

New Zealand Productivity Commission,
PO Box 8036,
The Terrace,
Wellington 6143

Contact: Niels Meinderts Regulatory
Affairs Manager - Air NZ

Email:

Address: 185 Fanshawe Street, Auckland
1010, New Zealand

17 April 2023

For: Dr. Ganesh Nana. Chair. Chair of the New Zealand Productivity Commission

Uploaded to: <https://www.productivity.govt.nz/have-your-say/make-a-submission>

Submission on the Issues Paper for the Productivity Commission's Improving Economic Resilience Inquiry

- 1 Air New Zealand welcomes the opportunity to submit on the Issues Paper for the Productivity Commission's Improving Economic Resilience Inquiry (**the Inquiry**). Thank you also for the opportunity to meet directly and discuss Air New Zealand's key interests with regards to the Inquiry. Air New Zealand broadly supports the objectives of the Inquiry and the Government's renewed focus on exploring policy options for enhancing the resilience of the New Zealand economy to future supply chain disruption. As with our Submissions on the Ministry of Transport's National Freight and Supply Chain Strategy and the Spatial Planning and Natural and Built Environment Bills we hope this Inquiry can further deliver on a government commitment to develop a holistic freight and supply chain strategy that can direct public and private resources to agreed priority actions & investment - including an urgent focus on decarbonisation and system resilience.
- 2 The massive disruption to New Zealand's air connectivity caused by COVID-19 and the subsequent closure of the international border laid bare the key role that aviation provides in New Zealand's global supply chain connectivity and the risk to New Zealanders health and wellbeing when critical trade flows are disrupted. As the likelihood of regular supply chain disruption looks set to continue with ongoing weather, geo-political, or regulatory risk, it is vital for New Zealand's economic resilience to further build up efficient, robust, and low emission global and domestic air connectivity. As a New Zealand business our future success and economic resilience is aligned with that of Aotearoa and its people – our 11,800 staff are paid well and

distributed throughout the motu contributing directly to their local economies. Through supporting aviation connectivity, we change New Zealand's geography: by reducing the economic distance within New Zealand and to the rest of the world, we help New Zealand address its well-known challenges to becoming more productive: small scale, dispersed population, and distance from markets.

- 3 The Inquiry is therefore an opportunity to land clear national objectives, outcomes, and vision with regards to aviation along with relevant regulation, policy, and incentives to drive action and investment from both private and public interests – this will help build New Zealand's economic resilience. We hope our response to the Inquiry Questions in Annex 1 will support these outcomes by outlining some of the key risks that could impact our business and suggesting how the Government could help us best address these. Supply chain actors across New Zealand are currently fragmented and must be brought together to operate in such a way that their interests are aligned with the interests of New Zealand's supply chain system as a whole.
- 4 You will see throughout our response a clear focus on supporting New Zealand's transition to a low emissions transport system and a strong commitment for us to work with the Government on initiatives to do so given the joint goal to achieve net-zero carbon emissions in international and domestic aviation by 2050. Decarbonising aviation will primarily rely on access to scalable and affordable volumes of sustainable aviation fuel and developing the supporting infrastructure to support next generation zero emission aircraft (powered by hydrogen or electricity). Transitioning aviation to a low emissions model presents significant challenges - working in partnership with the Government and the energy sector will be critical for us to transform the sector.
- 5 Thank you for the opportunity to provide this submission and we look forward to continuing to engage with you as the Inquiry takes shape this year. If you would like to discuss any issues we have raised, we would be happy to do so.

