



# OCBC GREEN BOND REPORT 2021



Disclaimer: This document should be read as an overview of OCBC's current business activities and operating environment which may contain statements relating to OCBC's growth strategy and future business aspirations. These statements involve risks and uncertainties and should not be solely relied upon by investors or potential investors when making an investment decision. OCBC Bank accepts no liability whatsoever with respect to the use of this document or its content.

# INTRODUCTION

OCBC Bank is the longest established Singapore bank, formed in 1932 from the merger of three local banks, the oldest of which was founded in 1912. It is now the second largest financial services group in Southeast Asia by assets and one of the world’s most highly-rated banks, with Aa1 by Moody’s and AA- by both Fitch and S&P.

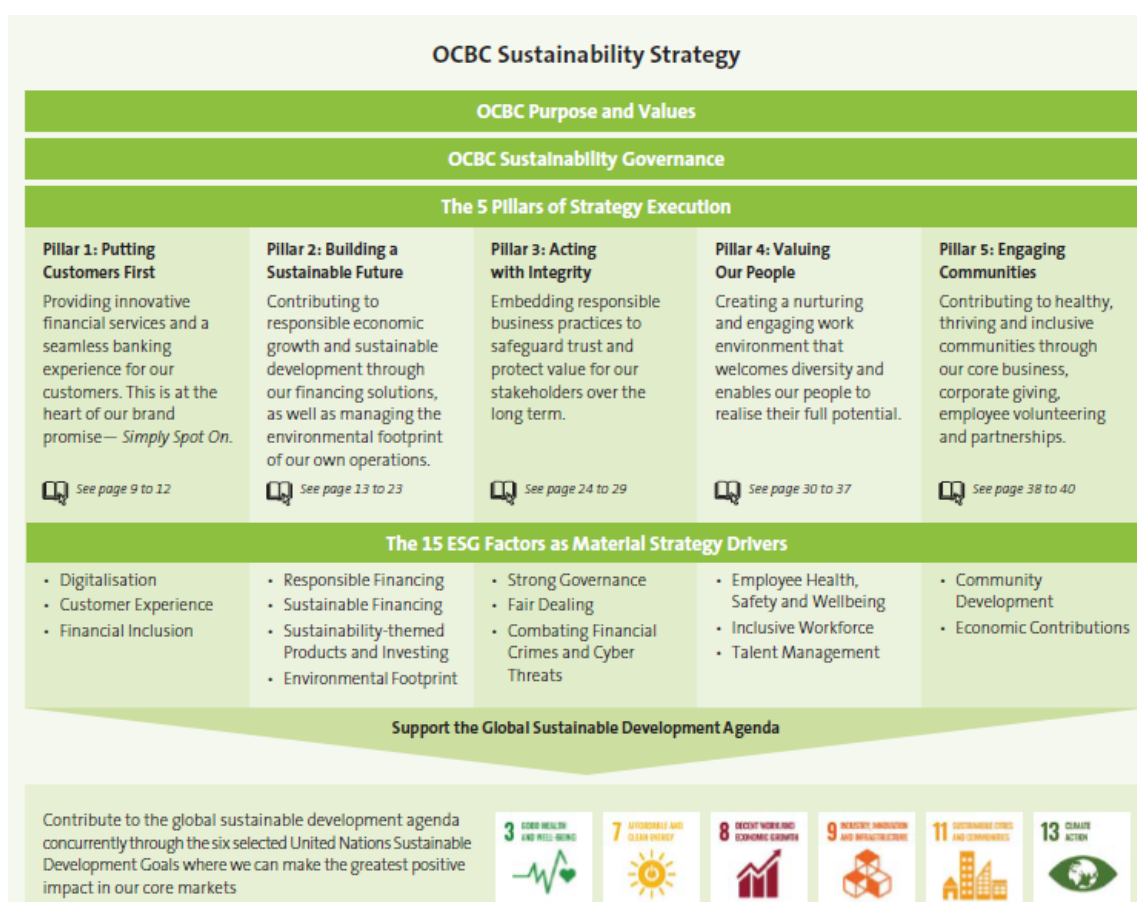
## Our Approach to Sustainability

Our aspiration is to create a positive social, environmental and economic impact for our stakeholders by embedding responsible and sustainable business practices in everything we do, in order to build a sustainable future for all.

