



BACKGROUND NOTE

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Brace for impact! The Qantas climate crash flightpath

Qantas, Australia's leading airline, is facing the challenge of reconciling its national and international emissions reductions commitments with its growth projections.

In response it has chosen to increase flights while claiming Sustainable Aviation Fuels (SAF) and carbon offsets will cut its emissions in line with a Net Zero 2050 pathway.

Qantas's response, supported by an obliging Australian government and, to date, accepted uncritically by the mainstream media, puts it on a climate crash flightpath.

This BACKGROUND NOTE is a critical assessment of Qantas's claims, using publicly available aviation data, climate science research papers and Qantas reports.

Executive summary

- **Qantas flight emissions will almost double between now and 2050.**
- **Qantas has arguably already blown its risk-averse 'Paris aligned' emissions budget.**
- **To achieve its stated goal of reaching Net Zero 2050, Qantas's deployment of SAF and use of offsets must overcome critical and arguably insurmountable barriers.**
 - Deployment of SAF at scale faces critical cost and feedstock obstacles, and claimed emissions cuts are overstated.
 - Offsets have a very poor record of achieving emissions cuts equivalent to new emissions against which they are credited.
- **Regulatory oversight of Qantas's path to Net Zero 2050 remains inadequate.**
 - Qantas faces no Australian government mandated domestic emissions reduction target.
 - Qantas is not required to abate the majority of its international emissions.
 - The aviation industry has missed all but one of its emissions reduction targets over the last 20 years.
- **Even if Qantas could achieve its goal, Net Zero 2050 won't hold warming to well below 2°C, an aim of the Paris Agreement which Qantas supports.**
 - On the Net Zero 2050 path warming of 1.5°C wasn't due until 2040. But it's here now. With 2°C now due by 2040, and 3°C by 2050 unless emergency action is taken.
- **Qantas's sustainable aviation actions are not commensurate with those actions now needed to avoid catastrophic warming.**
 - Current CO2 levels of 426 ppm are dangerous and on their own will push warming past 2°C.
 - To restore a safe climate new emissions must be prevented *and* atmospheric CO2 rapidly drawn down to below 350 ppm.
 - This urgent task of permanent carbon sequestration is undermined by all carbon neutral actions, such as Qantas SAF and offsets, when drawn down carbon is replaced by new emissions.
- **The Qantas sustainable aviation pathway may help Qantas to sustain flights but it will not make aviation sustainable.**

This assessment includes some specific emissions figures that have been estimated because they are not publicly available. The method used to calculate these estimates is detailed in the relevant footnotes. Any miscalculations are those of the author, who welcomes any new data that improves the accuracy of these estimates.

Our big picture climate reality

The Qantas emissions reduction pathway can only be effective if it aligns with the response our current climate reality now requires.

Existing emissions

Global warming is caused by rising levels of greenhouse gases in the atmosphere. CO₂ emissions, the primary greenhouse gas, reached a record high global average concentration of 428 parts per million (ppm) in 2025¹, rising by 3.5 ppm – the largest increase recorded². At this level, we are witnessing devastating floods, fires, droughts, associated loss of life and biodiversity habitat, as well as rising insurance premiums.

This level of atmospheric CO₂ has already caused some climate tipping points to be breached. For example:

- Australia’s tropical rainforests now emit more carbon than they draw down³;
- West Antarctic and Greenland Ice Sheet melting now underway, will eventually raise sea levels 10 metres; and
- the terminal decline of coral reef systems from too-frequent bleaching events, will destabilise marine ecosystems on which millions of us rely⁴.

At 426 ppm, other tipping points are edging closer. For example:

- the release from Amazonian forests of more carbon than they draw down; and
- the collapse of warm North Atlantic ocean currents (AMOC), that bring mild weather and viable agriculture to Europe, due to their inundation by freshwater from melting Greenland ice^{5,6}.

Even if we stopped all emissions today, the existing 428 ppm of atmospheric CO₂, on its own, will continue to drive warming for centuries, and push it well past 2°C⁷, with the risk of then triggering the Hot House Earth scenario⁸.

Climate scientists now advise that if humanity is to have a chance of restoring a safe climate, we need to urgently reduce the current 428 ppm to below 350 ppm⁹.

New emissions

In absolute terms, the world is not yet decarbonising. Emissions from fossil fuels are still rising¹⁰. Energy demand is increasing rapidly for sectors such as AI, crypto and cloud computing, and in India and China.

The UN Environment Program (UNEP) and International Energy Agency (IEA) both project emissions dropping only 10 to 20% by 2050, with all major oil/gas nations planning to expand production.

The UNEP Production Gap report finds, on current plans, emissions may be as high in 2050 as today¹¹.

The IEA says that current national and industry policies will result in oil and gas production in 2050 as high as in 2020¹².

Professor Kevin Anderson, on 27 November 2025, told the UK National Emergency Briefing: “We are going to see a rise of about 2°C by the middle of the century. But now there is a small but very real risk that we could hit 4°C by the end of the century. The prospects of 3°C and 4°C of warming are absolutely dire. We cannot risk that at all.

