



# Independent Review

Independent review of selected Subject Matter contained in  
Macquarie Group Limited's 2022 Annual Report

6 May 2022



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# 1. Purpose

The purpose of this document is to define the selected Subject Matter (the selected Subject Matter) contained within Macquarie Group Limited's (MGL) 2022 Annual Report and the Carbon and Energy Data FY2022 page located at [www.macquarie.com/esg](http://www.macquarie.com/esg) that have been included in the scope of PwC's limited assurance engagement.

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## 2. Scope and the selected Subject Matter

The selected Subject Matter that MGL requested be included within the scope of PwC's limited assurance engagement comprised the following selected corporate sustainability information for the 12 months ending 31 March 2022 (the reporting period):

- a) total electricity consumed from MGL's corporate offices, data centres and base building consumption (where MGL owns and occupies the building) around the world
- b) total direct emissions from refrigerants, natural gas and diesel usage (Scope 1) from MGL's corporate offices and base building consumption (where MGL owns and occupies the building) around the world
- c) total indirect emissions from electricity usage (Scope 2) from MGL's corporate offices, data centres and base building consumption (where MGL owns and occupies the building) around the world
- d) Scope 3 emissions associated with air travel, hotels, ground transport and Food & Beverage (F&B) procured by MGL and paid for on our Corporate Card Platform (Amex).
- e) percentage of global electricity sourced from renewable energy.
- f) management's assertion that carbon offsets have been purchased and retired for the 2022 reporting period representing a quantity of greenhouse emissions offset greater than the sum of b), c) and d).

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## 3. Basis of preparation

### 3.1 Organisational boundary

#### 3.1.1 Corporate offices and data centres

Macquarie's corporate offices and data centres are defined as:

- offices leased by MGL operating entities globally which are also occupied by MGL staff and have a Net Usable Area (NUA) – the area that can be fitted out by the tenant greater than 100m<sup>2</sup>
- data centres around the world where MGL has oversight of electricity usage and pays for this usage
- new offices from business acquisitions from the month the acquisition is completed.

The following exclusions have been applied in determining the reporting boundary for corporate offices and data centres:

- offices or buildings that are owned or managed by an MGL entity but are not tenanted by Macquarie staff
- serviced offices, data centres and cloud computing services used by MGL where MGL has no oversight of the energy usage of the office, data centre and cloud computing services. Energy costs for serviced offices are typically included as part of a service fee
- joint venture offices. Joint venture offices are defined as offices where Macquarie staff may be located as part of a joint venture business activity but where Macquarie has limited ability to influence the operation of these offices and does not have oversight of the data required to calculate electricity consumption and greenhouse gas (GHG) emissions
- properties associated with businesses acquired (*referred to as "operationally segregated subsidiaries"*) by Macquarie are excluded until such time as the associated lease obligations are renewed or otherwise by Macquarie post acquisition.

#### 3.1.2 Base building

Macquarie's base buildings are defined as:

- offices or buildings where Macquarie owns and occupies the building. Base building energy refers to the energy required to operate the mechanical plant, lifts and lighting in the lobby and other communal areas.

The following exclusions have been applied in determining the reporting boundary for base buildings:

- energy use in this category excludes tenanted energy use in Macquarie owned and operated buildings.

#### 3.1.3 Business travel

The primary source of business-related travel is Macquarie's exclusive global corporate card provider (Amex), and includes air travel, hotels, and ground transport. Additionally, our corporate card data also includes F&B for meals while travelling, as well as other forms of F&B spend that may not be directly related to business travel (e.g. staff or client entertainment).

Where business trips booked through Macquarie's Travel Management Companies include staff-funded spousal travel or personal leisure arrangements made as an aside to business trip, this has been included in 'business travel'.

