



MOVING TOWARDS MORE SUSTAINABLE AVIATION

About Cathay Pacific



- 8th largest international passenger carrier
- 3rd largest international air cargo carrier
- Connecting Hong Kong to 119 destinations in 35 countries immediately prior to the pandemic...
- 234 aircraft together with our subsidiaries HK Express and Air Hong Kong
- Branched into a lifestyle brand since 2021



Mission: minimise our negative impact



Our main sustainability impacts

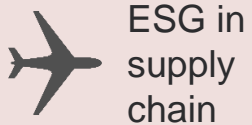


Climate Change



Use of Resources and Waste

Our sustainability efforts also cover a range of topics that our stakeholders care about, including:



ESG in
supply
chain



Biodiversity



Our People



Community
Engagement

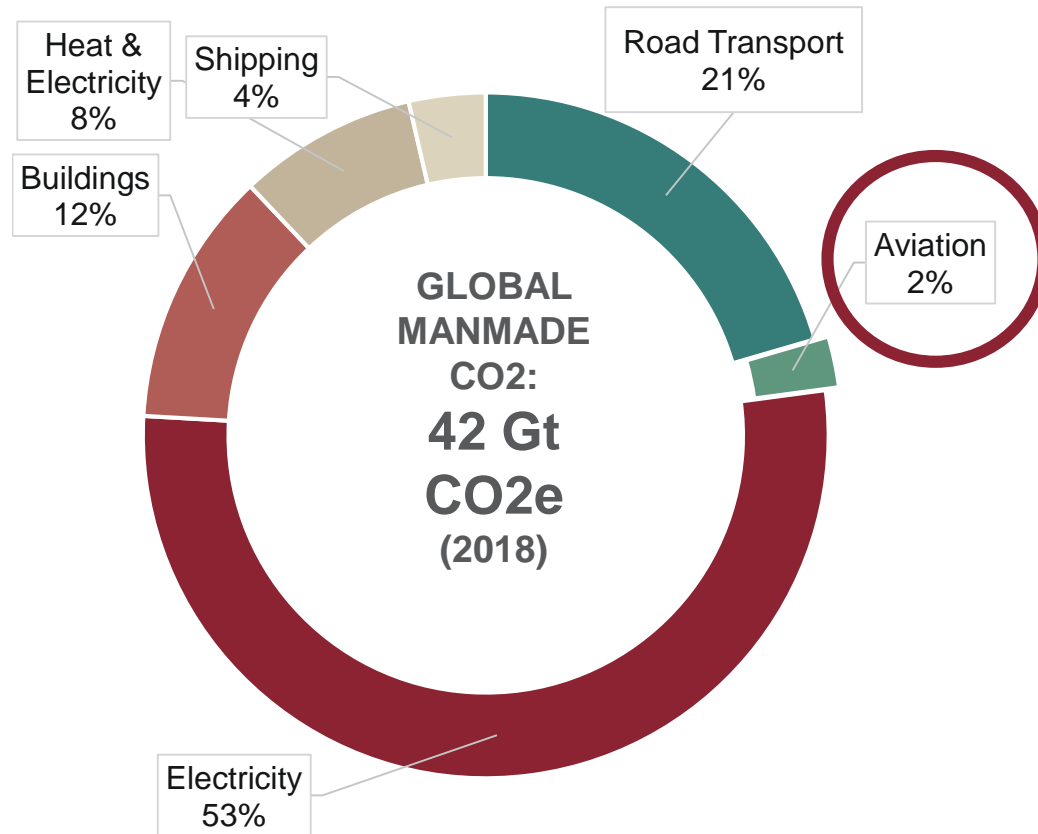


Diversity &
Inclusion

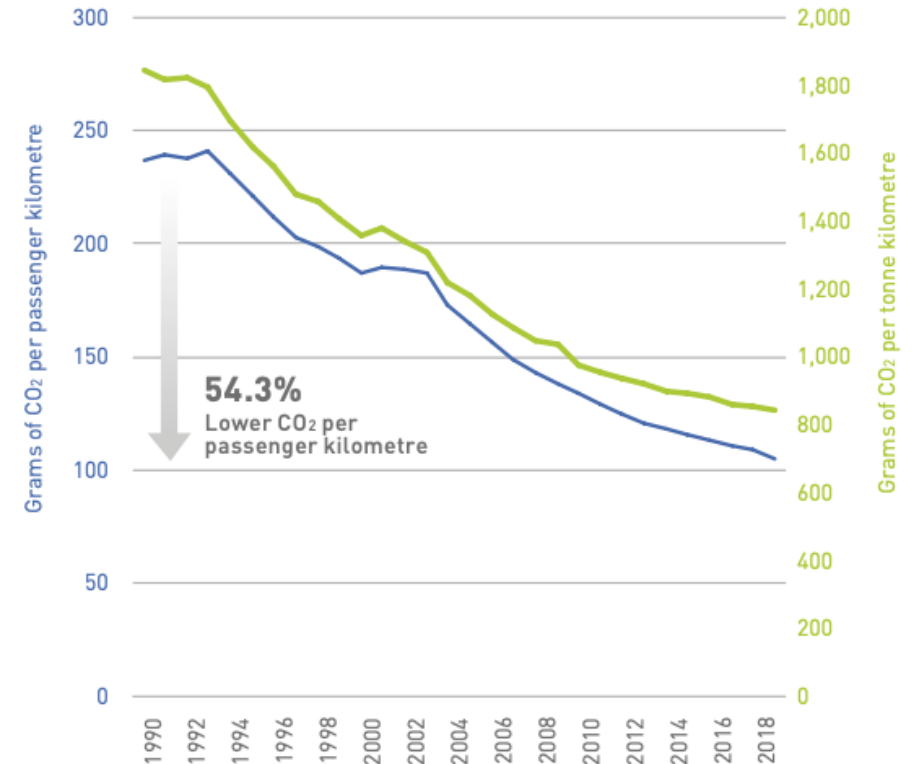


Mitigating our carbon impacts

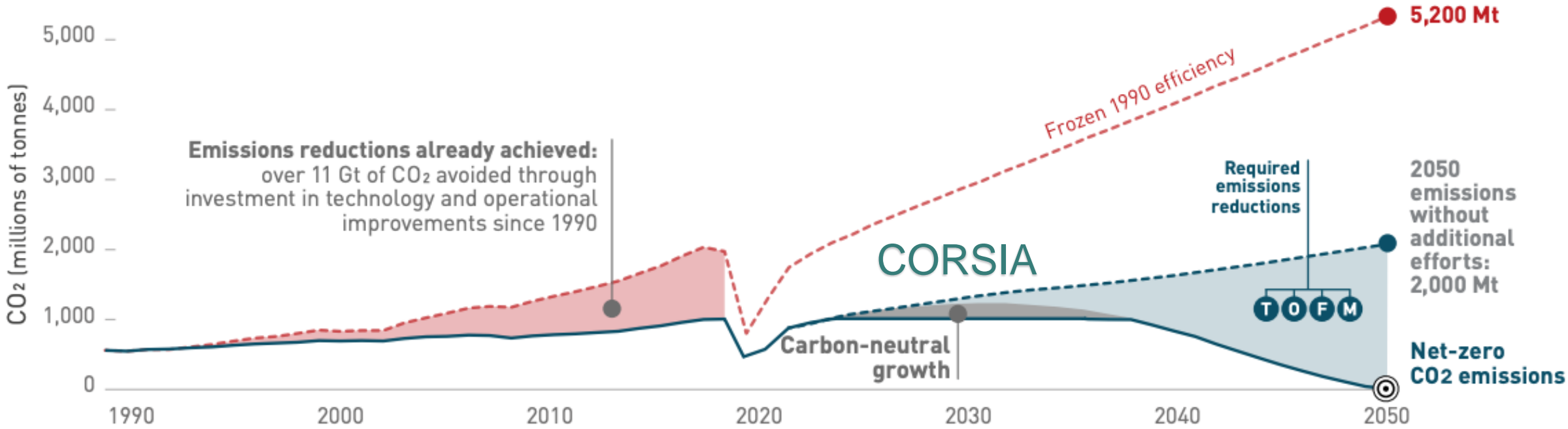
Aviation contributes to less than 3% of global emissions



