

AIR NEW ZEALAND 

2023

Greenhouse Gas Inventory Report

A STAR ALLIANCE MEMBER 



This document is the annual greenhouse gas (GHG) emissions inventory report for the Air New Zealand Group for the period 1 July 2022 to 30 June 2023.

This report has been written in accordance with The Greenhouse Gas Protocol – A Corporate Accounting and Reporting Standard, Revised Edition ('Greenhouse Gas Protocol') and the Corporate Value Accounting and Reporting Standard (a supplement to the Greenhouse Gas Protocol).

Deloitte Limited has been appointed as the third-party independent assurance provider for the 2023 financial year greenhouse gas emissions inventory report. A reasonable level of assurance has been given over the scope 1 and 2 emissions and a limited level of assurance over categories in Scope 3 Corporate Value Chain Accounting and Reporting Standard.

Greenhouse Gas Inventory Report


Table 1: Greenhouse Gas Emissions Inventory*

Sources	2011 ²	2019	2020	2021	2022	2023
Scope 1 emissions (tonnes CO₂-e¹)						
Jet fuel emissions - domestic network	551,837	629,876	518,607	508,737	465,303	621,444
Jet fuel emissions – international network	2,516,069	3,286,502	2,649,922	817,078	1,040,786	2,210,836
Jet fuel emissions – ground sources ³	-	941	1,180	1,616	1,048	953
Sustainable Aviation Fuel emissions ⁴ (CH ₄ and N ₂ O)	-	-	-	-	-	108
Liquid propane gas emissions	3,610	1,579	1,437	1,227	1,413	1,295
Natural gas emissions	2,520	2,732	2,275	2,249	2,141	2,092
Diesel emissions ⁵	977	3,935	3,129	2,218	2,129	2,554
Bio-Diesel emissions	1,194	-	-	-	-	-
Petrol emissions	84	73	67	52	52	61
Coal emissions	2,246	-	-	-	-	-
Wood pellet emissions (CH ₄ and N ₂ O)	20	13	18	14	14	15
Total Scope 1 emissions	3,078,557	3,925,650	3,176,634	1,333,192	1,512,886	2,839,358
Biogenic and biomass emissions (tonnes CO₂)						
Sustainable aviation fuel emissions ⁴ (CO ₂)	-	-	-	-	-	3,082
Wood pellet emissions (CO ₂)	1,423	725	1,050	828	818	845
Total biogenic and biomass emissions	1,423	725	1,050	828	818	3,927

*Emissions are reflected as whole numbers and may therefore not add down.

Sources	2011 ²	2019	2020	2021	2022	2023
Scope 2 emissions (tonnes CO₂-e⁶)						
Electricity – location based	7,246	3,098	2,832	2,720	2,736	3,357
Total Scope 2 emissions	7,246	3,098	2,832	2,720	2,736	3,357
Total Scope 1 and 2 emissions	3,085,803	3,928,748	3,179,466	1,335,912	1,515,622	2,842,715
Scope 3 emissions (tonnes CO₂-e⁷)						
Category 1 – purchased goods and services	-	-	-	-	-	242,215
Category 2 – capital goods ⁸	-	-	-	-	-	104,303
Category 3 – fuel and energy related activities	-	-	-	-	307,335	570,462
Category 5 – waste generated in operations	-	-	-	-	-	1,729
Category 6 – business travel	-	-	-	-	-	11,916
Total measured Scope 3 emissions	-	-	-	-	307,335	930,625
Total measured emissions (tonnes CO₂-e)	3,085,803	3,928,748	3,179,466	1,335,912	1,822,957	3,773,340

