

Green Finance Impact Report



# Introduction

Macquarie Group Limited ("Macquarie" or "MGL") is pleased to present its Green Finance Impact Report for the 12 months to 31 March 2024.

This report relates to the MGL 2021 £900 million Sterling and 2020 \$US300 million Samurai loan facilities, of which £250 million and \$US150 million constitutes green financing ("green tranches") respectively. On 14 December 2023, the green tranche of the Samurai loan was repaid, leaving the Sterling green tranche outstanding as at 31 March 2024. The report provides information on the environmental benefits ("green impact") of the eligible projects<sup>1</sup> which have been notionally<sup>2</sup> allocated green tranche financing.

The approach presented in this report is consistent with Macquarie's Green Finance Framework ("GFF") which was developed in accordance with the APLMA<sup>3</sup> Green Loan Principles. Macquarie has utilised the expertise of Macquarie Asset Management's (MAM's) Sustainability Green Analytics team to demonstrate the green impact of its eligible projects. The full Impact Report is available in Appendix A.

Macquarie Asset Management ("MAM"), the global asset management division of the Macquarie Group, includes the MAM Green Investments team. The MAM Green Investments team has significant experience spanning investment, management and portfolio strategy, and specific industrial expertise across development, technical and engineering, customer solutions and energy markets, business creation and growth, and green analytics.



<sup>2</sup> See glossary for definition of notional.



# **Contents**

Key highlights	03
Summary of green metrics	04
Macquarie's green financing transactions	06
Approach	30
Green impact	10
Macquarie's green capabilities and commitments	11
Glossary	13
Appendix A: Green Impact Report	14
Appendix B:	2/

<sup>3</sup> Asia Pacific Loan Market Association.

# Key highlights on Macquarie's green financing



Fourteen individual projects across Europe and Asia were allocated green financing



The portfolio<sup>6</sup> is forecast to produce over 5,250 GWh per year



The Green Finance Framework has been developed in accordance with the APLMA **Green Loan Principles** 



The portfolio<sup>6</sup> is forecast to avoid greenhouse gas emissions of 2,470 kt CO<sub>2</sub>e per year



**A\$0.7b⁴** equivalent of green financing drawn during<sup>4</sup> FY2024 from 24 financiers across the globe



Finance was allocated to eligible projects in development, construction, or operations with renewable energy generation capacity of over 1,585 MW<sup>7</sup>



MAM Green Investments Carbon Score: 2,470 AA<sup>5</sup>



Reasonable assurance provided by PwC over Macquarie's compliance with the Green Finance Framework (refer to page 9 for scope)

- 4 £250 million and \$US150 million converted to AUD at March 31st 2024 FX rates. \$US150 million was repaid on 14 December 2023.
- 5 The MAM Green Investments Carbon Score is a measure of greenhouse gas (GHG) emissions reduction: the number describes the portfolio's contribution to avoided emissions from the local grid, where 2,470 comprises the forecasted kt CO<sub>2</sub>e avoided per year by the assets which have received funds; and the AA is the Carbon Rating, which is a measure of a project's lifecycle greenhouse gas emissions compared to the emissions of the counterfactual. Projects with the lowest lifecycle emissions relative to the counterfactual would score the highest ratings from AAA to B.
- 6 The portfolio refers to the fourteen eligible projects which were allocated green financing throughout the reporting period (refer to Appendix A). Forecasts are based on a whole project basis, i.e. 100% of the total Green Impact derived from the projects that have been notionally allocated green tranche financing, irrespective of the portion of the year for which financing has been allocated. GWh aggregated using information provided on the energy generation yield on each of the allocated projects. For further detail, refer to Appendix 1 in the Green Impact Reporting Criteria.
- 7 Based on the total green impact derived from 100% of those projects that have been notionally allocated green tranche financing, and not just the proportional impact of the green tranches, irrespective of the portion of the year for which financing has been allocated.



# **Summary of green metrics**

Throughout the reporting period fourteen projects were allocated funding from the green tranches, delivering a significant green impact and achieving a Carbon Score of 2,470 AA.

### Throughout this report the green impact and associated metrics:

- 1. incorporate all the eligible projects which have been notionally allocated green tranche financing from 1 April 2023 to 31 March 2024 (the "portfolio"). This is in line with the APLMA Green Loan Principles and allows full transparency and disclosure of each project that has been supported by the green tranches.
- 2. reflect the total green impact derived from 100% of those projects that have been notionally allocated green tranche financing, irrespective of the portion of the projects' value financed or the portion of the year for which financing has been allocated. This approach has been adopted, as the GFF's 'Management of proceeds' described on page 9 does not support proportional allocation due to the revolving allocation of the use of proceeds (i.e., projects may not necessarily be supported by the facility for the entire reporting period).

### MAM Green Investments Carbon Score

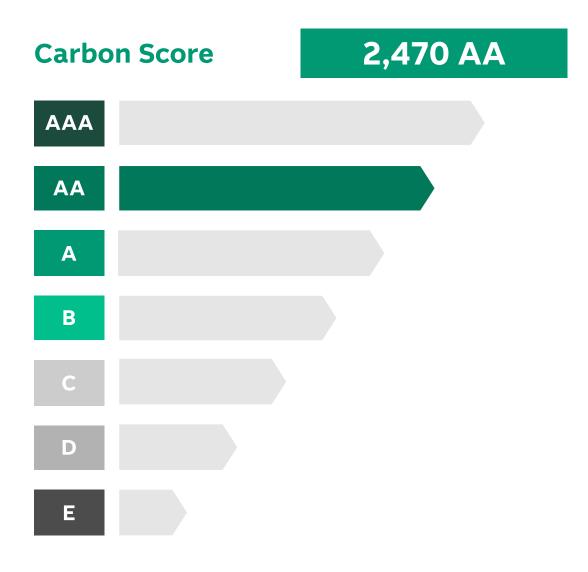
The MAM Green Investments Carbon Score ('the Carbon Score') is MAM's standard for communicating the impact of low carbon infrastructure in helping to reduce greenhouse gas emissions. While other measures of GHG emissions only consider the emissions produced during a project's operational phase, the Carbon Score also considers the emissions across the project's entire lifecycle.

The rating shows the aggregated Carbon Score for Macquarie's green tranches is 2,470 AA. The rating of AA reflects the low lifecycle carbon intensity of the solar PV and wind power projects notionally allocated funding, and the mix of project locations in lower carbon intensive grids (e.g. UK) and higher carbon grids (e.g. Taiwan and India).

Projects located in countries with higher carbon intensive grids achieve higher ratings, reflective of their potential to displace more polluting generation.

The Carbon Score also shows the quantified greenhouse gas emissions avoided as 2,470 kt CO<sub>2</sub>e/yr,<sup>8</sup> This globally applicable approach allows investors to compare the relative performance of projects using an emissions avoided measure.

Full details of the Carbon Score methodology is provided within the Green Impact Report in Appendix A.2.



**2,470 Kt CO<sub>2</sub>e** Avoided (Annual Average)

<sup>8</sup> For renewable electricity projects, the quantified GHG emissions avoided are calculated with reference to emissions from displaced marginal electricity generators on the local grid. Please refer to Appendix A.2 in the Green Impact Report for details.

