

Environmentalists and industry weigh in on how to decarbonize aviation

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Under intense political pressure, the aviation industry has set itself a daunting challenge to decarbonize flying by 2050, and has laid out a road map to get there through technological innovation.

For environmentalists, especially in Europe, that prolonged switch to

[clean energy technology](#) is not good enough.

"It takes decades to get there, but there's a real plan," Airbus Chief Executive Officer Guillaume Faury told journalists at an event just before the Paris Air Show opened. "It's actually incredibly exciting times to be in aviation."

With the world's fleet of airplanes projected to double in just the next two decades, that plan is too slow for Matteo Mirolo, sustainable aviation manager for Transport & Environment, Europe's leading clean transport advocacy group.

In an interview at the Paris Air Show, which he attended to speak with government and industry leaders, Mirolo said the world needs to reduce flying.

"It's also a question of keeping the growth of our energy needs in check," said Mirolo. "The best energy is the one you don't use."

"It is a hell of a lot simpler to not fly rather than have to go through loops to produce a fuel that is costing some of the energy we really need to function in a world of energy scarcity," Mirolo said.

The [aviation industry](#)'s goal is "net zero," a pollution level at which it produces as little greenhouse gas emissions as possible while offsetting the balance with carbon-capturing technologies.

One element of the aviation industry plan is new, more fuel-efficient airplanes: Switch out older airplanes for the latest models, then take a further leap in the 2030s with innovative clean technologies on new-design airplanes. Further out, manufacturers will introduce hydrogen-powered and hybrid-electric aircraft.

The most essential part of the plan to reach that 2050 emissions goal is to vastly ramp up the use of sustainable aviation fuel, or SAF, made from renewable sources.

Nick Cunningham, an analyst with London-based Agency Partners, in a note to investors as the Paris Air Show wrapped up this week, praised Airbus for recognizing that decarbonizing flying is "a near-existential threat to the entire industry."

Still, the industry is spooked by talk of efforts to cut flying. Airbus sales chief Christian Scherer in an interview called that "the worst thing you can do to the economy and societal progress."

"I don't want to say if you jugulate [air transportation](#) we're going back to the Middle Ages, but there's a part of me that believes that," he said.

He added that the industry needs to convince "opinion leaders, politicians, policymakers and the general public that our effort is a lot more than what people make it to be."

The air show impact

The business and trade part of the Paris Air Show ended Thursday.

Washington Gov. Jay Inslee, opening a panel discussion on sustainability on Tuesday at the air show, praised all the innovative technological solutions he'd seen aimed at decarbonizing.

"I am so inspired to see the creativity that's going through: liquid sustainable fuels, e-fuels, battery power, fuel cells, you name it," Inslee said. "We have multiple ways of getting this job done."

Airplane orders in Paris were light except for two from India.

One that had been previously announced in February from Air India split 470 jets evenly between Airbus and Boeing. The other was new: a gigantic order for 500 Airbus A320neo family jets from low-cost carrier Indigo.

"Of course, the commercial guy in me is really happy. We have a great score," said Scherer, the Airbus sales chief. "But I say blah, blah, blah, blah, blah. It's not my primary objective, coming here and winning the tally."

He feels the talk of innovative technologies at the show was more important.

Airbus outlined its progress toward hydrogen planes. CFM pitched its new open-fan engine proposal. Boeing talked up a new airframe concept for the 2030s. And urban air taxi startups drew lots of attention.

"I feel that it does contribute to keeping the flame alive ... the mystique of aerospace," said Scherer. "We need to keep the interest in aviation of the population and particularly the younger generation."

"You could feel the good old excitement of aviation," he said. "From that perspective, this show was successful."

Mirola, a self-described aviation geek, felt some of that excitement. Yet he also tasted something sour in that record-breaking Indigo order.

"I cannot help but wonder how we can reconcile aircraft sales and at the same time talk about sustainability," he said. "When Airbus announced its 500 A320neos sale to Indigo ... what I see is a huge amount of energy that we need to consume somewhere."