Greenhouse Gas Inventory Report

Notes to Table 1

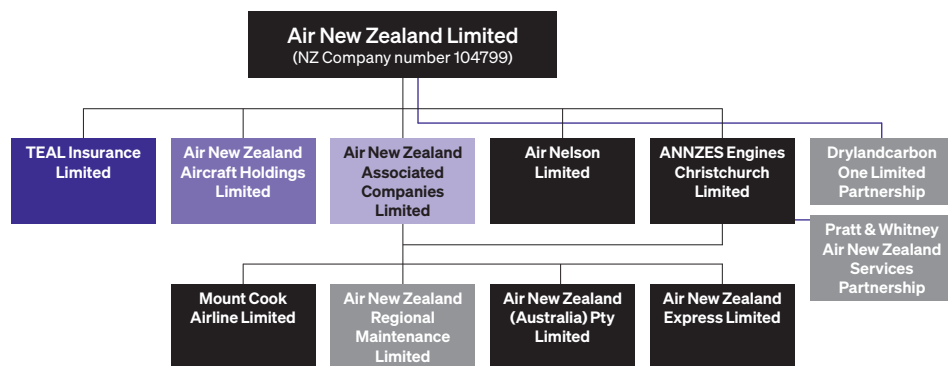
1 Scope 1 Emissions: Accounts for direct GHG emissions from sources that are operated or controlled by Air New Zealand. **2** In 2019, the New Zealand Ministry for the Environment updated greenhouse gas emissions factors for organisational reporting, including for the first time an emissions factor for aviation fuel. Air New Zealand has adopted this figure to stay consistent with national greenhouse gas inventory guidance, a process which has included updating the baseline inventory (2011). **3** Emissions from Jet Fuel - Ground sources were not measured in 2011. **4** Biogenic Emissions: Accounts for SAF emissions based on a mass balance approach. No SAF emissions factor are publicly available so the jet fuel emission factor is applied. **5** Diesel includes mobile and stationary sources. **6** Scope 2 Emissions: Accounts for GHG emissions from the generation of purchased electricity consumed by Air New Zealand. **7** Scope 3 Emissions: Accounts for indirect GHG emissions from sources that occur in the company's value chain. **8** Scope 3 Emissions: Category 2 – Capital goods: Accounts for emissions from leased and owned aircraft.



Organisational Boundary

This report is the annual greenhouse gas emissions inventory report for the Air New Zealand Group. The inventory is a complete and accurate quantification of the amount of GHG emissions that can be directly attributed to the organisation’s operations within the declared boundary and scope for the specified reporting period.

Air New Zealand’s organisational boundary encompasses the companies listed in the table below. Apart from where indicated in the exclusions (table 2) overleaf, Air New Zealand has operational control of these companies.



Nature of Subsidiary or Affiliate Operations

- Captive Insurer
- Aircraft Leasing and Financial
- Investment
- Limited Partnership
- Engineering Services
- Partnership

Operational Boundary

Air New Zealand applies an operational control approach to determine the boundary of the airline’s GHG Inventory. A company has operational control over an operation if the former or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation.

Emissions from excluded entities are described in Table 2.

Air New Zealand reports Scope 1 and 2 emissions and this year extends reporting of Scope 3 emissions from one category in 2022 to five categories in 2023 from the Corporate Value Chain Accounting and Reporting Standard (a supplement to the Greenhouse Gas Protocol). Emissions from the use of aviation jet fuel are the most significant emission source in the organisation’s value chain and are under Air New Zealand’s ability to manage and influence.

Baseline Year

The base year is 1 July 2010 to 30 June 2011. This was chosen as the base year because it was the first year that Air New Zealand had complete data for Scope 1 and 2 emissions. If Air New Zealand’s Scope 1 or 2 emissions were to change by more than 10% due to company or portfolio acquisitions or divestments, it acknowledges a base year recalculation would be appropriate.