# Portfolio renewable energy capacity



**260 MW** 

of renewable energy in construction9



1,325 MW

of renewable energy in **operation**<sup>9</sup>



The portfolio is forecast<sup>10</sup> to produce over

5,250 GWh

per year



The portfolio is forecast<sup>10</sup> to avoid greenhouse gas emissions of

2,470 kt CO<sub>2</sub>e per year

- 9 Based on the total green impact derived from 100% of those projects that have been notionally allocated green tranche financing, and not just the proportional impact of the green tranches, irrespective of the portion of the year for which financing has been allocated.
- 10 The forecasts are based on the total green impact derived from 100% of those projects that have been notionally allocated green tranche financing, and not just the proportional impact of the green tranches, irrespective of the portion of the year for which financing has been allocated. GWh aggregated using information provided on the energy generation yield on each of the allocated projects. For further detail, refer to Appendix 1 in the Green Impact Reporting Criteria.





# Macquarie's green financing transactions

Climate change and the associated legislative and regulatory responses present significant challenges for society and the global economy. Green financing has an important role to play in supporting the global energy transition, and investor appetite for these products is rising.

In June 2018, Macquarie issued a £2,100 million loan facility of which £500 million constituted green financing. £250 million of green financing was returned to lenders in April 2020 upon prepayment of the 3yr tranches of this facility. The 5yr tranches of the 2018 facility were refinanced in October 2021 for £900 million, retaining £250 million in green financing. In March 2020, Macquarie issued its second green financing facility, a \$US300 million facility into the Japanese market. Of this, \$US150 million constitutes

as green financing. On 14 December 2023 the \$US150 million was repaid.

The green tranches were issued in accordance with Macquarie's GFF. The GFF was established to demonstrate how Macquarie and its entities intend to enter into green financing transactions<sup>11</sup> to fund projects that will deliver environmental benefits to support Macquarie's business strategy.

### The details of Macquarie's green tranches are as below:

	Macquarie GBP Facility	Macquarie USD Samurai Facility
Tranche	Tranche A	Tranche A
Issuer	Macquarie Group Limited	Macquarie Group Limited
Issue Date	27 October 2021	30 March 2020
Original Maturity Date	1 April 2027	30 March 2025
Prepayment Date	-	14 December 2023
Original Tenor	5.5 years	5 years
Total Volume	£250m	\$US150m
Structure	Term	Term
Initial Drawdown Date	29 October 2021	9 April 2020
Drawn Volume as at 31 March 2024	£250m	Repaid 14 December 2023
Use of Proceeds	In accordance with Macquarie's Green Finance Framework	In accordance with Macquarie's Green Finance Framework

### For the reporting period 1 April 2023 to 31 March 2024:

- MGL 2021 GBP Facility Tranche A was drawn down and allocated throughout the entire reporting period.
- MGL 2020 Samurai USD Facility Tranche A was drawn down and allocated through the reporting period 1 April 2023 until repayment on 14 December 2023.

<sup>11</sup> See glossary for definition of green financing transactions.

### The eligible projects which have been notionally allocated funding from the green tranches during the reporting period are summarised in the following table:

Eligible projects	Location	Technology	Stage	Macquarie Equity Stake <sup>12</sup>	Total Capacity (MW) <sup>13</sup>	Total GHG emissions avoided (kt CO <sub>2</sub> e/yr) <sup>13</sup>
East Anglia ONE	UK	Offshore Wind	Operational	20%	714	1037
Formosa 2	Taiwan	Offshore Wind	Operational	26%	376	548
Kasar Phase 2 (Vibrant Energy)	India	Onshore Wind	Operational	$90\%^{14}$	25	69
Koppal Wind (Vibrant Energy)	India	Onshore Wind	Construction	90%14	104	264
VEH Srishti (Vibrant Energy)	India	Onshore Wind	Operational	90%14	54	146
Kalyani (Vibrant Energy)	India	Solar PV	Operational	90%14	24	36
Kaomatikuntla - 01 (Vibrant Energy)	India	Solar PV	Operational	90%14	11	16
Kaomatikuntla - 02 (Vibrant Energy)	India	Solar PV	Operational	90%14	14	19
Koppal Solar (Vibrant Energy)	India	Solar PV	Construction	90%14	155	198
Palamakulla (Vibrant Energy)	India	Solar PV	Operational	90%14	9	13
Tanakallu - 01 (Vibrant Energy)	India	Solar PV	Operational	90%14	12	15
Tanakallu - 02 (Vibrant Energy)	India	Solar PV	Operational	90%14	9	14
Telcontar (Vibrant Energy)	India	Solar PV	Operational	90%14	67	84
Vizianagaram (Vibrant Energy)	India	Solar PV	Operational	90%14	10	12
Total					1,585	2,470

<sup>12</sup> Reflects Macquarie equity stake as at 31 March 2024.



<sup>13</sup> The forecasts are based on the total green impact derived from 100% of those projects that have been notionally allocated green tranche financing, and not just the proportional impact of the green tranches, irrespective of the portion of the year for which financing has been allocated. Total Capacity is subject to rounding.

14 90% represents Macquarie equity stake in Vibrant Energy. Vibrant Energy invests into the individual projects.

# Approach

The GFF, under which the green tranches were issued, was developed in accordance with the APLMA Green Loan Principles, February 2021. It was supported by a second opinion external review by Sustainalytics and was noted to be credible and impactful.<sup>15</sup>

# The framework is based on four core components:

- 1. Use of proceeds
- 2. Process for project evaluation and selection
- 3. Management of proceeds
- 4. Reporting

### **Use of proceeds**

Under the GFF, the use of proceeds of each green financing transaction is notionally allocated against the financing or re-financing of eligible projects which provide clear environmental benefits.

The GFF explicitly recognises several broad categories of eligibility for projects with the objective of addressing key areas of environmental concern such as climate change, natural resources depletion, loss of biodiversity, and air, water and soil pollution.

The proceeds from the green tranches were applied towards financing offshore wind, onshore wind and solar development projects across the globe in FY24. Going forward, we may extend the use of proceeds to support further renewable energy, energy efficiency, waste management, green buildings and clean transportation projects.

Activities and lending to an industry or technology which directly involves fossil fuels, nuclear or biomass suitable for food production are specifically excluded under the GFF.

# Process for project evaluation and selection

Macquarie has established a Green Finance Working Group ("GFWG") which has responsibility for governing and implementing the GFF. The GFWG currently comprises representatives from Macquarie's Environmental and Social Risk ("ESR") team and MAM Sustainability Green Analytics team ("Green Analytics team") who hold in-house environmental expertise, as well as representatives from Risk Management Group - Credit, Financial Management Group - Group Treasury and Macquarie's Operating Groups.

Business units will identify potential eligible projects based on the criteria in the GFF's use of proceeds. Potential eligible projects are submitted to the GFWG for review and confirmation that they qualify under the GFF.

This includes the preparation of a suitable Green Opinion<sup>16</sup> provided by the Green Analytics team where appropriate.

The Green Analytics team is responsible for confirming that the projects:

- fall within one of the eligible project categories defined in the GFF
- are anticipated to provide clear environmental sustainability and/or climate change mitigation benefits in terms of the contribution to one or more Green Purposes<sup>17</sup>.

In addition to meeting the green loan or bond eligibility criteria, a potential eligible project must do no significant harm to any of the other overarching thematic objectives outlined in the GFF's use of proceeds. All projects are assessed under Macquarie's group-wide ESR policy during the investment decision process.

