NAB's Carbon Inventory

Scope 1 Stationary combustion

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia[1]	Australia	Europe	New Zealand	UK	US
Diesel	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Diesel – Fuel tab).	• Activity data for diesel is in litres. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by facilities manager and utilities is complete.				✓		
	National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 21 September 2023, Schedule 1, Part 3.	• Activity data for diesel is in kL. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by facilities manager and utilities is complete.		✓				
Natural gas	DBEIS 2024 – UK Government conversion factors for Company Reporting, Fuels (Gross CV).	• Activity data for natural gas is in GJ.	• Data provided by landlords and utilities is complete.					✓	

[1] Asia includes operations in China, Vietnam, India, Singapore, Japan. ✓ refers to one or more than one country in Asia has been included into Group's carbon inventory.

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia[1]	Australia	Europe	New Zealand	UK	US
		GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000							
	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Gas – Fuel tab).	• Activity data for natural gas is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by facilities manager and utilities is complete. • Accruals are used for natural gas where data is incomplete for the reporting period (based on average daily consumption over the prior 6 months where possible).				✓		
	National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 21 September 2023, Schedule 1, Part 2.	• Activity data for natural gas is in GJ. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by facilities manager and utilities is complete.		✓				

Scope 1 Fugitive emissions

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Building-based refrigerants (in HVAC and refrigerators)	DBEIS 2024 – UK Government conversion factors for Company Reporting, Refrigerant & Other. Greenhouse Gas Protocol, Global Warming Potentials 5th Assessment Report.	• Leakage activity data is in kgs. Method reflects GHG Protocol worksheet titled hfc-pfc (1) - Worksheet 3: Screening Method for HFC and PFC Emissions from Refrigeration/AC Equipment: Emission Factor Based Approach. • Determine Gross HFC and PFC Emissions from Operation of Refrigeration/AC Equipment. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Installation emissions occur at manufacturer's site and are not relevant, unless maintenance personnel have recorded onsite recharge. • Disposal emissions not relevant to Asia at leased facilities. Only relevant for small number of owned property if disposal of refrigeration equipment occurs as part of refurbishment. • Default charge and leakage rates used. Actual charge volume could not be collected from labelling on equipment. • Australia only: Number of kitchen refrigerators based on property classification. Kitchen refrigerants are measured once every three years, unless there is a material shift in operations. The base year for the current assumptions is 2021.	✓	✓			✓	✓

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	DBEIS 2024 – UK Government conversion factors for Company Reporting, Refrigerant & Other. Greenhouse Gas Protocol, Global Warming Potentials 5th Assessment Report.	• Leakage activity data is in kgs. Method reflects: • Classification of units into size bands via cooling capacities - ICF International, Development of GHG Refrigeration and Air-conditioning Model, Final Report December 2011, page 23. • Operational leakage rates – HM Government, Environmental Reporting Guidelines, March 2019 page 101. • Installation leakage rates - HM Government, Environmental Reporting Guidelines, March 2019 page 100. • GHG Protocol worksheet titled hfc-pfc (1) - Worksheet 3: Screening Method for HFC and PFC Emissions from Refrigeration/AC Equipment: Emission Factor Based Approach: Determine Gross	• Installation emissions occur at manufacturer's site and are not relevant, unless maintenance personnel have recorded onsite recharge. • Disposal emissions not relevant to leased facilities in New Zealand. Only relevant for small number of owned property if disposal of refrigeration equipment occurs as part of refurbishment. • Default charge and leakage rates used where actual charge volume could not be collected from labelling on equipment.				✓		

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
		HFC and PFC Emissions from Operation of Refrigeration/AC Equipment. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000							
Vehicle air conditioning refrigerant	DBEIS 2024 – UK Government conversion factors for Company Reporting, Refrigerant & Other. Greenhouse Gas Protocol, GWP 5th Assessment Report.	• Leakage activity data is in kgs. Method reflects GHG Protocol worksheet titled hfc-pfc (1) - Worksheet 3: Screening Method for HFC and PFC Emissions from Refrigeration/AC Equipment: Emission Factor Based Approach. • Determine Gross HFC and PFC Emissions from Operation of Refrigeration/AC Equipment. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Australia: Where refrigerant gas is unknown have assumed refrigerant is R410A. • New Zealand: Where refrigerant gas is unknown have assumed refrigerant is R134A. • Installation emissions occur at manufacturer's site and are not relevant for NAB/BNZ vehicle fleet. • Disposal emissions not relevant to NAB/BNZ vehicle fleet which are leased for a three-year term on an agreed km distance and then returned to the fleet manager.		✓		✓		