It’s extreme and unstoppable and beyond any safe zone that has nurtured civilisation. We are going to be seeing unprecedented societal and ecological collapse. We are going to see escalating geo-political instability and rising military tensions. And there will be no real economy to talk about. There is no ‘reduction in GDP’. We’d be looking at systemic collapse.”¹³

To avoid warming beyond the Paris Agreement limit of 2°C, new emissions must be abated at emergency speed¹⁴.

Sir David King, the former UK Chief Scientist, has made the case for climate interventions because “rapid emissions reduction is no longer sufficient to avoid an unmanageable future for mankind. We also must have the capability to remove greenhouse gases at scale from the atmosphere, and to repair those parts of the climate system, such as the Arctic Circle, which are passing or have passed their tipping point”¹⁵.

The Qantas emissions pathway

Qantas planned growth

Qantas¹⁶ flight emissions will almost double between now and 2050.

More flights, planes, fuel burn, emissions and impacts

More flights

Flights overseas by Australians now exceed the record numbers set pre-Covid. The one in four Australians who flew in 2024 took 11.5 million overseas trips¹⁷.

Qantas’s Jetstar Australia emissions per passenger kilometre dropped 0.9%¹⁸ in 2024, but with flights growing 12%, total emissions rose 11%. Jetstar will open at least 15 new routes in 2026.

Both Qantas and the Australian government are expecting more of us to fly and further. Domestic flights, measured as total kilometres travelled by passengers, are forecast to grow by 140% to 2050 and international flights by 124%¹⁹.

Qantas’s growth aligns with that for European aviation, where passenger numbers are projected to double between 2019 & 2050²⁰.

If every Australian flew in 2024 as much as the one in four, on average, who actually did, then Qantas emissions²¹ would have been roughly 10% of all Australian emissions²². If everyone in the world flew as much as the 10% who actually do²³, global aviation emissions would equal one quarter of all global emissions²⁴.

More planes

Qantas orders for new passenger jets are amongst the 43,750 forecast to be delivered globally between now and 2044²⁵.

More fuel

Australian jet fuel demand is projected to increase by 75% from 2023 to 2050²⁶.

More emissions

Flying is the fastest way to warm the planet. One premium economy return flight to London (13 t CO₂e)²⁷ on its own almost doubles an average Australian’s annual emissions footprint (15 t CO₂e)²⁸.

Qantas’s Scope 1 CO₂e emissions grew 6% last year, on the back of airport expansions enabling more flights and the opening of new routes²⁹.

On the Qantas emissions pathway, business-as-usual emissions will almost double between now and 2050³⁰.

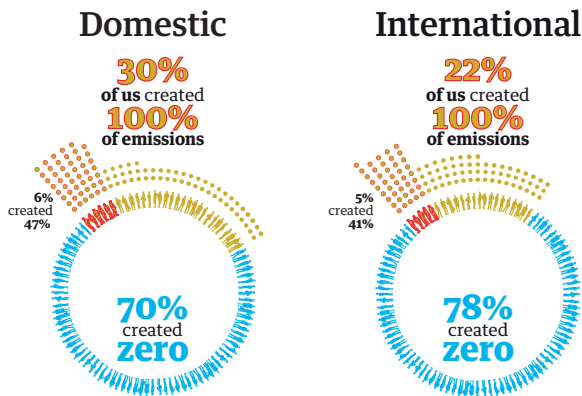
Qantas’s cumulative annual emissions through to 2050 are an estimated 420 Mt CO₂e – 35 times those it reported in 2025³¹.

Measurable emissions impacts

Global insurance group Zurich says all major Australian airports face significant climate risk, particularly from wind, storms and heat. In addition, two in three tourism sites Australia-wide are at peril from 2°C warming, including destinations serviced by Qantas such as Uluru, Kakadu, the Daintree, Bondi, the Barossa, and Victoria’s Great Ocean Road³².

Qantas CO₂ emissions projected to 2050, total an estimated 368 Mt CO₂³³. Specific climate impacts from those emissions can now be quantified³⁴. They will, for example, increase global warming by 0.00016°C, causing an additional quarter of a million people globally to experience unprecedented heat, and result in the loss of an additional eight million coral colonies in every future Great Barrier Reef Marine Park bleaching event.

Australian’s holiday flight emissions



Source: <https://www.roymorgan.com/findings/sky-high-australians-air-travel-habits>

Can SAF and offsets cut these projected emissions as much as Qantas claims?

The Qantas emissions pathway

Qantas emissions mitigation claims

To achieve its stated goal of reaching Net Zero 2050, Qantas’s deployment of SAF and use of offsets must overcome critical and arguably insurmountable barriers.

SAF hot air

SAF is a biomass fuel, produced from feedstocks such as wood, crops and agricultural waste. Second generation SAFs are produced from waste oils³⁵. Synthetic SAFs are often labelled power-to-liquid fuel³⁶.

SAF decarbonises aviation

The Australian government’s recently released road map to net zero transport says “[SAF]... will be the primary pathway to decarbonise the aviation sector, particularly for medium and long-haul flights”³⁷. In 2024 the Australian government allocated an initial \$30 million to support a new Australian “low carbon liquid fuel industry” (read SAF)³⁸.

The Qantas 2025 Sustainability Report says “We consider SAF has great potential to help the aviation industry reduce emissions over time”³⁹. It recently announced “a significant escalation of its sustainability commitments”, assigning more than \$100 million of its \$400 million Climate Fund to SAF and other ‘decarbonisation initiatives’⁴⁰.

