

Grounded

*Civil aviation emissions reductions under COVID-19 in
Australia and globally and the potential long-term
impacts to emissions in the sector*

Discussion paper

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Summary

The COVID-19 pandemic has caused major economic and societal disruption. Civil aviation has been severely impacted. Travel bans and restrictions across the globe have caused a substantial decrease in air traffic demand and thousands of flights have been cancelled worldwide as the virus continues to spread.

According to global flight tracking service Flightradar24, commercial air traffic was 4.3% lower in February 2020 than in February 2019, and 10% lower in the period 1-19 March 2020 compared to the same period last year. Using the common industry metric of distance travelled by paying passengers (Revenue Passenger Kilometres or RPKs) as a proxy for commercial airline activity, global aviation emissions fell by 2.84 Mt of carbon dioxide (Mt CO₂) for February 2020 compared to February 2019 and 7.51 Mt CO₂ for March 1st-19th 2020 compared to the same period in 2019.

This suggests that the COVID-19 pandemic has resulted in approximately 10.3 Mt CO₂ reduction in global air transport CO₂ emissions during February and March, with the remainder of March likely to show further deep falls.

Future emission reductions can be estimated based on the International Air Transport Association's (IATA) economic assessment of COVID-19. IATA's most recent economic assessment expects a 38% fall in global RPKs. This translates to a fall in global aviation emissions of 352.7 Mt CO₂ from civil aviation in 2020 compared to 2019, and an 8.8 Mt reduction in CO₂ from Australian civil aviation.

This could prove to be optimistic (much like IATA's two previous assessments only a few weeks earlier). A more extreme the potentially realistic scenario, involving a continuation of the announced cuts by Qantas and Virgin planes for up to 9 months, could result in a reduction of 13.2 Mt to Australian commercial aviation emissions compared to 2019 (a 56% decrease).

The COVID-19 pandemic has the potential to permanently change flying habits and regulations, in particular regarding business travel. In-person meetings have been replaced with virtual conferences at global organisations including The International Monetary Fund, the World Bank and the OECD, and videoconferencing platform Zoom has had more active users in the first two months of 2020 than in all of last year combined. Businesses may be attracted to use videoconferencing facilities long after the coronavirus pandemic has eased in an effort to cut costs, cut travel times and improve productivity.

A further challenge for the industry is the timing of the international agreement to reduce CO₂ emissions from international civil aviation, the CORSIA agreement. The agreement aims to cap global CO₂ emissions from international civil aviation using 2020 as the high-water

benchmark. If 2020 is an exceptionally low year for civil aviation emissions, and initial signs indicate it might be, then the industry will have to work hard to keep emissions down while the industry picks back up again. Any emergency fiscal aid provided to airlines during the COVID-19 crisis could be made conditional on maintaining requirements to reduce greenhouse gas emissions, in line with CORSIA.

Introduction

In December 2019, an outbreak of a severe respiratory virus, COVID-19, spread from Wuhan, Hubei province, China, to other parts of China and other countries. By March 2020 it had spread to over 100 countries and resulted in thousands of deaths. On 11 March, the World Health Organisation (WHO) declared COVID-19 a pandemic. Across the world countries are suffering exponential growth of the disease. At the time of writing in late March there were over half a million confirmed cases. The number will be much larger by time of publication.

Among the historic economic and societal disruption caused by the pandemic have been severe impacts on civil aviation. Governments have implemented travel bans and restrictions across the globe,¹ demand for air travel has plummeted and thousands of flights have been cancelled worldwide as the virus continues to spread.²

In Australia, Qantas announced it will suspend all international flights from the end of March until at least May 31st and decrease domestic flight activity by around 60%.³ Virgin will cease all international flights from 27 March until 14 June and cut domestic capacity by 90%,⁴ while Tiger Air has grounded all flights.⁵ On 24 March, the Australian Government announced it will ban all outgoing international travel, except in specific circumstances requiring official clearance.⁶

The rapid and unexpected collapse and closure of commercial aviation will have widespread economic and social consequences. It will also result in a reduction in greenhouse gas emissions.

