NAB's Carbon Inventory

NAB Australia

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
A4 and A3 paper purchased	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2019–2020 (2020) 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. • Purchased paper is converted to kg and relevant emission factor is applied for calculation GHG Emissions (tCO_2-e) = Emissions Factor X Activity data	• Consumption of paper obtained from stationary provider is accurate
Building-based refrigerants – in HVAC and refrigerators	DBEIS 2021: UK Government conversion factors for Company Reporting, Refrigerant & Other Greenhouse Gas Protocol, Global Warming Potentials 5th Assessment Report	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: Step 2: Determine Net HFC and PFC Emissions from Operation of Refrigeration/AC Equipment.	• 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. • Installation emissions occur at manufacturer's site and are not relevant, unless maintenance personnel have recorded onsite recharge • Disposal emissions not relevant to NAB at leased facilities. Only relevant for small number of owned property if disposal of refrigeration equipment occurs as part of refurbishment. The default leakage rate is applied to the count of refrigerators where the refrigerant type is unknown.

more than money

NAB's Carbon Inventory

NAB Australia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Business travel – air	DBEIS 2021: 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 Economy • Long Haul International (>3700 km) – First Class • Short Haul International (<3700 km) – Business. This includes flights between New Zealand & Australia • Short Haul International (<3700 km) – Economy. This includes flights between New Zealand & Australia	• Data provided by corporate travel provider is complete
Business travel – employee claims for use of personal vehicles for work purposes	DBEIS 2021: UK Government conversion factors for Company Reporting, Business Travel land, and WTT – Business travel land	• Activity data captured in distance travelled (kms) on claim forms • Average Car (unknown fuel) GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• All employees adhere to the NAB Travel and Expense Guidelines • All personal vehicles are average passenger vehicles – with unknown fuel

NAB's Carbon Inventory

NAB Australia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Business travel – hotel stays	MFE: New Zealand government Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Travel tab)	• Activity data captured in nights stays (nights) GHG Emissions (tCO_2-e) = $\frac{\text{Hotel Emission Factor x Activity Data (nights)}}{1000}$	• No emissions from food consumption included in factor calculator • Data provided by travel providers is complete • Uplift of 7.34% assumed for hotel stays not booked through corporate travel provider based on reconciliation between travel costs.
Business travel – rental cars	DBEIS 2021: UK Government conversion factors for Company Reporting, Business Travel land, and WTT – Business travel land	• Activity data captured in distance travelled (kms) provided by rental company GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by service providers is complete • Rental cars vary so have used average car (unknown fuel) • Uplift of 49% assumed for rental cars not booked through corporate rental car provider based on reconciliation between travel costs.

more than money

NAB's Carbon Inventory

NAB Australia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Stationary energy – diesel, gas and electricity	Diesel – National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 2020, Schedule 1, Part 3 Gas – National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 2020, Schedule 1 – Part 2 Electricity – National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled July 2020, Schedule 1, Part 6	• Activity data for electricity is in KWh • Activity data for diesel is in kilolitres • Activity data for gas is in GJ GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• 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)
Base – building energy use gas and electricity not under NAB's operational control (Australia only)	Gas – National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 2020, Schedule 1 – Part 2 Electricity – National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 2020, Schedule 1, Part 6	• Activity data for electricity is in KWh • Activity data for gas is in GJ GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by landlords and utilities is complete • For non-billed sites we estimate consumption using known energy factors and building size.
Transmission losses – Stationary energy – diesel, gas and electricity	Diesel – National Greenhouse Accounts (NGA) Factors, 2020, Table 43 Gas – National Greenhouse Accounts (NGA) Factors, 2020, Table 41 (ACT, NSW, QLD, VIC, WA) National Greenhouse Accounts (NGA) Factors, 2009, Table 37 (NT, TAS) Electricity – National Greenhouse Account (NGA) Factors, 2020, Table 44	• 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) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by facilities manager and utilities is complete