Table 2: List of Excluded Entities

Entity	Reason for exclusion
TEAL Insurance Limited	No activities that produce GHG emissions
Air Nelson Limited	No activities that produce GHG emissions
Mount Cook Airline Limited	No activities that produce GHG emissions
Air New Zealand Aircraft Holdings limited	No activities that produce GHG emissions
Air New Zealand Associated Companies Limited	Non-operating holding company
Air New Zealand Express Limited	Non-operating holding company
Air New Zealand (Australia) Pty Limited	Non-operating holding company
ANNZES Engines Christchurch Limited	Non-operating holding company
Pratt & Whitney Air New Zealand Services Partnership	No operational control
Drylandcarbon One Limited Partnership	Limited partnership, no operational control

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Methodologies and Uncertainties

1. Emissions for Scope 1 and 2 were quantified using the calculation method based on activity data multiplied by greenhouse gas emissions factors while emissions for Scope 3 were quantified using the calculation method based on activity and spend data multiplied by greenhouse gas emissions factors. A mix of emission factors have been sourced from official 2022 Ministry for the Environment factors, the Australian National Greenhouse Gas Accounts Factors, the UK Department for Environment, Food and Rural Affairs BEIS factors, 2023 Air NZ/Toitū Envirocare Report; Review of Supplier Specific Sustainable Aviation Fuel Emission Factors, 2023 Auckland Council: Consumption emissions modelling, as detailed in Table 4.

Upstream emissions related to the production of Sustainable Aviation Fuels (SAF) are accounted in Scope 3, under category 3 for fuel and energy-related activities.

To minimise uncertainties in the accuracy of this inventory, data has been sourced wherever possible from a verifiable source as detailed in Table 3 below.

Table 3: Inclusions

Category	GHG Emissions Source	Data Source	Methodology, Data Quality, Uncertainty
Scope 1 emissions			
Jet Fuel	Fuel used to operate aircraft (domestic and international).	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Jet Fuel – Ground	Fuel used for ground engine testing.	Fuel reconciliation process.	Records of fuel purchased. High certainty data quality.
Jet Fuel – Sustainable Aviation Fuel (SAF)	Fuel used to operate aircraft (domestic and international).	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Liquid Propane Gas	Fuel used for heating and process plant.	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Natural Gas	Fuel used for heating and process plant.	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Diesel ¹	Fuel for light vehicle fleet in New Zealand	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
	Fuel for Ground Support Equipment (GSE) at five domestic airports and operational diesel vehicles in Auckland and Christchurch.	Records from supplier.	Records of fuel purchased. High certainty data quality.
Diesel ²	Fuel for Ground Support Equipment at Regional airports and Rarotonga.	Estimated for Regional New Zealand airports and Rarotonga.	Estimations based on testing duration and consumption data. Reasonable certainty data quality.
Diesel ³	Testing hangar deluge systems, emergency generators and boilers.	Estimated for Auckland and Christchurch Engineering bases.	Estimations based on testing duration and consumption data. Reasonable certainty data quality.
Bio Diesel	Fuel for ground vehicle fleet.	Records from supplier invoices.	(N/A in current reporting year however included in base year)

Notes to Table 3

1 Diesel GSE, and petrol and diesel light vehicle fleet assumptions and exclusions. Includes diesel (GSE) consumed at the five main New Zealand domestic airports - Auckland, Wellington, Christchurch, Nelson and Dunedin; diesel consumed by operational vehicle fleet at Engineering and Cargo operations at Auckland and Christchurch; (844,547 Litres). Includes diesel and petrol consumed by Air New Zealand's fleet of 131 vehicles consisting: Diesel (50); Petrol (7), Plug-in Electric (Fully) (5); Hybrid (Battery/Petrol) (22); Hybrid (Battery/Diesel) (1). (52,315 Litres petrol and diesel). **2** Estimations for diesel consumption at regional airports and Rarotonga (70,500L). 6 diesel GPUs (Ground Power Units) at regional airports and Rarotonga. Based on 4,000 litres per year (the average diesel GPU use at the five New Zealand domestic ports) the estimate for diesel use is 36,000 litres per year. 12 aircraft container loaders at regional airports and Rarotonga. Based on 1,800 litres per year (the average diesel Transporter use at Dunedin) - the estimate for diesel use is 21,600 litres. 9 Tugs at regional airports and Rarotonga. Based on 600 litres per year (the average diesel Tug use at Dunedin) - the estimate for diesel use is 4,800 litres. 2 pushback tractors at regional airports and Rarotonga. Based on 900 litres per year (the average diesel Tug use at Dunedin) - the estimate for diesel use is 2,700 litres. 3 Ambulifts at regional airports and Rarotonga. Based on 400 litres per year the estimate for diesel use is 1,200 litres. 1 toilet truck in the regional airports. Estimated diesel consumption is 1,000 litres. 5 fork hoists at regional airports and Rarotonga. Based on 300 Litres per year (the average diesel fork hoist use at Dunedin) - the estimate for diesel use is 1,500 litres. 4 belt loaders at regional airports and Rarotonga. Based on 300 litres per year (the average diesel Tug use at Dunedin) - the estimate for diesel use is 1,200 litres. 1 truck-mounted stair at a regional airport. Estimated diesel consumption is 250 litres. 7 motorised stairs at regional airports and Rarotonga. Estimated diesel consumption is 250 litres. **3** Diesel (Stationary systems) at Auckland & Christchurch Engineering estimated (7,952 Litres). Exclusion: There are 13 light vehicles offshore. There is no visibility on fuel consumption for these vehicles.