The ESR policy provides a process to assess, manage, mitigate, monitor and report environmental and social risks and takes a precautionary approach to ESR issues including labour and employment practices, climate change, human rights, resource efficiency, pollution prevention, biodiversity and cultural heritage. The approach is guided by international guidelines including the International Finance Corporation Performance Standards.

<sup>15</sup> Sustainalytics opinon is available from https://www.macquarie.com/assets/macq/investor/debt-investors/macquarie-green-finance-second-party-opinion.pdf

<sup>16</sup> Green Opinion provided by the Green Analytics team on the prospective transaction included in the eligible projects' portfolio.

<sup>17</sup> As listed in The Green Investment Principles, available from www.greeninvestmentgroup.com/green-impact.

### **Management of proceeds**

The proceeds of the green tranches have not been credited to a dedicated account and are deposited in Macquarie's general funding accounts.

We have developed an internal governance process to notionally allocate proceeds against eligible projects in an appropriate manner (as required in the APLMA Green Loan Principles). Through the GFWG, Macquarie maintains a register of green financing transactions and eligible projects and has implemented a monitoring and reporting process to ensure that:

- the total funding required for eligible projects is greater than the outstanding principal amounts due on green financing transactions
- eligible projects are owned within the consolidated entity<sup>19</sup> which raises the green financing transaction that is notionally allocated against the eligible projects

eligible projects do not have other financing (a) secured<sup>20</sup> against them, or (b) attributable to them in respect of another 'use of proceeds' obligation.

### Reporting

This report is designed to outline Macquarie's compliance with the GFF and contain information on the allocation reporting and impacts of outstanding green financing transactions.

The report is publicly available on Macquarie's website and will be revised annually.

### **Assurance**

PwC has been engaged to provide reasonable assurance over Macquarie's compliance with the obligations contained within its GFF.

Claims relating to the green impact estimated in relation to eligible projects allocated to under the GFF were outside the scope of PwC's assurance engagement.

<sup>20</sup> Secured in this instance is defined as projects where external financing is either secured against Macquarie's investment (with no letter of credit in place) or has recourse back to Macquarie.



<sup>18</sup> This is calculated as the legal commitment Macquarie has agreed to invest in an eligible project as reflected in contractual arrangements entered into by Macquarie, irrespective of whether the commitment is drawn or undrawn. This includes, but is not necessarily limited to, the purchase price for an eligible project, the total committed exposure to an eligible project or an equity contribution to an eligible project.

<sup>19</sup> Macquarie Group Limited and its subsidiaries.



Macquarie has utilised the expertise of the Green Analytics team to demonstrate the green impact of the proceeds from the green tranches.

In line with the APLMA Green Loan Principles, the green impact has been calculated for all the projects to which proceeds have been notionally allocated green tranche financing from 1 April 2023 to 31 March 2024. This allows full transparency and disclosure of each green project that has been supported by the GFF. The full Impact Report is available in Appendix A.

### Forecasted green impact of eligible projects<sup>21</sup>

### **GHG** emissions avoided (carbon dioxide equivalent)

Average annual	2,470	kt CO <sub>2</sub> e / yr
Remaining lifetime	62,293	kt CO <sub>2</sub> e

### Other emissions to air avoided (oxides of nitrogen)

Average annual	4,144	t NO <sub>x</sub> / yr
Remaining lifetime	111,281	t NO <sub>x</sub>

### Fossil fuels consumption avoided (oil equivalent)

Average annual	1,111	kt oe / yr
Remaining lifetime	27,377	kt oe

### **Green impact forecast accuracy**

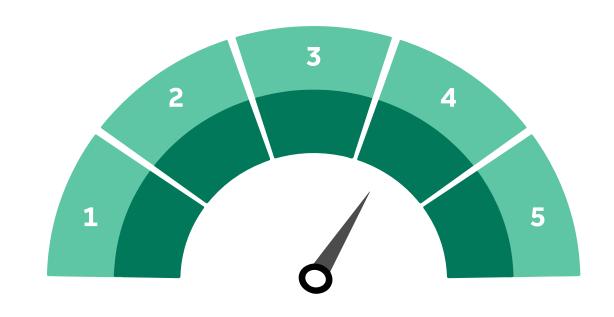
Green impact forecast accuracy is an assessment of the level of confidence that can reasonably be placed on the accuracy of any quantified green impact forecast. The Green Analytics team has assessed the weighted average green impact forecast accuracy for the portfolio at Level 4 (High). The forecasts and

green impact forecast accuracy are subject to the methodology, assumptions, limitations and methods set out in Appendix A.2.

The majority of the projects within the portfolio are operational and as such, their forecasted performance is based on actual performance of the assets.

This results in a Level 4 (High) green impact forecast accuracy, which is the same as the FY2023 assessment.

### Level 4 (High)



### **The Green Impact Report**

The Green Impact Report (Appendix A), which uses MAM Green Investments' green impact methodology, provides green impact performance disclosure. The report has unique features developed using proprietary methodology and shows quantified, globally comparable green performance data for a project or portfolio including:

- · greenhouse gas emissions avoided, calculated according to the internationally harmonised approach for greenhouse gas accounting<sup>22</sup>
- metrics for avoided fossil fuel consumption (tonnes of oil equivalent), air pollutant emissions (nitrous oxides, oxides of sulphur, particulate matter), and, where applicable, waste to landfill avoided and materials recycled and recovered
- a measure of accuracy of the forecast green impact, derived from project technology type, stage of project development, location of the project/ country governance, and input data quality
- the direct or indirect performance of the portfolio or project against the UN Sustainability Development Goals and their associated targets.
- 21 The forecasts are based on the total green impact derived from 100% of those projects that have been notionally allocated green tranches, irrespective of the portion of the year for which financing has been allocated.
- 22 The GHG Protocol for Project Accounting <a href="https://www.ghgprotocol.org/standards/project-protocol">www.ghgprotocol.org/standards/project-protocol</a>.



# Macquarie's green capabilities and commitments

Macquarie is a global financial services group operating in 34 markets in asset management, retail and business banking, wealth management, leasing and asset financing, market access, commodity trading, renewables development, specialist advice, access to capital and principal investment.

For two decades, Macquarie has worked in close partnership with stakeholders in the public and private sectors to support the energy transition and advance solutions to climate challenges. With extensive expertise and experience in scaling energy transition solutions, Macquarie is using its deep capabilities in energy, infrastructure, technology and commodities to support climate action.

Drawing on our global network, sector expertise and strong track record, Macquarie provides a diverse range of products and services with an ESG focus to corporate, government and institutional clients.

Our activities span the investment cycle from research on alternative energy to tailored capital solutions for the development and construction of renewable assets and social infrastructure.

Macquarie continues to believe an effective transition must be managed, orderly and just. Consistent with that philosophy, and in recognition that much of the world will depend on the oil/gas industries for years to come, Macquarie is working with our oil/gas clients to help them reduce their emissions as well as maintain sufficient energy supply.

### **Our climate strategy**

At Macquarie, our approach to addressing climate challenges is rooted in our purpose of 'Empowering people to innovate and invest for a better future'.