Meanwhile, efficiency for commercial air travel continued to improve



Despite efficiency improvement, lots still need to be done



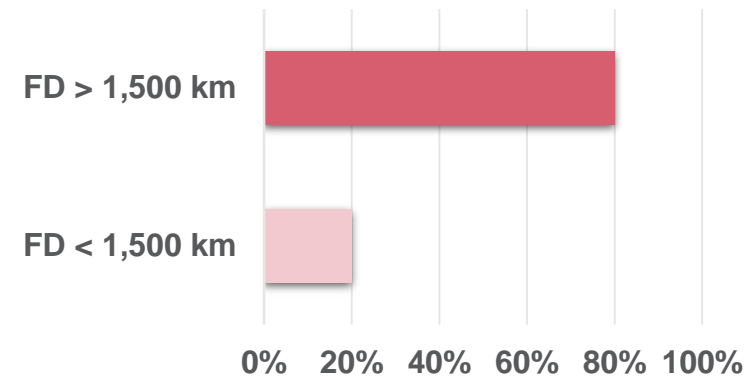
Technology | **O**perations and infrastructure | **SAF** | **M**arket-based measures (Offsetting/ other mitigations)



Just stay grounded?

- 80% of emissions are from flights over 1,500 kilometres, which have few alternatives
- Majority of the growth in the last decade (and the growth to come in the next 30 years) is in emerging economies

Flight Distance (FD)






Aviation Industry Emissions Level in 2018 =
2% (Eq. to 895Mt) CO_{2e}

In 2008, the aviation industry agreed to a global, sector-wide climate action framework - a world first.



2008			Oct 2021
	Goal 1	Goal 2	Goal 3
	Short Term	Medium Term	Long Term
WHAT IS?	1.5% average annual fuel efficiency improvement from 2009 to 2020	Stabilise net aviation CO ₂ emissions at 2020* levels through carbon-neutral growth	Halving net CO ₂ emissions by 2050 compared to what they were in 2005
PROGRESS	✓ Done	✓ Done	Improvised ➔



Aviation's Long Term Aspirational Target:
Net Zero Carbon by 2050

* Likely to be changed to 2019 after COVID-19 outbreak



Our promise today, for a sustainable tomorrow

We are among the first airlines in Asia
to commit to achieving net-zero carbon emissions by 2050.

Cathay Pacific 2050 target – net zero carbon emissions



Our 5-prong approach towards decarbonisation:



Aircraft

Operate one of the youngest fleet with a robust aircraft replacement plan.



Operational Improvement

Ongoing effort – over 28% fuel efficiency improvement since 1998.



Sustainable Aviation Fuel

First airline investor in Fulcrum Bioenergy. Offtake agreement for 1.1m tonnes of SAF.



Carbon Offset

Fly Greener voluntary carbon offset programme, launched since 2007.



New Technology

As founding member of Aviation Climate Taskforce (ACT), accelerating breakthrough.



Announced Sep 2021:

Cathay Pacific commits to using SAF for 10% of its total fuel consumption by 2030.

New aircraft: up to 25% more fuel efficient than previous generations



The wings can change shape during flight to improve fuel efficiency

Operates at a higher cabin pressure, hence a lower cabin altitude, to reduce passenger fatigue