NAB's Carbon Inventory

NAB Australia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Transmission losses – Base – building energy use (gas and electricity) not under NAB's operational control	Gas – National Greenhouse Accounts (NGA) Factors, 2020, Table 41 (ACT, NSW, QLD, VIC, WA) National Greenhouse Accounts (NGA) Factors, 2009, Table 37 (NT, TAS) Electricity – National Greenhouse Account (NGA) Factors, 2020, Table 44	• Activity data for electricity is in KWh • Activity data for gas is in GJ GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by landlord and utilities is complete. • For non-billed sites we estimate base building consumption using known energy factors and building size.
Business travel – taxi use	DBEIS 2021: UK Government conversion factors for Company Reporting, Business Travel land, and WTT	• Activity data captured in AUD spent on taxi travel converted into distance travelled (km) with information from state Taxi administrator websites GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• 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
Business travel – work use vehicle fleet (diesel, petrol and ethanol)	National Greenhouse and Energy Reporting (Measurement) Determination 2008, Compiled 2020, Schedule 1, Part 4, Div 4.2	• Activity data captured in litres of fuel GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• All fuel is purchased with fuel card provided • All vehicles were produced post 2004 • Data provided by fleet provider is complete.

more than money

NAB's Carbon Inventory

NAB Australia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Transmission losses – Business travel – work use vehicle fleet (diesel, petrol and ethanol)	National Greenhouse Accounts (NGA) Factors, 2020, Table 43	• Activity data captured in litres of fuel GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• All fuel is purchased with fuel card provided • All vehicles were produced post 2004 • Data provided by fleet provider is complete.
Work use vehicle fleet – air conditioning refrigerant	Greenhouse gas protocol, GWP 5th Assessment report	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: Step 2: Determine Net HFC and PFC Emissions from Operation of Refrigeration/AC Equipment	• Where refrigerant gas is unknown have assumed refrigerant is R410A • Installation emissions occur at manufacturer's site and are not relevant for NAB vehicle fleet • Disposal emissions not relevant to NAB vehicle fleet which are leased for a three-year term on an agreed km distance and then returned to the fleet manager
Waste to Landfill	National Greenhouse Accounts (NGA) Factors, 2020, Table 47, 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	• 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.

NAB's Carbon Inventory

NAB Australia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Water	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2019-2020 (2020)	• Activity data captured in kL of water consumed GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• 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.
Working from home (WFH)	WFH calculator developed by Energetics and provided by Climate Active (Department of Industry, Science, Energy and Resources)	• Activity data is based on number of full-time employees working from home GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• The calculator contains embedded assumptions and emission factors relating to employee energy usage for heating and cooling, lighting, equipment use. • Relevant transmission losses are embedded in the calculator

more than money

NAB's Carbon Inventory

NAB Asia

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
A4 and A3 paper purchased (China, Hong Kong, Japan, India, and Singapore.)	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2019–2020 (2020)	• Method reflects those in the Emissions Factor Source Documentation. • Activity data captured as kg of paper purchased GHG Emissions (tCO_2-e) = Emissions Factor X Activity data	• Consumption of paper obtained from stationery provider is accurate
Business travel – air (China, Hong Kong, Japan, India, , and Singapore.)	DBEIS 2021: 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 Economy • Long Haul International (>3700 km) – First Class • Short Haul International (<3700 km) – Business • Short Haul International (<3700 km) – Economy	• Data provided by corporate travel provider is complete

more than money

NAB's Carbon Inventory

NAB Asia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Business travel – hotel stays (China, Hong Kong, Japan, India, and Singapore.)	MFE: New Zealand government Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published 2020 (Travel tab)	• Activity data captured in nights stays (nights) GHG Emissions (tCO_2-e) = Hotel Emission Factor x Activity Data (nights) / 1000	• No Emissions from food consumption included in Hotel Emissions • Data provided by travel providers is complete
Business travel – rental cars (China, India and Singapore)	MFE – New Zealand government - Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published 2020 (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 • Emission factor assumes that all representative vehicles are petrol • All vehicles are post 2015
Business travel – rail (Japan)*	Ministry of the Environment, Japan Greenhouse Gas Inventory, 2017, Chapter 3, page 58 and Deloitte Global Impact report 2015, http://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-gr15-main-final.pdf	• 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
Electricity Usage (China, Hong Kong, Japan, India, and Singapore.)	IEA (2020), Emission Factors, CO2KWH ELE tab	• Activity data is in KWh GHG Emissions (t CO2-e) = Emission Factor x Activity Data / 1000	• Data provided by landlords and utilities is complete

