

Chair
Cabinet Economic Growth and Infrastructure Committee

INTERNATIONAL TRANSPORT AND CLIMATE CHANGE: NEGOTIATION MANDATES

Proposal

1. This paper seeks approval of a negotiating mandate to guide New Zealand's participation in climate change discussions at the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO); agreement to support adoption of the ICAO global market-based measure; and agreement that New Zealand voluntarily participates in Phase 1 of the ICAO measure from 2021.

Executive summary

2. The Paris Agreement on climate change was concluded in December 2015, setting an expectation of universal participation in the global response to climate change. All Parties to the Agreement are obliged to reduce emissions under the jurisdiction of the United Nations Framework Convention on Climate Change (UNFCCC).
3. International transport emissions are about 3.2 percent of overall global greenhouse emissions¹ and are projected to grow as international trade and tourism expand². The main mitigation options are the uptake of technology and improved loading and operational practices to maximise the emissions efficiency of the sector.
4. International transport emissions are not addressed in the Paris Agreement, nor has any Party unilaterally adopted emission reduction obligations relating to these emissions under the UNFCCC, or the Kyoto Protocol.
5. ICAO and IMO, respectively, are responsible for the regulation of international aviation and maritime activity. Negotiations are under way in each of these bodies on measures to manage greenhouse gas emissions.
6. In 2014, Cabinet approved a new negotiating mandate on International Climate Change: Negotiations and New Zealand's responsibilities (EGI (14) 184 refers). That mandate included supporting ICAO and IMO as the lead organisations on emissions reduction measures for their sectors. However, the mandate did not address New Zealand's priorities for engagement in negotiations in these fora.
7. Cabinet has agreed general principles for New Zealand's engagement in climate change negotiations (EGI-15-MIN-0128 refers). With some refinement, these are appropriate as the guiding parameters for New Zealand's positions in the ICAO and IMO negotiations. Applying these principles will enable New Zealand to advocate for environmentally

¹ CO₂ Emissions from Fuel Combustion (2015 Edition), International Energy Agency.

² International aviation's emissions are approximately 1.4% of global emissions and international shipping's emissions are approximately 1.8%. For comparison, Brazil is 1.3% of global emissions and Japan is 3.3%.

effective measures that enable New Zealand to make contributions that are credible, cost-effective, and appropriate for our national circumstances.

ICAO

8. ICAO Member States have agreed a collective medium-term global aspirational goal of capping net global CO₂ emissions at 2020 levels (i.e. carbon neutral growth from 2020). A resolution establishing a measure to offset emissions over this level will be considered for adoption at the ICAO Assembly in Montreal, Canada, from 27 September to 7 October 2016.
9. The United States and China are highly influential in these negotiations and an understanding reached between them bilaterally forms the basis of the proposed measure now being discussed. However, the United States and China have yet to agree how the Resolution will address the issue of differentiation between developed and developing countries and this remains the most contentious aspect of the negotiations.
10. [REDACTED]
[REDACTED]
[REDACTED] This leadership can be shown by committing to participating in the ICAO measure from its inception. I propose that New Zealand makes such a commitment ahead of the Assembly meeting.

IMO

11. IMO has not directly tackled the question of greenhouse gas emissions, but has made progress in the regulating of energy efficiency and the monitoring, reporting and verification of fuel consumption by ships over 5,000 gross tonnes under the relevant treaty – MARPOL Annex VI: Prevention of Air Pollution from Ships. These measures are expected to have emissions management benefits and could potentially inform future regulation of global greenhouse gas emissions from ships.
12. IMO is expected to finalise the operational aspects of the IMO data collection system at the 70th meeting of its Maritime Environmental Protection Committee to be held from 21 to 26 October 2016.
13. Pressure from some states for IMO to take stronger action to control emissions has grown subsequent to the Paris Agreement. Yet, opposition to additional measures remains strong. It is important the IMO supports and does not undermine the goals of the Paris Agreement. However, New Zealand needs to remain flexible and realistic about the form this support takes.

Mandate for international transport negotiations

14. The mandate for international transport negotiations needs to be refreshed to enable New Zealand to engage effectively in ICAO and IMO on measures to manage greenhouse gas emissions from international aviation and shipping.

Trade and tourism

15. Although any measures introduced by ICAO and the IMO will create new costs to our international trade and tourism, I expect the costs to individuals and households will be small.

Background

16. Human-induced greenhouse gas emissions are increasing globally, with consequent temperature rises and increasing climate variability already having an impact in New Zealand.
17. Countries have been working collectively to address climate change through the UNFCCC since 1992. The Paris Agreement on climate change, which concluded in December 2015, enshrines countries' collective determination to limit global average temperature rise due to greenhouse gas emissions to 2° Celsius, and to strive to limit the increase to 1.5° Celsius.
18. The Paris Agreement obliges all countries to establish nationally determined contributions to reduce emissions under the jurisdiction of the UNFCCC. International transport emissions, which occur outside countries' land and maritime territories, are not addressed by the Paris Agreement nor covered by any Party's national emission reduction targets under the Kyoto Protocol or the UNFCCC.
19. The primary fora responsible for regulation of international aviation and maritime activity are ICAO and the IMO, respectively. Measures taken by these bodies usually apply at the vessel/aircraft level and are enforced by flag and/or port states.
20. International transport emissions represent just over three percent of overall global greenhouse emissions and are projected to grow as international trade and tourism expand. They are expected to account for an increasing share of global emissions as global efforts to reduce stationary energy emissions take effect. As the production of goods and services concentrates in countries with lower emissions, demand for international transport will increase. While this will result in increased international transport emissions, the significantly lower production emissions will be an important enabler for the transition to a low-emissions economy.
21. New Zealand's economy requires an effective global response to climate change to continue to prosper. We have a responsibility to shoulder our fair share of the short-term costs of addressing global warming. Our economic prosperity depends heavily on international transport to service our export and tourism sectors, and New Zealand consumers rely on international transport to access international goods and tourism. Our national interests would be harmed by limiting flows of people and goods, but we recognise that growth in use of international transport needs to be reconciled with a global transition to a low-emissions economy.
22. Management of these emissions is currently being negotiated in ICAO and IMO. The Ministry of Transport leads New Zealand's participation in these negotiations. New Zealand's interests in ICAO and IMO negotiations are best served by agreement on flexible and cost-effective measures that will encourage the uptake of technology, and loading and operational practices to maximise the emissions efficiency of international transport.
23. Progress toward agreement on greenhouse gas measures in ICAO and IMO has been slow. For some states, industry interests in avoiding being regulated override broader national interests in securing effective measures in determining negotiation positions. Progress has been further impeded by some developing countries' efforts to use the negotiations to continue the UNFCCC's differentiation between developed and developing countries. [REDACTED]