### 3.2 Calculating and measuring GHG emissions and energy use

#### 3.2.1 Energy use and GHG emissions

##### 3.2.1.1 Direct emissions associated with diesel, natural gas and refrigerants usage (Scope 1 emissions)

Approximately 85 percent of Scope 1 emissions data for the reporting period was obtained directly from actual meter usage data, supplier, or landlord invoices. The remaining Scope 1 emissions within the organisational boundary were estimated as follows:

- Diesel usage - where no tank meter readings were available, fuel usage was estimated based on engine performance data from diesel generator data sheets.
- Natural gas usage - where no invoiced data was available, usage was estimated based on usage in comparable office.
- Refrigerants - emissions associated with refrigerant usage were estimated based on refrigerant charge and leakage rates in accordance with the *National Greenhouse and Energy Reporting (Measurement) Determination*.

Emission factors outlined in *Measurement of GHG emissions* have then been applied to determine the equivalent direct emissions associated with diesel and natural gas consumed (Scope 1 emissions).

### 3.2.1.2 Total electricity consumed

Approximately 86 percent of the electricity data for the reporting period was obtained directly from actual tenancy or building data. The remaining 14 percent of energy consumption was estimated by one of the following prioritised data methodologies:

1. To account for seasonal variances, estimates are derived as follows:
  - Where a clear seasonal trend exists from previous reporting periods, the estimate is based on an extrapolation of these trends and adjusted for any year-on-year overall movements
  - Where no clear seasonal trend exists from previous reporting periods, the actual figure for the same period in the prior year, is used as the estimate
2. Where invoiced data existed for part of the reporting period, determining average daily invoiced electricity consumed for that part of the reporting period and extrapolating this out to the remainder of the reporting period. This method is used when some of the invoiced data within the reporting period is unavailable from the energy providers.
3. Where no invoiced data was available for a particular office, estimating electricity consumed for that office based on the Net Lettable Area of the office and the average electricity consumption per square metre of other offices in the same region

Emission factors outlined in *Measurement of GHG emissions* have then been applied to determine the equivalent indirect emissions associated with electricity consumed (Scope 2 emissions).

### 3.2.1.3 Other indirect emissions associated with business travel (Scope 3 emissions)

Air travel, hotels, ground transport and F&B emissions calculations are based on the methodology provided by American Express, the organisation contracted as our preferred corporate card provider, who calculate our carbon footprint where Amex is the form of payment.

Emission factors outlined in *Measurement of GHG emissions* have then been used to determine the equivalent indirect emissions associated with air travel, hotels, ground transport and F&B spend on the corporate card program (Scope 3 emissions).

### 3.2.2 Measurement of GHG emissions

The following emissions factors have applied in calculating GHG emissions (tonnes CO<sub>2</sub>-e):

Component	Reference documents
<b>Australia</b> <i>Electricity, Natural Gas, Refrigerants &amp; Diesel</i>	<i>National Greenhouse and Energy Reporting (Measurement) Determination 2008</i> and subsequent amendments for the calculation of greenhouse gas (GHG) emissions. (2020 & 2021)
<b>New Zealand</b> <i>Electricity</i>	NZ Ministry for the Environment (2020)
<b>Taiwan, Japan &amp; Hong Kong</b> <i>Electricity</i>	International Energy Agency - CO <sub>2</sub> EMISSIONS FROM FUEL COMBUSTION (2019)
<b>United Kingdom</b> <i>Electricity &amp; Natural Gas</i>	Department for Environment Food and Rural Affairs (DEFRA) Government GHG Conversion Factors for Company Reporting: Methodology Paper for Emission Factors. (2021)
<b>United States</b> <i>Electricity</i>  <i>Natural Gas &amp; Diesel</i>	- Emissions & Generation Resource Integrated Database (eGRID) - USEPA, eGRID (2019) published Feb 2021  - <i>National Greenhouse and Energy Reporting (Measurement) Determination 2008</i> and subsequent amendments for the calculation of greenhouse gas (GHG) emissions. (2021)
<b>Canada</b> <i>Electricity</i>	The Climate Registry Information System (CRIS) (2021)
<b>Brazil, Chile, UAE, China, India, Indonesia, Mexico, Philippines,</b>	