more than money

NAB's Carbon Inventory

NAB Asia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Transmission losses – Electricity (China, Hong Kong, Japan, India, and Singapore.)	IEA (2020), Emission Factors, T&D losses adjustment tab DBEIS 2021: UK Government conversion factors for Company Reporting, WTT- UK & overseas elec	• Activity data is in KWh GHG Emissions (t CO2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by landlords and utilities is complete
Business travel – taxi use (Hong Kong and Singapore)	MFE – New Zealand government – Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published 2020 (Travel tab)	• Activity data captured in $ spent on taxi travel converted into distance travelled (km) with information from HK Department of Transport/ Singapore LTA GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• No additional changes and no waiting time • Emission factor assumes that all representative vehicles are petrol **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 – http://www.td.gov.hk/en/publications_and_press_releases/press_releases/transport_department/index_id_2168.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/getting_around/taxis_private_hire_cars/taxi_fares_payment_methods.html

NAB's Carbon Inventory

NAB Asia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Business travel – work use vehicle fleet (petrol – Hong Kong)*	MFE – New Zealand government – Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published 2020 (Fuel tab)	• Activity data captured in litres of fuel GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Emission factor assumes that all representative vehicles are petrol
Waste to incineration (Japan)	DBEIS 2021: UK Government conversion factors for Company Reporting, Waste disposal, Commercial and Industrial Waste - combustion	• Activity data captured in tonnes of waste sent to incineration GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Extrapolation based on of waste tonnage per area (m^2)
Work use vehicle fleet – air conditioning refrigerant (Hong Kong)*	DBEIS 2021: UK Government conversion factors for Company Reporting, Refrigerant & Other	• 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. • Step 2: Determine Net HFC and PFC Emissions from Operation of Refrigeration/AC Equipment GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Disposal emissions not relevant to NAB vehicle fleet which are leased for a three-year term of an agreed km distance and then returned to the fleet manager • Average quantity of refrigerant charge for year estimated based on inventories recorded at the end of H1 (Jul-Dec) and H2 (Jan-Jun) • Where Refrigerant is unknown have assumed refrigerant is R134A • Installation emissions occur at manufacturers site and are not relevant for NAB vehicle fleet

more than money

NAB's Carbon Inventory

NAB Asia (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Building-based refrigerants – in HVAC and refrigerators (Hong Kong)	DBEIS 2021: UK Government conversion factors for Company Reporting, Refrigerant & Other Greenhouse Gas Protocol, Global Warming Potentials 4th Assessment Report	• 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. • Step 2: Determine Net HFC and PFC Emissions from Operation of Refrigeration/AC Equipment GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• 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
Work from home (WFH)	WFH calculator developed by Energetics and provided by Climate Active (Department of Industry, Science, Energy and Resources)	• Activity data is based on number of colleagues working from home GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Given the smaller numbers of colleagues located in our Asian offices, applying the Australian Climate Active calculator for colleagues working from home as a result of COVID-19 was deemed appropriate for 2021. • The Victorian state calculations were applied as they use the highest emission factors

*There were no emissions from this source in 2021 but have occurred in prior years.

more than money

NAB's Carbon Inventory

New Zealand – BNZ and JB Were

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
A4 and A3 paper purchased	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2019–2020 (2020) Carbon neutral certification provided by recognised certification body e.g. Department of Industry, Science, Energy 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) = Emissions Factor x Activity data	• Consumption of paper obtained from stationery provider is accurate
Building-based refrigerants – in HVAC and refrigerators	DBEIS 2021: UK Government conversion factors for Company Reporting, Refrigerant & Other Greenhouse Gas Protocol, Global Warming Potentials 5th Assessment Report	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: • Step 2: Determine Net Gross HFC and PFC Emissions from Operation of Refrigeration/AC Equipment GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Installation emissions occur at manufacturer's site and are not relevant, unless maintenance personnel have recorded onsite recharge • Disposal emissions not relevant to 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 labeling on equipment.