32. The Ministry for Primary Industries has undertaken modelling on the economic effects of a price on international transport emissions. A summary of the modelling is in Appendix 1.

Framework for negotiating mandates

33. Paragraphs 34 to 104 outline the state of play of negotiations at ICAO and the IMO, and recommend a negotiation mandate for forthcoming meetings of each, including explicit decisions expected to be taken by ICAO, for implementation by Member States, and by the IMO on the development of its work programme.
34. I propose the general principles for New Zealand's engagement in climate change negotiations agreed by Cabinet, (EGI-15-MIN-0128 refers) as modified below, should set the guiding parameters for New Zealand's engagement in ICAO and the IMO. New Zealand should seek to ensure measures agreed by these bodies are:
- 34.1. Environmentally effective – consistent with the goal of transitioning to a low-emissions global economy so as to keep the increase in the global average temperature to below 2 degrees Celsius above pre-industrial levels.
- 34.2. Durable – capable of attracting agreement, responding dynamically to evolving circumstances in the sector, and improved scientific understanding of the global emissions challenge.
- 34.3. Transparent – actions taken must be recorded, verified and reported.
- 34.4. Applicable to all – measures must apply to vessels/aircraft from all countries on the same legal footing.
- 34.5. Fair – vessels/aircraft should face similar relative costs from their actions to manage emissions.
- 34.6. Cost-effective – measures must facilitate cost-effective action to deliver global benefits at least cost.
- 34.7. Environmentally credible – designed to ensure double issuance, double counting and double claiming of emission reductions is avoided.
- 34.8. Flexible – allow emitters to determine for themselves how they achieve the obligations.
- 34.9. Consistent – with New Zealand's UNFCCC negotiation objectives as relevant.

ICAO and the development of a global market based measure for international aviation

35. In 2013, the 38th ICAO Assembly (triennial meeting of all 191 Member States) requested that the ICAO Council (the 36 member governing body) develop a global market-based measure for consideration at the 39th ICAO Assembly in 2016. The work was to include analysis of its feasibility and practicability, taking into account the need for the development of international aviation, the proposal of the aviation industry and other international developments, as appropriate, and without prejudice to the then ongoing negotiations under the UNFCCC on the post-2020 climate regime.

36. At the same meeting, the Assembly adopted a collective medium term global aspirational goal of keeping the global net CO₂ emissions from international aviation from 2020 at the same level (carbon neutral growth from 2020).
37. Actors in the sector have been progressing a basket of measures to reduce CO₂ emissions from international aviation. These measures include new aircraft technologies, operational improvements and sustainable alternative fuels.
38. Despite progress in these areas, emissions from expected growth in international air traffic are expected to exceed the emissions reductions achieved through the measures. This puts at risk the global goal of keeping emissions under agreed 2020 levels.
39. ICAO is developing a global market-based measure (Global Measure) that requires emissions in excess of 2020 levels to be offset by the purchase of emission reductions from outside the sector. Negotiations are proceeding on the basis of understandings reached between Parties over the course of several years, and in particular recent agreement on key elements of the measure between the United States and China.

The proposed Global Measure

40. The proposed Global Measure provides for any growth in emissions beyond 2020 levels to be offset by operators using units that meet yet-to-be defined eligibility criteria. It is likely that units generated under UNFCCC/Paris Agreement mechanisms will be eligible.
41. New Zealand will only be responsible for ensuring emissions are offset by New Zealand registered airlines, principally Air New Zealand. JetConnect (a subsidiary of Qantas Group, Australia) has a small number of New Zealand registered aircraft.
42. The proposed Global Measure explicitly excludes Least Developed Countries, Small Island Developing States or Landlocked Developing Countries from its coverage. However, these states are strongly encouraged to participate voluntarily.
43. ICAO operates a 'non-discrimination' principle that requires regulations to be applied to all aircraft serving a common route, irrespective of their state of registry. This means offsetting obligations will not arise in relation to flights to and from exempted countries, even if operated by participating airlines.
45. The proposed Global Measure will be implemented in two phases to accommodate developing countries' claims to have greater need for aviation growth. Each phase consists of a series of 3-year compliance periods. In Phase I, the first period (2021–26) will be a nominal 'pilot' period, followed by a second operational period. Phase 2 (2027–35) will comprise three sequential compliance periods.
46. The proposed Global Measure will provide for voluntary participation in Phase I. How and when Member States communicate their intention to participate is yet to be resolved. Participation in Phase 2 will be mandatory, other than for exempted countries.
47. The Global Measure will set out the formula by which Member States determine the offset liability of individual registered airlines. Initially this will apportion liability for growth in sector-wide emissions between operators. However, for the final two periods of Phase 2 an operator's liability will be calculated taking account of both sectoral and individual emissions growth. The weighting of each component has yet to be agreed.

