

Chair  
Cabinet Economic Development Committee

## **LEGISLATION TO IMPLEMENT THE CARBON OFFSETTING AND REDUCTION SCHEME FOR INTERNATIONAL AVIATION (CORSA)**

### **Proposal**

1. This paper seeks Cabinet reconfirmation of the 2016 decision that New Zealand will participate in the Carbon Offsetting and Reduction Scheme for International Aviation (CORSA) from 2021. Given reconfirmation, this paper then seeks Cabinet approval for Parliamentary Counsel Office to draft legislation to implement CORSA in New Zealand.

### **Executive summary**

2. International aviation is responsible for approximately 1.3 percent of global carbon dioxide emissions<sup>1</sup>. Aviation emissions are forecast to grow in the coming years. Projected annual improvements in aircraft fuel efficiency of around 1 to 2 percent are surpassed by forecast traffic growth of around 5 percent each year. International aviation fuel consumption is estimated to grow between 2.8 to 3.9 times by 2040, compared to 2010 levels.
3. The International Civil Aviation Organization (ICAO) has responsibility for regulating international aviation activity. In 2013, ICAO agreed on a global aspirational goal to achieve carbon neutral growth in the international aviation sector from 2020.
4. Domestic aviation emissions are covered by the Paris Agreement, which does not explicitly mention international aviation emissions. The Paris Agreement does, however, set an expectation of universal participation in the global response to climate change. It aims to meet the goal of limiting the global average temperature increase to well below 2 degrees Celsius, with efforts to limit this to 1.5 degrees Celsius above pre-industrial levels.
5. In 2016, ICAO agreed to introduce a global market-based measure for reducing and offsetting carbon emissions in the international aviation sector. This market-based measure is known as CORSA.
6. Additionally, ICAO agreed on a global aspirational goal to achieve carbon neutral growth in the international aviation sector from 2020. It also identified a basket of measures to achieve its goal and reduce emissions from international aviation, including aircraft technology and standards, operational improvements, sustainable alternative fuels and market-based measures.
7. CORSA will require aeroplane operators (operators) that fly internationally to and from participating countries to offset emissions (above a baseline) by buying and cancelling

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<sup>1</sup> International and domestic aviation emissions combined are responsible for around 2 percent of global carbon dioxide emissions produced by human activity.

emissions units from carbon markets. This will create financial incentives for operators to reduce their emissions. ICAO also supports other measures to reduce emissions, such as new aircraft technologies, operational improvements and sustainable alternative fuels.

8. In September 2016, Cabinet agreed to New Zealand participating in CORSIA from its commencement in 2021 (EGI-16-MIN-0232 refers).
9. Participating in CORSIA from 2021 demonstrates our commitment to the Paris Agreement's long-term temperature goals. CORSIA is critical in achieving comprehensive global action on climate change, and it is in New Zealand's overall interests to see CORSIA become an effective tool to mitigate international aviation emissions. Our participation in CORSIA contributes to the critical mass for the measure to succeed.
10. Air New Zealand (Air NZ) supports participation in CORSIA and recognises that business must play a key role in addressing global sustainability challenges by enabling economic development and social and environmental progress. It recognises that air transport is vital to New Zealand's trade, investment, and tourism industry and has a strong role to play in connecting people and improving economic outcomes.
11. While implementing CORSIA will create new costs to our trade and tourism sectors, I expect the costs to individuals and businesses will be relatively small. Overall, future changes to the price of aviation fuel and currency exchange rates are likely to have a significantly greater impact on the tourism and trade sectors than the offset costs of CORSIA.
12. There are some potential risks in implementing CORSIA, but these are overshadowed by the wider risk of CORSIA collapsing if it does not garner enough international support. CORSIA's breakdown would likely result in an unsustainable patchwork of measures around the world, distort aviation markets and impose higher costs than CORSIA would. As a result, it is in New Zealand's interest to have as many states participating in CORSIA as possible.
13. There would also be reputational risks to New Zealand if we did not participate in CORSIA. As a developed country, New Zealand is expected to participate - almost all developed states and most major aviation states have already signalled their intent to do so. Not participating would undermine our ability to advocate for ambitious action on climate change internationally, particularly in the Pacific.
14. I am seeking Cabinet's reconfirmation of the 2016 decision to participate in CORSIA from 2021. Legislation would be required to give effect to CORSIA domestically. Given reconfirmation, I consider it is imperative that we develop and implement domestic legislation that enables CORSIA.
15. I propose CORSIA be part of the Civil Aviation Bill, which will replace the Civil Aviation Act 1990 and the Airport Authorities Act 1966 with a single new statute. The Civil Aviation Bill's purpose is sufficiently broad in scope to incorporate CORSIA.
16. This paper recommends instructions be issued to the Parliamentary Counsel Office for the drafting of the CORSIA-related sections of the Civil Aviation Bill. My intention is that legislation will be in force by 31 December 2020 to enable its implementation in New Zealand from 1 January 2021.

## Background

17. Aviation emissions are forecast to grow in the coming decades, as the projected annual improvements in aircraft fuel efficiency of around 1 to 2 percent are surpassed by forecasted traffic growth of around 5 percent per year. International aviation fuel consumption is estimated to grow between 2.8 to 3.9 times by 2040, compared to 2010 levels.
18. The Paris Agreement has set an expectation of universal participation in the global response to climate change. All Parties to the Paris Agreement are required to communicate and maintain nationally determined contributions (NDCs) that outline the emissions reductions they intend to achieve. The Paris Agreement was adopted by Parties to the United Nations Framework Convention on Climate Change.
19. International aviation is responsible for approximately 1.3 percent of global carbon dioxide emissions, but is not explicitly covered under the Paris Agreement. The Paris Agreement has the objective of holding the increase in global temperature to well below 2 degrees Celsius, and pursuing efforts to limit this to 1.5 degrees Celsius above pre-industrial levels. This goal requires contribution by all sectors. The bodies responsible for regulating the international transport sector, ICAO for aviation and the International Maritime Organization for shipping, are taking action to reduce emissions.
20. In 2016, ICAO agreed on a global aspirational goal to achieve carbon neutral growth in the international aviation sector from 2020. The organization identified a basket of measures to achieve its goal and reduce emissions from international aviation. This basket includes aircraft technology and standards, operational improvements, sustainable alternative fuels and market-based measures.
21. Technological and operational improvements alone will not be enough to meet the aspirational goal of carbon neutral growth. Sustainable alternative fuels require further development and maturity to make a significant contribution to reducing emissions. To achieve carbon neutral growth in the short to medium term, airlines will need to offset their remaining emissions.
22. To facilitate this, ICAO developed a market-based measure known as CORSIA. This global measure for reducing and offsetting carbon emissions in the international aviation sector was agreed at ICAO's 39<sup>th</sup> Assembly in October 2016.
23. Prior to the Assembly, Cabinet agreed New Zealand would participate in the global market-based measure from its commencement (EGI-16-MIN-0232 refers). Shortly after Cabinet's decision, the Government announced that New Zealand would partake in CORSIA from 2021<sup>2</sup>.
24. ICAO has developed the international Standards and Recommended Practices (SARPs) for how the international aviation sector will begin to address its carbon emissions through CORSIA. The SARPs set out the monitoring, reporting and verification requirements for operators' annual emissions, the offsetting requirements from international flights, emissions reductions from the use of sustainable fuels, and the eligibility of emissions units, including cancelling and reporting requirements.