17 April 2023
Niels Meinderts
Regulatory Affairs Manager

17 April 2023
Mat Bolland
Chief Corporate Affairs Officer

Annex 1 – Inquiry Questions

5.1 Introduction

- 5.2 Air New Zealand is Aotearoa’s largest domestic and international airline, providing both passenger and cargo transport services in and around Aotearoa and overseas destinations.
- 5.3 It currently services 20 domestic network regions, and flies to 30 international ports across Australia, the Pacific Islands, North America and Asia. In FY22, it flew more than 8 million passengers, and carried tonnes of New Zealand exports around the globe and domestically. Before the global pandemic, Air New Zealand’s passenger numbers were significantly higher – flying more than 17 million passengers in 2019.
- 5.4 As the national airline, Air New Zealand has a critical role in the social and economic success of Aotearoa with respect to domestic and international tourism and travel, and export of New Zealand’s products. Aviation connects New Zealand to the world and is vital to the basic functioning of our economy, our critical infrastructure and our health system. It is necessary for our exporters to distribute high-value goods to the rest of the world and to import the critical goods and services needed to keep our economy running. It ensures that our people can continue to connect with others at home and abroad, and it is fundamental to the ongoing success of our world-class tourism proposition. Put simply, access to local, national, and international markets is critical to the success of our regions and the country as a whole, and Air New Zealand is committed to facilitating and growing that long-term success.
- 5.5 Air New Zealand is also committed to playing its part in the global response to the climate crisis. Our central contribution to that response is the reduction of carbon emissions across our operation, with the goal of reaching net zero emissions by 2050. An interim 2030 science-based carbon reduction target is in place to guide Air New Zealand and hold us to account. As set out in further detail below, sustainable aviation fuel and next generation aircraft- powered by electricity and green hydrogen- are critical technologies for reducing our carbon emissions. Supporting the development of, and transition to, these technologies is not, however, something that Air New Zealand can accomplish alone. It will require co-ordination across multiple sectors, and will be a journey that must be shared with the Government and other stakeholders across the economy.

6 Question 1 - What supply chain disruptions and trends are you worried about?

- 6.1 The following key risks to our operation could in turn disrupt New Zealand’s global and domestic supply chains and reduce New Zealand’s economic resilience:

Aviation Infrastructure Resilience

- 6.2 We would like to draw specific attention to the vulnerability of aviation infrastructure in New Zealand, including airports and air navigation services. The vulnerability is in the lack of regulation of this critical infrastructure and its ability to withstand disruption caused by adverse weather events - for example the 27-28 January closure of Auckland Airport from flooding caused significant disruption to New Zealand’s aviation connectivity.

- 6.3 *Case study – airports.* Since New Zealand’s airports were established in the earliest days of air connectivity, they have been essential components of our national transport and trade infrastructure, enabling a vital social and economic link between New Zealand and the rest of the world. New Zealand’s three major airports are however natural monopolies, and the way in which they are regulated has allowed them to prioritise economic return for shareholders and their own commercial interests over planning for and investment in resilient critical airport infrastructure for the long-term benefit of all New Zealanders and the wider economy. Under the current settings, such decisions are not obliged to account for those national considerations, including how they might best support the effective, integrated operation of the air transport network and supply chain as a whole. A more nationally focussed, strategic approach would help realise the considerable productivity benefits associated with an efficient air network, including improved economic growth, supply chain efficiency and resilience (further explained in the need for a National Spatial Plan in our answer to Question 3).
- 6.4 *Case study – air navigation services.* The limited resilience of air navigation services to support our operations and maintain New Zealand’s critical air connectivity is a growing concern for our operation. In the period April 2022-2023 we saw the use of contingency procedures at New Plymouth, Gisborne, Palmerston North and Ohakea due to staffing constraints. This resulted in 16 days where for significant periods no aerodrome service was available.
- 6.5 As we noted during the Air Navigation System Review a modern and responsive air navigation system is critical to keeping New Zealand safe, connected, growing, resilient, and secure. Unfortunately, the current user pays system does not equip New Zealand well to deliver on this and respond to future risks and opportunities to improve resilience in air navigation services. For example, the investment cost to transition Airways from procedural control in regional centres to surveillance control would be difficult to recover under the user pays model. This is despite the fact that the transition to a surveillance service would improve efficiency, safety and resilience (and could have kept air services operational at Napier Airport during and immediately after Cyclone Gabrielle). Air New Zealand is concerned that due to the lack of direct connection within the current funding model for innovation or future resilience - most investment has been driven by commercial needs, resulting in piecemeal introduction not aligned with the national strategic interest or resilience. We have therefore advocated for a funding model in the review that provides better incentives for long term innovation/ economic resilience.
- 6.6 *Case study - Aviation Fuel Security* We note this inquiry is complimentary to MBIE’s ongoing fuel supply resilience analysis so will only briefly comment on aviation fuel security concerns. We can’t stress enough the risk to New Zealand’s economic resilience & supply chain should urgent action not be taken to improve New Zealand’s aviation fuel security – more so now with New Zealand being wholly reliant on imported jet fuel. The December 2022 contaminated fuel import resulted in fuel supplies at Auckland Airport being rationed to 75%. This had a severe impact on our business and required significant emergency management resource to limit disruption to travel and critical supply chains. Air New Zealand ‘tankering’ fuel in from offshore airports at great cost is not an effective ‘insurance policy’ for disruption to aviation fuel supply in New Zealand.
- 6.7 We note MBIE’s response is currently considering increased minimum stockholding obligations, however, we have noted a broader analysis that considers risks and potential mitigations along