What will the cost of the Global Measure be for international aviation?

- 48. The Air Transport Action Group, a not-for-profit association that represents all sectors of the global air transport industry, has released information on the cost of the Global Measure to the whole aviation industry.
- 49. The ICAO Committee on Aviation Environment Protection (CAEP) developed a set of scenarios that looked at the potential cost of the global offsetting scheme to the whole industry.
- 50. Looking at a medium assumption of price and industry CO₂ growth, the CAEP forecast suggests that in 2025, the Global Measure may cost airlines NZ\$3.9 billion, at a carbon price of NZ\$21 per tonne. This is about 0.3 percent of industry revenue. By 2030 this could rise to NZ\$7.8 billion, or 0.5 percent of revenue at the time. To put this into context, in 2015, the world's airlines spent some NZ\$251 billion on fuel, which was around a third of operating costs.
- 51. It is difficult to establish what the sensitivity will be if the price of an air ticket increases because of the Global Measure. Using ICAO projections, for an A380 plane that carries up to 553 passengers, the offset cost on a flight from London to Beijing would be between NZ\$2,416 (using a carbon price of NZ\$21) and NZ\$6,281 (using a carbon price of NZ\$46³). This would equate to an approximate per passenger cost of between NZ\$4 and NZ\$11.
- 52. Potentially people may not travel as much, which could have a negative effect. Alternatively, the effect could be positive. For example, Australians might choose to reduce long-distance travel and opt to come to New Zealand instead. However, this could be offset by a reduction in visitors from other key markets that are further away (eg China, United Kingdom, United States, Germany). These markets spend on average more per person than Australian visitors, so international tourism expenditure may not be as high.

Potential risks if a Global Measure for international aviation is not agreed

- 53. The significant pressure for conclusion of the Global Measure this year comes from perceptions that it is an essential complement to the Paris Agreement, and like the Paris Agreement [REDACTED]
[REDACTED] This means failure to agree the Resolution at the September Assembly will erode momentum behind global action on climate change not only in ICAO, but in respect of the UNFCCC/Paris Agreement and IMO as well.
- 54. If there is no agreement in ICAO, there is a significant risk that policy-makers in other jurisdictions will respond by taking unilateral measures. [REDACTED]
[REDACTED]
[REDACTED]

■ This modelling does not reflect that New Zealand used a higher price for our Intended Nationally Determined Contribution and Emissions Trading Scheme modelling of NZ\$50.

55. Further, if New Zealand chose not to support the Global Measure we would risk considerable damage to our ICAO, climate change and other Government foreign policy and trade priorities.

Potential impact of the Global Measure on New Zealand

56. Information about the role of international aviation in New Zealand's trade and tourism is set out in Appendix 2.
57. The Global Measure is likely to result in increased costs for our tourism and export sectors. Airlines registered to participating states that service routes to and from New Zealand will incur offset costs if they experience growth in their overall aviation activity and are likely to pass this cost on to consumers. Approximately 55 percent of trips to and from New Zealand are made by non-New Zealand airlines.
58. The International Air Transport Association has used ICAO's projections on the cost of a global offsetting scheme to the whole industry to conservatively estimate how much the offsetting scheme may cost on a per-flight basis.
59. As mentioned, on one sample flight in 2030, an A380 aircraft from London to Beijing, the offsetting cost for the flight would be between NZ\$2,416 and NZ\$6,281. This would equate to an approximate per passenger cost of between NZ\$4 and NZ\$11. The principal variable is the expected price of offset units.
60. By comparison, the fuel cost for that flight today is around NZ\$60,500. If the cost of fuel were to rise by \$10 per barrel, the fuel cost increase alone would be NZ\$13,413. This demonstrates the potential cost of the Global Measure is likely to be significantly less than expected growth in fuel costs.
61. It is in New Zealand's interest to see a Global Measure established and successfully implemented. Benefits include support for the development of a robust global carbon market that gives both participants in the Global Measure, and New Zealand as a participant in the Paris Agreement, access to a sufficient supply of good quality carbon credits.

Design features of the Global Measure that are yet to be resolved

62. [REDACTED] a number of design features of the Measure still need to be agreed by Member States. These are the:
- criteria to define a further category of exempted countries that conduct minimal aviation activity and lack capacity to administer the measure (a 'de minimis exemption')
 - extent to which agreed three-yearly reviews of the scheme can change its fundamental design elements, or allow for decisions to be deferred on elements of Phase 2 of the scheme (e.g. mandatory participation)
 - weighting to be applied to the individual emissions component of the offset liability calculation in the final two periods of Phase 2
 - eligibility criteria for units to be used for offsetting.

The criteria for the 'de minimis' exemption

63. The definition of a fourth group of countries exempted from the scheme is likely to be based on a threshold share of global revenue/tonnes/kilometre (RTK, a standard industry measure of capacity). The higher the threshold share the greater the level of exempted emissions growth with a corresponding reduction in the environmental impact of the Global Measure.
64. Countries' positions on this share range from 0.1 percent (the European Union) to 0.65 percent (Africa). A convergence around the 0.5% level seems likely. Coverage of growth in emissions corresponding to 95 percent of global RTK would represent a comparable outcome to the coverage of the Paris Agreement and would not exempt any major aviation states. Therefore, exemptions around this level represent an acceptable outcome for New Zealand.

Reviews of the scheme

65. Unease about the implications of joining the scheme, in combination with residual resistance to taking on any potential impediments to future economic growth, has seen a number of developing countries propose that Phase I should run its course then the ICAO Council can conduct a review to decide what comes next. These arguments have been soundly rejected by a broad range of countries and industry, as antithetical to the certainty the sector needs to invest in the research and technologies that will enable emissions to reduce.
66. Given the proposed measure now embodies numerous concessions already made to accommodate developing countries concerns, it is important to preserve the delicate balance of interests achieved. Therefore, New Zealand should seek to ensure the cohesion of the scheme by working with other countries to ensure the details of Phase 2 remain part of the Global Measure agreed this year.