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<sup>2</sup> [www.beehive.govt.nz/release/government-backs-global-aviation-climate-change-measure](http://www.beehive.govt.nz/release/government-backs-global-aviation-climate-change-measure)

25. Officials reviewed and commented on the SARPS as they were developed. ICAO adopted and agreed the final SARPs in July 2018, and these came into effect on 22 October 2018.
26. ICAO international standards, such as the CORSIA SARPs, are binding on New Zealand unless we lodge a difference (i.e. application of a different standard in New Zealand), in accordance with Article 38 of the Convention on International Civil Aviation. New Zealand did not lodge a difference with ICAO at its deadline of 1 December 2018<sup>3</sup>.
27. As the SARPs are final, we now need to develop legislation to give effect to CORSIA in New Zealand. Legislation will ensure New Zealand-registered airlines that operate internationally will monitor, report, verify and ultimately offset their carbon emissions (as covered by CORSIA).

### The design features of CORSIA are established in the SARPs

28. Emissions offsetting is the key mechanism of CORSIA. To achieve ICAO's goal of carbon neutral growth from 2020, the international aviation sector will need to offset any emissions which exceed the baseline level set in 2020.
29. The SARPs establish the design features of CORSIA. Further information on each of these design features is in Appendix A. These features cover:
  - **Application:** New Zealand-registered operators that fly internationally will have obligations under CORSIA. The government will also have obligations to receive information from operators, process and check it, and then report it to ICAO.
  - **Duration:** CORSIA offsetting requirements commence on 1 January 2021 and are intended to run until 31 December 2035. In 2032, ICAO will conduct a review of CORSIA to consider whether it will continue the scheme beyond 2035.
  - **Monitoring, reporting and verification:** Operators conducting international flights will be required to monitor, report and verify their carbon emissions. These commenced on 1 January 2019<sup>4</sup>.
  - **Exemptions:** CORSIA does not apply to all international aviation activities<sup>5</sup>.
  - **Phased-in implementation:** CORSIA offsetting requirements will be implemented in several stages.
  - **Offsetting:** Emissions from a flight only need to be offset if both the origin and destination states are participating in CORSIA. The government calculates the offsetting requirements attributed to an operator (accounting for any emissions reductions from the use of sustainable fuels). The operator will subsequently purchase and cancel emissions units equivalent to its offsetting requirements from international carbon markets.
  - **Emissions units:** Emissions units must meet the CORSIA eligibility criteria. Cancellation takes place within a registry designated by an eligible emissions unit programme, and the registry publishes the list of cancelled units online. Operators report the cancelled emissions units to the government, which then reports to ICAO. ICAO publishes the cancelled emissions units on its CORSIA Central Registry to ensure transparency.

<sup>3</sup> If during legislation development it is identified that we need to lodge a difference, officials will consider how this can be achieved.

<sup>4</sup> Since CORSIA currently has no legal standing in New Zealand, the monitoring, reporting and verification requirements are currently being managed through a Memorandum of Understanding between the Ministry of Transport and Air New Zealand.

<sup>5</sup> Least developed countries, small island developing states and landlocked developing countries are exempt from the offsetting requirements. Very small emitting operators, new operators and special operations (such as military, state, humanitarian, medical, firefighting, and search and rescue flights) are exempt from CORSIA.

30. Officials anticipate primary and secondary legislation will need to be consistent with the overall design features listed above. However, further decisions on minor details may need to be made during the drafting of the legislation if ICAO makes adjustments to the SARPs or to other related technical guidance for CORSIA. I seek authorisation to make these decisions, consistent with the policy intent outlined in this paper, jointly with the Minister of Transport.

#### ***CORSIA will affect New Zealand-registered operators that fly internationally***

31. Air NZ is currently the only New Zealand-registered operator affected by CORSIA's requirements. Air NZ is supportive of implementation of CORSIA, provided that New Zealand's involvement does not impact it disproportionately when compared to its competitors.
32. New aeroplane operators or other existing operators that expand their international operations may also become subject to CORSIA in later years. The proposed legislation will need to treat all New Zealand-registered operators fairly and equitably.
33. The legislation will require annual emissions monitoring of all operators that conduct international flights. An annual check will confirm operators' emissions profiles and an assessment will be completed to determine which operators need to participate in CORSIA. This should be straightforward as it will be based on information operators already collect.

#### **The New Zealand Emissions Trading Scheme will not be part of CORSIA**

34. For clarity, this Cabinet paper does not provide or propose for the New Zealand Emissions Trading Scheme (NZ ETS) to be part of CORSIA. If New Zealand wishes to have the NZ ETS or other New Zealand based projects accepted as a source of emissions units for CORSIA in the future, further work would be needed to consider the policy and process for this, as well as a Cabinet decision.
35. New Zealand would need to formally submit a request to ICAO for the NZ ETS or New Zealand-based emissions unit projects to be assessed against ICAO's emissions unit eligibility criteria. The criteria determines the programmes from which emissions units can be bought from to offset emissions for CORSIA.
36. An additional consideration is that negotiations on the details relating to accounting and internationally transferred mitigation outcomes are still being progressed for Articles 6.2 and 6.4 of the Paris Agreement. These relate to the general concept that Parties may choose on a voluntary basis to cooperate in the implementation of their NDCs; and the transfer of mitigation outcomes. ICAO is likely to mirror the approach taken by Parties to the Paris Agreement, once those negotiations are concluded.
37. This matter falls within the portfolio responsibilities of the Minister for Climate Change. In terms of timing, I would expect that consideration of including the NZ ETS as a source of emissions units for CORSIA would only be determined following the implementation of the Zero Carbon Bill and the changes to the Climate Change Response Act 2002.

#### **CORSIA should be implemented domestically via the Civil Aviation Bill**

38. The Ministry of Transport (the Ministry) consulted the Ministry for the Environment (MfE), Ministry of Foreign Affairs and Trade (MFAT), the Civil Aviation Authority (CAA) and the

Environmental Protection Authority (EPA) on the legislative vehicles that might be used to implement CORSIA domestically.