NAB's Carbon Inventory

New Zealand – BNZ and JB Were (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Stationary energy – diesel, electricity, gas	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Electricity – Purchased Energy tab, Diesel, Gas – fuel tab)	• Activity data for electricity and gas is in KWh • Activity data for diesel is in litres GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by facilities manager and utilities is complete • Accruals are used for electricity & gas where data is incomplete for the reporting period (based on average daily consumption over the prior 6 months where possible).
Business travel – air	DBEIS 2021: 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). This includes all domestic flights in NZ. • Long Haul International (>3700 km) – Business • Long Haul International (>3700 km) – Economy • Long Haul International (>3700 km) – Premium Economy • Long Haul International (≥3700 km) – First Class • Short Haul International (≤3700 km) – Business. This includes flights between NZ & Australia • Short Haul International (≤3700 km) – Economy. This includes flights between NZ & Australia	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). These were as follows: • Domestic air travel data uplifts of 1.07% (H1) and 0.55% (H2) • International air travel data uplift of 0%

NAB's Carbon Inventory

New Zealand – BNZ and JB Were (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Business travel – employee claims for use of personal vehicles for work purposes	DBEIS 2021: UK Government conversion factors for Company Reporting, Business Travel land, and WTT-Business travel land	• Activity data captured in distance travelled (kms) on claim forms • Average Car (unknown fuel) GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• All employees adhere to the Motor Vehicles – Private Use policy • All personal vehicles are average passenger vehicles – with unknown fuel.
Business travel – hotel stays	MFE – New Zealand government Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Travel tab)	Activity data captured in nights stays (nights) GHG Emissions (tCO_2-e) = $\frac{\text{Hotel Emission Factor x Activity Data (nights)}}{1000}$	• No Emissions from food consumption included in Factor Calculator • Data provided by travel providers is complete • Uplift factors have been applied to BNZ hotel stays data to allow for bookings that have occurred outside our preferred travel data suppliers. These were as follows: • 16.54% (H1) & 59.95%(H2) for domestic hotels, 17.11% (H1) & 15 days for TransTasman and 0% for International bookings. (no uplift applied for JBWere NZ).
Business travel – rental cars	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Travel tab)	• Activity data captured in distance travelled (kms) provided by rental company • Passenger Transport Conversion tables used.	• Data provided by service providers is complete • Rental cars categorized by size and fuel type • BNZ Uplift averaged 16.4% p.a. assumed for rental cars not booked through corporate rental car provider based on reconciliation between travel costs.

NAB's Carbon Inventory

New Zealand – BNZ and JB Were (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Base – building energy use (electricity not under NAB's operational control)	MFE – Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Purchased Energy tab)	• Activity data for electricity is in KWh GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by BNZ (ATM's) and external data centre providers is complete
Transmission losses – Stationary energy, gas and electricity	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (T&D Losses tab)	• Activity data for electricity and gas transmissions losses is in KWh GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by facilities manager and utilities is complete
Transmission losses – Base – building energy use (electricity not under NAB's operational control)	MFE - New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (T&D Losses tab)	• Activity data for electricity transmission losses is in KWh GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by BNZ (ATM's) and external Data Centre providers is complete.
Business travel – taxi use	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Travel tab)	• Activity data captured in NZD spent on taxi travel converted into distance travelled (km) with information from state Taxi administrator website GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• All taxi expense is captured in relevant general ledger account(s) using SAP • Expenditure is inclusive of GST • Based on MFE conversion