Calculating liability

67. The proposed Global Measure will transition over the final two periods of Phase 2 from a calculation methodology centred on growth in sectoral emissions to one that takes greater account of an operator's individual emissions growth for the relevant year.
68. Recognising individual emissions levels rewards individual airlines performance in reducing CO₂, which is important to developed countries, but is seen to disadvantage high growth operators. This is why many developing countries prefer to apply sectoral data.
69. The outstanding question is the relative weighting for the sectoral and individual components. The United States and China have agreed the individual component should have a weighting of "at least 20 percent" in the second period of Phase 2, and "at least 70 percent in the third period of Phase 2." Except for the group of developing countries that wish to defer decisions on Phase 2, there is general acceptance of these levels.
70. If there is any pressure to define these levels with greater precision, [REDACTED]
[REDACTED]
[REDACTED]

Eligibility of units for offsetting

- 71. Decisions about eligibility criteria for units to be used by operators for offsetting will be made subsequent to adoption of the Resolution. However, it seems likely that the Resolution will be used to signal the automatic eligibility of units generated under UNFCCC mechanisms.
- 72. The projected demand for units by potential participants in the ICAO scheme has the potential to serve as a significant stimulus for global supply. Decisions about standards of environmental integrity by ICAO have potential precedent effect for the UNFCCC markets negotiations. New Zealand should encourage ICAO outcomes that maximise post-2020 supply of units and align environmental integrity standards (including to prevent double counting) applicable to the Global Measure and to the use of markets to achieve nationally determined contributions under the Paris Agreement.

New Zealand Participation

- 73. As a developed country, New Zealand is expected to volunteer to participate in the Measure from 2021. Almost all developed countries and most major aviation developing countries have already signalled they will do so.
- 74. A previous iteration of the proposed measure used an RTK metric to prescribe the timing of countries' participation in the Global Measure. This iteration, which is no longer a live option, placed New Zealand in Phase 2. [REDACTED]
[REDACTED]
[REDACTED]
- 75. The Ministry of Foreign Affairs and Trade has advised that committing to opting into the Global Measure early would demonstrate our support and commitment to the Paris Agreement and enhance our negotiating influence inside the UNFCCC on future forestry rules. It would support the leadership role New Zealand is taking on international carbon markets, including our position as a demandeur on supply.
- 76. Given developed countries' shared interest in safeguarding the Paris Agreement's landing on differentiation between developed and developing countries, [REDACTED]
[REDACTED] Such a decision could create cover for reduced developing country participation, or lead to increased developing countries' support for China's push to formalise differentiation between developed and developing countries.
- 77. [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
- 78. Volunteering for Phase I of the Global Measure will increase the cost of participation for New Zealand compared to a Phase 2 counterfactual. However, given the significant portion of flights to and from New Zealand serviced by aircraft registered to other states that will join Phase I, we expect that the cost increment of participating ourselves is relatively small.

79. The application of the non-discrimination principle in respect of non-participating states that are not exempt countries, has not been discussed. However, we have no reason to expect that other ICAO members would have any interest in shielding any developed country that failed to volunteer for Phase I from any indirect impacts of the Global Measure.
80. When and how Member States communicate their commitment to participate in Phase I has yet to be decided. It is possible that the ICAO Council will issue an invitation to volunteer at the September Assembly. It is desirable that a decision about New Zealand's participation is communicated ahead of the Assembly [REDACTED]
[REDACTED]
[REDACTED]

Stakeholder Views

81. The Ministry of Transport has consulted aviation and tourism sector stakeholders about the Global Measure.
82. Air New Zealand recognises that business must play a key role in addressing global sustainability challenges by enabling economic development and social and environmental progress. The company recognises 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. At the same time, it considers the aviation industry has a responsibility to address carbon emissions given the impacts those emissions have on global climate change.
83. Air New Zealand (and the airline industry via its representative body (International Air Transport Association)) supports development of a Global Measure at the ICAO Assembly and stresses the importance of such a global agreement being reached in 2016 in order to ensure that all airlines are taking rigorous and meaningful action to reduce emissions. It notes that it is important for the industry to demonstrate real and substantial progress in responding to climate change and that an international agreement is reached at the Assembly, so that the Global Measure can be implemented from 2020 as intended.
84. It is also imperative for Air New Zealand that it is not commercially disadvantaged compared to other competitors, otherwise carbon emissions will simply be exported to other airlines and carbon leakage will occur.
85. Air New Zealand emphasises that a future Global Measure must sit alongside the full basket of measures at ICAO, these include technology-based and operational measures. Tourism Industry Aotearoa was pragmatic about the Global Measure and acknowledged that there will be costs associated with it.
86. The Customs Brokers and Freight Forwarders Federation of NZ Inc (CBAFF) sees that the effect of the Global Measure on its industry will be the flow forward to exports and backwards to imports.
87. The Ministry of Transport will continue to engage with the sector as further details of the design of the Measure are known, to enable the sector to better understand the impact of the Measure. Also, for the sector and the government to understand better the cumulative impact that different charges and levies have on international travel.

Trade-offs for voluntarily participating in the Global Measure

88. Table 1 below sets out the potential trade-offs that New Zealand must consider in determining whether to participate voluntarily in Phase I of the Global Measure from 2021. The advantages of participation in Phase I of the scheme accrue only if we participate from the outset. Any delay in New Zealand’s participation will nullify the majority of these benefits.