39. The Ministry has advised me that incorporating CORSIA into the Civil Aviation Bill is, on balance, the most practicable way to implement the scheme domestically. The Bill will replace the Civil Aviation Act 1990 and the Airport Authorities Act 1966 with a single new statute.
40. The purpose of the Civil Aviation Bill is sufficiently broad in scope to incorporate CORSIA, and CORSIA's inclusion will mean that aviation regulation is largely contained within a single regulatory statute. The Civil Aviation Bill is also at a considerably advanced stage, as it has largely been drafted and an exposure version is out for public consultation.
41. The Civil Aviation Bill has a priority of category 4 within the legislative programme - to be referred to a select committee within the 2019 calendar year. Given the intent to participate in CORSIA from its commencement in 2021, legislation should be in place by 31 December 2020.
42. I propose the Ministry be the principal regulator of the CORSIA-related aspects of the Civil Aviation Bill, and will oversee the administrative, monitoring, reporting, verification and offsetting requirements of CORSIA.
43. The legislation should enable an information sharing relationship between the Ministry and the CAA, MBIE and MfE, as required to support the Ministry's administrator role for CORSIA. For example, the CAA could provide supporting flight data to ensure New Zealand's reports to ICAO are accurate, MBIE could cross-check fuel usage by operators and MfE's carbon market expertise could be drawn on as required.
44. Overall, the domestic implementation of CORSIA is unlikely to be contentious, and I consider that it is imperative that we develop and implement domestic legislation that enables New Zealand's participation in CORSIA from 2021. However, there are some costs and risks that will potentially arise from CORSIA and these will need to be managed.

#### **The cost of not participating in CORSIA**

45. Not participating in CORSIA would, in the short-term, represent the lowest financial cost to New Zealand. However, the long-term costs of an inadequate global response to climate change would significantly outweigh this. We are already seeing the destructive consequences of climate change inaction on our environment and our economy. It is vital that New Zealand takes steps now to decarbonize all sectors of our economy as soon as possible.
46. New Zealand's economy requires an effective global response to climate change to continue to prosper. Although there is the potential for a small cost to the economy from CORSIA, I consider that we have a responsibility to shoulder our fair share of the short-term costs of addressing climate change. New Zealand's international aviation needs have to be reconciled with a global transition to a low-emissions economy.
47. There would also be reputational risks to New Zealand if we did not participate in CORSIA. As a developed country, New Zealand is expected to participate - almost all developed states and most major aviation states have already signalled their intent to do so. Not participating would undermine our ability to advocate for ambitious action on climate change internationally, particularly in the Pacific.

## Participating in CORSIA will likely result in small additional costs for the tourism and trade sectors

48. International aviation plays an important role in the global economy. As a result of its offsetting requirements, CORSIA will likely result in a small increase to costs, particularly in the trade and tourism sectors. Overall, future changes to the price of aviation fuel and currency exchange rates are likely to have a significantly greater impact on the tourism and trade sectors than the offset costs of CORSIA. This section provides an overview of the potential costs of CORSIA. Further information is in Appendix B.
49. In order to illustrate the potential impact of CORSIA at an individual flight level, ICAO developed some indicative examples of the estimated costs in 2030. One of the examples, an A380 plane that carries 515 passengers on a flight from London to Beijing, is estimated to have a CORSIA offsetting cost between US\$1,740 and US\$4,523 for the flight. This would equate to an approximate per passenger cost of between US\$3 and US\$9. The principal variable is the expected price of emissions units, which is linked to the price of carbon.
50. By comparison, the fuel cost for that flight was around US\$43,560. If the cost of fuel were to rise by US\$10 per barrel<sup>6</sup>, the fuel cost increase alone would be US\$9,658. To give a reference on magnitude, over the past decade the standard deviation of the jet fuel price annually has been almost US\$40 per barrel, meaning that operators have managed to cope with fuel price volatility (mostly upwards) of more than 15 times the size of the estimated offsetting costs in 2030. This demonstrates the potential impacts of CORSIA are likely to be significantly less than those expected from the growth in fuel costs.
51. While the potential costs from CORSIA are likely to be nominally small, it is difficult to establish what, if any, effects these costs might have on the price sensitivity of those using international aviation to or from New Zealand. New Zealand, as a small long-haul destination, faces intense competition to attract visitors. Ministers should be conscious that alongside CORSIA, other costs have been added at the border - in the form of new or increased border fees and levies in recent years<sup>7</sup>. The cumulative impact of these levies has the potential to change behaviours or perceptions about the affordability of flying to New Zealand. However, officials advise that it is unclear at which point price sensitivity would change visitor or trade growth to or from New Zealand.
52. Previous work on price sensitivity of airline tickets, undertaken to inform decisions on the Border Clearance Levy, estimated a potential impact on GDP of NZ\$24 million to NZ\$124 million, due to a decrease in projected visitor numbers and tourism expenditure. However, no observable impact has followed the introduction of the Border Clearance Levy, and the demand impacts from the International Visitor Conservation and Tourism levy are expected to be low.<sup>8</sup>
53. Cabinet recently considered a Minister of Custom's paper that set out the various border cost recovery initiatives across government, DEV-19-MIN-0193 refers. The paper provided information on the various fees, levies and costs (existing, reviewed and proposed) at the border that impact on the aviation and maritime sectors. Ministers should be aware of these charges in considering the proposals in this paper.

<sup>6</sup> US\$ per barrel (\$/bbl) is a standard aviation industry metric for jet fuel price.

<sup>7</sup> For example, the Border Clearance Levy was introduced on 1 January 2016 and imposes a levy of NZ\$18.76 on travellers arriving in and departing from New Zealand. The International Visitor Conservation and Tourism levy, expected to be implemented in the second half of 2019, will initially be set at NZ\$35 per traveller arriving in New Zealand.

<sup>8</sup> Cabinet paper - International Visitor Conservation And Tourism Levy (2018): [www.mbie.govt.nz/assets/e3893b19d2/cabinet-paper-international-visitor-conservation-and-tourism-levy.pdf](http://www.mbie.govt.nz/assets/e3893b19d2/cabinet-paper-international-visitor-conservation-and-tourism-levy.pdf)

54. While uncertainties about the price of emissions units and the cumulative effects of multiple cost pressures make it difficult to quantify the consumer cost of CORSIA, officials assume it will contribute to some reduction in the level of international tourism and trade compared to business as usual. This is unlikely to disproportionately affect New Zealand given many of our tourism and trade competitors are also participating in CORSIA, and more states are expected to participate in the future.