Anchored by OCBC purpose and values, and a robust governance structure as the foundational building block for our sustainability strategy, we are focused on the five core pillars of strategy execution to meet the needs and aspirations of different stakeholder groups.

To support value creation in the five core pillars, we are guided by 15 material Environmental, Social and Governance (ESG) factors as material strategy drivers. These were chosen due to their significance in the Bank’s business operations. We have and will continue to implement core initiatives and priorities aligned to the 15 material ESG factors in order to achieve the Group’s goals.

We measure our performance in the five core pillars against selected United Nations Sustainable Development Goals, tracking the Group’s long-term value creation for stakeholders.



Source: OCBC Sustainability Report 2021

## ABOUT THIS REPORT

OCBC issued two AUD 500 million, 3-year floating green bonds to investors in December 2019 and August 2021 (the “Green Bonds”). The total outstanding Green Bonds as of 31 December 2021 is AUD 1 billion.

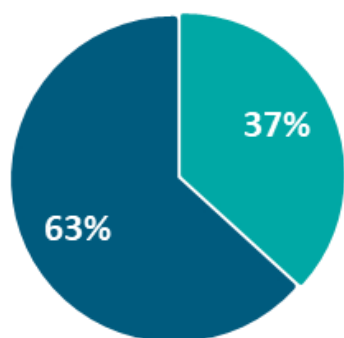
Morningstar Sustainalytics, a globally recognised provider of ESG services, has calculated the estimated environmental impact achieved or expected from the projects financed by the Green Bonds using ICMA’s Harmonised Framework for Impact Reporting and recognised methodologies for greenhouse gas emissions calculation.

PricewaterhouseCoopers LLP has provided independent limited assurance on the allocation of proceeds. Their review report is available at the end of this report.

## ALLOCATION OF PROCEEDS

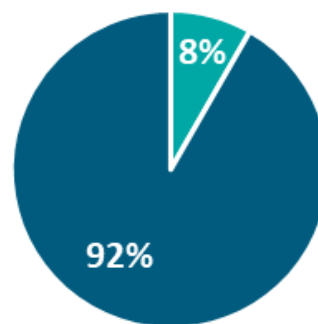
100% of the Green Bonds proceeds have been allocated to AUD 1,191 million<sup>1</sup> of eligible assets as of 31 December 2021.

### Allocation by Country



■ Australia ■ Singapore

### Allocation by Category



■ Renewable Energy ■ Green Building

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<sup>1</sup> Rounded to the nearest millions.



# Impact Report for Bonds


## OCBC Sustainability Bond Framework


### Impact Summary

**Evaluation Date** August 22, 2022

**Issuer Location** Singapore


Sustainalytics has calculated the estimated impact achieved from the projects financed by the green bonds issued by OCBC Bank in December 2019 and August 2021. The green bonds outstanding as of 31 December 2021 is AUD 1 billion. OCBC Bank has since allocated AUD 1.2 billion to projects in Australia and Singapore in the categories Renewable Energy and Green Buildings. For a representative year of the bonds' terms to maturity, Sustainalytics has calculated 124 kilotonnes of avoided emissions in CO<sub>2</sub>e.


 **A\$1.2B**  
Allocated to green projects


 **124**  
Annual emissions avoided (ktCO<sub>2</sub>e)

 **10**  
Projects

Emissions avoided equivalent to:

 **31.9K**  
Cars driven for one year

 **8.2M**  
Trees, yearly sequestration

 **286.7K**  
Barrels of oil equivalent



### Number of Projects by Country



### 10 Projects Total

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## Introduction

OCBC Bank (“OCBC”) is the longest established Singapore bank, formed in 1932 from the merger of three local banks, the oldest of which was founded in 1912. It is now the second largest financial services group in Southeast Asia by assets, with more than 420 branches and representative offices in 19 countries and regions. Sustainalytics provided a Second-Party Opinion on the Sustainability Bond Framework proposed by OCBC, evaluating it as credible, impactful and aligned with the Green Bond Principles 2018 (GBP).<sup>1</sup>

OCBC engaged Sustainalytics to quantify the environmental benefits of the projects financed with the proceeds from OCBC’s Sustainability Bond Framework. This report covers proceeds raised from two green bonds of AUD 500 million each issued in December 2019 and August 2021 respectively.<sup>2</sup> Using established methodologies, Sustainalytics has estimated avoided emissions from OCBC’s Renewable Energy and Green Buildings projects. This report presents the details of our findings, including a description of the methodology used to calculate the impacts.