the whole supply chain¹ (through a national economic resilience lens) is necessary. We are recommending MBIE commit to undertaking a deeper review that considers a broader range of both risks and mitigations:

- (a) **Risks:** The current consultation is aiming to address a hypothetical 1 in 40 year event that is so material that it would drop global crude production by 50% for a period of 6 months. This is a black swan event and it is likely in such an event that Air NZ's and other international flight carrier patterns would drop proportionally – accordingly, the cost of carrying a mitigation to this event for that period of time is unlikely to be value for money for New Zealand Aviation. We have recommended that MBIE re-scope the consultation to consider inherent risks along the entire supply chain, with a particular focus on the numerous single-point sensitivity risks that exist in NZ (e.g. the Ruakākā fuel pipeline rupture) which are much more likely to cause disruption and are much more important to develop a coherent, value driven mitigation plan.
- (b) **Mitigations:** Simply increasing storage is a very expensive way to mitigate a fuel supply chain. Resilience can also be established through alternate means like supply chain diversification, increasing throughput capacity, establishing contingency supply chain(s). We have recommended that MBIE re-scope the consultation to consider a broader range of mitigations to better qualify which represents the best value for money for New Zealand.

Cost of decarbonisation and emissions pricing

6.8 We note international environmental standards are out of scope for this Inquiry except insofar as implementation affects the resilience or efficiency of NZ supply chains – we expect disruption to the resilience and efficiency of aviation in New Zealand, and thereby global supply chains, if public and private sector efforts to decarbonise aviation are not urgently ramped up. New Zealand's domestic aviation emissions are already covered by the 2015 Paris Agreement and therefore included in New Zealand's NDCs; however, the Paris Agreement does not explicitly mention international aviation emissions - these are therefore not currently covered by the Climate Change Response (Zero Carbon) Act. The Act instead requires the Climate Change Commission (CCC) to provide written advice to the Minister for Climate Change on whether the 2050 net zero target should be amended to include emissions from international shipping and aviation - no later than 31 December 2024. A decision in favour will raise the urgency for New Zealand of decarbonising aviation.

6.9 Outside of the legislated Paris Agreement framework New Zealand nevertheless already committed to net-zero carbon emissions in international aviation by 2050 at the 2022 International Civil Aviation Organisation's (ICAO) 41st Assembly in Montreal (referred to as a Long-Term Aspirational Goal (LTAG)). Urgent action is needed to implement the LTAG and

¹ It appears compliance to the stockholding obligation will be met through additional storage at Marsden Point, this stockholding does nothing for resilience outside of the Upper North Island. With COLL (Coastal Tankers) being disbanded through the Marsden Point refinery conversion, NZ now has no capability to barge fuel around the country and so we now have 4 jet fuel supply chains that are independent of each other – Upper NI (supplied through Marsden/Wiri), Lower NI (supplied through Miramar and Seaview), Upper SI (supplied through Lyttleton) and Lower SI (supplied through Dunedin) – any resilience should therefore consider these supply chains independently.

support a transition to decarbonise aviation. As we outline in Question 2, this will require public/private collaboration and substantial upfront investment to reduce longer term transition costs. Indeed, a recent report by research groups SEO Amsterdam Economics and the Royal Netherlands Aerospace Centre estimated reaching net zero for European aviation would need “considerable additional efforts compared to business as usual” and would cost €820bn over a 32-year period from 2018 to 2050.