SAF emissions are zero

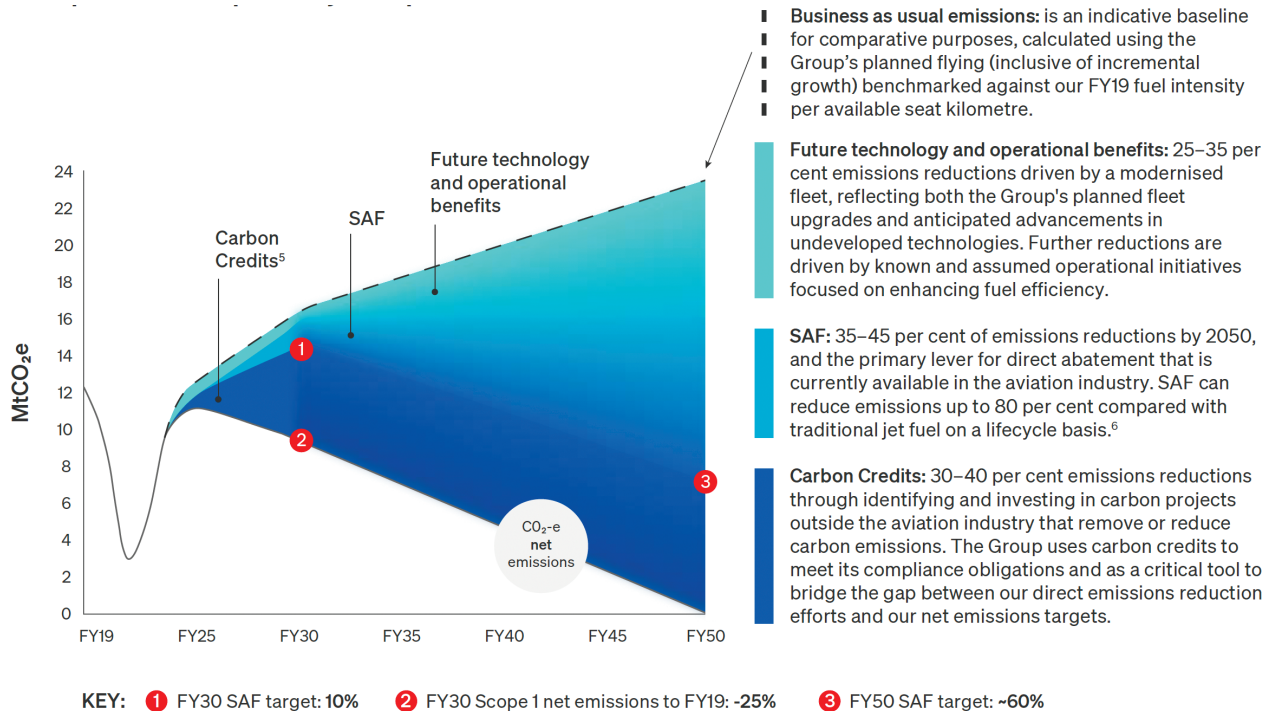
Qantas acknowledges that “Tailpipe emissions of SAF are equivalent to that of fossil jet fuel, as it is the same molecule”⁴¹, yet at the same time says using SAF is a ‘direct decarbonisation’ measure⁴².

This contradiction – that SAF can both directly decarbonise while creating equivalent emissions to fossil jet fuel – is permitted under IPCC Guidelines for SAF emissions reporting and accounting.

In calculating SAF emissions, these guidelines allow the carbon emissions, that are drawn down, days, weeks or months earlier in growing or manufacturing the SAF feedstock, to be subtracted from total in-flight emissions.

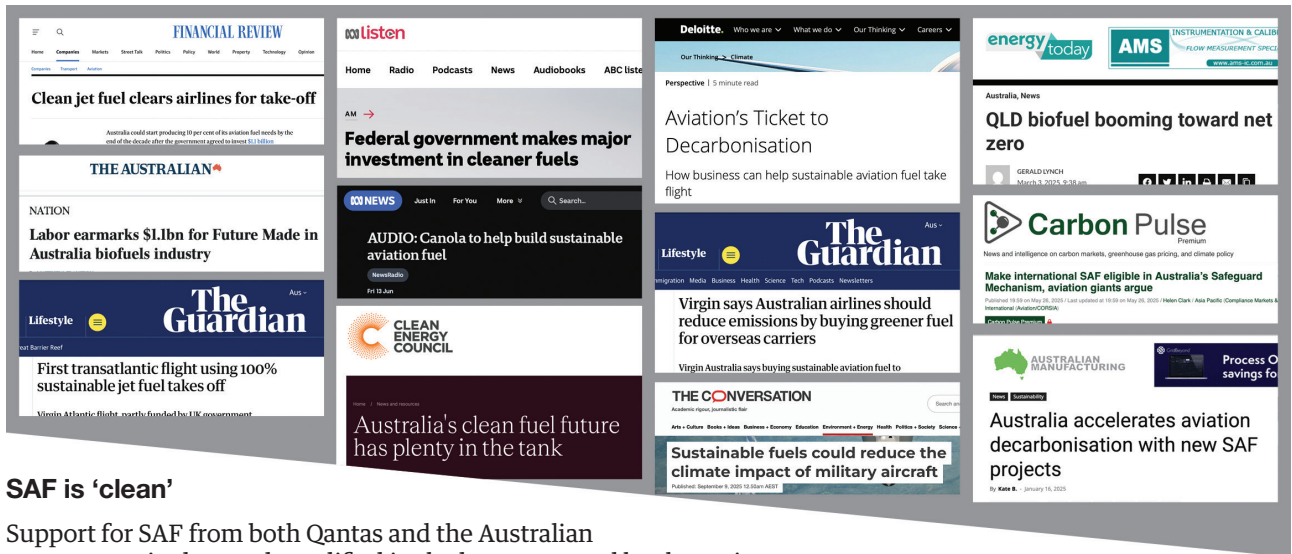
In its accounting of SAF emissions, the Australian government’s National Greenhouse Accounts office interprets this guidance to mean that SAF emissions are zero⁴³. A calculation often described as SAF’s ‘lifecycle’ emissions.