Component	Reference documents
<b>Singapore, South Korea and Thailand</b> <i>Electricity</i>	Institute for Global Environmental Strategies (IGES) GHG Emissions Data (2021)
<b>Austria, France, Germany, Ireland, Luxembourg, Netherlands, Spain &amp; Switzerland</b> <i>Electricity</i>	Association of Issuing Bodies - European Residual Mixes (2020)
<b>South Africa</b> <i>Diesel</i>	<i>National Greenhouse and Energy Reporting (Measurement) Determination 2008</i> and subsequent amendments for the calculation of greenhouse gas (GHG) emissions. (2021)
<b>Malaysia</b> <i>Electricity</i> <i>Diesel</i>	<ul style="list-style-type: none"> <li>- Institute for Global Environmental Strategies (IGES) GHG Emissions Data (2021)</li> <li>- <i>National Greenhouse and Energy Reporting (Measurement) Determination 2008</i> and subsequent amendments for the calculation of greenhouse gas (GHG) emissions. (2021)</li> </ul>
<b>Business travel</b> <i>Air &amp; Ground</i>  <i>Hotel</i>  <i>Food &amp; Beverage</i>	<ul style="list-style-type: none"> <li>- Department for Environment Food and Rural Affairs (DEFRA) Government GHG Conversion Factors for Company Reporting: Methodology Paper for Emission Factors. (2021)</li> <li>- Applies the method defined by Cornell Hotel Sustainability Benchmarking Index (CHSB Index) (2021 study using 2019 data). The 2019 Business Travel News (BTN) Corporate Travel Index is used to retrieve the average daily room rate to estimate the number of room nights of hotel stay. The number of nights is then multiplied with an appropriate emissions factor provided by CHSB based upon the class of service of the hotel, which is provided by Smith Travel Research (STR).</li> <li>- United States Environment Protection Agency (US EPA) and multiplies the number of meals with an appropriate GHG emission factor per meal.</li> </ul>

Scope 2 emissions factors used for Australian and The Americas offices, and Scope 3 emissions factors for all business travel, include greenhouse gases in addition to carbon dioxide and are expressed in carbon dioxide equivalents (CO<sub>2</sub>-e) as stipulated within the associated reference documents. Scope 2 emission factors used for the United Kingdom and remaining office locations only comprise carbon dioxide emissions (CO<sub>2</sub>) as stipulated within the reference documents. The jurisdictional variance in approaches to Scope 2 methodology had no material effect on outcome.

Where electricity is sourced from 100% renewable sources (including the purchase and retirement of renewable energy certificates), emissions from these sources are considered as zero and classified as market-based emissions. Where renewable energy certificates are purchased, the associated Scope 2 emissions reductions are calculated based on the emissions factor for the location of the renewable generation, with the resulting emissions reduction applied to our global operations.

### 3.3 Carbon offsets purchased and retired

Carbon offsets were purchased and retired from a portfolio of Australian Carbon Credit Units (ACCUs) and other voluntary carbon offsets that met the Verified Carbon Standard.



To: The Directors of Macquarie Group Limited

## **Independent limited assurance report over selected Carbon and Energy Data reported for the 12 months ended 31 March 2022**

### ***Scope***

In accordance with the terms of our engagement letter dated 8 February 2022, we were engaged by Macquarie Group Limited (**MGL**) to perform an independent limited assurance engagement in respect of selected subject matter (the **Subject Matter**) reported within the Environmental Social and Governance Section of MGL's Annual Report and the *Carbon and Energy Data FY2022* document located at [www.macquarie.com/esg](http://www.macquarie.com/esg) for the 12 months ended 31 March 2022 (**the Period**). The Subject Matter is as follows:

- a) total electricity consumed from MGL's corporate offices, data centres and base building consumption (where MGL owns and occupies the building) around the world;
- b) total direct emissions from refrigerants, natural gas and diesel usage (Scope 1) from MGL's corporate offices and base building consumption (where MGL owns and occupies the building) around the world;
- c) total indirect emissions from electricity usage (Scope 2) from MGL's corporate offices, data centres and base building consumption (where MGL owns and occupies the building) around the world;
- d) Scope 3 emissions associated with air travel, hotels, ground transport and Food & Beverage (F&B) procured by MGL and paid for on MGL's Corporate Card Platform (Amex);
- e) percentage of global electricity sourced from renewable energy; and
- f) management's assertion that carbon offsets have been purchased and retired for the 2022 reporting period representing a quantity of greenhouse emissions offset greater than the sum of b), c) and d).

The criteria (the **Criteria**) against which we assessed the Subject Matter are the definitions and approaches presented in the *Independent Review* document within the FY22 Independent Limited Assurance Report located at [www.macquarie.com/esg](http://www.macquarie.com/esg), as at 6 May 2022.

### ***MGL's responsibilities***

The Management of MGL is responsible for the Subject Matter and for the preparation of the Subject Matter in accordance with the Criteria.

### ***Our Independence and Quality control***

We have complied with relevant ethical requirements related to assurance engagements, which include independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

In accordance with Auditing Standard ASQC 1 *Quality Control for Firms that Perform Audits and Reviews of Financial Reports and Other Financial Information, Other Assurance Engagements and Related Services Engagements* the firm maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

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### ***Our responsibilities***

Our responsibility is to express a limited assurance conclusion based on the procedures we have performed and the evidence we have obtained.

Our engagement has been conducted in accordance with the Australian Standard on Assurance Engagements (ASAE 3000) *Assurance Engagements Other Than Audits or Reviews of Historical Financial Information* and the Australian Standard on Assurance Engagements (ASAE 3410) *Assurance Engagements on Greenhouse Gas Statements*. That standard requires that we plan and perform this engagement to obtain limited assurance about whether anything has come to our attention to indicate that the Subject Matter has not been prepared, in all material respects, in accordance with the Criteria, for the Period. The procedures we performed were based on our professional judgement and included:

- enquiries of management
- analytical procedures
- testing of selected data to source information
- re-performance of calculations
- walk-through of key processes and controls
- testing over the consolidation and reporting process applied by MGL

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 and consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion.

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

### ***Use of report***

This report was prepared for the Directors of MGL. We disclaim any assumption of responsibility for any reliance on this report to any persons or users other than Directors of MGL, or for any purpose other than that for which it was prepared.

### ***Inherent limitations***

Because of the inherent limitations of any non-financial performance information, given both its nature and the methods used for determining, calculating and estimating such information, it is possible that fraud, error or non-compliance may occur and not be detected. A limited assurance engagement is not designed to detect all instances of non-compliance of the Subject Matter with the Criteria, as it is limited primarily to making enquiries of the Management of MGL and applying analytical procedures. The limited assurance conclusion expressed in this report has been formed on the above basis.

This report relates to Subject Matter contained in the Environmental Social and Governance Section of MGL's Annual Report and the *Carbon and Energy Data FY22* document located at [www.macquarie.com/esg](http://www.macquarie.com/esg) for the 12 months ended 31 March 2022. The Management of MGL are responsible for the integrity of MGL's website. We have not been engaged to report on the integrity of MGL's website. We do not accept responsibility for any changes that may have occurred to the reported subject matter information or criteria since they were initially presented on the website. This report



refers only to the Subject Matter described above. It does not provide an opinion on any other information which may have been hyperlinked to or from these statements.

***Conclusion***

Based on our review, which is not an audit, nothing has come to our attention that causes us to believe that the Subject Matter has not been prepared, in all material respects, in accordance with the Criteria for the 12 months to 31 March 2022.