Macquarie's climate strategy, as set out in our 2023 Net Zero and Climate Risk Report, is based around four areas of action:

- 1. Continue to reduce the emissions of our own business operations
- 2. Leverage our knowledge and networks to help others decarbonise
- 3. Align our financing activity with the global goal of net zero emissions by 2050
- 4. Invest in climate mitigation and adaptation solutions

Macquarie now has targets in place for over 80% of our dollar exposures to carbon-intensive sectors and, in line with the Net-Zero Banking Alliance (NZBA) Guidelines for Climate Target Setting - Supporting notes (Guidelines), we will outline our approach to all remaining material carbon-intensive sectors in our next Net Zero and Climate Risk Report.<sup>23 24</sup>

- 23 Lending refers to loan assets held at amortised cost and excludes certain items such as leasing, asset finance, trading assets and short-term financing (e.g., inventory finance).
- 24 The percentage of dollar exposures is shown as at 31 March 2023. Exposures include on balance sheet lending and equity investments. In addition, for motor vehicles, exposures include novated leases. See Appendix 3 of the 2023 Net Zero and Climate Risk Report for details.



Separately to Macquarie's direct financing activities, MAM set the foundations for its net zero journey by publicly announcing its Net Zero Commitment in late 2020. In supporting the transition to a low carbon economy, MAM made the following commitments:

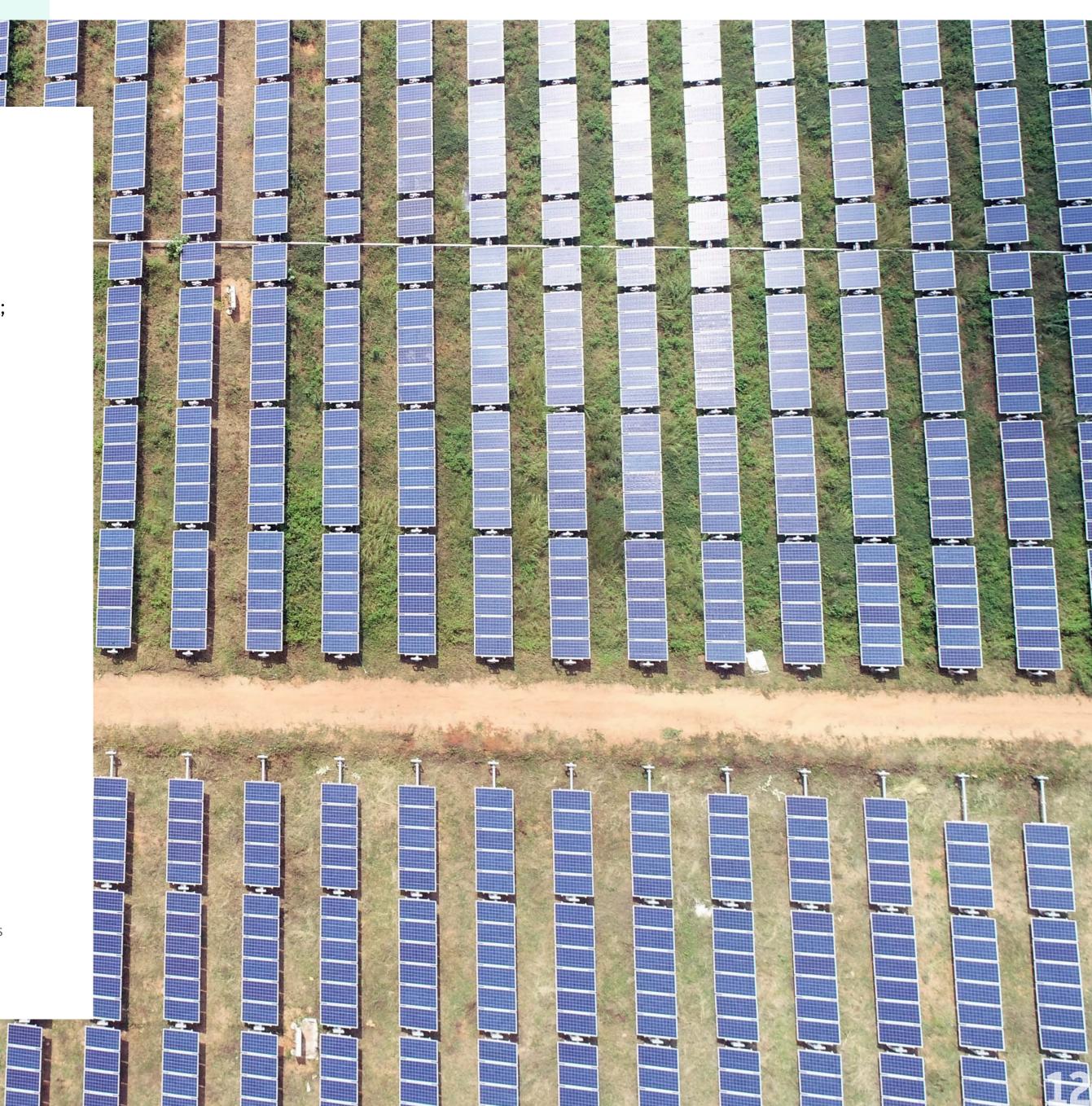
- Where MAM has control or significant influence,<sup>25</sup> it will invest and manage its portfolio in line with global net zero Scope 1 and 2 greenhouse gas emissions by 2040
- Where MAM does not have control or significant influence, such as in its managed portfolio of public securities, it will continue to support the goals of the Paris Agreement<sup>26</sup> in a manner consistent with its client-guided fiduciary and regulatory responsibilities.

### Our green capabilities

Across our Operating Groups, Macquarie is supporting a range of environmental financing activities under the following broad categories: financing and developing; advising; managing; researching and trading. Our activities are described on pages 62-64 in the environmental and social financing section of the FY2024 ESG Report.

For more information see <u>macquarie.com/esg</u>

<sup>26</sup> The Paris Agreement's central aim is to strengthen the global response to the threat of climate change by maintaining a global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. The Intergovernmental Panel on Climate Change concluded the need for net zero emissions by 2050 to remain consistent with 1.5°C.



<sup>25</sup> MAM generally only has influence over Scope 1 and 2 emissions. However, to the extent possible, in line with the Net Zero Asset Managers initiative guidance, MAM intends to support assets where it has control or significant influence to reduce their Scope 3 emissions.

# Glossary

CO <sub>2</sub> e	Carbon dioxide equivalent; a unit of measurement used to compare emissions from various greenhouse gases relative to their global-warming potential.	
Counterfactual	A scenario in which the eligible projects were not built.	
Eligible projects	Eligible projects refer to projects which fall within the categories below and which are or have been originated by the various business units of Macquarie.  • renewable energy  • energy efficiency  • waste management  • green buildings  • clean transportation	
ESG	Environmental, Social and Governance	
ESR	Environmental and Social Risk	
GFF	Macquarie's Green Finance Framework	
GFWG	Green Finance Working Group	
GHG	Greenhouse Gases	
Green finance transactions/ Green financing	These include bonds, loans and other debt or financing structures which support eligible projects, as defined in the GFF.	
Green impact	Environmental benefits of the use of proceeds of the green tranches.	