Table 1: Advantages and disadvantages of New Zealand joining Phase 1 or Phase 2

	Pilot/ Phase 1 (from 2021)	Phase 2 (from 2027)
Advantages of the Phase	<ul style="list-style-type: none"> • Supports successful conclusion of negotiations on the Global Measure • Consistency with New Zealand’s commitment to achieve the goals of the Paris Agreement • Supports New Zealand’s credibility in the development of the global carbon market and securing sources of supply • Alignment with ‘clean green’ branding of New Zealand export and tourism sectors • Aligns New Zealand with like-minded developed states who join this phase • Ensures New Zealand is not isolated in ICAO negotiations and remains able to engage effectively in negotiation of design issues, including those critical to the Paris Agreement on climate change • Avoids possible risks to other Government foreign policy and trade priorities arising from defying clear expectations of relevant partner countries • Gives New Zealand access to a credible global carbon market 	<ul style="list-style-type: none"> • Costs of the Global Measure for New Zealand delayed by six years • Aligns with the current ICAO President’s proposal for New Zealand (note President’s proposal may change) • Six other developed states are currently shown as being in Part 2 (this could change as ICAO’s expectation is that developed states participate in Phase 1) • [REDACTED]
Disadvantages of the Phase	<ul style="list-style-type: none"> • Costs and impacts of the Global Measure start from 2021 • Air New Zealand would have to pay a share of growth in aviation emissions earlier • Airlines in the scheme will be applying the costs of the Global Measure to routes to New Zealand • Air New Zealand would face a perceived or real disadvantage against any competing airline that does not enter until Phase 2. • [REDACTED] • [REDACTED] • [REDACTED] 	<ul style="list-style-type: none"> • Most developed states will be participating in the Global Measure – their airlines will be applying the costs of the Global Measure to routes to New Zealand • Delays access to a credible global carbon market • Does not support New Zealand’s reputational status in line with other international climate change fora • Delays access to a credible global carbon market

How will the ICAO Resolution apply to New Zealand?

89. The Resolution for a Global Measure for international aviation will be considered for adoption at the ICAO Assembly in Montreal, Canada from 27 September to 7 October

2016. We anticipate adoption of the Resolution by ICAO issuing an International Standard. An ICAO International Standard is binding on New Zealand, unless New Zealand lodges a difference (i.e. application of a different standard in New Zealand) in accordance with Article 38 of the Convention on International Civil Aviation.

90. In light of our significant experience with offsetting greenhouse gas emissions, we could expect to face questions from other Member States if New Zealand was to lodge a difference in respect of the Global Measure.
91. The ICAO Council will develop standards and recommended practices for the monitoring, reporting and verification elements of the Global Measure by June 2017. New Zealand would need to consider how to implement these standards and recommended practices. This is usually done as an amendment to the Civil Aviation Rules and the Civil Aviation (Offences) Regulations 2006, but the Global Measure may require change to primary legislation.

Decisions sought for ICAO

92. I propose Cabinet agrees that the New Zealand delegation should support adoption of the Global Measure Resolution at the 39th ICAO Assembly provided its final design is substantially similar to the Proposed Measure. In the event that material changes are made to the Measure before adoption that are not covered by the negotiation mandate, the delegation will seek instructions from the Minister of Transport, in consultation with relevant portfolio ministers.
93. I further propose that Cabinet agrees that New Zealand will indicate it will opt into Phase 1 of the scheme, commencing in 2021, provided developed countries and the majority of major aviation states agree to participate in Phase 1.
94. I also propose that Cabinet agrees that the negotiation mandate for ICAO negotiations is based on the principles set out in paragraph 34 of this paper. This mandate includes the direction to:
 - support ICAO remaining the lead agency for international aviation emissions
 - resist developments in ICAO that undermine the Paris Agreement on climate change
 - support environmentally effective outcomes to decisions about exemption criteria and the scope of review of the mechanism
 - seek to ensure decisions about eligibility of units used for offsetting are consistent with New Zealand's interests in the development of the global carbon market.

Developments in the IMO to reduce greenhouse gas emissions from international shipping

95. The IMO's progress on direct regulation of greenhouse gas emissions from the international maritime sector is not as advanced as in ICAO. However, measures for energy efficiency have been agreed and these are expected to have emission reduction benefits. Details of recent IMO measures are set out in Appendix 3.

96. New Zealand participates in these discussions as a non-party to the relevant international treaty – MARPOL Annex VI: Prevention of Air Pollution from Ships (Annex VI).
97. IMO regulation of greenhouse gases would have a direct impact on New Zealand's international trade despite our non-Party status to Annex VI. This is because actions taken by other countries to discharge their obligations under the Annex affect New Zealand flagged vessels in their ports, and to Party flagged vessels that carry goods to and from New Zealand.
98. Resistance to discussion of specific greenhouse gas management measures at the IMO by some developing countries has proved fairly intractable. Most countries share an interest in safeguarding the potential for future growth of international maritime transport, including to support climate change mitigation efforts (by facilitating production and export of goods by emissions efficient countries, and by displacing higher emission transport alternatives). This reality makes it unlikely that the IMO will agree on an equivalent to the ICAO measure in the foreseeable future.
99. New Zealand should encourage the IMO to take steps to ensure the maritime sector supports the goals of the Paris Agreement. However, we should remain flexible, and realistic, about the form that support might take.

New Zealand and MARPOL VI

100. While we engage on Annex VI matters at the IMO, our ability to influence decisions on it is affected by our non-party status. This is mitigated because the IMO makes decisions on a consensus basis and avoids putting matters to the vote. New Zealand progresses its interests by working with like-minded States, whether they are party or non-party to the international treaty concerned. Further information on Annex VI and New Zealand's status is set out in Appendix 4.
101. However, the new focus on climate change issues gives significant impetus to proactive engagement to defend our interests in an effective global response.
102. The Ministry of Transport will lead work to develop advice on whether New Zealand should accede to Annex VI. The timing for this is yet to be determined.

