



Airbus Reveals Plans for Zero-Emission Planes

Discussion > Advanced 7



Exercise 1 – Vocabulary

hydrogen	A chemical element that is a light, flammable gas with no color or smell.
[noun]	<i>Ex: In water, the ratio of hydrogen to oxygen is two to one.</i>

fuel cell	A device used to generate electricity from a chemical reaction.
[noun]	<i>Ex: This truck is powered by hydrogen fuel cells.</i>

aviation	The designing, making, and operating of planes.
[noun]	<i>Ex: The factory produces engines for the aviation industry.</i>

kerosene	An oil that is made from petroleum and used as a fuel.
[noun]	<i>Ex: My grandmother still uses a kerosene lamp when it gets dark.</i>

exhaust	Gases produced by an engine and sent out as waste.
[noun]	<i>Ex: Diesel exhaust is a major cause of pollution.</i>



Exercise 2 – Reading

Read the text aloud with your tutor and discuss the key points.

Airbus Reveals Plans for Zero-Emission Planes

European aircraft manufacturer Airbus has revealed plans for the world's first zero-emission commercial aircraft. In late September, the company released three concept designs for what it's calling its "ZEROe" aircraft, which it says it hopes to have in service by 2035.

The planes would use hydrogen to fuel their engines, and hydrogen fuel cells to generate electricity.

Two of the three designs look much like today's commercial aircraft. One is a larger plane with two jet engines, able to carry up to 200 passengers about 3,700 kilometers. The other is a smaller propeller plane able to carry up to 100 passengers about 1,800 kilometers.

The third plane, however, uses a more unique "blended wing" design. The entire aircraft is shaped like a triangular wing, with the passengers, crew, cargo and fuel all carried inside. It will also be able to carry up to 200 passengers about 3,700 kilometers.



However, Airbus will not be able to operate hydrogen-powered aircraft without cooperation from governments and the rest of the aircraft industry. Airports would need new equipment to store hydrogen and refuel aircraft, and governments would need to invest in infrastructure to help make it cheaper to produce and transport hydrogen.

Hydrogen is a promising fuel for aviation because it can hold about three times more energy than traditional kerosene-based jet fuel by weight. However, it takes up about four times more space and needs to be kept very cold — at minus 253 degrees Celsius.

The main exhaust from hydrogen engines is water, with no emissions of carbon dioxide (CO₂), unlike today's kerosene engines. Hydrogen fuel will release some nitrogen oxides, but 90% less than kerosene engines.

However, most hydrogen fuel production requires fossil fuels, which means making it in the first place generates CO₂. It is possible to make "green hydrogen," where electricity from renewable sources is used to make hydrogen out of water, but only about 0.1% of the world's hydrogen is made this way today.



Exercise 3 – Discussion

Discuss the following questions with your tutor.

1. What are your thoughts on Airbus' plans for zero-emission planes?
2. Do you think it's likely that zero-emission planes will be in service by 2035?
3. How do you expect air travel to change over your lifetime?
4. Are electric vehicles a common sight where you live?
5. What do you imagine the world will be like in 50 years if greenhouse gas emissions continue to rise?
6. In your opinion, is your government doing enough to promote clean energy?
7. What renewable energy sources would you invest in if you were a billionaire?
8. What do you imagine are the greenest countries in the world?