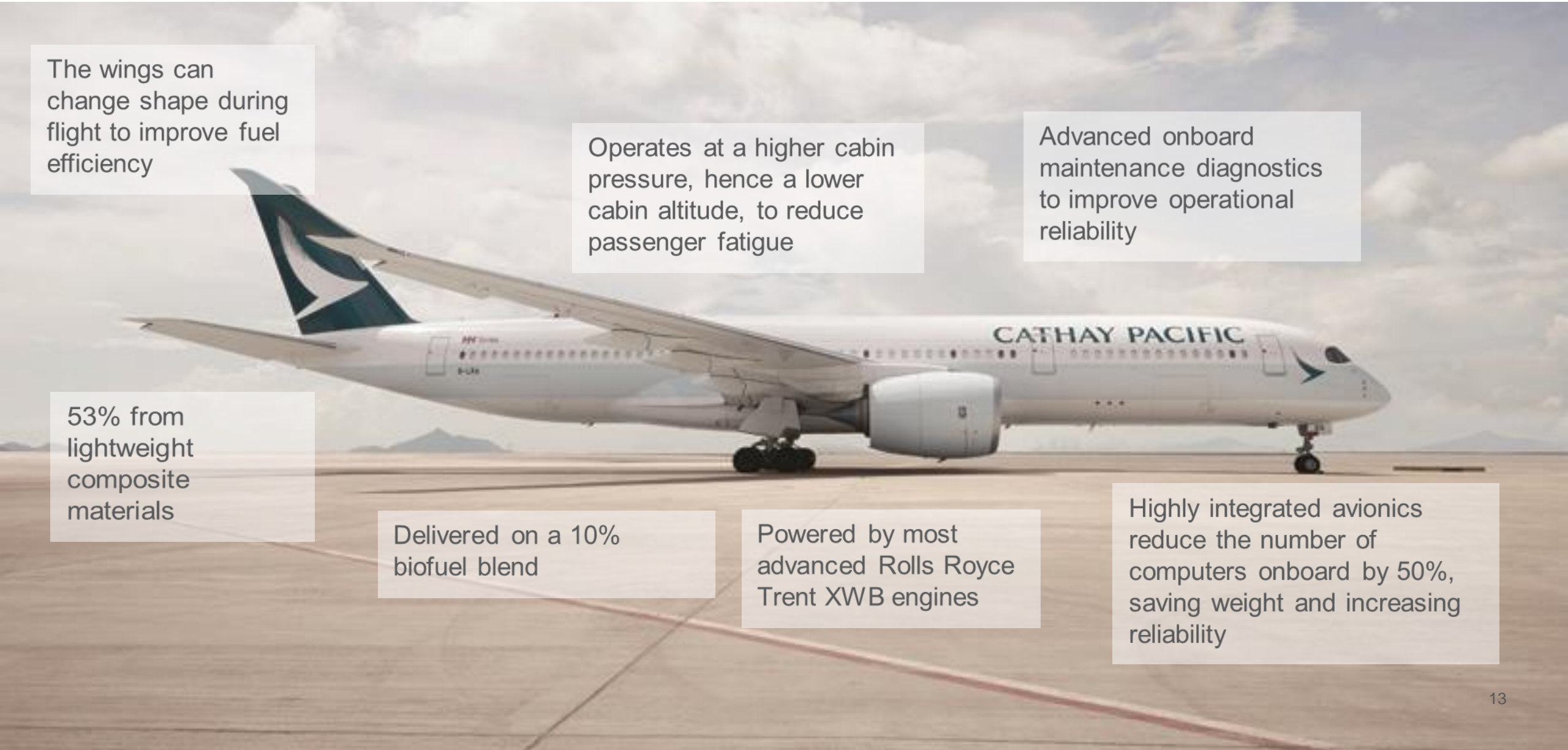
Advanced onboard maintenance diagnostics to improve operational reliability

53% from lightweight composite materials

Delivered on a 10% biofuel blend

Powered by most advanced Rolls Royce Trent XWB engines

Highly integrated avionics reduce the number of computers onboard by 50%, saving weight and increasing reliability



Operationally, various initiatives have been adopted to improve efficiency and reduce carbon emissions.



Replace physical manuals
by electronic flight folders



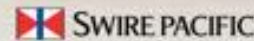
Reduced usage of Auxiliary Power Unit (APU)
Reduced Engine Taxi In (RETI)



LEADING THE WAY TOGETHER TO FLY GREENER

Introducing Asia's first major
Corporate Sustainable Aviation Fuel Programme.