Green tranches	The tranches of the 2021 MGL GBP 900 million and 2020 MGL USD 300 million Samurai loan facilities which constitute green financing.	
	<ul> <li>This includes:</li> <li>Tranche A of the 2021 MGL GBP facility totalling GBP 250 million (Since establishment in 27 October 2021); and</li> <li>Tranche A of the MGL Samurai Facility totalling USD 150 million (repaid on 14 December 2023).</li> </ul>	
Kt	Kilotonne, equal to 1000 metric tonnes.	
Legal commitment	The dollar amount Macquarie has agreed to invest in an eligible project as reflected in contractual arrangements, irrespective of whether the commitment is drawn or undrawn. This includes, but is not necessarily limited to, the purchase price for an eligible project, the total committed exposure to an eligible project or an equity contribution to an eligible project.	
MAM	Macquarie Asset Management	
MW	Megawatt is a unit for measuring electrical power, equal to one million watts	
Notional allocation	The allocation of outstanding green financing to eligible projects at any point during the reporting period (not just as at 31 March 2024) irrespective of whether the legal commitment of the eligible project is drawn.	
	While notional allocations can be made against undrawn funding, we have been careful to allocate against drawn balances only in order to ensure the greatest green impact.	
PPAs	Power purchase agreements	
SDGs	United Nations Sustainable Development Goals	
Reporting period	The period from 1 April 2023 to 31 March 2024	



## 1. Introduction

Macquarie Asset Management's (MAM's) Green Analytics team has prepared this Green Impact Report (the 'Report') in connection with the Macquarie Group Limited ('MGL') 2021 GBP 900 million Sterling, and 2020 USD 300 million Samurai loan facilities; of which GBP 250 million and USD 150 million constitutes green financing ('green tranches') respectively. The USD 150 million was repaid on 14 December 2023.

This Report covers those projects (the 'Projects') that were supported by the green tranches between 1 April 2023 and 31 March 2024 (together, the 'Portfolio'). The Green Analytics team has analysed the performance and forecast the Portfolio's avoided greenhouse gas ('GHG') emissions; emissions to air; and fossil fuels consumption (together, the 'Green Impact'), as summarised below. The forecasts are based on the total Green Impact derived from 100% of the Projects that have been notionally allocated green tranche financing. This Report also considers the Portfolio's alignment with the United Nations Sustainable Development Goals.

The Portfolio's Carbon Score is 2,470 AA. We have assessed the weighted average Green Impact Forecast Accuracy for the Portfolio at Level 4 (High). Please refer to Appendix 2 for further information on how this is calculated.

### Portfolio information<sup>27</sup>

Total capacity (MW)	1,585
Solar PV (MW)	311
Onshore wind capacity (MW)	184
Offshore wind capacity (MW)	1,090
Construction projects	2
Operational projects	12

### 27 Please see Appendix 1 for further details of the projects within the Portfolio.

As of 1 April 2022, the Green Analytics team is part of the MAM Sustainability Team. Important note: This Report has been prepared by MAM's Green Analytics team on the basis of, and should be read in conjunction with, the methodology v1.2, assumptions, limitations and other terms set out in Appendices 2, 3 and the Important Notice and Disclaimer, Appendix 4. This is not a due diligence report and should not be relied upon as such. If appropriate, recipients and users of this Report should conduct their own separate environmental, social and governance enquiries and assessments. This Report is provided for information purposes only and does not constitute and shall not be deemed to be in any way an offer or invitation or solicitation of any offer or invitation to sell or purchase shares or invest. This Report has not been filed, lodged, registered or approved in any jurisdiction and recipients of this document should keep themselves informed of and comply with and observe all applicable legal and regulatory requirements.



# Carbon Score AAA AA B C D E

**2,470 Kt CO<sub>2</sub>e** Avoided (Annual Average)

### **Green impact: Forecast performance**

### **GHG** emissions avoided (carbon dioxide equivalent)

Average annual	2,470	kt CO <sub>2</sub> e / yr
Remaining lifetime	62,293	kt CO <sub>2</sub> e

### Other emissions to air avoided (oxides of nitrogen)

Average annual	4,144	t NO <sub>x</sub> / yr
Remaining lifetime	111,281	t NO <sub>x</sub>

### Fossil fuels consumption avoided (oil equivalent)

Average annual	1,111	kt oe / yr
Remaining lifetime	27,377	kt oe

# 2. Green impact forecast

In this Report we use the term 'Green Impact' to refer to the GHG emissions, other emissions to air and fossil fuels consumption avoided by the Portfolio, as defined in Appendix 2. Forecasts are based on data provided to the Green Analytics team and are subject to our assessment of Green Impact Forecast Accuracy (as set out on page 18). The forecasts and Green Impact Forecast Accuracy are subject to the methodology, assumptions, limitations and methods set out in the Appendices 1-4.

### Greenhouse gas emissions avoided

The Portfolio is forecast to avoid over 60 million tonnes CO<sub>2</sub>e over the remaining lifetime of the constituent Projects.

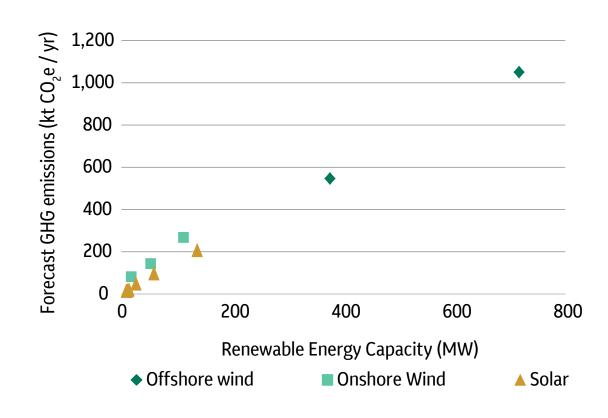
Avoidance of GHG emissions (measured in carbon dioxide equivalent: CO<sub>2</sub>e), both actual and forecast, is derived by comparing the emissions associated with each underlying Project to a counterfactual (alternative method of energy generation. Please see Appendix 2 for counterfactual calculation methodology). In this case, the counterfactual is local marginal electricity grid emissions where the Project is located.

### Other emissions to air avoided

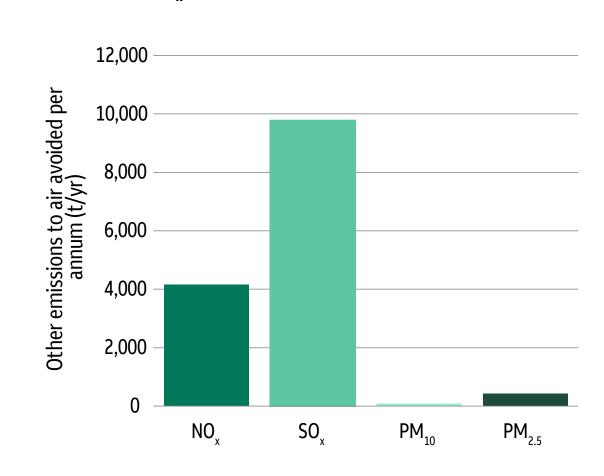
The Portfolio is forecast to result in the avoidance of over 4,000 tonnes  $NO_x$ , nearly 10,000 tonnes  $SO_x$  and over 500 tonnes of particulate matter per year.