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Table 3: Inclusions (continued)

Category	GHG Emissions Source	Data Source	Methodology, Data Quality, Uncertainty
Scope 1 emissions (continued)			
Petrol ¹	Fuel for light vehicle fleet in New Zealand.	Records from supplier.	Records of fuel purchased. High certainty data quality.
Coal	Not used during relevant reporting period	No invoices held for relevant reporting period.	(N/A in current reporting year however included in base year)
Scope 2 emissions			
Electricity	Electricity used in offices and facilities in New Zealand.	Records from supplier invoices validated by energy meters.	Accurate records of electricity purchased. High certainty data quality.
Scope 3 emissions			
Category 1 – purchased goods and services	Records across twenty-nine spend categories	Records from general ledger.	Spend from Air New Zealand general ledger. High certainty data quality.
Category 2 – Capital goods	Covers engines, maintenance fixed asset additions, Corporate fixed asset additions, leased and owned aircraft	Aircraft asset register Engineering fixed asset register Corporate assets register non aircraft	Purchasing cost of aircraft. Purchased maintenance, properties and equipment. Spend on leased assets. High certainty data quality.
Category 3 – Jet fuel	Fuel used to operate aircraft (domestic and international) and ground engine testing.	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Category 3 – Liquid Propane Gas	Fuel used for heating and process plant.	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Category 3 – Natural gas	Fuel used for heating and process plant.	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.

Category	GHG Emissions Source	Data Source	Methodology, Data Quality, Uncertainty
Scope 3 emissions (continued)			
Category 3 – Diesel (Total)	Fuel used to operate ground fleet and ground support equipment in New Zealand and Rarotonga.	Combination of records from suppliers and estimates.	Combination of records of fuel purchased and estimates. Reasonable certainty data quality.
Category 3 – Petrol ¹	Fuel used to operate ground fleet.	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Category 3 – Sustainable aviation fuel	Upstream emissions related to the production of sustainable aviation fuel.	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Category 5 – Waste generated in operations	Landfill waste generated in its operations	Records from supplier waste reports	Records of waste generated by type and weight. Reasonable certainty data quality.
Category 6 – Business Travel	Spend on Crew and non-crew accommodation, transfers, taxis and non-Air New Zealand flights	Records from general ledger	Spend from the Air New Zealand general ledger. Reasonable certainty data quality.
Biogenic and biomass emissions			
Sustainable aviation fuel	Fuel used to operate aircraft (domestic and international)	Records from supplier invoices.	Records of fuel purchased. High certainty data quality.
Wood pellets	Fuel used for heating.	Records from supplier invoices.	Records of wood pellets purchased from supplier. High certainty data quality.