Scope 1 Mobile combustion

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Fuels used for NAB Group's vehicle fleet	National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 21 September 2023, Schedule 1, Part 4.	• Activity data captured in litres of fuel. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• All fuel is purchased with fuel card provided. • All vehicles were produced post 2004. • Data provided by fleet provider is complete.		✓				
	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Diesel & petrol – Fuel tab, electricity – Purchased Energy tab, Private car default PHEV electricity consumption – Travel tab).	• Activity data captured in litres of fuel (diesel & petrol), KWh of electricity in kms travelled for PHEV allocated vehicle electricity). GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Fuel is purchased with fuel card provided and an uplift is applied for non-fuel card purchases. • All remote BEV & PHEV pool vehicle charging is sourced from the preferred supplier charging network. Remote PHEV allocated vehicle charging occurs remotely.				✓		

Scope 2 Purchased energy

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Purchased electricity	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Electricity – Purchased Energy tab). Toitū Envirocare - Confirmation statement on emissions accounting for Ecotricity supplied electricity, 23 March 2022	• Activity data for electricity and gas is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000 Scope 2 Electricity Dual Reporting – location and market based emission methods.	• Data provided by facilities manager and utilities is complete. • Accruals are used for electricity where data is incomplete for the reporting period (based on average daily consumption over the prior 6 months where possible).				✓		
	eGRID2022, Unit, Generator, Plant, State, Balancing Authority Area, eGRID Subregion, NERC Region, U.S., and Grid Gross Loss (%) Data Files (January 2024).	• Activity data for electricity is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete.						✓
	National Greenhouse and Energy Reporting (Measurement) Determination	• Activity data for electricity is in KWh.	• Data provided by facilities manager and utilities is complete.		✓				

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	2008, Compiled 21 September 2023, Schedule 1, Part 6. National Greenhouse Accounts (NGA) Factors, August 2023, Table 2a.	Location Based: GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000 Market Based: GHG Emissions (tCO_2-e) = Residual Mix Factor x Activity Data/1000	• Where invoices for electricity are yet to be received, we extrapolate data (small portion of applicable sites) based on net lettable area (NLA).						
	ADEME – Bilans GES Site, Continental France, Average, Grid Electricity 2022	• Activity data for electricity is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete.			✓			
	IEA (2023), Emission Factors, CO2KWH ELE tab.	• Activity data for electricity is in KWh. GHG Emissions (t CO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete.	✓					
	DBEIS 2024 – UK Government conversion factors for Company Reporting, Fuels (Gross CV).	• Activity data for electricity is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete.					✓	

Scope 3 Category 1: Purchase goods and services

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Office paper	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2020-2021 (2021).	• Method reflects those in the Emissions Factor Source Documentation. • Activity data captured as kg of paper purchased. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Consumption of paper obtained from stationery provider is accurate.	✓		✓		✓	✓
	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2020-2021 (2021). Paper Australia PTY LTD 2020, Climate Active Public Disclosure Statement. Carbon neutral certification – provided by recognised certification body e.g. Department of Industry, Science and Resources. Climate Active Carbon Neutral Standard.	• Method reflects those in the Emissions Factor Source Documentation. • Activity data captured as kg of paper purchased. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Consumption of paper obtained from stationery provider is accurate.		✓		✓		

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	Emission factor provided by paper supplier NXP.								
Customer statement paper	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2020-2021 (2021).	• Activity data is captured as kg of printed customer statement. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by supplier is complete.				✓		
Water	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2020-2021 (2021).	• Activity data captured in kL of water consumed. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• For unknown, data extrapolation is based on water (kL) per area (m^2) using a representative sample of measured data from sample sites.			✓			
	DBEIS 2024 – UK Government conversion factors for Company Reporting, Water supply + Water Treatment.	• Activity data captured in kL of water consumed. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete.					✓	