Carrot-and-stick policy strategies

In Istanbul earlier this month, on the sidelines of the annual general meeting of the International Air Transport Association, Qatar Airways CEO Akbar Al Baker, who likes to make the headlines, did so when he told CNN that the industry talk about net-zero emissions by 2050 was a "PR exercise."

"It won't be able to be achieved," Al Baker said.

The industry scrambled to deny his comments as governments weigh strategies to make that goal happen.

Europe has imposed mandates requiring energy companies and airlines to reach targets of 6% of fuel being SAF by 2030, rising to 70% by 2050. It also has a emissions cap-and-trade scheme that increasingly penalizes companies financially for carbon emissions.

The U.S. uses carrots instead of sticks. The Inflation Reduction Act includes incentives for the use of clean energy, and various state laws, including those in California and Washington, substantially enhance the subsidies.

Julie Kitcher, Airbus executive vice president for sustainability, said both carrots and sticks are needed. But she noted that the Inflation Reduction Act is a short-term policy framework, assured only through 2027, assuming no change in the U.S. administration cuts it sooner.

"We need longevity in the regulatory responses," to encourage investors to commit capital, she said.

Nikita Pavlenko, the Washington, D.C.-based Fuels program lead at the International Council on Clean Transport, said the European approach is more likely to produce the results needed but that "Americans are more reflexively totally opposed to any kind of binding regulations or taxes."

In an interview, Inslee acknowledged the risk in the U.S. approach.

"The industry should be prepared to be aggressive in these incentive-based programs and the development of technology to avoid the necessity of a regulatory approach," he warned.

"If a regulatory approach is necessary, the science will dictate that," Inslee added. "We have to solve this problem."

Europe and the wider world

Mirola said his call to reduce flying "is not about grounding people," or telling people they are not allowed to fly. Instead, he thinks flying should be reduced by a combination of higher prices, pressure on companies to cut unnecessary business travel and more taxes on corporate jets.

"We ask car drivers, at least in Europe, to pay heavy taxes at the fuel pump," he said. "How acceptable is it for them that someone flying a private jet does not have to pay the taxes on the kerosene?"

"The cost of an airline ticket is often not at all representative of the climate impact of flight," he said, citing past offers by Ryanair of 10-euro fares to some vacation destinations in Europe.

"In the coming years, I think flying is going to be more expensive," Mirola added.

From the perspective of the globe-spanning airline industry, this pressure to reduce flying is a narrow, Eurocentric view.

Haldane Dodd, executive director of the Geneva-based Air Transport Action Group—representing the entire aviation industry, including airlines, manufacturers and airports—said in an interview that outside of

Europe, "the idea of restricting people's access to travel especially could be a real problem from a development perspective."

"It's a no-go area," said Dodd. "There are countries in the world, a lot of citizens around the world, that want to have the access to travel, and tourism and jobs and [economic growth](#), that Europe and North America have had for the last century or so."

Kircher of Airbus echoed that view.

"Anywhere outside of Europe, it's really hard to travel or to connect or to do business without an aircraft," she said. "The powerhouse that's Europe today has been in very large part created through those aviation connections."

Kircher pointed out that although aviation today contributes only between 2 and 3% of total human carbon emissions, it offers an outsized portion of both economic benefit and technological innovation focused on reducing climate change.

"In a scenario where you stop aviation, what happens is you still have 98% of the world's emissions to solve for and you lose more than 4% of global economic GDP to be able to solve that energy-transition conundrum," Kircher said.

She said society will need its full economic strength to make the daunting energy transition to renewable sources in all sectors, not just aviation.

Airbus sales chief Scherer said that at the air show he heard a consistent message throughout the industry on what needs to be done to decarbonize and how urgently—with few skeptics, despite the comments of Al Baker in Istanbul.

"Crystallization around these topics is happening," he said. "We just need to show our good faith ... and put our money where our mouth is."

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