in the **X-57 Maxwell could impact development across the industry.**

Who else is involved? Though NASA's aircraft would mark a watershed moment for electric aviation, other private firms are racing to build their own solutions as well.

- Leading the charge is Israel-based **Eviation**, which recently announced a production version of its electric aircraft that it claims could seat nine passengers and two crew and fly with a range of 440 miles.
- Meanwhile other firms like **MagniX** are focused on creating electric motors, which they hope can be used to convert smaller gas-powered planes to electric.
- Just last month, MagniX and **GE Innovation** were awarded **$74.3 million and $179 million respectively** to develop electrical propulsion technologies that could potentially be used in US air fleets by 2035.

What's the catch? Limitations in battery technology mean electric planes' batteries are still far less efficient than jet fuel. Aircraft makers have tried to compensate for this inefficiency by creating larger batteries, but those lead to extremely heavy vehicles ill-equipped for long-range travel.

The opportunity: Though tech limitations mean long-range electric aircraft flights are likely still many decades away, small and midsized electric aircraft modeled after NASA's could offer a more environmentally friendly and economically efficient solution to short-range (usually under an hour) air travel.

- Major airlines have largely moved away from serving shorter-range, small-city flights. According to Business Insider, just **2.5% of the more than 20,000 FAA-approved runways in the US are currently active.**
- Longer term, electric aircraft could help reduce the airlines industries' carbon footprint, which globally accounts for around 2% of CO2 emissions. a

Source: NASA