Note domestic aviation emissions (flights that start *and* end in Australia) are captured under the Australian Government's Safeguard's Mechanism which puts caps on high-emitting

¹ Smartraveller (2020) *Coronavirus (COVID-19)*, <https://www.smartraveller.gov.au/news-and-updates/coronavirus-covid-19>

² BBC (2020) *Coronavirus: Airlines cancel thousands of flights*, <https://www.bbc.com/news/business-51818492>

³ Qantas (2020) *Qantas International network changes*, <https://www.qantas.com/au/en/travel-info/travel-updates/coronavirus/qantas-international-network-changes.html>

Qantas (2020) *Qantas Australian Domestic network changes*, <https://www.qantas.com/au/en/travel-info/travel-updates/coronavirus/qantas-australian-domestic-network-changes.html>

⁴ Virgin Australia (2020) *Virgin Australia Group revised domestic schedule*, <https://newsroom.virginaustralia.com/release/virgin-australia-group-revised-domestic-schedule-0>

⁵ Reuters (2020) *UPDATE 1-Virgin Australia to cut 90% of domestic flights, put 8000 staff on leave*, <https://www.reuters.com/article/health-coronavirus-virgin-australia/update-1-virgin-australia-to-cut-90-of-domestic-flights-put-8000-staff-on-leave-idUSL4N2BH58U>

⁶ Steve Creedy (2020) *Australia bans outgoing travel as some ignore warning*, <https://www.airlineratings.com/news/australia-bans-outgoing-travel-ignore-warning/>

facilities in Australia and this includes Qantas and Virgin. International aviation emissions in Australia (flights that either start *or* end in Australia), which make up the majority of Australia commercial aviation emissions, are addressed under CORSIA.

This paper estimates reduced commercial aviation emissions as a result of the COVID-19 pandemic. It considers how aviation emissions have responded during and following previous unexpected shocks, and contrasts with how people might adapt during the COVID-19 crisis not merely to being unable to fly but to being required largely to stay at home.

Finally it considers how the COVID-19 crisis may affect CORSIA, the main international agreement for mitigating carbon dioxide (CO₂) emissions from international civil aviation. Both behavioural and policy responses to COVID-19 could result in long-term changes that reduce emissions from commercial aviation in the future.

Aviation emissions

Aviation is currently powered by oil products which generate CO₂ when burnt. According to the International Civil Aviation Organisation (ICAO), the global peak body for commercial aviation (passenger and freight transport) currently accounts for around 2% of global CO₂ emissions.⁷

Global Emissions

The International Council on Clean Transportation (ICCT) estimates commercial aviation emissions for 2018 at 918 million tonnes (Mt) of CO₂.⁸ This is around 2.4% of global fossil fuel emissions. It is almost twice as big as Australia's domestic emissions.⁹

ICCT finds 81% of 2018 commercial aviation CO₂ was due to passenger transport (747 Mt CO₂), with the remainder due to freight.

Emissions from global commercial aviation are not available for 2019. International Air Transport Association (IATA) estimates a 1.1% increase on 2018 CO₂ emissions for 2019.¹⁰ We can therefore estimate 2019 commercial transport CO₂ emissions at 928 Mt CO₂, and for passenger transport specifically at 755 Mt CO₂.

Australian Emissions

The Australian Government Department of Infrastructure and Regional Development's last report on Australia's aviation emissions was in 2017 and stated commercial aviation emissions were 22.02 Mt CO₂-e in 2016.¹¹

⁷ ICAO (2019) *Destination Green, The Next Chapter*, p 111, [https://www.icao.int/environmental-protection/Documents/ICAO-ENV-Report2019-F1-WEB%20\(1\).pdf](https://www.icao.int/environmental-protection/Documents/ICAO-ENV-Report2019-F1-WEB%20(1).pdf)

⁸ ICCT (2019) *Co2 Emissions from Commercial Aviation, 2018*, https://theicct.org/sites/default/files/publications/ICCT_CO2-commercl-aviation-2018_20190918.pdf

⁹ Australian Government (2019) *Quarterly update of Australia's national greenhouse gas inventory: June 2019*, <https://publications.industry.gov.au/publications/climate-change/climate-change/climate-science-data/greenhouse-gas-measurement/publications/quarterly-update-australias-nggi-jun-2019.html>

¹⁰ IATA (2019) *Economic Performance of the Airline Industry*, <https://www.iata.org/en/iata-repository/publications/economic-reports/airline-industry-economic-performance---december-2019---report/>

¹¹ Australian Government Department of Infrastructure and Regional Development (2017) *Managing the Carbon Footprint of Australian Aviation*, p 10, table 3 <https://www.infrastructure.gov.au/aviation/environmental/emissions/files/Managing-the-Carbon-Footprint-of-Australian-Aviation.pdf>

and note the CO₂-e denotes equivalency of emissions in CO₂ and appear to use a similar methodology as

Assuming Australian growth in aviation followed the 2.2% per annum increase projected by the Australian Government Department of Environment and Energy,¹² Australia's commercial aviation emissions would be approximately 23.8 Mt CO₂-e for 2019.