Qantas Group emissions pathway (Scope 1)



Source: Qantas Sustainability Report 2025, p.27 <https://announcements.asx.com.au/asxpdf/20250905/pdf/06nwdw9woxvsq.pdf>

The Qantas emissions pathway



SAF is ‘clean’

Support for SAF from both Qantas and the Australian government is clear and amplified in the language used by the mainstream media that describes SAF as ‘carbon neutral’, ‘green’, ‘net zero’, ‘clean’, ‘sustainable’, and ‘eco-friendly’⁴⁴.

SAF emissions reality

Deployment at scale faces critical cost and feedstock obstacles

Deep emissions cuts are urgently needed right now but those claimed via a SAF ‘lifecycle’ calculation won’t be delivered for years⁴⁵.

SAF feedstocks such as wood, crops and agricultural waste risk deforestation, biodiversity loss, and higher net emissions. Second generation SAFs, from waste oils, are scarce, and synthetic SAFs are speculative, with carbon capture unproven at scale, and prohibitively expensive⁴⁶. Experts are pessimistic about the practicality of growing, accessing or creating the required feedstock in the volume and time required to meet projected demand, not least because of high production costs⁴⁷.

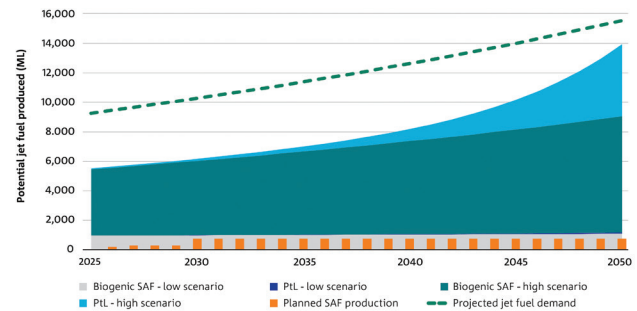
If these costs are passed on to its customers, raising ticket prices⁴⁸, Qantas growth projections may be affected.

One response to feedstock shortages shows how the market for SAF is creating perverse outcomes. Virgin vegetable oils are now being labelled ‘used cooking oil SAF feedstock’, because the latter attract a higher price under EU aviation biofuel mandates⁴⁹.

The Qantas Sustainability Report 2025 says, “SAF purchases across FY25 represented 0.2 per cent of our total fuel consumption”⁵⁰. Of all Qantas’s projected 2030 emissions, it says it will ‘cut’ only 10% using the SAF ‘lifecycle’ emissions calculation. By 2050 – its net zero year – Qantas estimates SAF will be used to ‘cut’ total emissions by 35 to 45% (see Qantas Group emissions pathway graph on page 3)⁵¹.

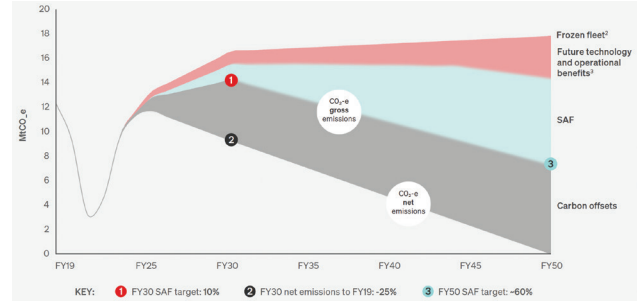
CSIRO projections (see graph above right) have, at best, Australian manufactured SAF supplying only 60% of projected jet fuel demand in 2050, several years after global warming is projected to hit 2°C⁵².

Potential Australian SAF production to 2050



Source: p.63, <https://www.csiro.au/en/work-with-us/services/consultancy-strategic-advice-services/csiro-futures/energy/sustainable-aviation-fuel-roadmap>

Qantas 2024 net zero emissions by 2050 pathway



Source: p.23, https://investor.qantas.com/FormBuilder/Resource/_module/doLLG5ufYkCyEPjF1tpgyw/file/annual-reports/QAN_2024_Sustainability_Report.pdf

The Qantas emissions reduction pathway now reflects these supply uncertainties. After defining specific reductions from SAF in its 2024 Sustainability Report (see graph above), those reductions have been blurred in its 2025 Sustainability Report (see graph page 3).

The Qantas emissions pathway

SAF ‘lifecycle’ emissions cuts are overstated

Not neat: In practice, SAF is blended with fossil jet fuel in a 50:50 mix, halving claimed cuts.