Other emissions to air avoided is a measure of net air pollutant emissions compared to the marginal grid generation mix displaced by portfolio. Quantified air pollutant emissions include oxides of nitrogen (NO $_{\rm x}$ ), oxides of sulphur (SO $_{\rm x}$ ), particulates up to 2.5 micrometres (µm) in diameter (PM2.5) and particulates between 2.5 µm and 10 µm in diameter (PM $_{10}$ ).

# The Portfolio is forecast to avoid emissions of 2,470 kt CO<sub>2</sub>e / yr



# The Portfolio is forecast to avoid emissions of 4,144 t NO, / yr



# Greenhouse gas emissions avoided (carbon dioxide equivalent)

Remaining lifetime	62,293	kt CO <sub>2</sub> e / yr
Average Annual	2,470	kt CO <sub>2</sub> e

### **Emissions to air avoided**

verage annual nitrogen oxides	4,144 t NO <sub>x</sub> / yr
verage annual sulphur oxides	9,723 t SO <sub>x</sub> / yr
verage annual 10µm articulate matter	87 t PM <sub>10</sub> / yr
verage annual 2.5µm articulate matter	430 t PM <sub>2.5</sub> / yr

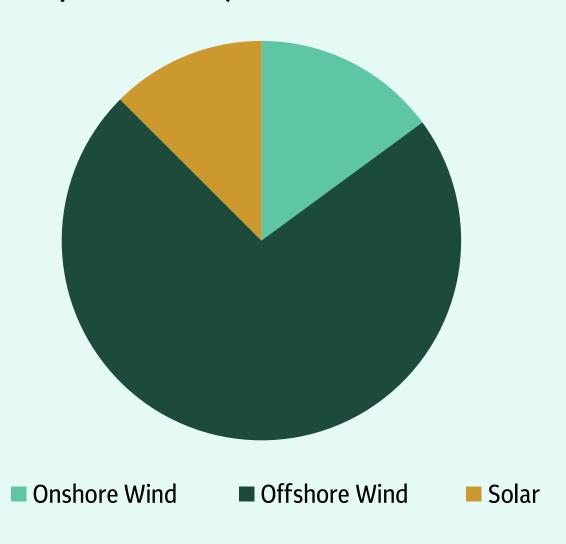
# 2. Green impact forecast

### Fossil fuels consumption avoided

Fossil fuels consumption avoided is a measure of the net consumption of coal, oil and gas avoided, compared to the counterfactual method (for counterfactual methodology please refer to Appendix 2) of grid-based electricity generation, and is normalised to metric kilotonnes of oil equivalent (kt oe).

The Portfolio is forecast to avoid an average of 1,111 kt oe per year. When the underlying projects are aggregated based on technology, they are anticipated to avoid an average of 807 kt oe per year for offshore wind, 166 kt oe per year for onshore wind and 139 kt oe per year for solar PV.

### The Portfolio is forecast to avoid 1,111 kt oil equivalent annually



### **Fossil fuels consumption avoided**

Remaining lifetime	27,377	kt oe
Average Annual	1,111	kt oe / yr



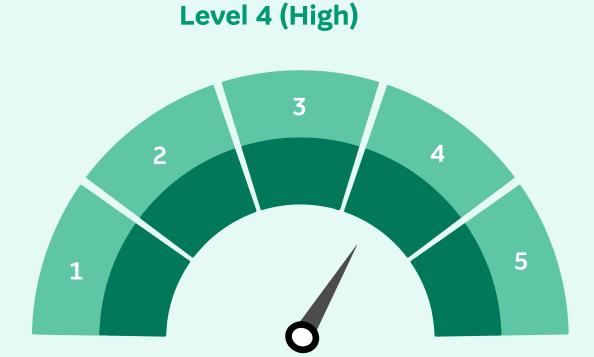
# 3. Green impact forecast accuracy

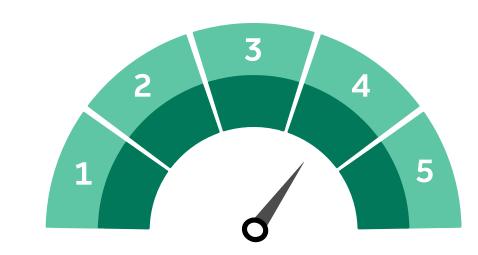
Green Impact Forecast Accuracy is our assessment of the level of confidence that can reasonably be placed on the accuracy of any quantified Green Impact Forecast. It is based on information provided to the Green Analytics team (set out on page 16 and in the methodology referred to in Appendix 2).

We assess Green Impact Forecast Accuracy at levels ranging from Level 1 (Low) to Level 5 (Very High), which represent the combined and weighted average of a series of factors, according to our in-house experience of the sensitivity of each element. See Appendix 2 for further detail.

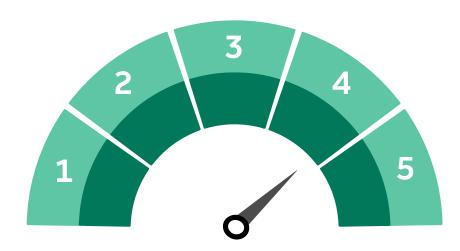
We have assessed the weighted average Green Impact Forecast Accuracy for the Portfolio at Level 4 (High).

Scores remain the same as last year, indicative of projects which are operational with actual generation data. The country governance score is also similar to 2022, with the majority of assets located in India, one located in Europe and one in Taiwan.

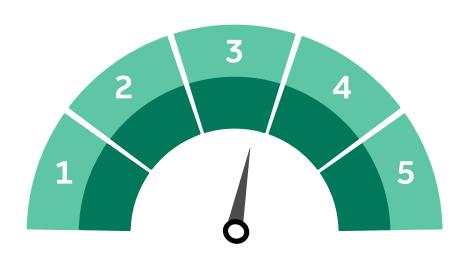




**Data quality** 



**Technology & development stage** 



Local governance



# 4. Contribution to the Sustainable **Development Goals**

The United Nations Sustainable Development Goals<sup>28</sup> (SDGs) are a set of 17 goals for sustainable development, defined by 169 SDG Targets to be achieved by 2030.

The Green Analytics team has considered the performance of the Portfolio against the SDGs and their associated Targets. The assessment has identified those Targets to which the Portfolio contribute directly

(associated SDGs shown as full coloured icons below), and those Targets to which the Portfolio contribute indirectly (inverted coloured SDG icons below).





















































### **Direct contribution**



### Goal

Goal

### **SDG Target**



### Target 7.2

Increase substantially the share of renewable energy in the global energy mix



### Target 9.1

Develop quality, reliable, sustainable and resilient infrastructure

The Portfolio accounts for 1,585 MW<sup>29</sup> nameplate capacity for renewable energy generation to the respective local

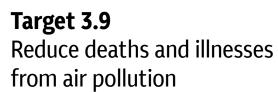
### **Indirect contribution**

### **SDG Target**

### Contribution

Contribution

electricity grids.



According to the World Health Organization, air pollutants such as nitrogen oxides (NOx), sulphur oxides (SOx) and particulate matter (PM) can lead to premature death and illnesses such as stroke, heart disease, lung cancer and chronic respiratory diseases.<sup>30</sup> Avoidance of fossil fuel electricity generation due to renewable generation is forecast to avoid average annual emissions of harmful air pollutants of:

4,144 NO<sub>x</sub> / yr 9,723 SO<sub>2</sub> / yr

 $87 \text{ t PM}_{10} / \text{yr}$  $430 \text{ t PM}_{25} / \text{yr}$ 

12 RESPONSIBLE CONSUMPTION



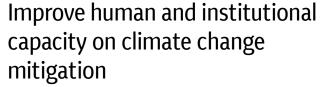
### **Target 12.2**

Achieve the sustainable management and efficient use of natural resources

Avoidance of fossil fuel electricity generation due to renewable generation results in the forecast avoidance of the consumption 1,111 kt oil equivalent annually.