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Notes to Table 3

¹ Diesel GSE, and petrol and diesel light vehicle fleet assumptions and exclusions. Includes diesel (GSE) consumed at the five main New Zealand domestic airports - Auckland, Wellington, Christchurch, Nelson and Dunedin; diesel consumed by operational vehicle fleet at Engineering and Cargo operations at Auckland and Christchurch; (844,547 Litres). Includes diesel and petrol consumed by Air New Zealand's fleet of 131 vehicles consisting; Diesel (50); Petrol (7), Plug-in Electric (Fully) (51); Hybrid (Battery/Petrol) (22); Hybrid (Battery/Diesel) (1). (52,315 Litres petrol and diesel).



Table 4: Greenhouse Gas Emissions by Greenhouse Gas Type

Source	Ref	Emissions (tonnes)*1			
		CO ₂ -e	CO ₂	CH ₄	N ₂ O
Scope 1 emissions (tonnes CO₂-e)					
Jet fuel emissions – domestic network	A	621,444	600,494.5	4,225.1	16,724.4
Jet fuel emissions – international network	A	2,210,836	2,136,306.7	15,031.2	59,498.4
Jet fuel emissions – ground sources	A	953	920.8	6.5	25.6
Sustainable Aviation Fuel emissions ⁵ (CH ₄ and N ₂ O)	A	108	-	21.7	85.8
Total jet fuel emissions	A	2,833,341	2,737,722	19,284.5	76,334.2
Liquid propane gas emissions	A	1,295	1,293.7	0.5	0.6
Natural gas emissions	A	2,092	2,089.7	0.9	1.0
Diesel (mobile) emissions ¹	A	2,343	2,303.2	3.1	36.7
Diesel (mobile) emissions ²	A	190	186.7	0.2	3.0
Diesel (stationary) emissions ³	A	21	21.1	0.0	0.1
Total diesel emissions⁴	A	2,554	2,511	3.3	39.8
Petrol emissions	A	61	58.1	0.7	2.0
Wood pellet emissions (CH ₄ and N ₂ O)	A	15	-	5.7	9.0
Total Scope 1 emissions		2,839,358	2,743,675	19,296	76,387
Biogenic and biomass emissions (tonnes CO₂)					
Sustainable Aviation Fuel emissions ⁵	A	3,082	3,082	-	-
Wood pellet emissions	-	845	845	-	-

Source	Ref	Emissions (tonnes)*1			
		CO ₂ -e	CO ₂	CH ₄	N ₂ O
Scope 2 emissions (tonnes CO₂-e⁵)					
Electricity – location based	A	3,357	3,273	78	6
Total Scope 2 emissions		3,357	3,273	78	6
Total Scope 1 and 2 emissions		2,842,715	2,746,948	19,374	76,393
Scope 3 emissions (tonnes CO₂-e)					
Category 1 – Purchased goods and services	E	242,215	-	-	-
Category 2 – Capital goods	E	104,303	-	-	-
Category 3 – Fuel and energy related activities	A-D	570,462	-	-	-
Category 5 – Waste stream generated in operations	E	1,729	-	-	-
Category 6 – Business travel	E	11,916	-	-	-
Total measured Scope 3 emissions		930,625	-	-	-
Total measured emissions		3,773,340	-	-	-

Notes to Table 4

1 Actual figures from five New Zealand domestic airports and operational vehicles at Airports, Engineering and Cargo operations in Auckland and Christchurch (diesel only, GSE). **2** Estimated fuel consumption for New Zealand (diesel and petrol) and Ground Support Equipment at Queenstown and Invercargill Airports and Rarotonga. **3** Testing stationary systems at Auckland and Christchurch Engineering (diesel only). **4** Diesel total (mobile and stationary). **5** Actual figures for SAF purchased.

References to Table 4

A 2022 MfE Factors **B** 2022 BEIS WTT Factors **C** 2022 Australian National Greenhouse Accounts Factors **D** 2023 Air NZ/Toitū Envirocare Report; Review of Supplier Specific Sustainable Aviation Fuel Emission Factors **E** 2023 Auckland Council: Consumption emissions modelling.