Aviation emissions have been climbing strongly in recent decades and are likely to continue to climb without additional credible policy. ICAO expects CO₂ emissions to more than triple by 2050 without large new research and development programs and strong policy action.¹³ ICCT finds aviation CO₂ emissions have increased 32% over the last five years and were over 70% higher than assumed in ICAO projections.

However, the true climate impact of global aviation is far larger than the figures above suggest, as they do not include non-CO₂ emissions from aviation. Emissions of water vapour, aerosols and nitrogen oxides at high altitude further increase global heating, including by increased ozone production and cloud formation. The ICAO in 2019 stated that the heating effects of aviation's non-CO₂ emissions were "two to four times greater than those of aviation's CO₂ alone".¹⁴

Despite the magnitude of such effects being known for many decades, emissions accounting for aviation remains contested and mainly focus on carbon dioxide. It is clear, however that emissions from aviation are far higher than CO₂ emissions data themselves indicate. At a time when emissions must fall rapidly to avoid dangerous climate change, rising aviation emissions remain a serious concern.

IMPACT SO FAR

COVID-19 has already had a substantial impact on air traffic and commercial aviation emissions globally. This section estimates the scale of that reduction.

Global flight tracking service, Flightradar24 provides timely and credible data on commercial air traffic. Commercial aviation includes scheduled passenger and cargo flights operated by an airline. It excludes private flights and 'general aviation', such as aerial work, instructional

international organisations relying heavily on fuel load to determine CO₂ emissions.

<https://www.infrastructure.gov.au/aviation/environmental/emissions/files/Managing-the-Carbon-Footprint-of-Australian-Aviation.pdf>

¹² Ibid, p 2 para 3. Also note this report relies on the Department of Infrastructure and Regional Development's analysis of aviation emissions, given it has responsibility for this sector and provides a more detailed and credible projection than that provided by the then Department of Environment and Energy (now Australian Department of Industry, Science, Energy and Resources). The latter states in its 2019 Emissions Projections that domestic aviation emissions remains flat at 9 Mt from 2014 to 2020, despite noting the increasing demand for air travel.

¹³ Ibid, p 207

¹⁴ Ibid, p 111

flying and pleasure flying.¹⁵ Flightradar24 is releasing data on commercial aviation during the COVID-19 crisis compared with the same period in 2019.

According to Flightradar24, commercial air traffic in February 2020 was 4.3% lower than the same month in 2019,¹⁶ and 10% lower in the period 1-19 March 2020 compared to the same period in 2019.¹⁷

There was a substantial acceleration in flight cancellations in mid-March, with most of the reduction happening in the week from 11 to 19 March.¹⁸

CO2 emissions from global commercial aviation for February 2019 and March 2019 are estimated based on the proportion of yearly traffic in those months. ICAO calculates traffic based on Revenue Passenger Kilometres (RPK), an airline industry metric that shows the number of kilometres travelled by paying passengers:

- Yearly RPKs occurring in February = 7.1%
- Yearly RPKs occurring in March = 8.1%¹⁹

Note the highest traffic months are the Northern Hemisphere Summer (June to August).

Assuming the monthly share of commercial CO2 emissions generally corresponds to RPKs this would mean CO2 reductions in 2020 of

- 2.84 Mt CO2 for February, and
- 7.51 Mt CO2 for March 1st-19th.

This suggests that the COVID-19 pandemic has resulted in approximately 10.3 Mt CO2 reduction in global air transport CO2 emissions during February and March, with the remainder of March likely to show further deep falls.

FURTHER REDUCTIONS OVER 2020

Projections of future reductions have been made difficult by the rapidly changing situation.