## Scope of Work and Limitations

OCBC has engaged Sustainalytics to calculate the environmental impacts of the projects financed through the green bonds issued. For this work, Sustainalytics relied on the data provided by OCBC on the amounts allocated and the available technical data on the financed projects. Where necessary, Sustainalytics has supplemented technical data provided by OCBC with data from publicly available databases.

Sustainalytics’ impact reporting is aligned with ICMA’s Harmonised Framework for Impact Reporting of June 2022.<sup>3</sup> The methodology used and the assumptions made for the impact calculation are outlined in the methodology section below.

As part of this engagement, Sustainalytics exchanged information with various members of OCBC’s team to understand the sustainability impact of its projects. Through these exchanges, OCBC’s representatives have confirmed that:

- (1) They understand it is the sole responsibility of OCBC to ensure that the information provided by them is complete, accurate and up to date;
- (2) They have provided Sustainalytics with all materially relevant information;
- (3) Any provided material information has been duly disclosed in a timely manner.

Sustainalytics also reviewed relevant public documents and non-public information.

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<sup>1</sup> The Green Bond Principles are administered by the International Capital Market Association and are available at <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/>

<sup>2</sup> While the total issuance of the two green bonds amount to AUD 1 billion, the total amount allocated is AUD 1.2 billion to ensure there are sufficient green assets to cover the size of the bonds.

<sup>3</sup> ICMA, Handbook - Harmonised Framework for Impact Reporting (2022), at: [https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Harmonised-Framework-for-Impact-Reporting-Green-Bonds\\_June-2022-280622.pdf](https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Harmonised-Framework-for-Impact-Reporting-Green-Bonds_June-2022-280622.pdf)

## Impact Findings

For reporting, Sustainalytics follows the ICMA Harmonised Framework for Impact Reporting.<sup>4</sup> This framework synthesizes market expectations and outlines recommendations for impact reporting to create a standardized reporting structure and to enhance the understanding of the impact to all stakeholders including bond investors.

Table 1 below provides a summary of the projects for which Sustainalytics has calculated the impacts at the portfolio level. Table 2 and 3 provide project level details for the projects financed by the proceeds from the bonds issued under the OCBC Sustainability Bond Framework. These metrics correspond to a representative year during the bond's term to maturity, and are based on the share of project financing.

**Table 1: Summary of Impact - Portfolio Level<sup>5</sup>**

Use of Proceeds	Allocated Amount	Project Lifetime <sup>6</sup>	Financed Annual Emissions Avoided
	AUD (million)	Years	tCO <sub>2</sub> e
Renewable Energy	99	3	122,878
Green Buildings	1,092 <sup>7</sup>	3	969
Total	1,191	3	123,847

**Table 2: Impact of Renewable Energy Projects by Technology**

Technology Type	Allocated Amount	Financed Generation	Financed Capacity	Financed Emissions Avoided
	AUD (million)	MWh	MW	tCO <sub>2</sub> e
Wind	99	144,700	51	122,878

**Table 3: Impact of Green Buildings Projects by Building Type**

Building Type	Allocated Amount	Gross Building Area	Financed Energy Reduction		Financed Emissions Avoided
	AUD (million)	m <sup>2</sup>	MWh	% <sup>8</sup>	tCO <sub>2</sub> e
Office	778	349,053	1,388	24	764
Mixed development	315	112,756	408	36	205

<sup>4</sup> ICMA, Handbook - Harmonised Framework for Impact Reporting, at: [https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Harmonised-Framework-for-Impact-Reporting-Green-Bonds\\_June-2022-280622.pdf](https://www.icmagroup.org/assets/documents/Sustainable-finance/2022-updates/Harmonised-Framework-for-Impact-Reporting-Green-Bonds_June-2022-280622.pdf)

<sup>5</sup> Tables 1 – 3 summarize projects by Use of Proceeds that have been rounded to the nearest integer and may be subject to rounding errors.

<sup>6</sup> For projects included in this report, the bond term has been used to define the project lifetime.

<sup>7</sup> For buildings based in Singapore, data on allocation was provided in SGD. For consistent reporting, these values were converted to AUD based on the SGD/AUD conversion rate of 31 December 2021.

<sup>8</sup> This represents the percentage reduction of financed energy consumption compared to the baseline energy consumption used for each building type.