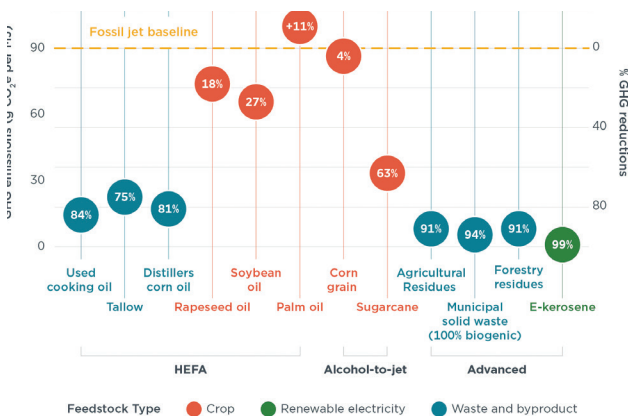
Non-CO2 emissions: Burning both fossil jet fuel and SAF produces non-CO2 emissions, including particulate matter that create contrails. In combination with other non-CO2 emissions they are estimated to contribute twice as much warming as CO2 emissions alone for a specific flight⁵³. Although SAF emissions lead to fewer contrails⁵⁴, the global warming they induce is not included in Qantas and Australian government emissions reports.

Not zero: Notwithstanding the IPCC Guidelines declaring SAF emissions as zero, or, in other words, delivering a 100% emissions ‘cut’ compared to fossil jet fuel, in reality they don’t.

In best case scenario modelling, whereby 100% of international aviation jet fuel demand was met with SAFs in 2050, ICAO determined that only a corresponding 56% reduction in CO2 emissions would be achieved⁵⁵.

Analysis by the International Council on Clean Transport, summarised in the graph below, finds that even the most optimistic ‘lifecycle’ emissions estimates for different SAF feedstocks deliver, at best, a 94% reduction. The 99% reduction shown for E-kerosene, a synthetic or power-to-liquid SAF, is reliant on carbon capture (which is expensive and unproven at scale) and the extraction of hydrogen from water using renewable electricity (better used elsewhere for higher priority emissions reductions).

ICCT claimed emissions reduction from different SAF feedstocks



Source: <https://theicct.org/understanding-the-ghg-emissions-of-different-saf-pathways-sept25/>

Qantas admits as much, saying SAF reduces greenhouse gas emissions by up to 80% compared to conventional jet fuel⁵⁶, and the Australian government’s Net Zero Roadmap for aviation also admits that, “[d]epending on the feedstocks, production methods and supply chains used, SAF offers [up] to 90% reduction in lifecycle emissions compared to traditional jet fuel”⁵⁷.

SAF’s ‘lifecycle’ accounting is exceptional

Whether 80%, 90% or 100%, SAF’s ‘lifecycle’ emissions reduction calculation is exceptional. Elsewhere, ‘lifecycle’ emissions reporting is not used.

A CO2 ‘lifecycle’ emissions calculation for milk production in the dairy industry, would include carbon drawn down in growing pasture eaten by cows. But under the international Paris Agreement rules, the emissions inventory for the dairy industry cannot include CO2 removals in growing pasture feedstock⁵⁸.

Elsewhere, emissions associated with growing feed crops are notably excluded from livestock emissions calculations⁵⁹.

Under an agreement announced recently by the European Commission, more than 20 airlines including Air France, Lufthansa and KLM have committed to stop claiming that the CO2 emissions of a specific flight can be directly reduced by alternative aviation fuels⁶⁰.

Even if so-called Sustainable Aviation Fuels can cut emissions, whether first generation, second generation, synthetic e-fuels or green hydrogen, those cuts won’t come in time to prevent 2°C of global warming. In the meantime ongoing new aviation emissions will help trigger new climate tipping points.

The ‘sustainable aviation’ story, that Qantas, the government and the aviation industry in general tell the public, is one of tech-fixes and market based mechanisms. These result in incremental cuts to emissions at a time when they must be rapidly brought to a halt.

Qantas promotion of SAF has been called ‘future soothing’⁶¹, defined as “the projection of technological innovation and managerial competence [to soothe] public concern while preserving the legitimacy of continued expansion.”

The Qantas emissions pathway

Offsets hot air

Offsets abate emissions

Carbon offsetting or carbon crediting is the process of paying someone else for drawing down carbon from the atmosphere, or for carbon emissions they avoid, equivalent to your new emissions.

Qantas “uses carbon credits to meet its compliance obligations”⁶², calling them ‘indirect abatement’. Currently they are the main way Qantas claims emissions reductions.

Of all Qantas’s projected 2030 international and domestic emissions, totalling 16.5 Mt CO₂e, it will ‘cut’ 33% or 6.7 Mt via offsets⁶³. By 2050 it estimates offsets will be used to ‘cut’ total emissions by 30 to 40%.

Offsets reality

Offsetting lack credibility

Offsets have a very poor record of achieving the emissions cuts they claim, and against which they are credited⁶⁶.

Guaranteeing that trees someone else plants today will ever eventually draw down carbon equivalent to an amount you have emitted elsewhere is difficult. As is guaranteeing that carbon emissions avoided by someone else will equal those you emit.