¹⁵ Australian Government (2020) *General Aviation*,

<https://www.infrastructure.gov.au/aviation/general/index.aspx>

¹⁶ Flightradar24 (2020) *Commercial air traffic down 4.3% in February 2020*

¹⁷ Flightradar24 (2020) *March commercial traffic down 10% below 2019 so far*,

<https://www.flightradar24.com/blog/march-commercial-traffic-down-10-below-2019-so-far/>

¹⁸ 4.9% lower over March 1 to March 11, and 7.2% lower over March 1 to March 15 according to Flightradar24
Flightradar24 (2020) *Commercial air traffic now down 7.2% in March*, [flightradar24.com/blog/commercial-air-traffic-now-down-7-2-in-march/](https://www.flightradar24.com/blog/commercial-air-traffic-now-down-7-2-in-march/)

¹⁹ ICAO (2020) *Economic Development: Feb 2020: Air Transport Monthly Monitor*, p 1

https://www.icao.int/sustainability/Documents/MonthlyMonitor-2020/MonthlyMonitor_February2020.pdf

On 20th February 2020, IATA began releasing economic assessments of COVID-19 on the future of the aviation industry.²⁰

IATA released a second economic assessment on 5th March 2020, in which it expected a 4.7% reduction in global RPK numbers in 2020 if impacts are confined mostly to China markets.²¹

Under IATA's 'extensive spread' scenario, Australia's civil aviation sector experienced a 23% reduction in passenger numbers over 2020. This assumed a similar impact to that following the SARS episode and the pattern in the China market data following COVID-19. There were also other scenarios explored with less extensive spread.

Just two weeks after its second assessment, on 17th March 2020, IATA confirmed the COVID-19 situation had already exceeded reductions in the 'extensive spread' scenario.²²

The following day both Qantas and Virgin announced the suspension of all international flights from the end of March 2020 and a 50-60% decline in domestic flights. Virgin later extended its announcement to a 90% decline in domestic flights.

On 24th March 2020, IATA released its third assessment, presenting an 'updated forecast'. This was based on announced airline plans and assuming flight restrictions continue for 3 months. IATA 'now expect a 38% fall in RPKs' for 2020, and a 37% reduction in the Asia-Pacific region.²³

Using RPKs as a proxy for the number of flights, and flights to emissions, the IATA numbers can be used to project reductions in emissions.

On the numbers in IATA's third assessment, global passenger aviation emissions will fall by 352.7 Mt CO₂ in 2020 compared to 2019, and there will be an 8.8 million tonne reduction in CO₂-e from Australian civil aviation.

The announcements by Qantas and Virgin can also be used to estimate reduced emissions. As of 2018, Qantas and Virgin (including their subsidiaries, Jetstar and Tiger) held a 95% market share of Australian domestic aviation,²⁴ and an approximate 31% market share of

²⁰ Pearce (2020) *Coronavirus updated impact assessment*, <https://www.iata.org/en/iata-repository/publications/economic-reports/coronavirus-updated-impact-assessment/>

²¹ Pearce (2020) *Updated impact assessment of the novel Coronavirus*, <https://www.iata.org/en/iata-repository/publications/economic-reports/coronavirus-updated-impact-assessment/>

²² IATA (2020) *COVID-19 Airlines' Liquidity Crisis*, <https://www.iata.org/globalassets/iata/pressroom/covid-19-airlines-liquidity-crisis.pdf>

²³ Pearce (2020) *COVID-19 Updated Impact Assessment*, p 13 <https://www.iata.org/en/iata-repository/publications/economic-reports/third-impact-assessment/>

²⁴ CAPA (2018) *South Pacific Aviation Outlook 2018*, <https://centreforaviation.com/analysis/airline-leader/south-pacific-aviation-outlook-2018-411231>

international airlines in Australia.²⁵ The estimates here are based on a Qantas Virgin scenario where:

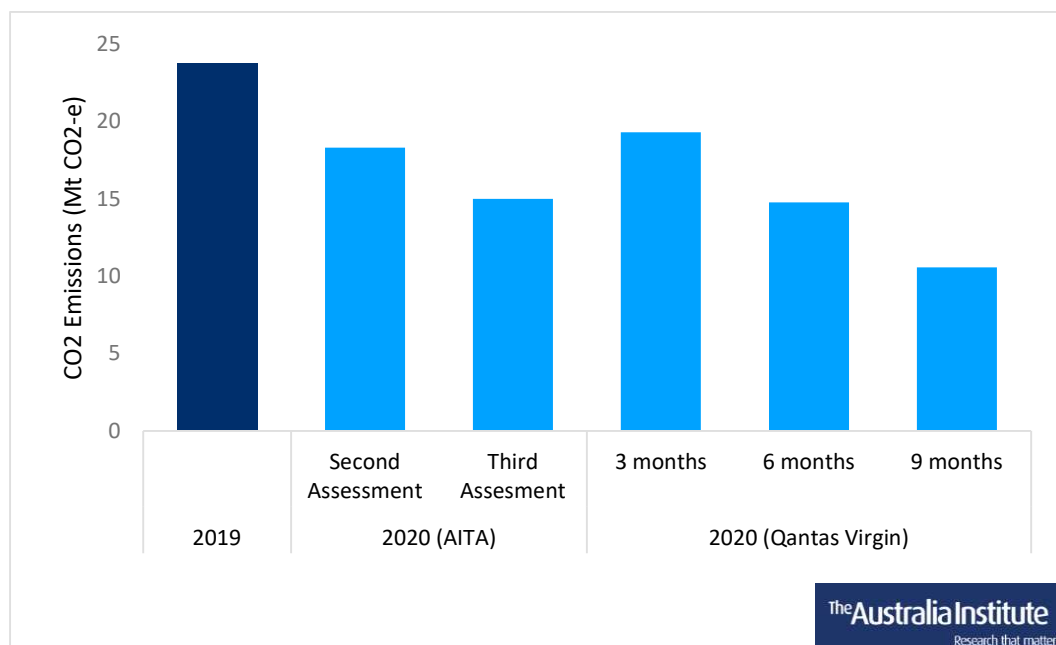
- Qantas ceases all international passenger flights, and cuts domestic passenger capacity by 60%.
- Virgin ceases all international passenger flights, and cuts domestic passenger capacity by 90%.
- All other Australian airlines cease international flights, and cut domestic passenger capacity by 50%.

The estimates also assume there is no change to domestic and international cargo flights, hence reduction in emissions, assumed in proportion to cargo tonne-kilometres (23% for international and 4% for domestic).²⁶

Under the Qantas Virgin scenario, there would be a fall in CO₂-e emissions (in 2020 compared to 2019) of

- 4.5 Mt if airline restrictions were in place for 3 months (April-June)
- 9.0 Mt if airline restrictions were in place for 6 months (April-September)
- 13.2 Mt if airline restriction were in place for 9 months (April- December)

Figure 1: Australian commercial aviation emissions under different COVID-19 scenarios



²⁵ David Casey (2018) *Analysis: Australia’s international market growth*, <https://www.routesonline.com/news/29/breaking-news/277448/analysis-australias-international-market-growth-/>

²⁶ Australian Government Department of Infrastructure and Regional Development (2017) *Managing the Carbon Footprint of Australian Aviation*, p 10, table 3

Long term impacts

It is hoped that flights resume once the worst of COVID-19 is over. The cuts to the frequency of local flights and the complete cuts to international flights have left Australians grounded and many would welcome a resumption of services, including the many reliant on the industry for their livelihoods. However, the pandemic has the potential to more permanently change Australian and global flying habits and regulations.

Previous infectious disease outbreaks that have caused a fall in flying have not resulted in any long-term changes to demand for air travel. Although air traffic briefly declined as a result of Avian flu in 2005, MERS Flu in 2015 and SARS in 2003, the volume of air travel recovered within a few short months after each outbreak.²⁷

However, COVID-19 is far less contained than Avian flu, SARS or MERS, and as a completely novel virus, has a higher death rate than Swine flu or Zika.²⁸ Consequently, much more of the world will likely be affected by the coronavirus for a longer time period, meaning behavioural changes such as working from home and flying less will be necessary for more people over a longer time span.

In such circumstances, many organisations will need to introduce new systems to continue operating, and policy changes will be implemented at the domestic and international level.

There is a chance that these interim measures and behavioural changes become long term shifts, which in turn might have a longer lasting impact on global CO2 emissions.

REDUCED DEMAND FOR AIRTRAVEL

Many organisations have already begun to transform the way they work, substituting air travel with digital mobility alternatives like video conferencing.