13 CLIMATE ACTION

### **Target 13.3**



The Portfolio raises awareness and improves institutional capacity

The Portfolio is forecast to avoid 2,470 kt CO<sub>2</sub>e of greenhouse gas emissions annually.

on climate change mitigation and negative impact reduction.

<sup>29</sup> Based on the total green impact derived from 100% of those projects that have been notionally allocated green tranche financing, and not just the proportional impact of the green tranches and irrespective of whether the project is in operation.

<sup>30</sup> World Health Organization, Ambient air pollution - a major threat to health and climate: <a href="https://www.who.int/airpollution/ambient/en/">https://www.who.int/airpollution/ambient/en/</a>

Portfolio: Key Project data<sup>31</sup>

Eligible projects	Location	Technology	Capacity (MW)	Stage	Calendar year of Commercial Operations Date (estimated for future dates)
East Anglia ONE	UK	Offshore Wind	714	Operational	2020
Formosa 2	Taiwan	Offshore Wind	376	Operational	2023
Kalyani (Vibrant Energy)	India	Solar PV	24	Operational	2023
Kasar Phase 2 (Vibrant Energy)	India	Onshore Wind	25	Operational	2024
Koppal Solar (Vibrant Energy)	India	Solar PV	155	Construction	2024
Koppal Wind (Vibrant Energy)	India	Onshore Wind	104	Construction	2024
Kaomatikuntla - 01 (Vibrant Energy)	India	Solar PV	11	Operational	2017
Kaomatikuntla - 02 (Vibrant Energy)	India	Solar PV	14	Operational	2020
Palamakulla (Vibrant Energy)	India	Solar PV	9	Operational	2017
Tanakallu - 01 (Vibrant Energy)	India	Solar PV	12	Operational	2017
Tanakallu - 02 (Vibrant Energy)	India	Solar PV	9	Operational	2018
Telcontar (Vibrant Energy)	India	Solar PV	67	Operational	2022
VEH Srishti (Vibrant Energy)	India	Onshore Wind	54	Operational	2023
Vizianagaram (Vibrant Energy)	India	Solar PV	10	Operational	2019

31 Data correct at 31st March 2024 unless stated otherwise

### Terms and conditions: terminology and methodology

### **Green impact**

The Green Impact metrics covered by this Report are identified in the header and executive summary. "Green Impact" is a collective term referring to the environmental benefits which have been calculated in accordance with MAM Green Investments<sup>32</sup> methodology to be, or to be reasonably likely to be, delivered by the project(s) to which this Report refers. The collective term can include defined metrics such as tonnes carbon dioxide equivalent avoided (t CO2e), tonnes oil equivalent avoided (toe), and tonnes (t) of other air pollutant emissions avoided.

### Methodology v 1.2

The Green Impact and Green Impact Forecast Accuracy assessments presented in this Report are based on MAM Green Investments approach to assessing Green Impact using the methodologies set out within its proprietary green investment principles, policies and the associated processes. The Green Impact assessment has applied proprietary modelling techniques and comparative data developed and owned by MAM, or by third party owners and made available under licence to MAM.

### **Green impact calculation**

MAM Green Investments initial calculation of the Green Impact of each project is produced by comparing relevant counterfactual (or baseline) data for the assumed environmental impacts that would occur if the project did not take place, based on MAM Green Investments proprietary reference sources or provided to MAM Green Investments by relevant third parties or obtained from publicly available sources. The resultant estimated Green Impact is then subject to further qualitative evaluation before production of the formal Green Impact Report.

For grid-connected projects that generate electricity, the counterfactual is assumed to be marginal electricity generated from the local electricity grid, which includes resources consumed to supply grid electricity. MAM Green Investments methodology calculates the net Green Impact of the project by comparing its likely emissions to those of a marginal

grid electricity mix, using the methodology set out in the International Financial Institutions (IFI) approach to GHG accounting for renewable energy projects and the IFI approach to GHG accounting for energy efficiency projects.<sup>33</sup>

MAM Green Investments methodology calculates results for likely Green Impact on an annual and lifetime basis. The Green Impact reported is 100% of the Green Impact of the underlying project(s) and includes the impact for projects under construction, as if they were fully operational. There is no proportionate allocation of Green Impact to any particular project investment or to particular investors, all of whom may report the same Green Impact from the underlying project(s).

### **Exclusions**

The counterfactual of marginal grid electricity does not include the total quantifiable lifecycle environmental burdens (e.g. resources consumed during construction, or indirect emissions during operations such as those from associated transport vehicles) associated with energy generation. Therefore, to produce a valid comparison, the calculation of Green Impact for the project(s) assessed in this Report is based solely on the operational phase of the relevant project(s), and does not include a full lifecycle assessment of the project(s) unless specifically stated otherwise. This approach is aligned with the Greenhouse Gas Project Protocol<sup>34</sup>. MAM Green Investments assessment does not include a review of any underlying project's environmental and/or social, permitting, licensing or other compliance status.

### **Green impact forecast accuracy**

Green Impact Forecast Accuracy is determined from a number of project parameters that include the project technology, stage of project development, and location of the project, together with MAM Green Investments opinion of the input data quality. These parameters have been assigned values that represent the degree to which they affect the accuracy of the forecast Green Impact, and are used to produce Forecast Accuracy scores for three elements: Data quality, Technology &

development stage, and Local governance.<sup>35</sup> The Forecast Accuracy scores for the three elements are weighted according to MAM Green Investments in-house experience of the sensitivity of each element and combined to derive an overall level of Green Impact Forecast Accuracy.

Green Impact Forecast Accuracy is an expression of the level of confidence that, in the opinion of MAM Green Investments, can reasonably be placed on the accuracy of any quantified Green Impact forecast. This assessment of forecast accuracy is described in levels as follows: Level 1 (Low), Level 2 (Moderate), Level 3 (Good), Level 4 (High), and Level 5 (Very High).

### **Carbon score**

Our Carbon Score shows the quantified greenhouse gas emissions avoided combined with our Carbon Rating. The Carbon Rating is a measure of a project's lifecycle greenhouse gas emissions compared to the counterfactual. Projects with the lowest lifecycle emissions relative to the counterfactual would score the highest ratings from AAA to B. Projects with lifecycle emissions similar to the counterfactual would score a C, and projects with greater emissions would score a D or E. The emissions of the counterfactual are derived from the IFI approaches to greenhouse gas accounting – please see above for details. Where we do not have project-specific information on lifecycle emissions, we use the median harmonised values from the US National Renewable Energy Laboratory's Lifecycle Assessment Harmonization.<sup>36</sup>

### **UN Sustainable Development Goals**

The alignment to global goals as framed by the UN SDG targets has been conducted by MAM based on the intended outcomes investment sought to contribute to at the outset. The assessment is therefore based on judgement, and outcomes and alignment are provided for illustrative purposes and are not guaranteed. Likewise, strategies and initiatives may contribute in practice to additional SDG targets that have not been included in this report.