Decisions sought for IMO

103. I propose that Cabinet agrees that New Zealand continues to engage actively, but flexibly and realistically, to encourage IMO action on climate change issues while protecting and promoting our economic and maritime interests.

Consultation

104. The Ministry of Transport (the Ministry) has consulted with the Ministries of Foreign Affairs and Trade, Primary Industries, Environment, and Business, Innovation and Employment (Tourism), Maritime New Zealand, and the Treasury. The Department of Prime Minister and Cabinet has been informed.
105. The Ministry has consulted with Air New Zealand, Tourism Industry Aotearoa and the Customs Brokers and Freight Forwarders Federation of New Zealand Inc, on the ICAO

Global Measure proposal. The Ministry has not consulted individual sectors that use New Zealand airlines for international airfreight services.

106. The Chamber of Commerce and the New Zealand Shippers Council have been updated on IMO progress to address emissions from international shipping.

Financial implications

Costs for passengers

107. The Global Measure will require any growth in emissions beyond 2020 to be offset. The cost to each airline will depend on its growth, and on final design decisions about the methodology for quantifying offsetting liability as discussed above.
108. As an example, accounting for a 10 percent increase in Air New Zealand's emissions would be approximately NZ\$12 million. If this cost were spread across all passengers, the additional cost would be approximately NZ\$2 per passenger on all seats. This is based on a NZ\$50 carbon price⁴.
109. Officials estimate that Air New Zealand has approximately 45 percent of the international travel market into/out of New Zealand. It is a commercial decision for Air New Zealand and other airlines as to whether they absorb the additional cost or pass it onto their customers. For example, airlines could choose to impose a standard additional charge per passenger, or the cost per passenger could vary depending on distance travelled (as longer-distance flights generate greater emissions).

Costs for airfreight

110. For the year ended 30 June 2015, cargo revenue represented 7 percent of Air New Zealand's combined passenger and cargo revenue. Airfreight is a relatively small part of Air New Zealand's operations.
111. The impact on airfreight will depend on how Air New Zealand chooses to pass on the potential cost of offsets (assuming that it does choose to pass on the cost to its customers). It may choose to pass on 7 percent of the cost, or a smaller or larger proportion of the total cost. Because of the nature of airfreighted items, exporters typically have no alternative, as their products need to reach their final destination in a timely manner. Therefore, we assume that any extra cost charged by Air New Zealand, up to a certain point, would not have a significant impact.
112. Similarly, for non-New Zealand airlines, the cost of the Global Measure on imports that are air freighted is unknown and will be dependent on how operators assign the costs of the Global Measure to their business activities.

Implementation costs

113. There will be costs associated with the development of regulations to implement the Global Measure. I anticipate that these will be absorbed into baseline spending.

⁴ This is based on the Ministry's calculation of Air New Zealand's baseline carbon emissions (for 2016) based on its routes and passenger numbers.

114. Further, there will be costs associated with the monitoring, reporting and verification requirements of the Global Measure. However, these costs are not quantifiable now because the details of the requirements are still to be developed.

Human rights, gender implications and disability perspective

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

Legislative implications

116. There are no legislative implications for this paper.

Regulatory Impact Analysis

117. A Regulatory Impact Analysis of the draft Resolution for a global market based measure has been completed and has been assessed as partially meeting requirements.

Publicity

118. I intend to release a media statement, following Cabinet's consideration of this paper, to indicate New Zealand's intention to participate in the Global Measure from 2021.
119. The Ministry of Transport may need to engage informally with key stakeholders on potential revisions to the ICAO Global Measure Resolution text arising from discussions among States before the Assembly.

Recommendations

120. The Minister of Transport recommends that the Committee:
1. **note** that the International Civil Aviation Organization (ICAO) and International Maritime Organization (IMO) are the fora responsible for regulating CO₂ emissions from international aviation and maritime, respectively
 2. **note** that in light of momentum from the Paris Agreement, it is critical that ICAO and IMO make progress in managing emissions in their respective sectors to maintain their authority to regulate this aspect of their sectors
 3. **agree** that New Zealand should continue to support ICAO and IMO as the lead organisations for deciding and implementing emissions reduction measures, and for determining any emissions reduction target for their respective sectors (EGI (14) 184 refers)

General principles for ICAO and IMO engagement in climate change negotiations

4. **agree** that the general principles for New Zealand's engagement in climate change negotiations agreed by Cabinet, (EGI-15-MIN-0128 refers) as modified below, should set the guiding parameters for New Zealand's engagement in ICAO and the IMO. New Zealand should seek to ensure measures agreed by these bodies are:

- i. Environmentally effective – consistent with the goal of transitioning to a low-emissions global economy so as to keep the increase in the global average temperature to below 2 degrees Celsius above pre-industrial levels
 - ii. Durable – capable of attracting agreement, responding dynamically to evolving circumstances in the sector, and improved scientific understanding of the global emissions challenge
 - iii. Transparent – actions taken must be recorded, verified and reported
 - iv. Applicable to all – measures must apply to vessels/aircraft from all countries on the same legal footing
 - v. Fair – vessels/aircraft should face similar relative costs from their actions to manage emissions
 - vi. Cost-effective – measures must facilitate cost-effective action so as to deliver global benefits at least cost
 - vii. Environmentally credible – designed to ensure double issuance, double counting and double claiming of emission reductions is avoided
 - viii. Flexible – allow emitters to determine for themselves how they achieve the obligations
 - ix. Consistent – with future updates in New Zealand's UNFCCC negotiation mandate as relevant
5. **agree** that New Zealand's negotiation and engagement on matters relating to climate change will be consistent with New Zealand's overall negotiating mandate on climate change issues and related financial measures