Launch Customers



Pilot Corporate SAF
Programme Fuel Suppliers



Lifecycle reduction up to 100%

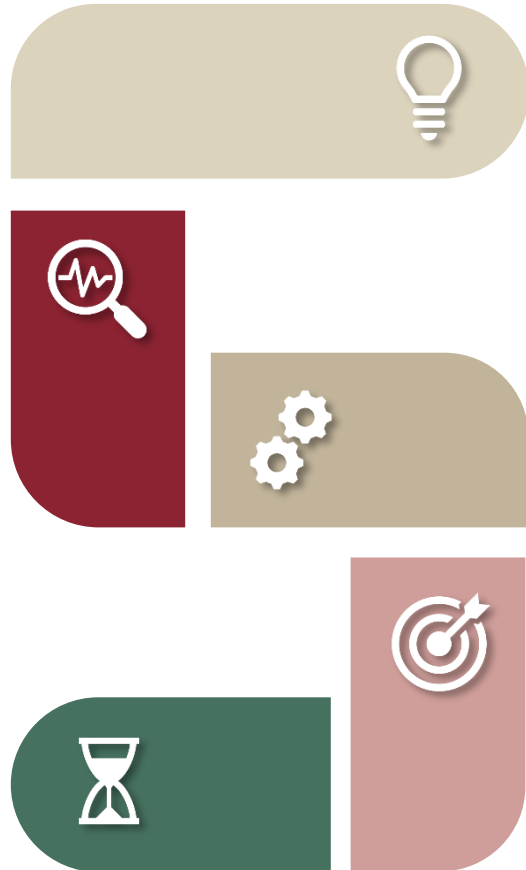


Depending on the technology used, SAF has the potential to reduce lifecycle carbon emissions by 100% compared w/ conventional jet fuel.

Ready to use



Requires no change to airplanes, engines, or airport infrastructure.



Meet science-based target (SBT) requirement

In-sector decarbonisation, fulfilling science-based target (SBT) requirement.



Safety & performance

SAF will meet stringent safety and performance requirements. More than 370k flights using SAF since 2011.



Potential to reduce waste

Some feedstock may help address the issue of waste.

What is Sustainable Aviation Fuel?