Furthermore, Qantas CO₂ emissions stay in the atmosphere longer than the carbon, against which they are offset, stays in the ground. The Australian Government considers carbon sequestered in land as ‘permanent’ for only 100 years, while carbon from the burning of fossil fuels has a very long lifetime in the atmosphere – 40% remaining after 100 years, 10-25% remaining after 1,000 years, and up to 20% after 10,000 years⁶⁷. Land-based offsets do not and cannot guarantee such long-term sequestration.

For its domestic emissions obligations under the Australian government’s Safeguard Mechanism, Qantas uses offsets to claim emissions ‘cuts’ of 4.9% each year⁶⁴.

Qantas international aviation emissions are managed under the International Civil Aviation Organisation’s Carbon Offsetting and Reduction Scheme for International Aviation (CORSA)⁶⁵.

No offsets for a majority of emissions

Qantas’ international flight emissions are one and a half times those from domestic flights⁶⁸. Under CORSA from 2028 onward annual Qantas international emissions, equivalent to 85% of what they were in 2019, can continue unabated.

From 2028 Qantas, and all CORSA registered international airlines, will be required to have purchased carbon credits for annual emissions that exceed the 85% unabated threshold. These credits are projected to cost airlines between \$US4 and 6 billion. With these credits already in short supply, airlines without them will face penalties reportedly up to \$US17.5 billion⁶⁹.

Qantas’s use of offsets to compensate for continued emissions growth is fundamentally inconsistent with the decarbonisation pathways of the IPCC and IEA. Under these, Qantas should be only purchasing and retiring offsets to neutralise residual emissions in 2050⁷⁰.

With emissions reductions from SAF and offsets will Qantas hit Net Zero in 2050?

The Qantas Net Zero 2050 pathway

Qantas Net Zero 2050 pathway

Net Zero 2050 hot air

Net Zero 2050 aligns with 1.5°C

The Net Zero 2050 emissions pathway derives from IPCC emissions reduction estimates for a two in three chance of limiting warming to 1.5°C⁷¹.

It has since been adopted as their emissions reduction pathway by Qantas, the Australian government and many other governments and industries. For the ICAO it remains an aspirational goal.

Qantas says that ‘direct decarbonisation’ via SAF, and ‘indirect emissions abatement’ via offsets, will help it meet its Net Zero 2050 target⁷².

The Australian government’s recently released Net Zero Plan for the transport sector, relies on efforts to “maximise emissions reduction” to align with Net Zero 2050⁷³.

A spokesperson for the Australian government transport department’s Net Zero Unit explained that Net Zero 2050 for aviation means that by 2050 there will be a ‘balance’ between aviation CO₂ emissions and CO₂ drawdown via SAF feedstock and offsets⁷⁴.

Net Zero 2050 reality

Regulatory oversight of Qantas’s path to Net Zero 2050 remains inadequate.

Qantas will face no penalty if its emission trajectory fails to align with a path to Net Zero 2050. The Australian government has chosen to set no interim emissions reduction targets – no ‘62 to 70% by 2035’ – against which Qantas progress to 2050 would be monitored.

The Australian government is not alone in its lack of appetite to monitor aviation emissions reductions. The international aviation regulator is taking a similarly laissez faire approach. At the 42nd ICAO Assembly in September 2025, no intermediate emissions reduction targets were set towards its ‘aspirational goal’ of net-zero carbon emissions by 2050⁷⁵.

The aviation sector’s track record in achieving its emissions abatement targets does not inspire confidence. Over the past 20 years the industry as a whole has missed all but one of its emissions reduction targets⁷⁶. As a result it is not surprising that the International Energy Agency confirms that aviation decarbonisation is not on track⁷⁷.

Climate Tracker, an independent non-profit established to monitor emissions reductions, warns that globally, current international aviation policies and action are ‘critically insufficient’ to align with limiting warming by 2050 to 2°C. They are, it concludes, actually aligned with a path to 4°C warming (see graph below left)⁷⁸.

Net Zero 2050 won’t hold warming to well below 2°C – the aim of the Paris Agreement.

Qantas claims to support “the aims of the Paris Climate Agreement to limit warming to well below two degrees Celsius above pre-industrial levels”⁷⁹ As does Australian government climate minister Chris Bowen⁸⁰.

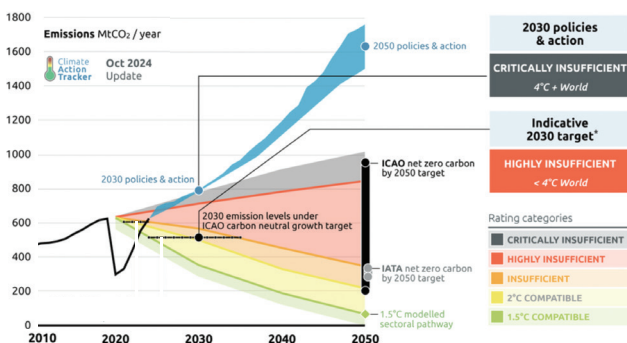
But Net Zero 2050, as an emissions pathway aligned with keeping warming well below 2°C, is based on a serious underestimation of the rate of global warming by the IPCC.

Its modelling in 2022 projected global warming not hitting 1.5°C until 2040. Whereas it’s here already, in 2025 globally, while in Australia it was actually 1.68°C last year. Fifteen years early.

