

Future of renewable energy looks bright thanks to solar plane's journey

By Damian Carrington, The Guardian, adapted by Newsela staff on 08.02.16

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Solar Impulse 2 lands at Moffett Field in Mountain View, California, April 23, 2016. The aircraft recently became the first renewable energy-powered plane to fly around the world. Photo: AP/Noah Berger

The first around-the-world flight by a solar-powered airplane landed this week. Solar Impulse 2 touched down in the Middle Eastern city of Abu Dhabi early Tuesday.

The final leg of the feat showed off the power of renewable energy. It was a bumpy ride. Turbulence was driven by hot desert air, leaving the solo pilot, Bertrand Piccard, fighting with the controls.

The plane has a wingspan wider than a Boeing 747. It carries more than 17,000 solar cells on its wings. In March 2015, the craft left from Abu Dhabi. It then crossed both the Pacific and Atlantic Oceans using no fuel and has spent more than 23 days in the air.

"Also A First In The History Of Energy"

Piccard said he was feeling emotional as he neared the end of the journey: "It is a very, very special moment – it has been 15 years that I am working on this goal. I hope people will understand that it is not just a first in the history of aviation but also a first in the history of energy," he said.

"All the clean technologies we use, they can be used everywhere. So we have flown 40,000 kilometers (about 25,000 miles), but now it is up to other people to take it further. These technologies now can make the world much better."

Piccard said the tools can make a profit, help the Earth, and create jobs.

During daylight, the solar panels charged the plane's batteries, which then power the plane's motor and propeller. The pilots also climbed high during the day and glided down at night, to conserve power. The plane flies at about 30 miles per hour, although it can go faster if the sun is bright.

The plane could fly almost forever but the pilots cannot. There were grueling conditions aboard.

Longest Leg Covered 4,000 Miles

Bertrand alternated with André Borschberg to fly the 16 legs of the journey. They spent up to five days in the unheated and unpressurized cabin. Each took only short naps. The single seat doubled as a toilet. Borschberg flew the longest leg, 4,000 miles over the Pacific from Japan to Hawaii, smashing the record for the longest uninterrupted journey in aviation history.

But Bertrand said his biggest challenge was getting his pilot's license.

"When I initiated the project, I had no airplane license so I had to work for it over six years. I did hundreds of hours to be allowed to fly a (trial) airplane."

Piccard and Borschberg, both Swiss, are seasoned adventurers. Piccard made the first non-stop balloon flight around the world in 1999. Borschberg, a former Swiss air force fighter pilot, has had brushes with death involving an avalanche and a helicopter crash.

Bertrand said the final leg from Cairo to Abu Dhabi was particularly tough. They had to fly at high altitude to avoid the worst of the rocky ride.

Battling The Flight Controls

"It is a much more demanding and exhausting flight," he said. "It is so turbulent, there were moments in the last night that I could not rest at all, I just had to fight with my flight controls."

He said his ground team had made the record-breaking flight possible.

"I am alone in the plane, but all the people who have worked on this project are people who are completely devoted and committed to success. I will give to each of them a big hug because they made my dream possible."

A Boost For Renewable Energy

The aim of the Solar Impulse adventure was to show the capabilities of renewable energy.

"Now I really want to leverage this demonstration and create a world council for clean technologies," Piccard said. That way, he said, experts can tell governments and businesses how to fight climate change and still make money.

Ban Ki-moon, the United Nations secretary-general, said: "Solar Impulse has flown more than 40,000 kilometers without fuel but with an inexhaustible supply of energy and inspiration. This is a historic day for Captain Piccard and the Solar Impulse team, but it is also a historic day for humanity.

Looking Toward The Future

"You may be ending your around-the-world flight today, but the journey to a more sustainable world is just beginning. The Solar Impulse team is helping to pilot us to that future."

Solar Impulse's journey has not been without difficulties. Crosswinds in China caused weeks of delays in 2015, and overheating batteries during the Pacific crossing forced it to spend the winter inside a Hawaiian hangar. The team also overcame money troubles in 2015 after raising \$22 million from sponsors.

Quiz

1 Read the paragraph below.

"Now I really want to leverage this demonstration and create a world council for clean technologies," Piccard said. That way, he said, experts can tell governments and businesses how to fight climate change and still make money.

Which of the following claims is BEST supported by this paragraph?

- (A) The main purpose of the historic flight was to create a new world record in aviation.
- (B) The record-breaking flight showed people that fighting climate change is not always expensive.
- (C) The Solar Impulse flight was important because it showed the power of solar energy.
- (D) The historic flight will likely not be repeated as the world turns its focus to other types of renewable energy.

2 Which piece of evidence BEST supports the idea that the pilots needed endurance to complete the flight?

- (A) Solar Impulse 2 touched down in the Middle Eastern city of Abu Dhabi early Tuesday.
- (B) The pilots also climbed high during the day and glided down at night, to conserve power.
- (C) "It is so turbulent, there were moments in the last night that I could not rest at all, I just had to fight with my flight controls."
- (D) "You may be ending your around-the-world flight today, but the journey to a more sustainable world is just beginning."

- 3 How does the following paragraph contribute to the development of the article's MAIN idea?

During daylight, the solar panels charged the plane's batteries, which then power the plane's motor and propeller. The pilots also climbed high during the day and glided down at night, to conserve power. The plane flies at about 30 miles per hour, although it can go faster if the sun is bright.

- (A) It highlights the challenges of flying a solar-powered plane.
- (B) It describes the conditions the pilots experienced during the flight.
- (C) It provides examples of other ways to use renewable energy.
- (D) It explains the technology that made the solar-powered flight possible.

- 4 Read the paragraphs from the section "Longest Leg Covered 4,000 Miles."

Piccard and Borschberg, both Swiss, are seasoned adventurers. Piccard made the first non-stop balloon flight around the world in 1999. Borschberg, a former Swiss air force fighter pilot, has had brushes with death involving an avalanche and a helicopter crash.

Bertrand said the final leg from Cairo to Abu Dhabi was particularly tough. They had to fly at high altitude to avoid the worst of the rocky ride.

How do these two paragraphs relate to each other?

- (A) The first paragraph describes the pilots' previous experience. The second shows that their previous experience made the challenges of the flight seem easy.
- (B) The first paragraph describes the pilots' previous experience. The second shows that the flight was still difficult in spite of their previous experience.
- (C) The first paragraph describes the pilots' motivation for making the flight. The second suggests that the pilots might have regrets about their recent journey.
- (D) The first paragraph describes the pilots' motivation for the making the flight. The second suggests that they did not expect to face so many difficulties.

Answer Key

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