- 6.10 New Zealand has further commitments to limit aviation emissions under ICAO’s Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA). This requires the global aviation industry to limit aviation emissions to a baseline average of 85% of 2019 emission levels from 2024 until the end of the scheme in 2035. Any emissions growth above this baseline average necessitates payment for offsetting of these emissions. CORSIA has applied to international aviation since 1 January 2019 when all airlines were required to report their CO2 emissions on an annual basis and from 1 January 2021 international flights became subject to offsetting obligations.
- 6.11 Air New Zealand is committed to decarbonising its operation and recognises this will initially come at a premium, impacting the cost of travel as we transition. The airline is striving to reach its goal of net zero carbon emissions by 2050 by reducing actual emissions as far as possible and using credible carbon removal solutions as a last resort. We set out below in question 2 how we intend to reach our goal of net zero carbon emissions by 2050 with a focus on utilising Sustainable Aviation Fuel and Next Gen zero emission aircraft.
- 6.12 **Geopolitical/transitional risk** - International geopolitical tension has increased the uncertainties faced by our operation and will continue to be a risk to New Zealand’s global supply chain connectivity as conflicts disrupt the security of open air space and access to landing slots at aviation hubs. The EU’s recent moves to ban the use of Russian airspace for its carriers and Heathrow Airport confiscating Russian airline Aeroflot’s landing slots (without payment) are an example of this. Broader business-related risks can be expected with societal and economic shifts toward a low carbon future – these can include policy and regulatory risks, technological risks, market risks, reputational risks, and legal risks. In this respect, the emergence of mechanisms such as the European Union’s Carbon Border Adjustment Mechanism and the noted criticism surrounding New Zealand’s Free Trade Agreement with the United Kingdom and European Union with regards to the viability of trade with a distant country signals a trend towards greater regulation on imports/exports and changing customer sentiment. Such transitional risks further amplify the need to decarbonise the freight system to help protect the future viability and reputation of our exports.
- 6.13 **Supply chain vulnerability & shortages in aircraft maintenance and engineering staff.** As the global aviation industry recovers from the COVID-19 pandemic, aircraft supply chains have come under pressure, and suppliers to aerospace manufacturers face a host of uncertainties, including shortages in critical inputs. The aerospace industry relies heavily on a complex, global network of suppliers to provide the raw materials, components and sub-assemblies needed to manufacture both aircraft and the materials required to maintain the aircraft throughout its life. In addition, the aerospace industry is subject to strict regulations, which impose stringent compliance requirements on all members of the supply chain. This complexity impedes new entrants into the market with airlines needing to develop strategies to effectively manage the existing supply base.

- 6.14 And finally, the aerospace industry is subject to frequent disruptions, whether from natural disasters, political instability, or other causes. When disruptions occur the complexity of aerospace supply chains lead to heightened impacts compared to many other industries given the lack of alternative supply or the complexity of changing suppliers or supply strategies.
- 6.15 Another material aerospace supply chain complication is the difficulty in recruiting skilled labour to fill key engineering and manufacturing roles that were vacated during the COVID retrenchment. Labour shortages post COVID have been a global phenomenon and aerospace manufacturing and maintenance has not been spared its effects. Staffing shortages amongst key engineering and maintenance crew at Air New Zealand have created constraints to our network this year. Whenever maintenance is required on an aircraft (be it simple like a transit maintenance through to more complex tasks) we need to certify this work in accordance with NZ CAA regulations – this is carried out by Licensed Aircraft Maintenance Engineers (LAME). New Zealand is currently very short of LAME’s particularly in Auckland and this regularly leads to network delays until this certification activities can be completed. Ensuring the aviation sector is properly staffed with supportive immigration settings will be key to building our resilience into 2023.
- 6.16 In summary, today there are several negative pressures on both aerospace supply chains. The effects of these pressures continue to manifest for end users of the products through much longer lead times (3x), higher prices and more uncertainty as to security of supply and therefore the risk of disruption to New Zealand’s connectivity.