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2020-2021 (2021).	• Activity data captured in kL of water consumed. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlord and utilities is complete. • Emission Factor for Victoria has been applied to the entire portfolio as Victoria accounts for the majority of the water consumption across the portfolio.		✓				
	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Water Supply and Wastewater tab). DBEIS 2024 – UK Government conversion factors for Company Reporting, Water supply + Water Treatment. EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2020-2021 (2021).	• Water usage data (kL) is sourced from a mix of local council and building owner invoices. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Accruals are used where data is incomplete for the reporting period (based on average daily consumption over the prior 6 months where possible). • Data is extrapolated for those sites that do not report water usage, this is based on in sample data and attendance (FTE).	✓					

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	ADEME – Bilans GES Site, Water – without infrastructure.								
	MFE – New Zealand government Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Water Supply and Wastewater tab).	• Water usage data (kL) is sourced from a mix of local council and building owner invoices. • Harvested water (kL) data comes from BMS systems via the Property Services Team. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Accruals are used where data is incomplete for the reporting period (based on average daily consumption over the prior 6 months where possible). • Data is extrapolated for those sites that do not report water usage, this is based on in sample data and property portfolio area (m^2).				✓		
	DBEIS 2024: UK Government conversion factors for Company Reporting, Water supply + Water Treatment	• Activity data captured in kL of water consumed. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data is estimated for those sites that do not report water usage, this is based on assumption of daily water usage and attendance (FTE).						✓
External data	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and	• Activity data for electricity is in KWh.	• Data provided by facilities manager and utilities is complete.				✓	✓	✓

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
centre - electricity[2]	Methods for the 2022 Calendar Year, published May 2024 (Purchased Energy tab, 2023 electricity used) DBEIS 2024: UK Government conversion factors for Company Reporting, UK electricity eGRID2022, Unit, Generator, Plant, State, Balancing Authority Area, eGRID Subregion, NERC Region, U.S., and Grid Gross Loss (%) Data Files (January 2024)	• GHG Emissions (t CO_2-e) = Emission Factor x Activity Data/1000	• Where invoices for electricity are yet to be received, we extrapolate data (small portion of applicable sites) based on net lettable area (NLA).						
	National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 21 September 2023, Schedule 1, Part 6.	• Activity data for electricity is in KWh. • Location Based: GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000 Market Based: GHG Emissions (tCO_2-e) =	• Data provided by facilities manager and utilities is complete. • Where invoices for electricity are yet to be received, we extrapolate data (small portion of applicable sites) based on net lettable area (NLA).		✓				

[2] Emissions associated with the services provided by the property manager so this inventory has been included in category 1.

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
		Residual Mix Factor x Activity Data/1000							
Vehicle fleet - electricity	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Purchased Energy tab, 2023 electricity used)	• Activity data for electricity is in KWh. GHG Emissions (t CO_2-e) = Emission Factor x Activity Data/1000	• All remote BEV & PHEV pool vehicle charging is sourced from the preferred supplier charging network. Remote PHEV allocated vehicle charging occurs remotely.				✓		

Scope 3 Category 3: Fuel and energy-related activities

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
T&D losses & Well to tank (WTT) - diesel, natural gas, electricity	Diesel – National Greenhouse Accounts (NGA) Factors, August 2023, Table 8. Electricity – National Greenhouse Accounts (NGA) Factors, August 2023, Table 1. Electricity – National Greenhouse Accounts (NGA) Factors, August 2023, Table 2a. Gas – National Greenhouse Accounts (NGA) Factors, August 2023, Table 6.	• Activity data for electricity is in KWh. • Activity data for diesel is in GJ. • Activity data for gas is in GJ. Location Based: GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000 Market Based: GHG Emissions (tCO_2-e) = Residual Mix Factor x Activity Data/1000	• Data provided by facilities manager and utilities is complete.		✓				
	eGRID2022, Unit, Generator, Plant, State, Balancing Authority Area, eGRID Subregion, NERC Region, U.S., and Grid Gross Loss (%) Data Files (January 2024).	• Activity data for electricity is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete.						✓
	IEA (2023), Emission Factors, T&D losses adjustment tab.	• Activity data for electricity is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by electricity provider or landlords is complete.	✓					