**There are risks that arise out of implementing CORSIA**

55. It is in New Zealand's interest to have as many states participating in CORSIA as possible. Having wider participation ensures that increases in aviation emissions to and from New Zealand are offset, improves parity between different operators, and overall reduces the risk of New Zealand being disproportionately affected by CORSIA compared to other countries.
56. Currently, 81 states (including New Zealand) have signalled their intent to voluntarily participate in CORSIA from its outset in 2021. This represents 76.63 percent of international aviation activity. Accordingly, I consider the risks to competitiveness are low. Some key states, including India and Russia, will not be participating in CORSIA from its commencement in 2021. [REDACTED]

Withheld to protect the international relations of the New Zealand Government

57. Were more states to withdraw their participation from the voluntary phases, there is a risk that confidence in CORSIA could be undermined and the scheme could collapse before it has even begun. CORSIA's breakdown would create a significant risk that individual jurisdictions will respond by taking unilateral measures, which would create an unsustainable patchwork of measures, distort aviation markets and impose higher costs.
58. Some countries have signalled that they are considering unilateral moves. China has indicated that it is considering adopting its own domestic market-based measure. The European Union (EU), while supportive of CORSIA, currently has regulations that extend coverage of its emissions trading scheme (ETS) to flights in and out of Europe. The EU has held its ETS regulations in abeyance to allow ICAO an opportunity to deliver CORSIA. There is a risk that EU states could return to unilaterally putting ETS costs on all international flights in and out of Europe if they were left unsatisfied with CORSIA.
59. For countries like New Zealand that trade with multiple markets, misalignment between rules in different jurisdictions adds significantly to the cost of doing business. Many countries share this concern and are therefore highly motivated to see CORSIA succeed.
60. There is also a potential risk that some operators could try to exploit CORSIA to make higher profit margins than would otherwise be possible, by increasing prices beyond what is necessary due to their CORSIA offset costs. Assuming that competition does not address this risk, officials consider that the risk may be mitigated domestically by Commerce Commission oversight. This should prevent operators from stating they are increasing prices because of CORSIA to an extent that exceeds their offset costs.

61. [REDACTED]

Withheld due to confidentiality of advice and to protect information which is subject to an obligation of confidence



62. While there are risks that arise out of participating in CORSIA, I consider there is a wider reputational risk to New Zealand if we did not. As a developed country, New Zealand is expected to participate - almost all developed states and most major aviation states have already signalled their intent to do so. Not participating would undermine our ability to advocate for ambitious collective action on climate change internationally, particularly in the Pacific<sup>9</sup>.

### **Consultation**

63. This paper has been consulted on with MFAT, MfE, CAA, EPA, Ministry for Primary Industries, Ministry for Business, Innovation and Employment (tourism policy), the Treasury, New Zealand Trade and Enterprise, Ministry for Pacific Peoples, Ministry for Social Development, New Zealand Customs, the Department of Internal Affairs, Inland Revenue, the Department of Conservation, Ministry of Defence and Ministry of Justice. The Department of Prime Minister and Cabinet, Te Puni Kōkiri and the Commerce Commission have been informed.
64. Air NZ has been consulted on information in this paper where it is referenced.
65. Seafood New Zealand Ltd, Horticulture New Zealand, the Meat Industry Association and the Tourism Industry Aotearoa have been consulted on the impact of CORSIA on their sectors.

### **Financial implications**

66. There are no financial implications arising directly from this paper.
67. As the proposed principal regulator, the Ministry will have ongoing costs associated with the administering of CORSIA. However, as these are desk-based requirements, I anticipate that the costs will be absorbed into the Ministry's baseline spending.

### **Human rights, gender implications and disability perspective**

68. There are no inconsistencies with the Human Rights Act 1993 or the New Zealand Bill of Rights Act 1990. There are no gender implications or disability perspectives associated with this paper.

### **Legislative implications**

69. I propose that CORSIA will be part of the wider Civil Aviation Bill. The Civil Aviation Bill has a priority of category 4 within the legislative programme - to be referred to a select committee within the 2019 calendar year.
70. It is my intention that the Bill be in force by 31 December 2020 in order to fulfil New Zealand's obligations under CORSIA. This paper recommends instructions be issued to the Parliamentary Counsel Office for the drafting of the CORSIA-related sections of the Civil Aviation Bill.

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<sup>9</sup> At ICAO's request, New Zealand officials delivered capacity-building assistance for CORSIA to four Pacific Island States: Vanuatu, the Solomon Islands, Fiji and Samoa. Not participating in CORSIA would undermine the work done to promote the scheme in the region.

71. The Ministry will engage with the Legislation Design and Advisory Committee on issues arising under the Legislation Guidelines during the drafting process. I will report back to Cabinet on any concerns that may arise.

#### *Offence and penalty provisions*

72. The SARPs are silent on the application of any offence and penalty provisions for not meeting the requirements for CORSIA. I consider an appropriate offence and penalty regime should be put in place for CORSIA, to ensure New Zealand meets its CORSIA obligations to ICAO.
73. The offences and penalties will be based on provisions in the Climate Change Response Act 2002, as appropriate. Operators will face penalties under the CORSIA-related sections of the Civil Aviation Bill if they:
- fail to collect data and keep records, when required to do so
  - fail to provide information or documents to the Ministry, when required to do so
  - fail to provide an emissions monitoring plan, emissions report, emissions unit cancellation report and associated verification reports to the Ministry, when required to do so
  - provide altered, false, incomplete or misleading information to the Ministry
  - fail to purchase and cancel emissions units, when required to do so.
74. The offence and penalty regime for CORSIA will be developed in consultation with the Ministry of Justice. If there is significant departure from the approach described above, then I will present a Cabinet paper on the offences and penalties regime later this year.

#### *Taxation*

75. The Income Tax Act 2007 contains specific rules setting out the tax treatment of emissions trading units. Similar rules may be required for the emissions units that operators will need to purchase to offset their emissions under CORSIA.
76. However, any tax changes will depend upon the ultimate nature of the qualifying emissions units, including their tradability, which is yet to be decided. ICAO has been testing the applicability of the emissions unit criteria to identify and test programmes that generate emissions units. ICAO will publish the list of qualifying emissions unit providers later in 2019.
77. Officials will report to Ministers on what legislative tax changes may be needed once it is known what emissions units will qualify under CORSIA.

#### **Regulatory Impact Analysis**

78. A Regulatory Impact Statement (RIS) “A carbon offsetting and reduction scheme for international aviation” was prepared in 2016 to support Cabinet’s decision to participate in CORSIA <https://treasury.govt.nz/publications/risa/regulatory-impact-assessment-carbon-offsetting-and-reduction-scheme-international-aviation>. As this Cabinet paper seeks to re-confirm decisions taken in 2016, this RIS remains directly relevant.
79. An “Update to Regulatory Impact Assessment: Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA)” has been produced by the Ministry of Transport to focus on key developments since 2016 and any consequent changes to the earlier analysis (none of which are significant). A review panel with representatives from the

Treasury Regulatory Quality Team and the Ministry of Transport has reviewed the update and considers that it meets the Quality Assurance criteria.