<sup>32</sup> Macquarie Group acquired the Green Investment Bank in 2017 which was later re-branded as Green Investment Group (GIG). The Macquarie Capital green investments principal investment team, known as the Green Investment Group (GIG), operated under a separate information barrier until joining MAM in April 2022. The combined team today is MAM's Green Investments team.

<sup>33 &</sup>lt;a href="https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting/ifi-twg-list-of-methodologies">https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting/ifi-twg-list-of-methodologies</a>

<sup>34</sup> https://www.ghgprotocol.org/standards/project-protocol

<sup>35</sup> Local governance scores are determined from datasets of indicators from the World Bank, Transparency International and United Nations University Institute for Environment and Human Security

<sup>36</sup> https://www.nrel.gov/analysis/life-cycle-assessment.html

### Terms and conditions: assumptions, limitations and other terms

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This Report has been prepared on the basis of the scope of work and subject to the terms and conditions set out or referred to in the terms of engagement agreed between MAM Green Investments and the Client (the "Terms of Engagement"). The Terms of Engagement accordingly apply in full to the provision, receipt and use of this Report.

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The forecasts and assessments expressed in this Report are not ratings: they are, and shall be construed solely as, statements of opinion as to the relative prospects that particular environmental benefits can be achieved by a specified project or other asset that is the subject of any securities or other investment, and not as statements of current or historical or scientific fact, or as an endorsement of the accuracy of any data or conclusion or as any assurance that any environmental impact (either positive or negative) or risk will or will not occur.

The contents of this Report must not be relied upon as being a conclusive, complete or accurate representation of all elements and factors relating to any project. Furthermore, this Report is not, and shall not be interpreted or construed as, an assessment of the economic performance or creditworthiness of any person or project.

This Report is valid only as at the date of issue based on the information, data and/or documents provided to MAM Green Investments by the Client or any relevant third party, or obtained using publicly available sources, as at the date of issue and shall not take account of any future information, events or changes with respect to the Client or any other person, any business, any financial instrument, any relevant project or transaction, any financial market or any relevant sector or otherwise (unless this Report is specifically amended at MAM's discretion).

This Report is not an offer or solicitation to buy or sell any investment or product or service, nor is it financial advice or trading advice or any other advice as to the merits of any investment, nor is it a recommendation regarding any investment decision or any decision to purchase, hold or sell any investment.

### **Project data**

MAM Green Investments has relied in good faith on publicly available data and data and information made available in connection with the relevant project(s) by the original Client and/ or relevant third parties, and has assumed that such data and information is complete, accurate and up to date.

MAM Green Investments may, at its discretion, but is not obliged to, conduct limited validation of the data and information provided by original Client and/ or relevant third parties, based on a high-level telephone interview with the Client's representative(s) and/ or relevant third parties. MAM Green Investments has not conducted, and shall not be responsible for conducting, any audit or detailed review or assurance or any other verification exercise of any such data (including data related to allocation of the use of proceeds.

### Reference data

In preparing this Report, MAM Green Investments has relied upon various sources of data and information provided to MAM Green Investments by relevant third parties or obtained through public information sources, the content of which no MAM Party has verified or controls.

MAM Green Investments calculates Green Impact using reference data obtained from, among others, by the Ecoinvent life cycle inventory datasets for the calculation of environmental impacts. Green Impact is also calculated based on data supplied by the International Energy Agency ("IEA"), specifically from the 2015 editions of the World Energy Statistics and Balances dataset and the CO2 Emissions from Fuel Combustion dataset.

Any limitations and caveats that are applicable to the Ecoinvent and IEA datasets, as published on their websites, are also applicable to the results presented in this Report.

MAM Green Investments method is designed to work with a limited number of key inputs and to be globally applicable, and makes some simplifying assumptions in order to achieve this degree of flexibility.

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E-mail MAM's Green Analytics team for more information: greenanalytics@macquarie.com





To: The Directors of Macquarie Group Limited

Independent assurance report on Macquarie Group Limited's application of the four pillars outlined in section 3 of the Macquarie Green Finance Framework for the year ended 31 March 2024

### Scope

In accordance with the terms of engagement letter dated 28 May 2024, we were engaged by Macquarie Group Limited (the "Group", "Macquarie" or "MGL") to perform an independent reasonable assurance engagement in respect of whether, in all material respects, all eligible projects have been notionally allocated green tranche financing ("Projects") in accordance with the four pillars outlined in Section 3 of Macquarie's Green Finance Framework ("GFF") for the year ended 31 March 2024. The four pillars outlined in Section 3 of the GFF (the "Criteria") against which we assessed the Projects are as follows:

- 1. Use of proceeds
- 2. Process for project evaluation and selection
- 3. Management of proceeds
- 4. Reporting

### Management's responsibilities

Management of Macquarie are responsible for:

- (a) For the preparation of Macquarie's 2024 Green Finance Impact Report which will be attached to our report, that Macquarie has, in all material respects, applied the Criteria for the Projects for the year ended 31 March 2024.
- (b) For applying the Criteria in assessing the Projects for the year ended 31 March 2024.
- (c) For identification of risks that threaten the application of the Criteria for the Projects being met and controls which will mitigate those risks.

### Our Independence and quality management

We have complied with the ethical requirements, of the Accounting Professional and Ethical Standard Board's APES 110 Code of Ethics for Professional Accountants (including Independence Standards) relevant to assurance engagements, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.



Our firm applies Australian Standard on Quality Management ASQM 1, Quality Management for Firms that Perform Audits or Reviews of Financial Reports and Other Financial Information, or Other Assurance or Related Services Engagements, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

### Our responsibility

Our responsibility is to express an opinion 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. That standard requires that we plan and perform this engagement to obtain reasonable assurance about whether the eligible projects have been notionally allocated green tranche financing in accordance with the Criteria for the year ended 31 March 2024. The nature, timing and extent of procedures selected depend on the assurance practitioner's judgement, including the assessment of the risks of material misstatement, whether due to fraud or error. In making those risk assessments, we considered internal control relevant to Management's preparation of the Green Finance Impact Report. Our procedures included:

- Obtaining evidence of the activities and controls implemented to meet the Criteria for the Projects for the year ended 31 March 2024.
- Any necessary procedures selected depend on our judgement, including the identification and assessment of risks of material misstatement, as evaluated against the GFF. We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

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

### Inherent limitations

Because of the inherent limitations of any assurance engagement, together with the internal control structure, it is possible that fraud, error or non-compliance may occur and not be detected. A reasonable assurance engagement is not designed to detect all instances of non-compliance of eligible projects which have not been notionally allocated green tranche financing in accordance with the Criteria as it is not performed continuously throughout the year ended 31 Mar 2024. The assurance procedures performed in respect of compliance with the GFF as measured by the notional allocation of green tranche financing to eligible projects in accordance with the Criteria are undertaken on a test basis. The reasonable assurance conclusion expressed in this report has been formed on the above basis.

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### **Opinion**

In our opinion, in all material respects, Macquarie has prepared the notional allocation of green tranche financing to eligible projects in accordance with the Criteria for the year ended 31 March 2024.

Pricewaterhouse Coopers

PricewaterhouseCoopers

C. Marco

Caroline Mara Sydney Partner

31 July 2024

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