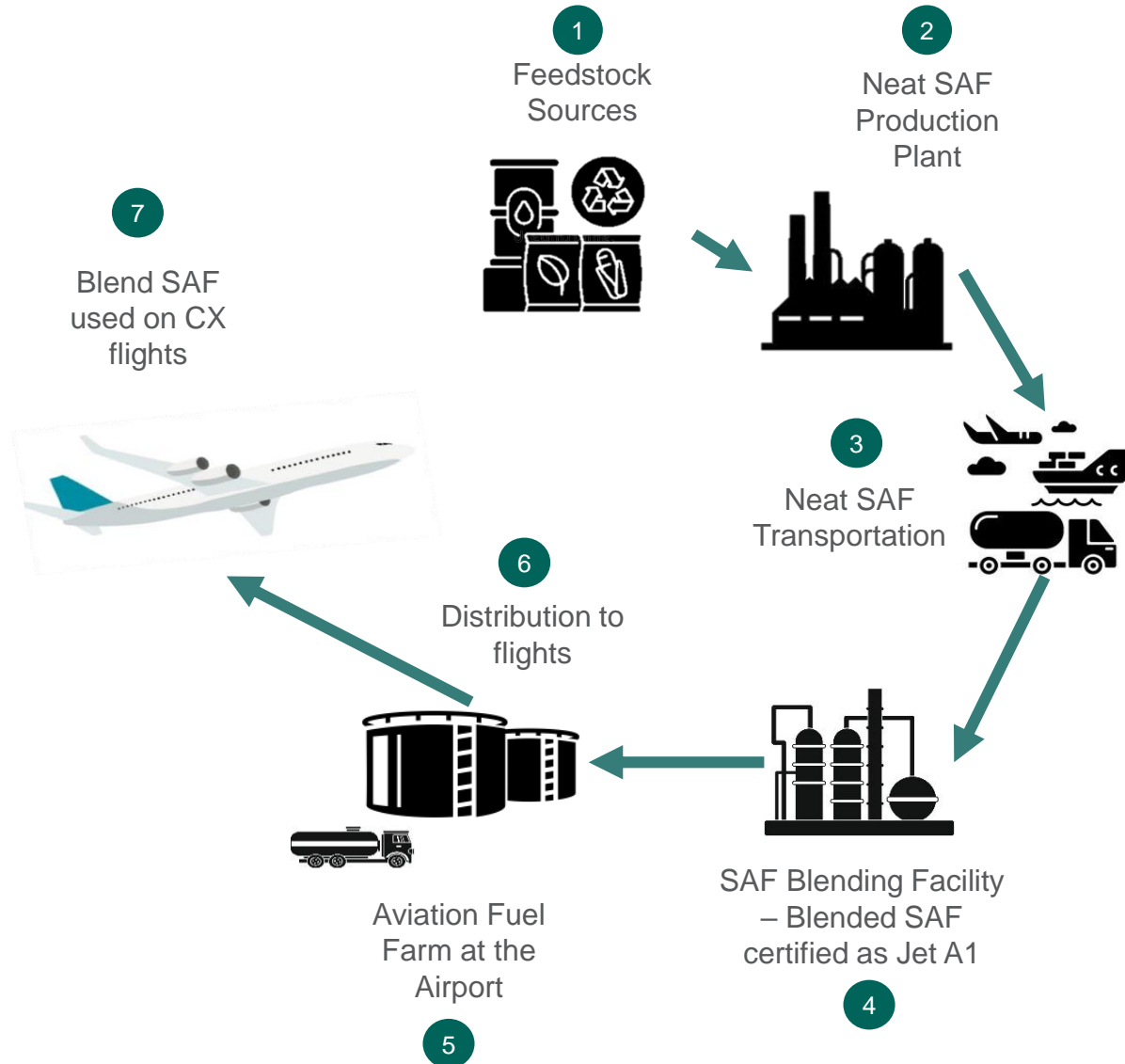


- Jet fuel made with ESG consideration from non fossil, sustainable sources
- Renewable energy for decarbonizing aviation, right now and in the future

FOGs			
Oil Seeds (e.g., camelina, rapeseed)		Wastes/Industrial (e.g., tallow/lard)	Algae/Aquatic Species (cyanobacteria)
Cellulose			
Woody (e.g., sawdust)	Grasses (e.g., switchgrass)	Residues (e.g., corn stover, grain hulls)	Other (e.g., Brassicaceae, fungi)
Carbohydrates/Sugars			
Crop Sugars (e.g., sugar beet, sugar cane)		Industrial (e.g., food processing, whey)	
Industrial Waste Streams			
(e.g., food waste, municipal solid waste)			



SAF Logistics



Key things to note

- SAF will be delivered via the **existing aviation fueling facilities** and **co-mingled** with the rest of conventional Jet A1 fossil fuel already in the system.
- This helps optimise SAF logistic cost

You can help too by offsetting your flight through “Fly Greener”



Offset your flights with Cathay through high-quality carbon offset projects that meet the Gold Standard certification.