In-person meetings have been replaced with virtual conferences at global organisations including The International Monetary Fund, the World Bank and the OECD.²⁹ A Gartner survey of global human resources executives suggests that 88% of organisations have required or encouraged their employees to work from home.³⁰ Amongst the many

²⁷ Brian Pearce (2020) *COVID-19 Updated Impact Assessment*, p 2

²⁸ Abadi & Cooper (2019) *How the coronavirus compares to SARS, swine flu, Zika, and other epidemics*
<https://www.businessinsider.com.au/coronavirus-compared-to-sars-swine-flu-mers-zika-2020-3?r=US&IR=T>

²⁹ Reuters (2020) *Coronavirus forces IMF, World Bank switch to virtual Spring Meetings*

³⁰ Gartner (2020) *Gartner Survey Reveals 88% of Organizations Have Encouraged or Required Employees to Work From Home Due to Coronavirus*, <https://www.gartner.com/en/newsroom/press-releases/2020-03-19-gartner-hr-survey-reveals-88--of-organizations-have-e>

companies asking employees to work from home are Twitter, LinkedIn and Microsoft.³¹ Several other organisations, including Oracle and Apple, have banned nonessential travel.³²

Business has boomed for some companies offering collaboration and videoconferencing technologies. Videoconferencing platform Zoom has had more active users in the first two months of 2020 than in all of last year combined,³³ and its stock price has risen over 100% since January.³⁴ Microsoft's Teams software has also surged in popularity, adding 12 million new customers in a single week in March 2020.³⁵

The widespread uptake and experience with such technologies could see organisations reconsider air travel in the future. Videoconferencing is far cheaper and is often more efficient than face to face meetings where travel is involved.³⁶ Videoconferencing eliminates the travel and accommodation costs associated with face to face meetings, as well as time spent getting to and from the meeting place.³⁷ Consequently, businesses may continue to use videoconferencing facilities long after the coronavirus pandemic has eased in an effort to cut costs and improve productivity.

CARBON NEUTRAL GROWTH FROM 2020

The aviation industry is a major contributor to global greenhouse gas emissions and has self-organised to develop a response. The central international instrument for mitigating CO₂ emissions from international civil aviation is the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), developed by the International Civil Aviation Organisation (ICAO). Note global aviation is not dealt with under the Paris Agreement given the role of ICAO and the CORSIA agreement.

³¹ BBC (2020) *Google tells staff to work at home due to coronavirus*, <https://www.bbc.com/news/technology-51828782>

³² Joey Hadden, et al. (2020) *Oracle, Apple, Google, and Amazon are among the largest global companies who have restricted travel or asked their employees to work remotely as a precaution against the novel coronavirus*, <https://www.businessinsider.com/companies-asking-employees-to-work-from-home-due-to-coronavirus-2020?r=AU&IR=T>

³³ Jordan Novet (2020) *Zoom has added more videoconferencing users this year than in all of 2019 thanks to coronavirus, Bernstein says*

³⁴ Carmen Reinicke (2020) *Zoom Video has seen its stock spike more than 100% since January as coronavirus pushes millions to work from home (ZM)*, <https://markets.businessinsider.com/news/stocks/zoom-stock-price-surged-coronavirus-pandemic-video-work-from-home-2020-3-1029023594>

³⁵ Jon Swartz (2020) *In just one week, Microsoft adds as many users to its Teams collaboration software as rival Slack has in total*, <https://www.marketwatch.com/story/these-tech-companies-with-telecommuting-tools-are-well-positioned-during-the-coronavirus-pandemic-2020-03-19> - disclaimer this includes The Australia Institute joining the Teams bandwagon.

³⁶ James R Wilcox (2017) *Videoconferencing: The Whole Picture*, Taylor & Francis

³⁷ Ibid

CORSIA is the first global market-based measure for any sector.³⁸As of June 2019, 80 nation states have announced their intention to participate in CORSIA, representing 76.63% of international commercial aviation.³⁹

Under the CORSIA agreement, countries have voluntarily agreed to global fuel efficiency improvements of 2% per year until 2050, and to cap the global net CO2 emissions from international aviation at 2020 levels.

Carbon neutral growth from 2020 is measured from the average baseline emissions of 2019 and 2020. Due to the disruption to airlines, and resulting lower emissions caused by the COVID-19 virus in 2020, a low baseline will likely be set. If 2020 is retained as a baseline, airlines may have to offset more emissions than anticipated in the following years.