7 Question 2 What is your industry/community currently doing or planning to do to address supply chain concerns?

- 7.1 With the Government’s Maintaining International Air Connectivity (MIAC) Scheme finishing up at the end of March 2023 and the airline now well into its post Covid-19 recovery the focus has shifted to preparing Air New Zealand for future challenges and improving the capacity to anticipate, prepare, absorb, recover, and learn from disruptions. Below we outline the key initiatives we are focused on to address the risks outlined in Question 1.

Decarbonisation Initiatives

- 7.2 Air travel is vital to the basic functioning of the New Zealand economy. It is necessary for our exporters to distribute high value, often perishable, goods domestically and to the rest of the world and for our country to import the critical goods and services needed to keep our economy functioning including medicines & vaccines. It is also vital for regional connectivity and helps nurses, doctors, corrections staff, police, and politicians get to where they need to be to keep the economy functioning. To this end aviation, and its infrastructure, delivers a strategic public good. However, flying creates carbon emissions, and these are hard to abate, in particular for long-haul travel. Even with the full deployment of aviation decarbonisation technologies, including electric, hybrid and hydrogen powered aircraft, and Sustainable Aviation Fuel (SAF), there is no current technology mix that can enable the industry to absolutely decarbonise by 2050. Furthermore, the industry’s share of emissions will continue to increase in coming decades as other sectors decarbonise more quickly as they are easier to abate and attract more policy support. Below we outline our key decarbonisation efforts:

- 7.3 **Sustainable Aviation Fuel** - Analysis undertaken by Air New Zealand, confirms the critical role of SAF in decarbonising international aviation emissions. In the period to 2050, zero emission aircraft technologies are not expected to be able to fly long haul missions in the near future. Currently, there is no ongoing SAF supply in New Zealand, and there is a global SAF shortage – less than 1 percent of aviation fuel supplied in the world is SAF. Where it is available, it is two to five times the cost of traditional jet fuel. Accessing sufficient volumes of SAF will be a key challenge in the short term and in the period to 2050 but fundamental to the decarbonisation of New Zealand’s global supply chain.
- 7.4 Air New Zealand has four possible future avenues for sourcing SAF: (1) domestic SAF production; (2) importing SAF from international production facilities; (3) purchasing from international ports; or (4) via emerging trading platforms enabled by “book and claim” practices² for which there is currently no workable accounting framework in New Zealand. With the right policy and investment settings, domestic SAF production could be made viable, and the commercial gap with fossil fuels can be narrowed, as demonstrated in California where State and Federal policy measures have reduced the gap to under two times the price of fossil fuel.
- 7.5 Analysis carried out by the SAF Consortium (Air New Zealand, Z Energy, Scion, LanzaTech and LanzaJet) shows there is a pathway to stand up a domestic SAF industry for New Zealand to meet 50 percent of New Zealand's aviation fuel demand by 2050, supported by a domestic feedstock (raw materials including forestry slash) supply chain. Further consideration of the domestic viability of SAF production in New Zealand is currently being investigated via a partnership between Air New Zealand and the Ministry of Business, Innovation and Employment. Any domestic production of SAF would likely need to be supplemented by SAF imported from offshore and emerging global trading platforms processed by ‘book and claim’. In the absence of domestic SAF production, a secure and sustainable import supply chain for SAF will need to be established.
- 7.6 While SAF is currently the best solution to decarbonise long haul flights, it still produces a residual amount of carbon emissions (CO₂). Zero emissions aircraft technologies play an important role in reducing not just CO₂, but other types of emissions such as NOX and contrails. This technology is expected to mature and be a possibility for Air New Zealand from 2030 on shorter domestic and regional flights. From 2040, these technologies could possibly enable flights to Australia and the Pacific Islands.
- 7.7 **Mission Next Gen Aircraft** is our mission created to accelerate the development of zero emissions aircraft technologies and the infrastructure required to make these a reality for commercial aviation in New Zealand. Mission Next Gen Aircraft has two ambitious goals: 1. Fly the first commercial demonstrator flight from 2026 and 2. Begin replacing the Q300 domestic fleet with a more sustainable aircraft – likely green hydrogen or battery hybrid systems from 2030. These goals follow the [Product Requirements Document](#) (PRD) released in December

² Book & Claim is a chain-of-custody model in which the administrative record flow does not necessarily connect to the physical flow of material or product throughout the supply chain. A book and claim solution allows customers to access SAF carbon reductions without being physically connected to the supply site. The SAF supplier delivers the SAF into the supply chain at one airport location and ‘books’ the carbon reduction associated with it into a registry. Then the customer at another global location can ‘claim’ those carbon reductions by purchasing their traditional jet fuel along with the benefit of the lifecycle carbon reductions that have been registered in that registry. This can help reduce unnecessary emissions from transporting SAF to a location.