### Proactive Release

80. I intend to proactively release this Cabinet paper (and associated regulatory impact summary assessment) shortly after decisions are made on this paper. Release will be subject to appropriate redactions.

### Recommendations

81. The Associate Minister of Transport recommends that the Committee:
  1. **note** that international aviation emissions are forecast to grow in the coming decades
  2. **note** that the International Civil Aviation Organization (ICAO) is responsible for regulating international aviation activity
  3. **note** that ICAO has agreed on a global market-based measure, known as the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), to achieve carbon neutral growth in the international aviation sector from 2020
  4. **note** that Cabinet made a decision for New Zealand to participate in CORSIA in September 2016 (EGI-16-MIN-0232 refers)
  5. **note** that New Zealand's participation in CORSIA strongly supports our climate change, foreign policy and trade priorities
  6. **agree** to reconfirm Cabinet's decision for New Zealand to participate in CORSIA from 1 January 2021
  7. **note** that ICAO's international standards and recommended practices (SARPs) set out the policy design for CORSIA and that ICAO adopted and agreed on these SARPs in July 2018
  8. **agree** to give effect to CORSIA in domestic legislation via the Civil Aviation Bill and ensure it is consistent with the July 2018 version of the SARPs
  9. **agree** to the application, duration, monitoring, reporting, verification, exemptions, phased-in implementation, offsetting and emissions unit requirements of CORSIA, as set out in the July 2018 SARPs
  10. **agree** to the ongoing monitoring of all New Zealand-registered aeroplane operators that fly internationally, to determine whether they need to participate in CORSIA
  11. **agree** to the proposed offence and penalty regime, on the basis that it does not significantly change during the development of legislation
  12. **note** the costs and risks that arise out of implementing CORSIA in New Zealand
  13. **note** that it is not possible to fully quantify the costs and impacts of CORSIA as this will be determined by the future price of eligible emissions units and the cumulative effects of multiple other cost pressures
  14. **note** that the impact on air passengers and air freight importers and exporters will depend on how aeroplane operators choose to pass on the cost of offsetting from CORSIA

15. **note** a separate Cabinet decision would need to be agreed if New Zealand wished to have ICAO consider the New Zealand Emissions Trading Scheme or other New Zealand projects as a source of emissions units for CORSIA
16. **agree** that the Ministry of Transport will be the lead administrator of the CORSIA components of the legislation
17. **agree** that the legislation could enable an information sharing relationship between the Ministry of Transport and the Civil Aviation Authority, the Ministry of Business, Innovation and Employment and Ministry for the Environment, as required to support the Ministry of Transport's administrator role
18. **invite** the Minister of Transport to issue drafting instructions to the Parliamentary Counsel Office to give effect to the decisions in the recommendations above
19. **authorise** the Associate Minister of Transport jointly with the Minister of Transport to make final decisions, consistent with the overall policy intent, on details that arise during the drafting of the legislation without reference to Cabinet
20. **note** that the proposed legislation should be in place before 31 December 2020 to fulfil New Zealand's obligations under CORSIA.

Authorised for lodgement  
Hon Julie Anne Genter  
**Associate Minister of Transport**

**Design features of CORSIA**

1. Carbon offsetting is the key component of CORSIA. Offsetting is a process through which an emitter compensates for its emissions by reducing emissions elsewhere (offsetting its emissions). In practice this will be done by buying and cancelling emissions units that represent genuine emissions reductions generated by programmes/projects that reduce carbon emissions in sectors other than aviation (e.g. through tree planting).
2. The average level of emissions from international aviation between 2019 and 2020 represents the basis for carbon neutral growth from 2020, against which emissions in future years are compared. The period between 1 January 2019 and 31 December 2020 is known as the baseline period/level. No carbon offsetting is required during the baseline period.
3. In any year from 2021, when emissions covered by CORSIA exceed the average baseline level, this difference represents the aviation sector's offsetting requirements for that year.

*Who will CORSIA apply to?*

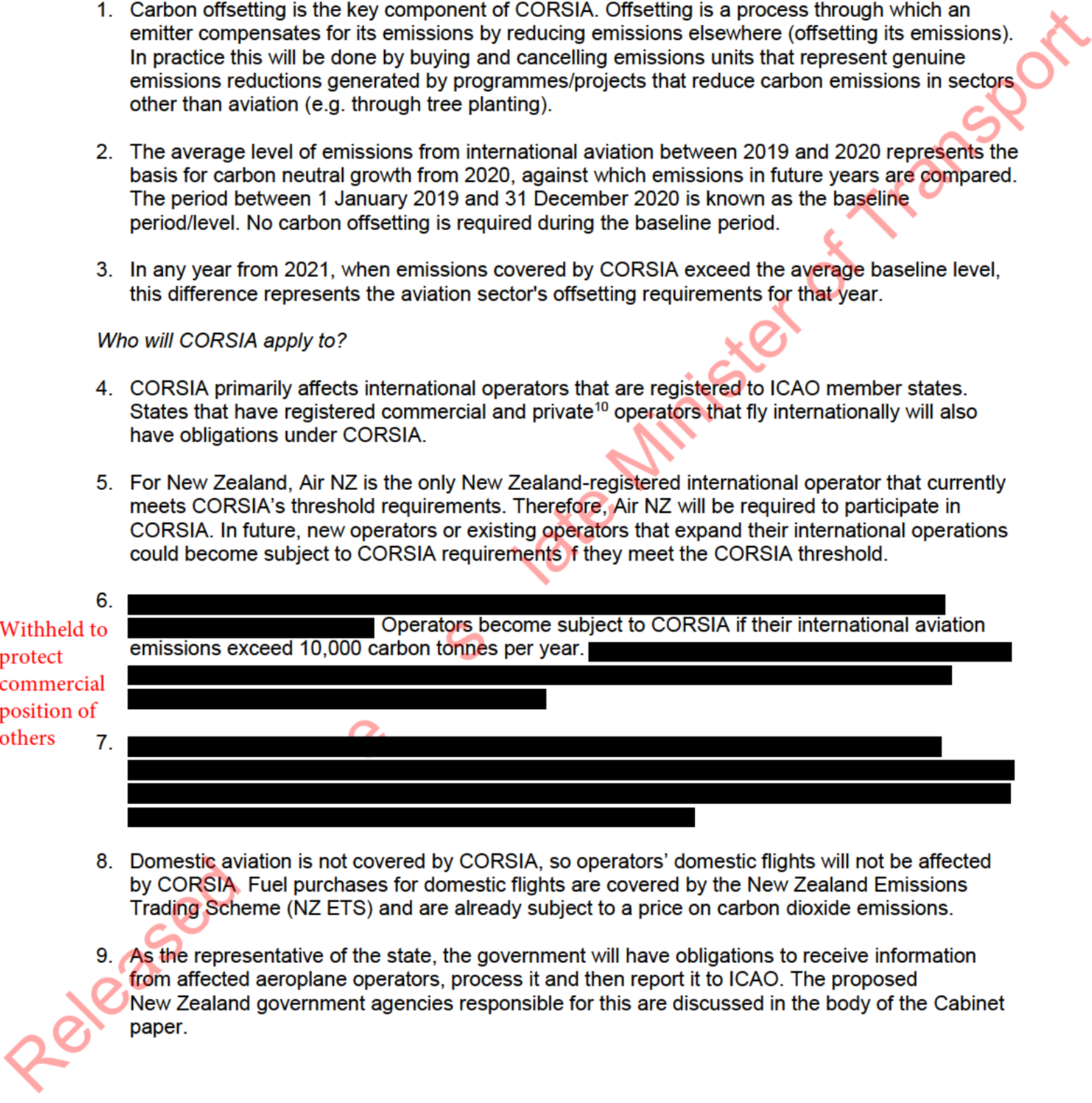
4. CORSIA primarily affects international operators that are registered to ICAO member states. States that have registered commercial and private<sup>10</sup> operators that fly internationally will also have obligations under CORSIA.
5. For New Zealand, Air NZ is the only New Zealand-registered international operator that currently meets CORSIA's threshold requirements. Therefore, Air NZ will be required to participate in CORSIA. In future, new operators or existing operators that expand their international operations could become subject to CORSIA requirements if they meet the CORSIA threshold.