Some airlines might ask for a change in the baseline year, however this could risk negating previous negotiations and hard-fought resolutions to get to this point in the agreement.⁴⁰

CORSIA has previously garnered criticism for its focus on purchasing offsets for airline emissions rather than undertaking actual emission reductions. CORSIA has also been critiqued for its lack of transparency and ‘weak’ draft rules.⁴¹ A further watering down, by changing the baseline year, is a real risk to the integrity of the agreement.

Ultimately a low emissions baseline will drive climate ambition. Given CORSIA is a market based mechanism, a lower emissions baseline year would mean higher demand for offsets in following years, pushing up the price of offsets and incentivising other measures such as improvements to aircraft technology, operational improvements, and sustainable fuels.

To help support the aim of carbon neutral growth for aviation from 2020, emergency fiscal support from governments to airlines during the COVID-19 crisis could be made conditional on sticking to the CORSIA conditions.

Around the world, airlines are appealing to governments for loans, guarantees and grants to assist them through the COVID-19 crisis. The Australian airline industry has already received a \$715m aviation relief package,⁴² waiving the aviation fuel excise, domestic and regional security charges and domestic air service charges. A further regional air network

³⁸ ICAO (n.d) *Climate Change Mitigation: CORSIA*, p 207 https://www.icao.int/environmental-protection/CORSIA/Documents/ICAO%20Environmental%20Report%202019_Chapter%206.pdf

³⁹ Ibid.

⁴⁰ Environmental Defence Fund (2020) *Coronavirus and CORSIA*, p 2 https://www.edf.org/sites/default/files/documents/Coronavirus_and_CORSIA_analysis.pdf
note 76.63% based on Revenue Tonne Kilometres (RTKs).

⁴¹ Jocelyn Timperley (2019) *Corsia: The UN's plan to 'offset' growth in aviation emissions after 2020* <https://www.carbonbrief.org/corsia-un-plan-to-offset-growth-in-aviation-emissions-after-2020>

⁴² Paul Karp (2020) *Australian airline industry to receive \$715m rescue package* <https://www.theguardian.com/australia-news/2020/mar/18/australian-airline-industry-to-receive-715m-rescue-package>

assistance package of \$198 million will ensure the continuation of regional flights and brings the total package to almost a \$1 billion now.⁴³

Head of the International Energy Agency, Fatih Birol has urged world leaders to design “sustainable stimulus packages” for industries including aviation.⁴⁴ Sustainable stimulus packages would focus on investing in clean energy technologies or reducing carbon emissions overtime.

If the Australian Government remains committed to addressing climate change then it has a unique opportunity to encourage the aviation industry to share this commitment when providing COVID-19 assistance packages.

⁴³ The Hon Deputy Prime Minister (2020) *Additional new support for critical regional aviation services through COVID-19* <https://minister.infrastructure.gov.au/mccormack/media-release/additional-new-support-critical-regional-aviation-services-through-covid-19>

⁴⁴ Chloe Farand (2020) *Governments have ‘historic opportunity’ to accelerate clean energy transition, IEA says*, <https://www.climatechangenews.com/2020/03/17/governments-historic-opportunity-accelerate-clean-energy-transition-iea-says/>

Conclusion

COVID-19 has already led to a substantial drop in global aviation emissions as the demand and supply for air travel declines. Further emission reductions can be expected, with global emissions from aviation projected to decline by 352.7 Mt in 2020 compared to 2019 levels. Emissions from the Australian civil aviation sector are projected to decline by 8.8 Mt of CO₂-e under IATA's latest assessment and up to 13.2 Mt under the extreme Qantas-Virgin scenario over the course of 2020.

It is early days in this crisis and the impacts are far-reaching and fast-moving. COVID-19 may have long term implications for global air travel demand. Many organisations are introducing teleconferencing technology as face-to-face meetings are cancelled and working from home becomes a necessity. This may cause organisations to reconsider the need for air travel into the future. With many companies financially impacted by COVID-19, it would become increasingly attractive to continue to limit spending on business travel when cheaper alternatives have been widely adopted.

Aviation policies and rules effected by the COVID-19 pandemic may also have long term implications. The pandemic and subsequent decline in emissions for the baseline year of the CORSIA agreement represent an opportunity to strengthen the primary international tool for addressing global aviation emissions. Any airline stimulus packages should require airlines to reduce emissions in the future and meet the commitments of the CORSIA agreement.