2021, which saw more than 30 aircraft developers respond with ideas and insights to guide the technology development.

- 7.8 What became clear from the PRD is the technology isn't advanced enough for us to make a decision yet around what aircraft we will use to begin to renew our retiring Q300 fleet come 2030. The PRD process emphasised that to accelerate the advancement of new aircraft technology, airlines have a significant role to play and need to approach relationships with aircraft suppliers and new startups in a more collaborative open way. It also highlighted how perfectly suited our network and New Zealand are to adopt zero emissions aircraft due to the short-range routes and electricity network being largely built on renewable energy further reducing any emissions footprint.
- 7.9 The next three years will be focused on supporting the building, testing, and certifying of aircraft and associated infrastructure. The learnings we will take from flying an aircraft with next generation propulsion technology from 2026 will pave the way for our long-term green hydrogen and battery hybrid partners to deliver an aircraft that can replace our Q300 domestic fleet. The key challenge will be the need to work with the Government, airports, and energy providers to make sure the on the ground supporting infrastructure is in place to support any Next Gen Aircraft - which will require significant amounts of renewable energy.
- 7.10 **Supporting Tourism Recovery** - Tourism recovery is key to balancing New Zealand's current account deficit and building New Zealand's economic resilience through strengthening supply chains. Despite New Zealand's small size and remote geographical location presenting a challenge in accessing reliable international transport services there is a clear link between New Zealand's tourism market and the economic resilience of international airfreight capacity (as per the Table below extracted from David Skilling's analysis). In times of buoyant tourism, the number of air carriers operating internationally into New Zealand increases. This in turn increases the breadth of market access for exporters (and importers), improves access to capacity, and reduces the total cost of market access as air freight costs for exporters (and importers) are typically driven on a supply demand basis, i.e. increasing the market supply of capacity typically reduces the overall cost to shippers (noting c. 80% of New Zealand's export airfreight is ordinarily carried in the belly of passenger aircraft). Given this alignment, increasing and securing New Zealand's global connectivity for passenger travel or attractiveness as a tourism destination is key to improving New Zealand's supply chain efficiency, cost, and resilience. OECD studies flag the link between a country's global connectivity to its productivity with better connectivity improving economic growth, supply chain efficiency, and resilience.

New Zealand's air freight capacity has been heavily supported by inbound tourism, which has grown particularly strongly in the decade prior to Covid



8 Question 3 How can the government help to enhance the resilience of your industry/community to supply chain disruptions?

- 8.1 We support David Skilling's assertions that for policymakers, a measure of anticipatory positioning for the structural changes that New Zealand will face over the coming years is important; structural changes to the geopolitical or logistical context require deliberate responses in advance. What Covid-19 proved is that responding to a shock (such as a closure of the border) after the event is suboptimal. The Government will need to play a key role to enhance the resilience of aviation in New Zealand and reduce the likelihood of future supply chain disruption and/or minimise the impact when it does occur.
- 8.2 Given New Zealand's particular supply chain exposures, the deliberate policy actions being taken in other advanced economies to respond to global supply chain risks should be taken seriously (e.g. the Inflation Reduction Act includes \$297 million for the Sustainable Aviation Fuel and Low-Emissions Aviation Technology Grant Program and further tax credits to help production get established). Government should focus on policy options to reduce exposure to supply chain disruption risk for essential/strategically vital goods many of which are air freighted (e.g. pharmaceuticals), physical and digital connectivity initiatives (e.g. customs digitising paper based air cargo documentation), development of strategic partnerships/international partnerships (e.g. collaboration with the Australian Government or Defence Force on establishing regional SAF production), and so on.
- 8.3 The Government should apply a supply chain resilience perspective to strategic policy decisions such as the speed of electrifying the economy (renewable energy, green hydrogen, airport pricing/resilience, and fuel infrastructure). To strengthen the resilience of outbound supply chains, policy can support a weightless or high value export economy more able to withstand an increase in supply chain costs and encourage outward direct investment by New Zealand firms (e.g. NZTE focus areas).