Calculation results

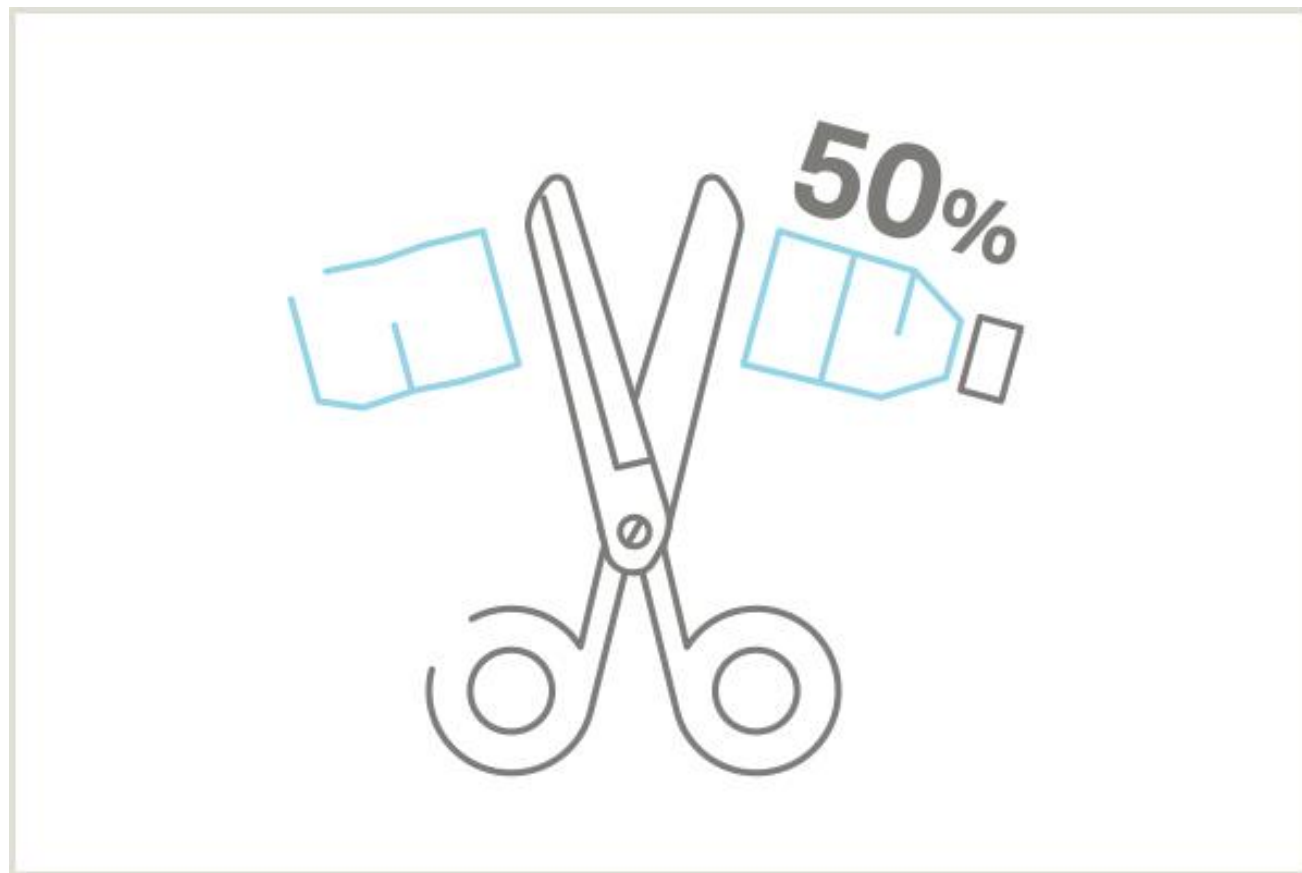
	CO2 emissions	Equivalent cash	Asia Miles	
Your total	1.66 tonnes	HKD 105.55	▲ 2602	
HKG → LHR Return, 1 Passenger(s) Economy	1.66 tonnes	HKD 105.55	▲ 2602	Remove

Offset your carbon emissions

Contributions can be made via credit card (Hong Kong dollars), e-payment methods or Asia Miles redemption.



Resources and waste management



We pledge to reduce our single-use plastic consumption by 50%, or 387 million pieces a year by end of 2022

43
MILLION
PIECES
REMOVED

2021

- Reduced our usage of blanket bags and plastic lids on garnish and noodle cups.
- Over 43 million pieces were removed from our annual usage baseline.
- Conducted several trials for alternatives to prepare for the removal and reduction of other major SUP inflight items in 2022

2020

- Commenced product lifecycle analysis to develop a guideline for material selection of inflight equipment.

2019

- Set our single-use plastic target: to reduce by 50% by the end of 2022.
- Adopted the use of cotton bags for the packaging of duvets and blankets in our Business Class cabins.
- Removed plastic straws and stirrers from all Cathay Pacific and Cathay Dragon flights, lounges, and offices globally, saving over 32 million pieces of plastic waste a year.

2018

- Introduced our '4R' Single-use Plastic Strategy: Rethink, Reduce, Reuse, Recycle.
- Achieved our goal of making our employee canteens in headquarters free of single-use plastic cutlery, bags, straws and stirrers.

2016

Replaced plastic bags used for duty-free purchases with paper bags.

2014

- Introduced the redesigned 9oz plastic cup used in Economy Class which is 33% lighter than the previous cup and is more pliable and recyclable. It can be recycled together with the First and Business Class plastic covers for plates and bowls.
- Began collection of plastic stretch wrap for recycling at the Cathay Pacific Cargo Terminal.