NAB's Carbon Inventory

New Zealand – BNZ and JB Were (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Business travel – work use vehicle fleet (diesel, petrol, electricity and electricity transmission	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Diesel & petrol – Fuel tab, electricity – Purchased Energy tab, electricity transmission losses – T&D Losses tab)	• Activity data captured in NZD spent on taxi travel converted into distance travelled (km) with information from state Taxi administrator website GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Fuel is purchased with fuel card provided and an uplift is applied for non-fuel card purchases • All remote BEV charging is sourced from the preferred supplier charging network
Work use vehicle fleet – air conditioning refrigerant	DBEIS 2021: UK Government conversion factors for Company Reporting, Refrigerant & Other	• 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 Net Gross HFC and PFC Emissions from Operation of Refrigeration/AC Equipment GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Where refrigerant gas is unknown have assumed refrigerant is R134A • Installation emissions occur at manufacturer's site and are not relevant for BNZ vehicle fleet • Disposal emissions not relevant to BNZ vehicle fleet which are leased for a three-year term on an agreed km distance and then returned to the fleet manager
Waste to Landfill and Compost	MFE - New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Waste tab)	• Activity data captured in kgs of waste sent to landfill or composted GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• 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

NAB's Carbon Inventory

New Zealand – BNZ and JB Were (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Customer statements	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2019–2020 (2020)	• Activity data is captured as the kg of printed customer statements. GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by supplier is complete.
Water/Waste Water	MFE – New Zealand Government, Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Water Supply and Wastewater tab)	• Water usage data is sourced from a mix of local council and building owner invoices. • Harvested water data comes from BMS systems via the Property Services Team. • Activity data is the sum of water consumption (kL) and harvested water (kL) GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• 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.

more than money

NAB's Carbon Inventory

New Zealand – BNZ and JB Were (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Working from home (electricity)	MFE – Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published May 2020 (Purchased Energy tab)	• Activity data for working from home electricity is in employee per day GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Working from home electricity activity data is estimated per month from total BNZ FTE less BNZ staff at work occupancy rates AND NZ residential electricity consumption data • Assumed 8 hours per work day of residential electricity consumption can be attributed to working from home • Average residential electricity consumption, sourced from MBIE (Mar-20 Qtr)
Working from home – Transmission losses (Electricity)	MFE – Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2016 Calendar Year, published May 2019 (T&D Losses tab)	• Activity data for working from home transmission losses (electricity) is in KWh GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Working from home electricity activity data is estimated per month from total BNZ FTE less BNZ staff at work occupancy rates AND NZ residential electricity consumption data • Assumed 8 hours per workday of residential electricity consumption can be attributed to working from home • Average residential electricity consumption, sourced from MBIE (Mar-20 Qtr)

more than money

NAB's Carbon Inventory

United Kingdom

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
A4 and A3 paper purchased	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2019–2020 (2020)	• Method reflects those in the Emissions Factor Source Documentation. • Activity data captured as KG of paper purchased GHG Emissions (tCO_2-e) = Emissions Factor X Activity data	• Consumption of paper obtained from stationery provider is accurate
Building-based refrigerants – in HVAC and refrigerators	DBEIS 2021: UK Government conversion factors for Company Reporting, Refrigerant & Other Greenhouse Gas Protocol, Global Warming Potentials 4th Assessment Report	• 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. • Step 2: Determine Net HFC and PFC Emissions from Operation of Refrigeration/AC Equipment GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Installation emissions occur at manufacturers site and are not relevant, unless maintenance personnel have recorded onsite recharge • Disposal emissions not relevant to UK at leased facilities. Only relevant for owned property if disposal of refrigeration equipment occurs as part of refurbishment. • Default charge and leakage rates used as actual charge volumes could not be collected from labeling on equipment.