- 8.4 **Decarbonisation** Government will play a key role enabling decarbonisation in the sector: aviation is difficult to decarbonise and requires collaboration across the whole economy, including the energy sector, airports, aviation, exporters, tourism, and primary industries. The private sector will not be able to decarbonise the air freight sector alone - new policies, regulations, R&D funding, and investment are needed. Industry and government must work closely together to get to net zero by 2050 while maintaining New Zealand's international and domestic connectivity - a system-wide 30-year approach with accompanying road map will be critical.
- 8.5 More specific direction is required by Government in relation to the planning and delivery of infrastructure needed to support the development and delivery of SAF and next generation aircraft powered by electricity and green hydrogen. New Zealand's largely renewable electricity grid also presents opportunities for scalable green hydrogen production. However, the feasibility of next generation aircraft will rely on a scaled electricity system, an improved energy distribution system and airport infrastructure capable of supporting new energy systems. This cannot be done by Air New Zealand alone, or by regions in isolation- it will require cross-sectoral planning and collaboration. The importance of these technologies in New Zealand's wider climate response was further endorsed by the Government through its signing of the COP 26 Declaration: International Aviation Climate Ambition Coalition, where it pledged New Zealand's support to the development of these technologies, alongside Ministerial support for an aviation specific decarbonisation plan.
- 8.6 As set out above, Air New Zealand is committed to playing its part in the global response to this crisis. In addition to investigating domestic production of SAF, Air New Zealand is currently working to import SAF, and collaborating with parties across the global aviation sector to address the issues of cost and supply.
- 8.7 Put simply, having access to commercially viable SAF and the infrastructure and energy required to deploy next generation aircraft technologies will be vital for achieving our climate commitments - and to support low carbon tourism and export industries. The Government can play a role in supporting these initiatives by providing streamlined pathways for the consenting and approval of infrastructure, and by facilitating cohesive, national and regional planning of the infrastructure and natural resources that will be required across Aotearoa to decarbonise the national, integrated aviation network. Directing decision-makers at a national and regional level to consider and provide for that infrastructure in strategic locations through both the Natural and Built Environment Bill and the Spatial Planning Bill (see also para 8.9 on need for National Spatial Plan) will help streamline their delivery and accelerate New Zealand's transition to a low-emissions aviation industry.
- 8.8 The Ministry of Transport's Decarbonising Transport Action Plan under Action 3.3 should further develop and set specific targets for decarbonising domestic aviation in line with 2050 targets, and look at the implementation of a sustainable aviation fuel mandate for international flights to help set a level playing field and help provide the right market sentiment for investors to invest in domestic SAF production. Using the MoT led public private body Sustainable Aviation Aotearoa appropriately to consider the following in 2023 will be key: (1) accelerating access to affordable and suitable volumes of SAF from New Zealand ports; (2) making zero emissions aircraft technologies a reality in New Zealand, including an enabling infrastructure and regulatory environment; (3) unlocking operational efficiency gains in the air and on the

ground and 4) setting New Zealand's ICAO State Action Plan to reduce aviation emissions. Ensuring initiatives under the Action Plan get the necessary funding and political support will be further key to advancing aviation decarbonisation efforts in New Zealand.