And 2°C is now likely by the early 2040s⁸¹, rather than later this century. So Net Zero 2050 is no longer a pathway aligned with holding warming to well below 2°C.

Even if Qantas emissions hit net zero in 2050, warming would have breached the 2°C Paris limit.

International aviation ‘Critically insufficient’



Source: <https://climateactiontracker.org/sectors/aviation/>

Reconciling Qantas actions with climate reality

Qantas’s sustainable aviation actions are not commensurate with those actions now needed to avoid catastrophic warming.

Keeping warming well below 2°C can no longer be achieved solely by quickly stopping new emissions. Past CO2 emissions, now at 426 ppm, also need to be urgently removed from the atmosphere – drawn down to below 350 ppm.

Qantas SAF, its offsetting and pursuit of Net Zero 2050 all create new emissions and thwart drawdown.

‘Lifecycle’ SAF emissions accounting allows drawn down carbon to be re-released into the atmosphere, maintaining, if not increasing, dangerously high CO2 levels in the atmosphere.

Offsetting also thwarts permanent carbon drawdown when new emissions replace carbon already removed from the atmosphere.

Net Zero 2050, indeed net-zero anything, along with any path to climate or carbon neutral emissions, likewise undermines permanent CO2 drawdown, when drawn down carbon is replaced by new emissions. As such, none of them can be said to be sustainable.

A ‘Paris’ aligned pathway for Qantas

When claimed SAF reduction are excluded from Qantas projected emissions pathway, because their use undermines the Paris Agreement goal, its projected emissions out to 2050 total an estimated 420 Mt CO2e (see page 3).

How much of this can Qantas actually emit on a pathway to limiting warming well below 2°C?

Neither Qantas or the Australian government have told us. Nonetheless an initial rough estimate can be made.

In 2022 the IPCC modelled a global carbon budget for an 83% chance of holding warming to 1.7°C⁸².

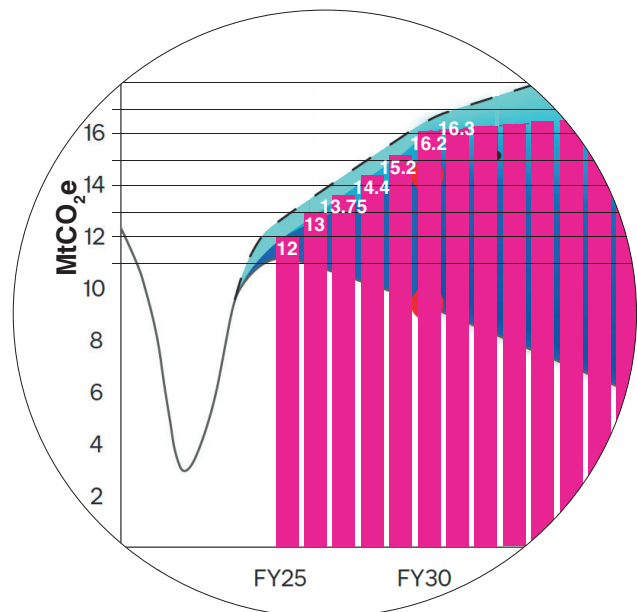
That IPCC modelling put the remaining global CO2 emissions budget – the tonnes of CO2 that could still be emitted globally – at 350,000 Mt.

With global aviation 2.5% of that total budget, and Australian aviation in turn 2.7% of that global aviation budget, Qantas’s fraction of that IPCC budget is an estimated 95 Mt⁸³.

Based on its projected emissions pathway, as shown in the graph above, Qantas CO2 emissions will total more than 95 Mt by 2031.

A Qantas emissions budget commensurate with the IPCC’s global emissions budget for an 83% chance of holding warming to well below 2°C’s – the aim of the Paris Agreement supported by Qantas – will be used up in less than an estimated six years.

Qantas emissions out to 2031 (100.85 Mt) exceed its estimated proportion of the IPCC carbon budget for 1.7°C (95 Mt).



For a less risky chance than the IPCC’s 83%, of preventing societal collapse at above 1.7°C, the budget would be used up even sooner. And sooner again given the IPCC’s budget was based on a significant underestimation of the rate of global warming.

Qantas has arguably already blown its ‘Paris aligned’ emissions budget.

Nothing validates the level of risk associated with Qantas’s sustainable aviation claims more than this threat to its ongoing operation.

With emissions free flight not possible across the Qantas fleet, rapidly reducing the number of flights remains the only way to deliver urgently needed emissions cuts and to keep drawn down carbon in the ground.

This is the Paris aligned reality that Qantas now faces. Yet Qantas has disclosed no “strategy to constrain customer demand for flying”⁸⁴.

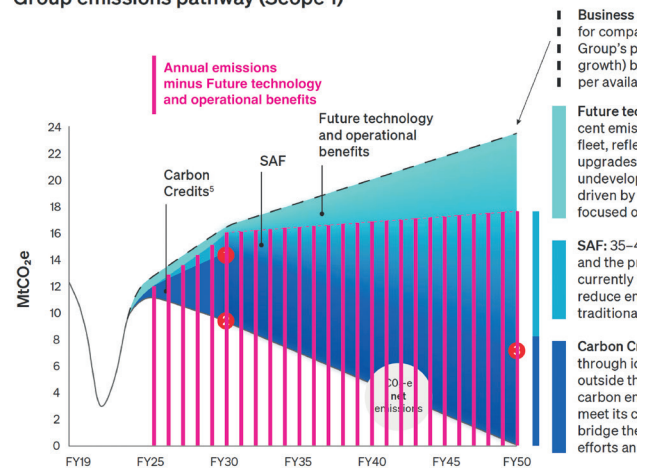
The Qantas sustainable aviation pathway may help Qantas to sustain flights but it will not make them sustainable.