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	ADEME – Bilans GES Site, Continental France, Average, Grid Electricity 2022	• Activity data for electricity is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete.			✓			
	DBEIS 2024 – UK Government conversion factors for Company Reporting, Transmission & Distribution.	• Activity data for electricity is in KWh. • Activity data for gas is in GJ. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete.					✓	
	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (T&D Losses tab). Toitū Envirocare - Confirmation statement on emissions accounting for Ecotricity supplied electricity, 23 March 2022.	• Activity data for electricity is in KWh. • Activity data for diesel is in GJ. • Activity data for gas is in GJ. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000 Scope 3 Electricity T&D Losses Dual Reporting – location and market based emission methods.	• Data provided by facilities manager and utilities is complete.				✓		

Scope 3 Category 4: Upstream transportation and distribution

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Courier, freight and postage	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Freight transport tab). NZ Post Emissions Statement – Kg CO2e Average per item p.a. 2023-2024.	• Activity data units: couriers – tonne.km, cash in transit – litres, postage – number of items. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by suppliers is complete. • Cash-in transit activity is a shared service and thus activity data is estimated based on revenue share of supplier fuel consumed. • Average per item postage emission factor is reflective of BNZ postage profile. • JB Were regards freight and postage to be any postage of goods > 2 kg.				✓		
	DBEIS 2024 - UK Government conversion factors for Company Reporting, Freighting Goods tab, HGV (all diesel), Rigid (>7.5 tonnes-17 tonnes), 100% Laden. National Greenhouse Accounts (NGA) Factors, August 2023, Table 8.	• Activity data units: cash in transit – litres, postage and courier – emissions are calculated by suppliers. GHG Emissions (tCO2-e) = Emission Factor x Activity Data/1000	• Data and emission factors provided by suppliers is complete.		✓				

Scope 3 Category 5: Waste generated in operations

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Waste to incineration	DBEIS 2024 – UK Government conversion factors for Company Reporting, Waste disposal, Commercial and Industrial Waste – Combustion.	• Activity data captured in kg of waste sent to incineration. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Extrapolation based on of waste tonnage per area (m^2).					✓	
Waste to landfill	ADEME – Bilans GES Site, Waste treatment, household and assimilated, Residual household waste, Landfill, Impacts.	• Activity data captured in kg of waste sent to landfill. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• For unknown, data extrapolation is based on waste tonnage per area (m^2) using a representative sample of measured data from sample sites.			✓			
	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Waste tab). National Greenhouse Accounts (NGA) Factors,	• Activity data captured in tonnes of waste sent to landfill. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by service provider is complete.				✓		✓

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	February 2024, Table 16, Waste emission factors for total waste disposed to landfill by broad waste stream category.								
	National Greenhouse Accounts (NGA) Factors, February 2024, Table 16, Waste emission factors for total waste disposed to landfill by broad waste stream category.	• Activity data captured in kg of waste sent to landfill. GHG Emissions (tCO_2-e) = Emissions Factor x Activity data/1000	• For known data assume data provided by waste services provider is complete. This data can include weighed data, the count of bins, bin size and waste stream. • For unknown data extrapolation is based on waste tonnage per area (m^2) using a representative sample of measured data from sample sites.		✓				
Waste to landfill and incineration	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Waste tab).	• Activity data captured in tonnes of waste sent to landfill or incineration. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by service provider is complete. • Data is extrapolated for those sites that do not report waste, this is based on in sample data and attendance (FTE).	✓					

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	National Greenhouse Accounts (NGA) Factors, February 2024, Table 16, Waste emission factors for total waste disposed to landfill by broad waste stream category. DBEIS 2024 – UK Government conversion factors for Company Reporting, Waste disposal, Commercial and Industrial Waste – combustion.								
Materials recycled/diverted from landfill	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Waste tab).	• Activity data captured in kgs of waste sent to landfill, composted or recycled. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• For sites where landfill waste data is not available, extrapolation of waste to landfill has been made based on data for prior periods. • All waste to landfill and compost is captured via supplier record keeping. • All waste recycling is captured via supplier record keeping.				✓		