*PricewaterhouseCoopers*

PricewaterhouseCoopers

*C. Mara*

Caroline Mara  
Partner

Sydney  
6 May 2022

# Carbon and energy data FY2022

## Total greenhouse gas emissions

	Units	Baseline <sup>1</sup>	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21 <sup>2</sup>	FY21 <sup>2</sup>	FY22	FY22	Change		
											Location-based <sup>3</sup>	Market-based	Location-based <sup>3</sup>	Market-based	Prior Year %	Baseline %	
Scope 1 Direct	Diesel, natural gas and refrigerant emissions <sup>4</sup>	tCO <sub>2</sub> -e	-	-	-	-	-	433	518	569	477	465	465	351	351	(24%)	-
Scope 2 Indirect	Electricity emissions:																
	• corporate offices and data centres <sup>5</sup>	tCO <sub>2</sub> -e	49,632	46,499	42,389	41,699	38,876	36,322	34,191	30,726	28,371	22,581	20,883	15,741	-	(100%)	(100%)
	• base buildings <sup>6</sup>	tCO <sub>2</sub> -e	-	-	-	1,558	2,188	1,946	1,779	1,596	1,396	1,153	1,153	264	-	(100%)	-
	<b>Total electricity emissions<sup>7</sup></b>	<b>tCO<sub>2</sub>-e</b>	<b>49,632</b>	<b>46,499</b>	<b>42,389</b>	<b>43,257</b>	<b>41,064</b>	<b>38,267</b>	<b>35,970</b>	<b>32,322</b>	<b>29,767</b>	<b>23,734</b>	<b>22,036</b>	<b>16,005</b>	<b>-</b>	<b>(100%)</b>	<b>(100%)</b>
Scope 3 Indirect	Business travel emissions:																
	Air travel	tCO <sub>2</sub> -e	78,018	63,334	48,870	41,954	40,721	36,674	40,277	55,724	44,405	524	524	10,064	10,064	-	-
	Ground transportation	tCO <sub>2</sub> -e	-	-	-	-	-	-	-	-	-	-	-	263	263	-	-
	Hotels	tCO <sub>2</sub> -e	-	-	-	-	-	-	-	-	-	-	-	1,220	1,220	-	-
	Food & beverages	tCO <sub>2</sub> -e	-	-	-	-	-	-	-	-	-	-	-	2,340	2,340	-	-
	<b>Total business travel emissions<sup>8</sup></b>	<b>tCO<sub>2</sub>-e</b>	<b>78,018</b>	<b>63,334</b>	<b>48,870</b>	<b>41,954</b>	<b>40,721</b>	<b>36,674</b>	<b>40,277</b>	<b>55,724</b>	<b>44,405</b>	<b>524</b>	<b>524</b>	<b>13,887</b>	<b>13,887</b>	<b>2,550%</b>	<b>(82%)</b>
Total Indirect Emissions	<b>Total scope 2 and scope 3</b>	<b>tCO<sub>2</sub>-e</b>	<b>128,941<sup>1</sup></b>	<b>109,833</b>	<b>91,259</b>	<b>85,211</b>	<b>81,785</b>	<b>74,941</b>	<b>76,246</b>	<b>88,046</b>	<b>74,172</b>	<b>24,258</b>	<b>22,560</b>	<b>29,892</b>	<b>13,887</b>	<b>(38%)</b>	<b>(89%)</b>
Total Emissions	<b>Total scope 1, 2 and 3<sup>9</sup></b>	<b>tCO<sub>2</sub>-e</b>	<b>128,941<sup>1</sup></b>	<b>109,833</b>	<b>91,259</b>	<b>85,211</b>	<b>82,240</b>	<b>75,374</b>	<b>76,765</b>	<b>88,616</b>	<b>74,649</b>	<b>24,723</b>	<b>23,025</b>	<b>30,243</b>	<b>14,238</b>	<b>(38%)</b>	<b>-</b>