2013

- Replaced Styrofoam boxes with reusable cooler bags for inflight ice cream storage, thereby reducing their usage by 44%.
- Phased out Economy Class plastic cups and sent 200,000 of these cups to a recycler to be made into other plastic items.

2012

Introduced biodegradable plastic wrapping for blankets, cutlery, and inflight magazines.

2011

Introduced biodegradable plastic bags for duty-free purchases.

2007

Began collecting and recycling inflight plastic cups and bottles.

2002

Introduced a rebate programme for returning plastic hangers to Vogue Laundry, a wholly-owned subsidiary of Cathay Pacific.

2001

Already sterilising and reusing plastic cutlery in Economy Class.

Highlights of our plastic reduction journey



Partnership with the School of Engineering of The Hong Kong University of Science and Technology (HKUST) to innovate and find an answer to a problem statement – reducing inflight waste and enhance inflight recycling to achieve our sustainability goals.

Supporting the community during the pandemics



- Delivered the first COVID-19 vaccine shipment to Hong Kong and over 165 million vaccine doses to Hong Kong and beyond
- Donated over 300,000 meals to people in need in 2021, through long-time partners Food Angel and Feeding Hong Kong
- Over four million items donated including catering equipment, blankets, children kits, and refurbished tablet computers





QATAR

Join us to fly greener!

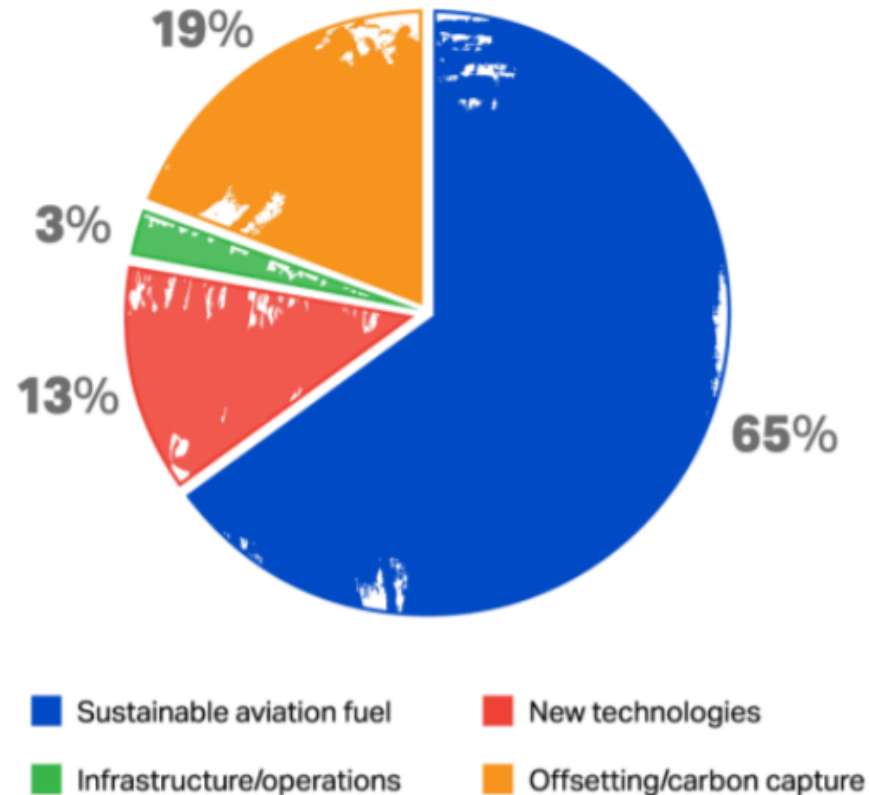




The industry action plan for decarbonisation



Contribution to achieving Net Zero Carbon in 2050



Net Zero 2050 is achievable through:

Combination of measures

- Sustainable Aviation Fuel, new technologies, operational and infrastructure improvements, and offsetting/carbon capture

Collective effort

- of the entire industry together with governments, oil producers and investors



Corporate SAF Programme



- The first major programme of its kind in Asia
- Contribute to the very first uplift of SAF at Hong Kong International Airport
- Support corporate customers to reduce their carbon footprint from business travel and/or airfreight