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Table 5: List of Excluded Emissions Sources

Scope	Category	GHG Emission Source	Reason for exclusion
1	Aircraft Engine Oil	Operation of aircraft.	Difficult to obtain data.
1	Fugitive Emissions	Fugitive HFC emissions from air-conditioning systems.	Difficult to obtain data.
1	Diesel and Petrol	Owned offshore vehicles.	Difficult to obtain data.
1	Fugitive Emissions	SF6 used in electrical switchgear, and transformers as electrical insulation.	Difficult to obtain data.
2	Electricity	Used in buildings/facilities in overseas locations.	Difficult to obtain data.
3	Category 4 – Upstream transportation and distribution	Transportation and distribution in supply chain.	Assessment of emissions in this category remains in progress.
3	Category 7 – Employee commuting	Staff commute to work.	Assessment of emissions in this category remains in progress.
3	Category 8 – Upstream leased assets	Real asset leases, car fleet leases and disrupted flight accommodation.	Assessment of emissions in this category remains in progress.
3	Category 9 – Downstream transportation and distribution	Transportation and distribution in supply chain.	Assessment of emissions in this category remains in progress.
3	Category 10 – Processing of sold products	N/A	Assessment of emissions in this category remains in progress.
3	Category 11 – Use of sold products	N/A	Assessment of emissions in this category remains in progress.
3	Category 12 – End of life treatment of sold products	N/A	Assessment of emissions in this category remains in progress.
3	Category 13 – Downstream leased assets	Aircraft leased.	No aircraft leased in FY23.
3	Category 14 – Franchises	N/A	Assessment of emissions in this category remains in progress.
3	Category 15 – Investments	Not yet defined.	Assessment of emissions in this category remains in progress.

Greenhouse Gas Inventory Report

Kiri Hannifin
Chief Sustainability Officer
24 August 2023



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Independent Assurance Report on Air New Zealand Limited's Greenhouse Gas Emissions Inventory Report

To the Board of Directors of Air New Zealand Limited

Report on Greenhouse Gas Emissions Inventory Report

We have undertaken a reasonable assurance engagement in relation to Scope 1 and 2 emissions and limited assurance engagement relating to Scope 3 emissions for the Greenhouse Gas Emissions Inventory Report (the 'Inventory Report') of Air New Zealand Limited and its subsidiaries (the 'Group') for the year ended 30 June 2023, comprising the Emissions Inventory Report and explanatory notes set out on pages 1 to 8.

The Inventory Report provides information about the greenhouse gas emissions ('GHG') of the Group for the year ended 30 June 2023 and is based on historical information. This information is stated in accordance with the requirements of the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) ('the GHG Protocol').

Board of Directors' Responsibility

The Board of Directors are responsible for the preparation of the Inventory Report, in accordance with the GHG Protocol. This responsibility includes the design, implementation, and maintenance of internal control relevant to the preparation of an Inventory Report that is free from material misstatement, whether due to fraud or error.

Our Responsibility

- **Reasonable assurance for Scope 1 and 2 emissions**

Our responsibility is to express an opinion whether the Scope 1 and 2 emissions within the Inventory Report for the period 1 July 2022 to 30 June 2023 have been prepared, in all material respects in accordance with the GHG Protocol.

- **Limited assurance for Scope 3 emissions**

Our responsibility is to form a conclusion whether, based on the procedures performed, anything has come to our attention that causes us to believe that the Scope 3 emissions within the Inventory Report for the 1 July 2022 to 30 June 2023 have not been prepared, in all material respects, in accordance with the GHG Protocol.

We conducted our engagement in accordance with International Standard on Assurance Engagements (New Zealand) 3410: Assurance Engagements on Greenhouse Gas Statements ('ISAE (NZ) 3410'), issued by the New Zealand Auditing and Assurance Standards Board. That standard requires that we plan and perform this engagement to obtain reasonable and limited assurance about whether the Inventory Report is free from material misstatement.

We did not evaluate the security and controls over the electronic publication of the Inventory Report.