NAB's Carbon Inventory

United Kingdom (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Business travel – air	DBEIS 2021: 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 Economy • Long Haul International (>3700 km) – First Class • Short Haul International (<3700 km) – Business • Short Haul International (≤3700 km) – Economy.	• Data provided by corporate travel provider is complete
Business travel – hotel stays	MFE: NZ Government Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published 2020 (Travel tab)	• Activity data captured in nights stays (nights) GHG Emissions (tCO_2-e) = $\frac{\text{Hotel Emission Factor x Activity Data (nights)}}{1000}$	• No Emissions from food consumption included in Hotel Emissions • Data provided by corporate travel provider is complete

NAB's Carbon Inventory

United Kingdom (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Stationary energy – gas and electricity	DBEIS 2021: UK Government conversion factors for Company Reporting, Fuels (Gross CV) DBEIS 2021: UK Government conversion factors for Company Reporting, UK electricity	• Activity data for electricity is in KWh • Activity data for gas is in GJ GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by landlords and utilities is complete
Transmission losses – Stationary energy – gas and electricity	DBEIS 2021: 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) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by landlords and utilities is complete
Business travel – taxi use	DBEIS 2021: UK Government conversion factors for Company Reporting, Business travel land & WTT – pass vehs & travel – land	• Activity data captured in GBP spent on taxi travel converted into distance travelled (km) with information from state Taxi administrator website (https://tfl.gov.uk/modes/taxis-and-minicabs/taxi-fares) GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• 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

NAB's Carbon Inventory

United Kingdom (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Waste to Incineration	DBEIS 2021: 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) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Extrapolation based on of waste tonnage per area (m^2)
Water	DBEIS 2021: UK Government conversion factors for Company Reporting, Water supply + Water Treatment	• Activity data captured in kL of water consumed GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by landlords and utilities is complete
Work from home (WFH)	WFH calculator developed by Energetics and provided by Climate Active (Department of Industry, Science, Energy and Resources)	• Activity data is based on number of colleagues working from home GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Given the smaller numbers of colleagues located in the UK, applying the Australian Climate Active calculator for colleagues working from home because of COVID-19 was deemed appropriate for 2021. • The Victorian state calculations were applied as they use the highest emission factors

NAB's Carbon Inventory

United States

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
A4 and A3 paper purchased	EPA Victoria, Greenhouse gas (GHG) inventory and management plan 2019–2020 (2020)	• Method reflects those in the Emissions Factor Source Documentation. • Activity data captured as KG of paper purchased GHG Emissions (tCO_2-e) = Emissions Factor X Activity data	• Consumption of paper obtained from stationery provider is accurate
Business travel – air	DBEIS 2021: 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 Economy • Long Haul International (>3700 km) – First Class • Short Haul International (<3700 km) – Business • Short Haul International (≤3700 km) – Economy.	• Data provided by corporate travel provider is complete

more than money

NAB's Carbon Inventory

United States (cont.)

Emission source/ activity	Emission Factor Source Documentation	Calculation Method	Assumption/limitation and justification
Business travel – hotel stays	MFE: New Zealand government Guidance for Voluntary, Corporate Greenhouse Gas Reporting. Data and Methods for the 2018 Calendar Year, published 2020 (Travel tab)	• Activity data captured in nights stays (nights) GHG Emissions (tCO_2-e) = $\frac{\text{Hotel Emission Factor x Activity Data (nights)}}{1000}$	• No Emissions from food consumption included in Factor Calculator • Data provided by travel providers is complete
Stationary Energy – Electricity Use	eGRID2019, Unit, Generator, Plant, State, Balancing Authority Area, eGRID Subregion, NERC Region, U.S., and Grid Gross Loss (%) Data Files (February 2021).	• Activity data for electricity is in KWh GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by landlords and utilities is complete
Transmission losses – Stationary energy – electricity	eGRID2019 V2, Unit, Generator, Plant, State, Balancing Authority Area, eGRID Subregion, NERC Region, U.S., and Grid Gross Loss (%) Data Files (February 2021).	• Activity data for electricity is in KWh GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Data provided by landlords and utilities is complete
Work from home (WFH)	WFH calculator developed by Energetics and provided by Climate Active (Department of Industry, Science, Energy and Resources)	• Activity data is based on number of colleagues working from home GHG Emissions (tCO_2-e) = $\frac{\text{Emission Factor x Activity Data}}{1000}$	• Given the smaller numbers of colleagues located in our US office, applying the Australian Climate Active calculator for colleagues working from home as a result of COVID-19 was deemed appropriate for 2021. • The Victorian state calculations were applied as they use the highest emission factors.