Decisions for ICAO

6. **note** that if ICAO adopts the Resolution for a global market based measure (Global Measure) costs will arise for both our trade and tourism industries
7. **agree** that New Zealand will support adoption of the Global Measure
8. **note** that there are potential trade-offs that New Zealand must consider in determining whether to voluntarily participate in Phase I of the Global Measure
9. **note** the cost of New Zealand's participation will depend on the level of emissions generated above the baseline amount calculated for 2018 and the final details of the methodology to calculate operator liability
10. **note** that if New Zealand is required to offset a 10 percent increase in emissions above its baseline, the estimated cost to Air New Zealand would be approximately NZ\$12 million, or NZ\$2 per passenger
11. **note** that it is not possible to determine and quantify the cost of the Global Measure:

- i. that may be passed onto consumers flying to and from New Zealand on other non-New Zealand airline operators
 - ii. to our tourism and trade sectors
 - iii. in respect of its implementation costs for monitoring, reporting and verification
12. **note** that the impact on air freight will depend on how Air New Zealand chooses to pass on the potential cost of offsets from the Global Measure
13. **note** that if New Zealand voluntarily participates in Phase I of the Global Measure it will need to communicate this commitment to the ICAO Secretariat
14. **agree** that New Zealand will voluntarily participate in Phase I of the Global Measure starting from 2021 provided other developed countries and the majority of major aviation states also agree to do so
15. **agree** that the mandate for the delegation at the ICAO meeting(s) includes:
 - i. supporting adoption of the Global Measure Resolution at the 39th ICAO Assembly provided its final design is substantially similar to the Proposed Measure
 - ii. seeking instructions from the Minister of Transport, in consultation with relevant portfolio ministers, if material changes are made to the Measure before adoption that are not covered by the negotiation mandate
 - iii. supporting an approach to participation in the Global Measure under which participation is voluntary in Phase I and mandatory in Phase 2 except for exempted states
 - iv. communicating New Zealand's intention to participate in Phase I of the Global Measure starting in 2021 by whatever communication method is agreed, provided other developed countries and the majority of major aviation states also agree to do so
 - v. resisting any efforts to prescribe developed country participation in Phase I of the Global Measure
 - vi. maximising the recognition of individual liability in Phase 2 of the Global Measure
 - vii. maximising the certainty of the fundamental settings of the Global Measure in any review process
 - viii. supporting a de minimis exemption that excludes countries with a global share of revenue/tonne/kilometres of around 0.5 percent
 - ix. encouraging ICAO outcomes that:
 - a. maximise post-2020 supply of units
 - b. prevent double counting of emission reductions

- c. align standards of environmental integrity applicable to eligible units with those applicable to use of units to achieve nationally determined contributions under the Paris Agreement
 - x. supporting the appropriate method to identify when states will participate and how they may do this
 - xi. supporting a pilot of the Global Measure provided it does not undermine the integrity of the Global Measure, or delay its implementation
16. **note** that I expect to report back to Cabinet with a future paper on the ICAO Global Measure

Decisions for IMO

17. **note** that once work under the IMO has progressed to the stage where New Zealand will need to consider binding decisions, I expect to bring a further paper to Cabinet
18. **agree** the delegation at IMO meeting(s) will seek to encourage the IMO to take steps to ensure the maritime sector supports, and does not undermine, the goals of the Paris Agreement. However, the delegation will be flexible, and realistic, about the form that support might take.

Hon Simon Bridges
Minister of Transport
Associate Minister for Climate Change Issues

Dated: _____

Appendix 1: Modeling on the Economic Effects of a Price on International Transport Emissions

1. The Ministry for Primary Industries has recently commissioned Infometrics to model the economic effects of a price on international transport emissions, using the same model as used to estimate the intended national determined contribution costs.
2. This modelling of the impact of an emissions charge indicates emissions charges applying to all emissions from transport would reduce economic activity by around 0.3 percent of real gross national disposable income (RGNDI). This is approximately an additional 25 percent cost on top of the 2030 target under the Paris Agreement. However, the sector impacts and total costs are sensitive to the assumptions around the design aspects of the carbon charge.
3. The 2016 modelling showed the impact of a charge on shipping is negligible. However, previous bunker fuel CGE⁵ modelling (which had substantively different approaches) showed the impact on RGNDI of a charge on maritime emissions is twice that of aviation in the same model. Bottom up modelling (aligning with greenhouse gas foot printing) indicates the emissions estimates in the 2016 modelling may be too low.
4. Further modelling is needed to determine the key factors that affect the costs and where we are able to influence the negotiations to reduce this.

⁵ The Economic Effects of a Price on International Transport Emissions, prepared by Infometrics for the Ministry of Transport, June 2010.

Appendix 2: New Zealand's international trade and tourism

1. International aviation is important to New Zealand's trade and tourism. International tourism expenditure for the year to June 2016 was \$10.3 billion, growing by 18 percent in the June 2016 year⁶. Tourism contributed 17.4 percent to New Zealand's total exports of goods and services in the year to March 2015. Domestic and international tourism generated a direct contribution to New Zealand's GDP of NZ\$10.6 billion, or 4.9 percent of GDP⁷.
2. There were 3.3 million overseas visitor arrivals in the June 2016 year. Some of the biggest visitor arrivals by country of residence were from China 396,000, Australia 1.37 million, and the United States 257,500⁸.
3. In the same year, New Zealand residents departed on 2.46 million overseas trips. The main destinations were Australia 1.15 million, Fiji 153,800 and the United Kingdom 113,300.
4. In terms of volume, air carries very little freight to/from overseas markets (0.3 percent of total trade volume for the year ended 30 June 2015). However, as air often carries high-value products, it represented 17 percent of the value of New Zealand's international commodity trade (imports and exports) for the year ended 30 June 2015⁹.
5. The main items exported by air are fish, vegetables, meat, fruit, dairy products, and machinery and the main export market is Australia, followed by China and Japan. The main items imported by air are machinery, electrical items, clothing, printed material, and vegetables, and the main source countries are Australia and China.
6. Airfreight volumes have increased over time: total imports and exports for the year ended 30 June 2015 were 196,688 tonnes compared with 123,078 tonnes for the year ended 30 June 1989. However, airfreight's share of total trade has fallen from 0.7percent to 0.3 percent during that time as the volume of sea freight has grown faster.
7. In the 2015 calendar year, New Zealand exported \$43.31 billion of product by sea. Ninety eight percent of exports by weight leave New Zealand by sea. In that same year, New Zealand imported \$40.16 billion of product by sea.