Scope 3 Category 6: Business travel

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US

Business travel – air travel	DBEIS 2024 – UK Government conversion factors for Company Reporting, Business travel with RF, WTT Business travel – air.	• As noted in Emissions Factor Source Documentation.
		• Activity data captured in passenger km (pkm).
		• Flight categories applied are as follows:
		  ○ Domestic – economy – long distance (>1,200 km)
		  ○ Domestic – economy – short distance (≤1,200 km)
		  ○ Long Haul International (>3700 km) – Business
		  ○ Long Haul International (>3700 km) – Economy
		  ○ Long Haul International (>3700 km) – Premium
			• Data provided by corporate travel provider is complete.
			• New Zealand only: Uplift factors have been applied to BNZ air travel data to allow for bookings that have occurred outside our preferred travel data suppliers (no uplift applied for JBWere NZ[3]). These were as follows:
			  ○ Domestic air travel data uplifts of 0.90%.
			  ○ International air travel data uplift – Of 0% (H1) and 0% (H2).
				✓	✓	✓	✓	✓	✓

[3] NAB completed the disposal of its New Zealand wealth businesses on 30 April 2024 from which point JBWere NZ ceased to be part of NAB's operational emissions boundaries.

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
		Economy ○ Long Haul International (>3700 km) – First Class ○ Short Haul International (≤3700 km) – Business ○ Short Haul International (≤3700 km) – Economy GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000							
Business travel – hotel stays	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Travel tab).	• No Emissions from food consumption included in Factor Calculator. • Uplift factors have been applied to hotel stays data. ○ New Zealand: Uplift factors have been applied to allow for bookings that have occurred outside our preferred travel data	• Data provided by travel providers is complete.	✓	✓	✓	✓	✓	✓

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
		suppliers. 11.7% (H1) & 19.48% (H2) for domestic hotels, 0% (H1) & 7.4% (H2) for TransTasman and 0% (H1) & 0% (H2) for International bookings (no uplift applied for JBWere and New Zealand). ○ Australia: Uplift of 8.99% assumed for hotel stays not booked through corporate travel provider based on reconciliation between travel costs. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000							
	DBEIS 2024 – UK Government conversion factors for Company	• Activity data captured distance travelled (kms) provided by service	• Data provided by service providers is complete.			✓		✓	

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Other business travel – rail	Reporting, Business Travel land, and WTT - Business travel land.	providers. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000							
	US Environmental Protection Agency - 2023 Emission Factors for Greenhouse Gas Inventories, Table 10, intercity Rail.	• Activity data captured distance travelled (miles) provided by service providers. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by service providers is complete.						✓
	2022 Global JR annual report. Japan Rail (JR East) group report integrated report 2021.	• Activity data captured distance travelled in (kms) provided by service providers. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by service providers is complete.	✓					
Other business	DBEIS 2024 – UK Government conversion factors for Company Reporting, Business	• Activity data captured in distance travelled (kms) provided by rental company.	• Data provided by service providers is complete. • Rental cars vary so have used average car (unknown fuel).		✓				

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
travel – rental cars	Travel land, and WTT - Business travel land.	GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Uplift of 49% assumed for rental cars not booked through corporate rental car provider based on reconciliation between travel costs.						
	ADEME – Bilans GES Site, Passenger Transport, Road, Personal car, Car/Mid-engine/2018 (https://base-empreinte.ademe.fr/donnees/jeu-donnees)	• Activity data captured in distance travelled (kms) provided by rental company. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by service providers is complete. • Rental cars vary so have used medium car.			✓			
	MFE – New Zealand government Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Travel tab).	• Activity data captured in distance travelled (kms) provided by rental company. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by service providers is complete. Asia: • Emission factor assumes that all representative vehicles are petrol. • All vehicles are post 2015. New Zealand: • BNZ uplift 10.8% (H1) and 33.2% (H2) assumed for rental cars not booked through corporate rental car provider based on reconciliation between travel costs (no uplift applied for JBWere and New Zealand).	✓			✓		