6. [REDACTED]  
[REDACTED] Operators become subject to CORSIA if their international aviation emissions exceed 10,000 carbon tonnes per year. [REDACTED]  
[REDACTED]  
[REDACTED]
7. [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

8. Domestic aviation is not covered by CORSIA, so operators' domestic flights will not be affected by CORSIA. Fuel purchases for domestic flights are covered by the New Zealand Emissions Trading Scheme (NZ ETS) and are already subject to a price on carbon dioxide emissions.
9. As the representative of the state, the government will have obligations to receive information from affected aeroplane operators, process it and then report it to ICAO. The proposed New Zealand government agencies responsible for this are discussed in the body of the Cabinet paper.

<sup>10</sup> New Zealand has a couple of private operators that may fly internationally. Under the legislation, these operators would be monitored to establish if they meet the CORSIA criteria, the point at which they would then need to monitor, report, verify and offset their emissions.

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### *Duration of CORSIA*

10. CORSIA will operate from 1 January 2021 until 31 December 2035. This excludes the baseline period between 2019 and 2020.
11. ICAO will conduct a special review in 2032 on the termination of CORSIA, its extension or any other improvements of the scheme beyond 2035. As a result, the legislation will leave the timeframe for CORSIA open to avoid locking in a set time period.

### *Monitoring, reporting and verifications requirements*

12. As part of their ICAO obligations, all member states with operators conducting international flights will be required to monitor, report and verify (MRV) emissions from 1 January 2019 to 31 December 2035. These obligations are separate to the CORSIA offsetting requirements. New Zealand is required to comply with these requirements regardless of its participation in CORSIA.
13. Implementation of these MRV requirements is essential to establish annual carbon dioxide emissions from international aviation (including the baseline level). The MRV system is made up of the following components:
  - monitoring of fuel use on each flight and calculation of emissions
  - reporting of emissions data between operators, states and ICAO
  - verification of emissions data to ensure completeness and avoid misstatements.
14. Operators must monitor their fuel use from international flights throughout the year and determine their annual emissions. Monitoring happens in accordance with an operator's Emissions Monitoring Plan (EMP). The operator submits an EMP for approval by the state. An EMP includes information on operator identification, fleet and operations data, methods and means of calculating emissions, and data management, flow and control.
15. Operators must also submit a verified Emissions Report for approval by the state. Verification is performed by a third party verifier who meets certain requirements under the SARPs. Once the state approves the verified Emissions Report for all its registered operators, the state reports its total annual emissions to ICAO.
16. Since CORSIA currently has no legal standing in New Zealand, the Ministry and Air NZ have developed a Memorandum of Understanding (MoU). The MoU ensures Air NZ abides by the MRV requirements from 1 January 2019 to 31 December 2020. These MRV requirements are similar to those that Air NZ already undertakes as a participant in the NZ ETS.

17.   
  
The proposed legislation needs to give effect to CORSIA and to future-proof for new operators that might register in New Zealand and operate international flights.

### *Phased-in implementation*

18. CORSIA was designed to incorporate phased-in implementation, taking into account the different circumstances of countries and to address developing countries' concerns about needing greater growth in their aviation sectors.
19. Participation in the carbon emissions offsetting component of CORSIA during the pilot and first phases is voluntary. Currently, 81 states (including New Zealand) have signalled their intent to

voluntarily participate in CORSIA from 1 January 2021. This represents 76.63 percent of international aviation activity, measured by revenue tonne kilometres (RTK)<sup>11</sup>.

20. For the second phase, states will be required to participate in CORSIA from 1 January 2027 if they meet the following criteria, subject to the exemptions below (New Zealand meets this criteria):

- a) an individual share of international aviation activities in revenue tonne kilometres (RTKs) in the year 2018 above 0.5 percent of total RTKs; or
- b) whose cumulative share in the list of states from the highest to the lowest amount of RTKs reaches 90 percent of total RTKs in the year 2018<sup>12</sup>.

**Table 1: CORSIA phased-in implementation timeframe**

	<i>Phase</i>	<i>Timeframe</i>	<i>State obligations</i>
Monitor, report and verify carbon dioxide emissions from 1 January 2019 to 31 December 2035	<b>Baseline period</b> (Compulsory)	1 January 2019 to 31 December 2020	All states with aeroplane operators conducting international flights are required to monitor, report and verify carbon dioxide emissions from these flights every year from 2019, independent of their participation in CORSIA.
	<b>Pilot phase</b> (Voluntary)	1 January 2021 to 31 December 2023	States that have volunteered to participate in CORSIA (includes New Zealand).
	<b>First phase</b> (Voluntary)	1 January 2024 to 31 December 2026	States that voluntarily participate in the pilot phase, as well as any other states that volunteer to participate in this phase.
	<b>Second phase</b> (Compulsory)	1 January 2027 to 31 December 2035	All states, whose market share exceeds 0.5 percent or is within 90 percent of the aggregate from the largest to smallest must participate.