## Per capita emissions

		Units	Baseline <sup>1</sup>	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21 <sup>2</sup> Location-based <sup>3</sup>	FY21 <sup>2</sup> Market-based	FY22 Location-based <sup>3</sup>	FY22 Market-based	Change	
																Prior Year %	Baseline %
Scope 2 Indirect	Electricity emissions per capita:																
	• corporate offices and data centres <sup>5</sup>	tCO <sub>2</sub> -e per person	3.93	3.40	3.05	2.97	2.70	2.67	2.36	2.04	1.84	1.40	1.30	0.90	-	(100%)	(100%)
	• base buildings <sup>6</sup>	tCO <sub>2</sub> -e per person	-	-	-	0.11	0.16	0.14	0.13	0.11	0.09	0.07	0.07	0.02	-	(100%)	-
	Total electricity emissions per capita <sup>7</sup>	tCO <sub>2</sub> -e per person	3.93	3.40	3.05	3.08	2.86	2.81	2.49	2.15	1.93	1.47	1.37	0.92	-	(100%)	(100%)
Scope 3 Indirect	Total business travel emissions per capita <sup>8</sup>	tCO <sub>2</sub> -e per person	5.34	4.64	3.51	2.99	2.83	2.70	2.78	3.70	2.88	0.03	0.03	0.79	0.79	2,333%	(85%)

## Energy consumption

		Units	Baseline <sup>1</sup>	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21 <sup>2</sup> Location-based <sup>3</sup>	FY22 Location-based <sup>3</sup>	Change	
														Prior Year %	Baseline %
Direct energy	Diesel & natural gas energy use <sup>4</sup>	TJ	-	-	-	-	-	7	8	9	7	7	5	(26%)	(20%)
Indirect energy	Electricity use <sup>7</sup>	TJ	237	243	231	228	215	208	201	194	187	156	148	(5%)	(38%)
Total energy	Total Macquarie energy use <sup>4</sup>	TJ	237	243	231	228	215	215	209	203	194	163	153	(6%)	(36%)

<sup>1</sup> Note that the baseline for Scope 2 electricity emissions is FY2009 while, due to data availability, the baseline for Scope 3 air travel emissions is FY2010. Total Scope 2 and Scope 3 emissions reductions are calculated based on a FY2010 baseline.

<sup>2</sup> Some numbers in this column have been revised from last year's Annual Report to reflect updated invoice data.

<sup>3</sup> Location-based emissions include emissions based on electricity for which energy attribute certificates were purchased and which was not directly sourced from renewable sources through green tariffs. In FY2022, Macquarie has sourced the equivalent of 100% of our electricity consumption from renewable sources through a combination of green tariffs and energy attribute certificates.

<sup>4</sup> Scope 1 emissions and associated energy use were not reported prior to FY2017.

<sup>5</sup> Macquarie corporate offices and data centres are defined as:

- space leased by Macquarie operating entities that are also occupied by Macquarie staff and have a Net Usable Area greater than 100m<sup>2</sup>

- 
- data centres where Macquarie Group has oversight of electricity usage and pays for this usage
  - new space from business acquisitions from the month the acquisition is completed
  - including Australian and international corporate offices.

<sup>6</sup> Base building refers to the energy required to operate a building and excludes tenanted energy use. It includes the mechanical plant, lifts, and lighting in lobby and other common areas. Base building applies only where Macquarie owns and occupies the building, i.e. 50 Martin Place, Sydney.

<sup>7</sup> Estimates make up a portion of energy consumption for FY2022 where no data is available (e.g. if invoices are yet to be received).

<sup>8</sup> From FY2010 to FY2020, business travel emissions were limited to air travel. In FY2021, they included both air and rail travel. In FY2022, business travel emissions include air travel, hotels, ground transportation and food & beverages. Additionally, food & beverages relating to entertainment are included. In FY2022 the air travel emission calculation methodology has matured to be more comprehensive and now reflects the class of ticket flown (e.g. economy, business class).

<sup>9</sup> Since 2010, Macquarie has maintained its carbon neutral commitment by reducing and offsetting emissions from its office energy use and business travel. In FY2022, to meet this commitment, Macquarie purchased and retired a diverse portfolio of voluntary carbon offsets.