⁶ International Visitor Survey, Ministry of Business, Innovation and Employment.

⁷ Tourism Satellite Account: 2015. The contribution made by tourism to the New Zealand economy. Statistics New Zealand.

⁸ International Travel and Migration: June 2016, Stats NZ.

⁹ New Zealand International Air Freight. Final report submitted by Murray King & Francis Small Consultancy Ltd & Richard Paling Consulting Ltd. Revised March 2016.

Appendix 3: IMO action on energy efficiency and monitoring of fuel collection data

1. In 2011, a new Chapter to Annex VI was adopted to require application of an Energy Efficiency Design Index for new ships, or ships subject to major conversion, and a Ship Energy Efficiency Management Plan for new and existing ships from 2013 onward. Both sets of regulations apply to ships of 400 gross tonnes and above, New Zealand has 67 such vessels that are not required to comply with Ship Energy Efficiency Design Management Plan requirements because New Zealand is not a Party to Annex VI.
2. Should any of these ships visit an Annex VI State for survey or repair, as a small proportion do, they can face issues around satisfying Port State Control requirements because the Annex enables Party States to enforce its provisions on all visiting ships. If New Zealand remains a non-Party State, Port State Control issues may increase over time as more Annex VI regulations are implemented.
3. The Energy Efficiency Design Index is a non-prescriptive, performance-based mechanism that leaves the choice of technologies to use in a specific ship design to the industry. As long as the required energy efficiency level is attained, ship designers and builders are free to use the most cost-efficient solutions for the ship to comply with the regulations. These measures are designed to ensure that by 2025 all new ships built and flagged to Annex VI Parties will be 30 percent more energy efficient than those built in 2013. This would result in the vast majority of international ships meeting the requirements because most of them are bigger than 400 gross tonnes.
4. Means to reduce carbon emissions from cargo ships and to improve fuel efficiency include slow steaming, weather routing, performance monitoring and applying energy saving devices. Of these, the most important is slow steaming. IMO has calculated that for a ship capable of carrying 8,000 standard cargo containers a reduction in ship speed from 24 knots to 20 knots (16 percent) will reduce fuel consumption and CO₂ emissions by 42 percent.
5. Although slow steaming is desirable from an environmental standpoint, the perishable nature of some New Zealand exports, and commercial issues relating to speed to market, make slow steaming problematic. Although the drop in international fuel prices in recent times has reduced the use of slow steaming, the management of these conflicting environmental and economic priorities will be important for New Zealand's engagement at IMO on energy efficiency and management measures.
6. In early 2016, IMO agreed a three-step approach to improve data collection to inform future discussions on improving fuel efficiency and reducing emissions from international shipping. The three-step approach is due to be adopted by IMO in October 2016. Our ability to influence these discussions will be based on working with like-minded States and within the IMO's principle of consensus decision-making.
7. The three-step approach includes a mandatory data collection system designed to provide the basis for future policy that could potentially inform measures to further improve fuel efficiency and reduce emissions from international shipping.
8. A number of (mainly European and Pacific Island) states are currently pushing for the IMO to begin work to define a sectoral contribution to the goals of the Paris Agreements. Options include a reduction target, or a fair share of a nominal global carbon budget. Other proposed responses include emissions efficiency/intensity targets, offsetting schemes, long-term emissions strategies, or no further action at all.

Appendix 4: MARPOL Annex VI and New Zealand's status

1. MARPOL Annex VI deals with two main issues with respect to shipping emissions:
 - a. greenhouse gas emissions, and
 - b. human health and local environments (including limits of sulphur oxide and nitrogen oxide emissions).
2. New Zealand is not a Party to Annex VI, largely because, until recently, there has not been compelling evidence of air quality problems in our major ports due to emissions from ships.
3. New Zealand's weather conditions and the low volume of shipping means that local communities are not affected by soot from ships running engines in port to the degree experienced in many overseas ports.
4. In addition, we are able to enjoy many of the benefits of Annex VI, without associated regulation and compliance costs, because:
 - a. overwhelmingly, ships flagged to Annex VI States, and therefore subject to its emissions standards, carry our imports and exports
 - b. ships visiting New Zealand generally pass through the ports of Annex VI States, and are therefore required to meet Annex VI standards, and thus subject to inspections to verify their compliance with those standards.
5. The case for considering Annex VI accession is growing, because:
 - a. New Zealand's ability to influence the development of global standards at the IMO to manage air emissions would be strengthened if we were a Party. A related point is that accession would underscore our international standing as a 'good citizen' and our general commitment to the system of global cooperation and standards that we benefit from as a trading nation.
 - b. Increasing international ship traffic to New Zealand ports and greater awareness of the health impacts is strengthening the case for controlling ship emissions in ports. This could be addressed through domestic regulation (although some councils have claimed they are unable to control these discharges through their regional coastal plan), but Annex VI provides existing regulations that are internationally recognised.
6. Accession would also address situations where New Zealand domestic ships become subject to Annex VI compliance scrutiny when visiting an Annex VI State for maintenance or repair.
7. We will lead cross-agency work on the case for Annex VI accession, including costs and benefits. If this work supports the case for accession, we anticipate consulting on it in the next twelve months.