21. All states will still need to monitor, report and verify their emissions from their international aeroplane operators, regardless of whether or not they are partaking in the offsetting component of CORSIA.

*Exemptions*

22. CORSIA addresses emissions from international civil aviation activity only and takes into account special circumstances and respective capabilities. There are a number of exemptions to CORSIA:

- o Special operations, such as military, state, humanitarian, medical, firefighting, and search and rescue flights. This means that the New Zealand Defence Force's operations would not be affected by CORSIA.
- o Operators that emit less than 10,000 metric carbon dioxide emissions tonnes per year. [REDACTED]
- o Small aircraft which have a maximum take-off mass (MTOM) of less than 5,700 kg. New Zealand-registered operator, Sounds Air, operates the Pilatus PC12 with a MTOM of around 5,000 kg. It also operates the Cessna 208 Caravan which has a MTOM of around 4,000 kg. Sounds Air does not fly internationally. However if it did, these airplanes would be exempt from CORSIA's requirements.

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<sup>11</sup> RTK is a standard aviation industry metric used to quantify the revenue load (passengers and cargo) multiplied by the distance flown.

<sup>12</sup> New Zealand's international aviation emissions are above the 0.5 percent threshold (New Zealand's individual share is 0.62 percent) and New Zealand's individual RTK would fall into the cumulative share of international aviation activity to reach an RTK of 90 percent.

- New entrant operators are exempt from the offsetting components of CORSIA for the first 3 years of operation, or until annual emissions exceed 0.1 percent of total 2020 carbon emissions from international flights, whichever comes first. These operators will have MRV requirements once their emissions are greater than 10,000 tonnes of carbon per year.
- Least developed countries, small island developing states, and landlocked developing countries are exempt from participating in the offsetting components of CORSIA, unless they volunteer to do so. These states must still abide by the MRV requirements. A number of Pacific Islands States fall under this exemption<sup>13</sup>.

#### Offsetting requirements and emissions units

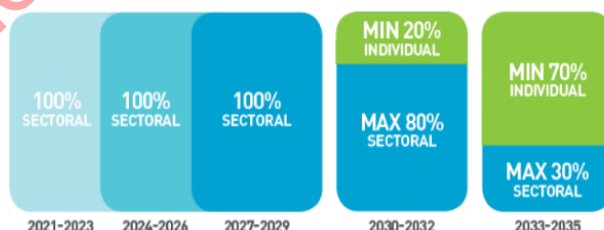
23. CORSIA's offsetting requirements are centred around a route-based approach. That means emissions from a flight only need to be offset if both the origin and destination states are participating in CORSIA. If either the origin and/or destination state is not participating in CORSIA, the operator is not required to offset the emissions from that flight (i.e. the emissions are not CORSIA eligible).
24. The government calculates an operator's offsetting requirements by multiplying their CORSIA eligible emissions with that year's growth factor (accounting for any emissions reductions from the use of sustainable fuels). The operator then purchases a number of emissions units equivalent to this requirement from international carbon markets and cancels those units to offset their emissions obligations (and remove the emissions units from circulation). Each emissions unit corresponds to one metric tonne of carbon that was reduced by an emissions reduction project or programme.
25. The distribution of offsetting requirements moves gradually from the international aviation sector's global average growth of emissions to the individual operator's growth of emissions.

Diagram 1: CORSIA offsetting requirements timeframe

#### HOW TO CALCULATE CO<sub>2</sub> OFFSET REQUIREMENTS?

$$\text{Operators' annual emissions} \times \text{Growth Factor} = \text{CO}_2 \text{ offset requirements}$$

The Growth Factor changes every year taking into account both the sectoral and the individual operators' emissions growth.



26. The emissions units operators purchase and cancel must meet the CORSIA emissions unit criteria. ICAO has approved the following emissions unit criteria<sup>14</sup>.
- Carbon offset programs must generate units that represent emissions reductions, avoidance, or removals that are additional.
  - Carbon offset credits must be based on a realistic and credible baseline.
  - Carbon offset credits must be quantified, monitored, reported and verified.

<sup>13</sup> Pacific Small Island Developing States (PSIDS) - the Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Solomon Islands, Samoa, Tuvalu, Tonga and Vanuatu.

<sup>14</sup> Carbon offset credits and emissions units are different from one another – carbon offset credits are used to offset emissions units.



- iv. Carbon offset credits must have a clear and transparent chain of custody within the offset program.
- v. Carbon offset credits must represent emissions reductions, avoidance, or carbon sequestration that are permanent.
- vi. A system must have measures in place to assess and mitigate incidences of material leakage.
- vii. Carbon offset credits are only counted once towards a mitigation obligation.
- viii. Carbon offset credits must represent emissions reductions, avoidance, or carbon sequestration from projects that do no net harm.

27. The emissions unit criteria will be critical to supporting the purchase of appropriate emissions units by operators. The application of the emissions unit criteria will ensure the quality of emissions units being generated and transferred. For New Zealand, it is important that CORSIA is effective in offsetting emissions and that any emissions units approved under CORSIA have environmental integrity and are not double counted<sup>15</sup>.

28. ICAO has been testing the applicability of the emissions unit criteria to identify and test programmes that generate approved emissions units. ICAO will publish the list of eligible emissions unit programmes later in 2019.

29. Confirming the cancellation of emissions units is important to avoid double counting and maintaining the environmental integrity of CORSIA. Cancellation takes place within a registry designated by an eligible emissions unit programme, and the registry will publish the list of cancelled emissions units online. Operators report the cancelled emissions unit to the government, which will then report to ICAO. ICAO will publish the cancelled emissions units on its CORSIA Central Registry to ensure transparency

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<sup>15</sup> In general, environmental integrity means that what is traded must represent genuine emissions reductions; that emissions reductions are not double counted; and that both of these can be verified and proven. Double counting refers to the situation where emissions reductions are used twice to attain mitigation pledges, either by the same or different actors.