Endnotes

1 > <https://www.co2.earth/daily-co2>
 2 > <https://www.reuters.com/sustainability/cop/co2-levels-hit-highest-ever-recorded-wmo-says-warning-more-extreme-weather-2025-10-15/>
 3 > <https://traveltomorrow.com/who-will-take-responsibility-for-reducing-aviation-emissions/>
 4 > <https://www.nature.com/articles/s43247-025-02299-w>
 > <https://www.carbonbrief.org/significant-risk-of-amazon-forest-dieback-if-global-warming-overshoots-1-5c/>
 5 > <https://www.nature.com/articles/s43247-025-02299-w>
 > <https://www.carbonbrief.org/significant-risk-of-amazon-forest-dieback-if-global-warming-overshoots-1-5c>
 6 > <https://iopscience.iop.org/article/10.1088/1748-9326/adfa3b>
 7 > <https://agupubs.onlinelibrary.wiley.com/doi/full/10.1029/2025GL114611>
 > <https://iopscience.iop.org/article/10.1088/1748-9326/adfa3b>
 8 > <https://cp.copernicus.org/articles/16/1599/2020/cp-16-1599-2020.html>
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 9 p.10 > https://www.breakthroughonline.org.au/_files/ugd/148cb0_fb8d67e54f914f429dc989ac968327b9.pdf
 10 > <https://www.csiro.au/en/research/environmental-impacts/emissions/Global-greenhouse-gas-budgets/Global-carbon-budget>
 11 > <https://www.unep.org/resources/production-gap-report-2023>
 12 > <https://www.iea.org/reports/world-energy-outlook-2023>
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 • Qantas fuel consumption for domestic and international flights in FY25 was 4,794,080,000 litres (p.127 <https://announcements.asx.com.au/asxpdf/20250905/pdf/06nw0dw9w0xvsq.pdf>) which, if AvGas fuel, equates to 10,685,122 t CO2 emissions (<https://www.4air.aero/carbon-calculator>); Qantas Scope 1 CO2e emissions in FY25 were 12,139,425 t CO2e (p.127 <https://announcements.asx.com.au/asxpdf/20250905/pdf/06nw0dw9w0xvsq.pdf>).
 • Drawn from Qantas Group annual emissions to 2050 graph (above), cumulative CO2e emissions from 2025 to 2050 add to **420 Mt CO2e**.
 • So if 12,139,425 t CO2e contains 10,685,122 t CO2, then in the same proportion 420 Mt CO2e contains 368 Mt CO2.

Group emissions pathway (Scope 1)



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- The remaining global CO2 emissions budget, in 2022, for an 83% chance of holding warming to 1.7°C was, according to the IPCC, **350,000 Mt**.
 - Global aviation's share of this global total CO2 budget is 2.5%, or **8,750 Mt** [1].
 - Australian aviation's share of the 814 Mt CO2 global aviation emissions in 2016 [2] (the most recent non-Covid year reported) was 22 Mt CO2 [3], or 2.7%. A budget of 2.7% of 8,750 Mt, or **236 Mt CO2**.
 - But since 2022 domestic and international Australian aviation emissions have totalled an estimated 24 Mt, calculated as follows. **Australian international** aviation emissions in 2022 were 5.5 Mt [4], growing at an estimated 4.8% to 5.7 Mt in 2023, and again growing at an estimated 4.8% to 6 Mt in 2024, for a 2023 plus 2024 estimated total of 5.7+6 or 11.7 Mt. **Australian domestic** aviation emissions in 2022 were 5.78 Mt [5], growing at an estimated 3% to 5.95 Mt in 2023, and growing at an estimated 4.8% [6] to 6.24 Mt in 2024, for a 2023 plus 2024 estimated total of 5.95+6.2, or 12.2 Mt. Total Australian domestic and international emissions for 2023 and 2024 add to an estimated 11.7+12.2, or 23.9 Mt.
 - So Australia's aviation CO2 budget is now an estimated 236-24, or 212 Mt.
 - Qantas proportion of this total can be estimated as follows. Of Australian aviation's total 22 Mt emissions in 2016, 10 Mt were from domestic and 12 Mt from international [3]. Using these proportions we can estimate a current **total domestic budget** as 10/22 of 212 Mt, or 96 Mt, and a current **total international budget** as 12/22, or 116 Mt. Based on Qantas domestic passenger market share of 64% in March 2025 [7] Qantas domestic emissions budget can then be estimated to currently be 64% of 96 Mt, or 62 Mt. Based on Qantas international passenger market share of 29% in November 2024 [8], Qantas international emissions budget can then be estimated to currently be 29% of 116, or 33 Mt. Totalling these puts Qantas total emissions budget right now at an estimated 62+33, or 95 Mt.
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