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Other business travel – taxi use	DBEIS 2024 – UK Government conversion factors for Company Reporting, Business Travel land, and WTT - Business travel land.	• Activity data captured in AUD spent on taxi travel converted into distance travelled (kms) with information from state Taxi administrator websites. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by service providers is complete. • Taxi Information based on weighted average of flagfall and fare per km rates across NSW, QLD and VIC (proportionate to the FTE in each of these states). • All travellers adhere to the NAB Group Travel and Expense Guidelines. • Each expense item or charge in the general ledger represents one trip. • All taxis are average passenger vehicles with unknown fuel type.		✓				
	DBEIS 2024 – UK Government conversion factors for Company Reporting, Business Travel land, and WTT - Business travel land.	• Activity data captured in GBP spent on taxi travel converted into distance travelled (kms) with information from state Taxi administrator website (https://tfl.gov.uk/modes/taxis-and-minicabs/taxi-fares). GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided through the expense travel system is complete. • Pounds converted to miles (and then kms). • Miles calculated using the Taxi Company description data and a Google Maps calculation for distance.					✓	

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Travel tab).	• Activity data captured in NZD spent on taxi travel. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Taxi expense is captured in relevant general ledger account(s) using SAP. • Expenditure is inclusive of GST. • MFE Emission factor uses conversion - dollars No additional changes and no waiting time. • Emission factor assumes that all representative vehicles are petrol. • Spent ($3.20/km).				✓		
	TCR (The Climate Registry) – 2023 default emission factors, Table 2.5. Greenhouse Gas Protocol, Global Warming Potentials 5th Assessment Report.	• Activity data captured in USD spent on taxi travel converted into distance travelled (kms) with information from taxi invoices and regions' relevant taxi authorities. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by service providers is complete. • All travellers adhere to the NAB Group Travel and Expense Guidelines. • Each expense item or charge in the general ledger represents one trip. • All taxis are average passenger vehicles with unknown fuel type. • No additional charges and no waiting time.						✓

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	SNCF 2023 – Greenhouse Gases Information for Transport Services, General Methodology, Emissions for other transport modes, short distance.	• Activity data captured in GBP spent on taxi travel converted into distance travelled (kms) with information from the region's relevant taxi authorities. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• All taxi expense is captured in relevant general ledger account(s) using SAP. • Emission factor assumes that all representative vehicles are petrol. • No additional charges and no waiting time.			✓			
	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Travel tab). MLIT (Policy Bureau, Ministry of Land, Infrastructure, Transport and Tourism), Summary of the White Paper on Land, Infrastructure,	• Activity data captured in local currency $ spent on taxi travel converted into distance travelled (kms) with information from each region's relevant taxi authorities. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	Hong Kong: • Taxi charges Information used to convert expenditure into distance travelled in kms is based on Urban Taxi flag fall rates from HK Department of Transport – https://www.td.gov.hk/en/transport_in_hong_kong/public_transport/taxi/taxi_fare_of_hong_kong/index.html • There are surcharges for using Toll Tunnels. Singapore: • Taxi charges Information used to convert expenditure into distance travelled in kms is based on information provided by Singapore Land Transport Authority – https://www.lta.gov.sg/content/ltagov/en/g	✓					

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
	Transport and Tourism in Japan, 2022		etting_around/taxis_private_hire_cars/taxi_fares_payment_methods.html Japan: • Taxi charges information used to convert expenditure into distance travelled in kms is based on information provided by Tokyo Hire-Taxi Association, assuming all trips travelled are in the 23 wards of Tokyo, Musashino city and Miaka city - https://www.taxi-tokyo.or.jp/english/call/pricelist.html China: • Taxi charges information used to convert expenditure into distance travelled in kms is based on information provided by GobyTaxi, assuming all trips travelled are in Shanghai - https://www.gobytaxi.com/asia/china/shanghai						