Reasonable Assurance

A reasonable assurance engagement undertaken in accordance with ISAE (NZ) 3410 involves performing procedures to obtain evidence about the quantification of emissions and related information in the Inventory Report. The nature, timing and extent of procedures selected depend on the assurance practitioner's judgement, including the assessment of the risks of material misstatement, whether due to fraud or error, in the Inventory Report. In making those risk assessments, we will consider internal control relevant to the Group's preparation of the Inventory Report. A reasonable assurance engagement also includes:

- Assessing the suitability in the circumstances of the Group's use of the GHG Protocol, as the basis for preparing the Inventory Report;
- Evaluating the appropriateness of quantification methods and reporting policies used, and the reasonableness of estimates made by the Group; and
- Evaluating the overall presentation of the Inventory Report.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Limited Assurance

A limited assurance engagement undertaken in accordance with ISAE (NZ) 3410 involves assessing the suitability in the circumstances of the Group's use of the GHG Protocol as the basis for the preparation of the Scope 3 elements of the Inventory Report, assessing the risks of material misstatement whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the Inventory Report. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

Our engagement will include such procedures as we consider necessary in the circumstances, including, but not limited to:

- A review of adherence to the principles and requirements outlined in the GHG Protocol, which includes a consideration of completeness and balance;
- Obtaining an understanding of the process of compiling and validating information received from data owners for inclusion in the Inventory Report;
- Review of material quantitative data, including corroborative enquiry and examination of selected supported documentation and calculations;
- Undertaking site visits to key Group operations as required;



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- Comparing the Inventory Report to the reporting requirements of the GHG Protocol; and
- Reviewing the contents of the Inventory Report against the findings of our work and, as necessary, providing recommendations for improvement.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement. Accordingly, we do not express a reasonable assurance opinion about whether the Group's inventory report has been prepared, in all material respects, in accordance with the GHG Protocol.

Inherent Limitations

Non-financial information, such as that included in the Group's Inventory Report, is subject to more inherent limitations than financial information, given both its nature and the methods used and assumptions applied in determining, calculating and sampling or estimating such information. Specifically, GHG quantification is subject to inherent uncertainty because of incomplete scientific knowledge used to determine emissions factors and the values needed to combine emissions of different gases.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of Professional and Ethical Standard 1 *International Code of Ethics for Assurance Practitioners (including International Independence Standards) (New Zealand)* issued by the New Zealand Auditing and Assurance Standards Board, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

In addition to this engagement, we have carried out assurance services relating to the audit of the Group financial statements and review of the interim Group financial statements, compliance with student fee protection rules and passenger facility charges. In addition, we provide non-assurance services to the Corporate Taxpayers Group for which Air New Zealand is a member, along with a number of other organisations. These services are compatible with those independence requirements. In addition to these engagements, principals, and employees of our firm deal with the Group on normal terms within the ordinary course of trading activities of the Group. These engagements and trading activities have not impaired our independence as auditor of the Group. Other than in the above capacities, we have no relationship with or interests in Group.

The firm applies Professional and Ethical Standard 3: *Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements*, which requires the firm to design, implement and operate a system of quality management including policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Use of Report

Our assurance report is made solely to the directors of Air New Zealand Limited in accordance with the terms of our engagement. Our work has been undertaken so that we might state to the directors those matters we have been engaged to state in this assurance report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the directors of Air New Zealand Limited for our work, for this assurance report, or for the conclusions we have reached.

Reasonable Assurance Opinion

In our opinion, the Scope 1 and Scope 2 emissions disclosed within the Inventory Report of the Group for the year ended 30 June 2023 have been prepared, in all material respects, in accordance with the requirements of the GHG Protocol.

Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Group's Scope 3 emissions disclosed within the Inventory Report for the year ended 30 June 2023 have not been prepared, in all material respects, in accordance with the requirements of the GHG Protocol.

Deloitte Limited

24 August 2023
Auckland, New Zealand

AIR NEW ZEALAND 

A STAR ALLIANCE MEMBER 