- 8.9 **Airport Infrastructure Case study – National Spatial Plan** The efficient movement of freight into, around, and out of Aotearoa is critical to our economy and our international competitiveness. More expedient travel times enable markets to become more integrated (both domestically and overseas), increasing supply chain efficiency and resilience, and lowering prices for consumers. Te Waihanga has identified that by 2052, the volume of freight moved around New Zealand is expected to increase by almost 40% (from approximately 280 million tonnes in 2017/18 to nearly 400 million tonnes by 2052/53). That presents a significant opportunity to enhance New Zealand's productivity and economic prosperity. A strategic, nationally co-ordinated approach to planning for, and investing in, our supply chain is required if we are to realise that opportunity. That work has begun through the proposed National Freight and Supply Strategy, but it must be supported by a national (as opposed to regional) spatial plan which identifies the location and timing of infrastructure needed to streamline the supply chain system.
- 8.10 There will need to be many facets of New Zealand's response to these challenges, some of which will be more appropriately planned for, and delivered, at a local or regional level. However, Air New Zealand considers that a national spatial plan which sets strategic directions around the "where and how" of our most nationally significant land uses over a 30-year time span is a vital part of that response – and one that is currently missing from the proposed resource management reform. For that reason, it requests that the Spatial Planning Bill (SP Bill) is amended to include the requirement for, and a comprehensive process for developing, a national spatial plan that applies a supply chain resilience perspective to strategic policy decisions.
- 8.11 A digital twin for that system would help ensure Government investment in that infrastructure is evidence based and prioritised accordingly – focussed on removing "choke points" and other existing vulnerabilities in the movement of goods, and identifying and supporting strategically critical infrastructure, particularly in the regions. With its national focus and existing oversight over relevant investment priorities, Air New Zealand considers that central Government is best placed to bear responsibility for developing that national spatial plan. Existing strategies and documents (such as Rautaki Hanganga o Aotearoa New Zealand Infrastructure Strategy 2022 – 2052) along with smart city technologies can and should also provide vital inputs for how and where planning and investment of nationally significant infrastructure and other land uses is prioritised and enabled.
- 8.12 Government might also note its role as it relates to the investment into infrastructure relating to airfreight operations, in instances where that infrastructure is deemed to be "fundamental to the movement of goods in freight and supply chains, but otherwise struggle to be commercially viable" this could include strategically critical airstrips in the regions for example. Facilitating New Zealand's participation in global value chains – we support a government role in improving the cross-border regulation of trade. This will be key to facilitating logistical efficiencies, reducing friction and thereby improving resilience in the supply chain. For example the digitisation of trade documentation could allow the removal of paper based trade documents that often cause delays, inaccuracies and lead to the potential for fraud.

8.13 To facilitate the digitisation of cross border trade, Government agencies will need to work together with private sector actors on a common goal to provide a trusted and legitimised platform for trade documentation aligned with similar platforms offshore. We would further support government trade officials proactively protecting the 'global supply chain' which in effect is a public good that needs to be maintained by all stakeholders. The last three years of ad hoc lockdowns, border closures, and the increasing introduction of export controls has been hugely disruptive to the global supply chain and can severely impact the operation of supply chains. Continuing to initiate multilateral initiatives such as the July 2020 APEC Declaration on Facilitating the Movement of Essential Goods and pushing back against unjustified restrictions that inhibit trade should be a key focus for trade officials.

In closing...

8.14 Given the gravity of recent disruptions to global and domestic supply chains we understand a focus on resilience will be front of mind for this Inquiry as an outcome. Air New Zealand would advocate for resilience being only one of many goals for the supply chain - where a constant balance between efficiency, speed, cost, reliability, and resilience has to play out for an economy to remain competitive and productive. Many of these factors are interdependent of each other – for example focusing on the efficiency of the supply chain in effect creates a more resilient supply chain. Enhancing digital capabilities to improve efficiency and forecasting capabilities while building better underlying infrastructure capacity/capability – will in turn also build supply chain resilience for New Zealand.

8.15 To achieve the stated agility and adaptability outlined in the ambition above – and for supply-chains to truly operate as a 'system', then we are critically dependent on the interoperability of systems and modes of transport (e.g. rail-to-air/air-to-rail). We should therefore try to write a new narrative where resiliency and efficiency can occur simultaneously, with the end goal being a supply chain that allows our economy to be resilient, competitive, and productive. This will ensure New Zealand exporters are better able to integrate themselves into global value chains and help facilitate the current Government agenda for a low emission, high value economy. Government should therefore focus on where it can really make a difference e.g. infrastructure capacity to meet growth levels, support for increasing the urgency of decarbonisation, data collection and improving or protecting against cross border regulations/risks.