Scope 3 Category 7: Employee commuting

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Working from home	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 (Working from home tab).	• Activity data for working from home electricity is employee per day. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• BNZ employee per day activity data is sourced from BNZ remote access systems. It is assumed that weekend access is for a full day and that staff will login onto to the network when working from home. • Given the smaller numbers of colleagues located in our JBWere offices, applying the Australian Climate Active calculator for colleagues working from home was deemed appropriate. • JBWere: the Victorian state calculations were applied as they use the highest emission factors.				✓		
	WFH calculator developed by Energetics and provided by Climate Active (Department of Industry, Science, Energy and Resources) – v4.0	• Activity data is average FTE working from home. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• The calculator contains embedded assumptions and emission factors relating to employee energy usage for heating and cooling, lighting, equipment uses. • Relevant transmission losses are embedded in the calculator. • Given the small number of colleagues ROW (excluding New Zealand), applying the Australian Climate Active calculator for colleagues working from home was deemed appropriate. • The Victorian state calculations were applied as they use the highest emission factors.	✓	✓	✓		✓	✓
Employee commuting	Climate Active – Carbon Inventory (v9.1)	• Activity data is distance travelled to work and home	• Employee commuting distance is calculated from NAB's FTE report, key commercial office location access data and employee leave data.		✓				

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
		by different travel methods. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Employee commuting patterns are based on 2016 Australian Bureau of Statistics (ABS) data.						

Scope 3 Upstream leased assets

Emission source / activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification	Asia	Australia	Europe	New Zealand	UK	US
Base building energy - diesel, natural gas, electricity	Electricity - National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 21 September 2023 – Schedule 1, Part 6, Electricity. Gas – National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 21 September 2023, Schedule 1, Part 2	• Activity data for electricity is in KWh. • Activity data for gas is in GJ. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by landlords and utilities is complete. • For non-billed sites we estimate consumption using known energy factors and building size.		✓				
	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2022 Calendar Year, published May 2024 – (Purchased Energy tab).	• Activity data for electricity is in KWh. GHG Emissions (tCO_2-e) = Emission Factor x Activity Data/1000	• Data provided by BNZ (ATM's) and external data centre providers is complete. • Remote ATM weighted average KWh consumption per ATM type is representative of actual consumption.				✓		

Note 1: Stationary energy is energy used in the building portfolio.

Note 2: Base building energy is energy used to provide shared base building services in commercial buildings such heating, ventilation, and air conditioning, lifts and escalators.

Note 3: Table has been reported for the Group's operations in Australia, New Zealand (BNZ and JBWere), the United Kingdom (UK), Asia, Europe and the United States of America (US).

CALCULATING NAB'S CARBON INVENTORY

Links to methodology and emissions factors

The following links provide information on the methodology and emission factors used in the calculation of NAB's carbon inventory/emission factor update in 2024.

- ADEME - Site Bilans GES – France
- Department for Business, Energy & Industrial Strategy (DBEIS) Greenhouse Gas (GHG) conversion factors 2024 - UK
- eGrid 2022 GHG Annual Output Emission Rates - USA
- 2024 Emission Factors for Greenhouse Gas Inventories (epa.gov) - USA
- EPA Victoria Greenhouse gas (GHG) inventory and management plan 2020 to 2021
- International Energy Agency Emissions Factors (IEA) 2023
- Ministry for the Environment (MFE) Measuring emissions: A guide for organisations: 2024 detailed guide – New Zealand
- Toitū Envirocare - Confirmation statement on emissions accounting for Ecotricity supplied electricity, 23 March 2022– New Zealand
- Australian National Greenhouse Accounts Factors August 2023
- National Greenhouse and Energy Reporting (Measurement) Determination 2008 (Compilation No.16)
- National Greenhouse Gas Inventory Report of Japan, 2017 - Ministry of the Environment, Japan
- NZECS Resources, Attributes of Residual Supply, 2023/24
- Paper Australia, Climate Active, Public Disclosure Statement, 2020
- Corporate Standard | The Greenhouse Gas Protocol
- MLIT (Policy Bureau, Ministry of Land, Infrastructure, Transport and Tourism), Summary of the White Paper on Land, Infrastructure, Transport and Tourism in Japan, 2022
- JR East Group Report INTEGRATED REPORT 2021
- 2022 Global JR annual report

- SNCF 2023 – Greenhouse Gases Information for Transport Services, General Methodology
- WFH calculator developed by Energetics and provided by Climate Active (Department of Industry, Science, Energy and Resources, Australia) – v4.0
- Climate active - Carbon inventory (v9.1)
- Greenhouse Gas Protocol, Global Warming Potentials 5th Assessment Report
- Standards | GHG Protocol
- Climate Active Carbon Neutral Standard for Organisations | Climate Active