

ECOLOGIC

Solar Impulse heralds future air travel

With aviation linked to climate change due to emission of greenhouse gases, the solar flights may well become the norm



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In July 2015 André Borschberg’s 5-day 5-night made a record-breaking flight from Japan to Hawaii, using only the power of the sun. When asked he said that Bertrand Piccard’s vision of clean technologies and energy efficiency to reduce our emissions which improve our life inspired him. In that famous classic, the hero Mr. Fogg wagered that he will go Around the World in Eighty Days!

Wonder if Jules Verne would have been impressed with the time taken by the first round-the-world solar flight. Probably not, as it took Piccard’s Solar Impulse 19 months! Ban Ki-moon, the UN secretary-general, praised: “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.” Solar flight may one day become viable for our hyper-mobile lifestyles.



Solar Impulse-2 on round-the-world trip

Capable of a maximum speed of 140 km/h, the 2.3 tonne Solar Impulse 2 cruised at 90 km/h during the day and 60 km/h at night

to save power. The Impulse was powered by 17,248 photovoltaic solar cells on 269.5 m² of the wings, fuselage and tail. A power plant

comprising a bank of electric motors and lithium-ion batteries stored the 66kW energy harnessed during day, and released 13 kW of

electricity for night-time flying. This could very well be the future of air travel soon. There is so much written about the links between climate change and the aviation industry that it is hard to ignore what a big deal this could be for the future of the planet.

Like all human activities involving combustion, aviation releases carbon dioxide (CO₂) and other greenhouse gases, contributing to an accelerated rate of global warming and ocean acidification. Globally, about 8.3 million people fly daily totaling to a staggering 3 billion occupied seats per year!

In addition to the CO₂ released by most aircraft, the industry also contributes greenhouse gas emissions from ground airport vehicles and those used by passengers and staff to access airports. Add to this the energy use in an airport, the manufacture of the aircraft itself and construction of airport buildings and you will see the monumental concerns raised by the aviation industry.

“Carbon offsetting” is considered one way to mitigate the environmental impact of frequent flyers. There are many websites out there that calculate your carbon footprint per flight — based on the distance travelled, class of travel, etc. For every kilometer of air travel, the quantity of carbon dioxide released into the atmosphere is computed.

In future it may be considered acceptable to pay a small fee for choosing to fly. Such voluntary contributions or statutory taxes could support organisations that will plant trees or engage in sustainability research or education. Perhaps solar technology entering the aviation field of carbon offsetting is just a passing fad — but until the day we all fly on solar planes, it will be well worth considering how you can do your part for the environment on your next trip!

(The writer is an architect, urban designer, dancer and chief designer at Shilpa Architects)