### Potential costs of CORSIA

1. In 2016, ICAO developed a set of scenarios to forecast the potential cost of CORSIA to the whole international aviation industry. Looking at a medium assumption of industry carbon growth, ICAO's forecasts suggest that in 2025, CORSIA may cost airlines between US\$1.5 to US\$6.2 billion in 2025 (at a carbon price of US\$6-\$33 per tonne). This could go up to between US\$5.3 to US\$23.9 billion in 2035 (at a carbon price of US\$12-40 per tonne). This is estimated to account for 0.2 to 0.6 percent of industry revenue in 2025, and 0.5 to 1.4 percent in 2035. To put this into context, in 2018, the world's airlines spent around US\$180 billion on fuel, which was around a quarter of their operating costs.
2. In order to illustrate the potential impact of CORSIA at an individual flight level, ICAO also developed some indicative examples of the estimated costs in 2030. One of the examples, an A380 plane that carries 515 passengers on a flight from London to Beijing, is estimated to have a CORSIA offsetting cost between US\$1,740 and US\$4,523 for the flight. This would equate to an approximate per passenger cost of between US\$3 and US\$9. The principal variable is the expected price of emissions units.
3. By comparison, the fuel cost for that flight was around US\$43,560. If the cost of fuel were to rise by US\$10 per barrel<sup>16</sup>, the fuel cost increase alone would be US\$9,658. To give a reference on magnitude, over the past decade the standard deviation of the jet fuel price annually has been almost US\$40 per barrel, meaning that operators have managed to cope with fuel price volatility (mostly upwards) of more than 15 times the size of the estimated offsetting costs in 2030. This demonstrates the potential impacts of CORSIA are likely to be significantly less than expected compared with the growth in fuel costs.

#### *Uncertainties and cumulative impacts*

4. While ICAO's projections provide a useful indicator of CORSIA's potential costs, uncertainties remain about the future price of emissions units that operators will need to buy on the carbon markets. Among other things, these future uncertainties include:
  - the price of carbon
  - the price of jet fuel
  - developments in aircraft technology and sustainable aviation fuels
  - consumer behaviours, price sensitivities and demand responses
  - exchange rate movements
  - the state of the global economy
  - how ICAO will implement the SARPs
  - whether, when and how CORSIA will be adopted by states.
5. In addition to these uncertainties about the future price of emissions units, there is also uncertainty about how and to what extent operators will pass on the offsetting costs to their customers, including both passengers and businesses that use air freight.
6. An operator's ability to fully pass on costs to its customers is dependent on a variety of factors, including the price of emissions units, the quantum of offsetting costs, how operational costs are accounted for, how competitors respond to their offsetting costs and the level of neutrality and/or distortionary impacts that result from CORSIA.
7. However, even if the offsetting costs stemming from CORSIA end up being nominally small, it is difficult to establish its effects on price sensitivity. This is because there are multiple other cost

<sup>16</sup> US\$ per barrel (\$/bbl) is a standard aviation industry metric for jet fuel price.

pressures that, alongside CORSIA, are likely to have a cumulative impact on the international aviation sector in the future. Other cost pressures at the border can also have an impact on airline customers, and those impacts are likely to become greater with each fee or levy increase.

8. While uncertainties about the price of emissions units, how operators will react, and the cumulative effects of multiple cost pressures make it difficult to quantify the consumer cost of CORSIA, there are some high-level observations that can be made about its potential impact on New Zealand's tourism and trade sectors.

*Potential impacts on tourism*

9. International tourism expenditure for the year to March 2018 was NZ\$16.2 billion and tourism contributed 20.6 percent to New Zealand's total exports of goods and services in the year to March 2018. Domestic and international tourism generated a direct contribution to New Zealand's GDP of NZ\$15.9 billion (6.1 percent of GDP). There were 3.82 million overseas visitor arrivals in the March 2018 year. In the same year, New Zealand residents departed on 2.89 million overseas trips.

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10. [Redacted]

11. [Redacted]

12. [Redacted]

[Large redacted block]

13. [Redacted]

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14. [Redacted]

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[Redacted]

- [REDACTED]
- [REDACTED]
15. Both New Zealand and overseas-registered operators are likely to pass on some, if not all, of CORSIA's offset costs onto their customers. While it is unknown how offset costs will be passed on, any resulting air ticket price increases could affect consumers' travel behaviour.
  16. This could potentially have a positive effect, for example if Australians chose to reduce long-distance travel and opted to come to New Zealand instead. On the other hand, Australians could opt for other nearby destinations in South East Asia or the Pacific.
  17. CORSIA could also play a role in influencing future behaviours amongst our high value visitor markets from Asia and North America. The further the distance travelled, the higher the emissions and the offsetting costs. While Australian visitors are our biggest inbound tourism market (making up 38 percent of visitors to New Zealand in 2018), visitors from further away tend to spend more on average per person than Australian visitors.
  18. Price increases on international aviation could also impact New Zealanders' choice of travel destinations. Indeed, some New Zealanders may opt to travel domestically rather than go overseas, so domestic tourism expenditure could increase.
  19. Consumers may change their travel behaviours in a number of unpredictable ways, making it difficult to establish what the effects of CORSIA-related price increases could be. Overall, a drop in visitor numbers generally leads to a drop in total visitor expenditure, with flow-on effects such as reduced employment and taxation.
  20. The Ministry met with representatives from Tourism Industry Aotearoa (TIA) to inform them about CORSIA and its potential implications, including that it may impact their industries as future costs of carbon beyond 2020 are established. They were also informed that it is difficult to know what the costs will be as this is dependent on the emission units operators purchase. TIA would like to be kept informed as CORSIA proceeds through the legislative process.

*Potential impacts on trade*

21. In terms of trade, planes carry very little freight to and from overseas markets in terms of volume (0.33 percent of total trade volume for the year ended June 2018). However, as air often carries high-value products it represented 18.7 percent of the value of New Zealand's international commodity trade for the year ended June 2018 (15.6 percent of export value and 22 percent of import value)
22. Airfreight is a relatively small part of Air NZ's operations - cargo revenue represented 7.3 percent of Air NZ's combined passenger and cargo revenue. The impact on airfreight will depend on how Air NZ chooses to pass on the offset costs onto its air freight customers.
23. Given the nature of airfreighted items, exporters typically have no alternative, as their products need to reach their final destination in a timely manner. As a result, officials have assumed that any extra cost, up to a certain point, would not have a significant impact on the demand for trade.
24. However, in some cases New Zealand businesses will have a competitive advantage big enough to absorb airfreight cost increases, but in other cases they might not. This could make some goods uncompetitive relative to alternatives in the destination market (whether that is imports coming into New Zealand or exports heading overseas). This will be determined by what the additional costs to a business using airfreight are, in relation to its competitors.

25. The Ministry met with representatives from Seafood New Zealand Ltd, Horticulture New Zealand and the Meat Industry Association to inform them about CORSIA and advised that it may result in costs for their industries, and that this is dependent on how aeroplane operators choose to assign costs. They were also informed that it is difficult to know what the cost will be as this is dependent on the emission units aeroplane operators purchase. These organisations would like to be kept informed as CORSIA proceeds through the legislative process.
26. The Customs Brokers and Freight Forwarders Federation of NZ Inc reconfirmed its 2016 view that the effect of CORSIA on its industry will be the flow forward to exports and backwards to imports.

Released by the Associate Minister of Transport

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## Appendix C