## Methodology

Sustainalytics developed its own methodologies for quantifying GHG avoidance and other metrics, including leveraging publicly available best-in-class methodologies, protocols and frameworks that are currently industry best practice. Our estimation practices and general principles rely on the GHG Protocol.<sup>9</sup> Our methodologies are based on guidance provided by the International Financial Institutions<sup>10</sup> on calculation methodology and global emissions. In addition, we rely on the Partnership for Carbon Accounting Financials' Global Accounting Standard<sup>11</sup> for guidance on estimation where data is not readily available and assumptions must be made. Finally, the UN's Clean Development Mechanism<sup>12</sup> provides guidance and information, serving as the foundation for these and other methodologies, including those implemented in this report.

## Renewable Energy

Energy generated by the projects is assumed to displace energy supplied by the local grid and its associated emissions. The approach taken to derive the emissions avoided is based on the comparison between:

- a) The emissions of the renewable energy projects; and
- b) The baseline emissions, or emissions occurring in the absence of the project. For electricity generation, these emissions are based on the energy mix used to supply electricity to the local grid.

## Data Sources and Assumptions

- For the projects included in this report, data on the energy generation (MWh) and capacity (MW) was provided by OCBC.
- For projects currently under construction, the annual energy generation was based on the best available estimates.
- The emissions for projects generating energy from wind are assumed to be 0 gCO<sub>2</sub>e per unit of generation.
- The baseline emission factors for the countries where projects are located were sourced from IFI.<sup>13</sup>

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<sup>9</sup> Greenhouse Gas Protocol, About Us, at: <https://ghgprotocol.org/>

<sup>10</sup> International Financial Institutions, "Members of the International Financial Institutions on Greenhouse Gas Accounting, at: [https://unfccc.int/sites/default/files/resource/IFIs\\_membership\\_for\\_UNFCCC\\_%27white\\_pages%27\\_0.pdf](https://unfccc.int/sites/default/files/resource/IFIs_membership_for_UNFCCC_%27white_pages%27_0.pdf)

<sup>11</sup> Partnership for Carbon Accounting Financials, About, at: <https://carbonaccountingfinancials.com/>

<sup>12</sup> UNFCCC, CDM Methodology Booklet, at: <https://cdm.unfccc.int/methodologies/documentation/index.html>

<sup>13</sup> UNFCCC, The IFI Dataset of Default Grid Factors, at:

[https://unfccc.int/sites/default/files/resource/Harmonized\\_Grid\\_Emission\\_factor\\_data\\_set.xlsx](https://unfccc.int/sites/default/files/resource/Harmonized_Grid_Emission_factor_data_set.xlsx)

## Green Buildings

It is assumed that green buildings consume less energy than a mix of existing buildings and new construction. The avoidance of greenhouse gas emissions is then calculated using:

- a) The emissions of the green building projects. To the extent available, the reporting is based on metered energy consumption. If such information is not available, estimates for the relevant projects are based on the building certificates, standards or country-level averages.
- b) The baseline emissions, or emissions occurring in the absence of the projects. This figure is based on the estimated energy intensity of comparable buildings, or in the case of refurbishments, the prior emissions.

## Data Sources and Assumptions

- For the projects included in this report, building data including gross building area, location and green building certificates were provided by OCBC and used as inputs for the calculations.
- Sustainalytics has performed calculations based on the most recent available green building certificates or energy performance certificates for each property.
- In the absence of data on building energy use intensity (EUI), it is assumed that a building has an intensity equal to that of the maximum permissible EUI under the same green building certification scheme and rating.<sup>14</sup>
- Based on location and building characteristics such as type and size, the EUI of a baseline building is estimated using a combination of country averages and publicly available statistical models.<sup>15</sup>
- The emissions factors for the project and baseline properties are based on the average energy mix for buildings in the relevant country. A distinction is made between electricity consumption and other energy consumption.
- The grid emissions factors for the countries in which the projects are located were sourced from IFI.<sup>16</sup> To account for emissions from upstream activities, Sustainalytics applies an additional, indirect emissions factor.<sup>17</sup>

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<sup>14</sup> Singapore Building and Construction Authority – Energy Efficiency 2021, at: [https://www1.bca.gov.sg/docs/default-source/docs-corp-buildsg/sustainability/20211027\\_energy\\_simplified\\_ver1.pdf](https://www1.bca.gov.sg/docs/default-source/docs-corp-buildsg/sustainability/20211027_energy_simplified_ver1.pdf)

<sup>15</sup> IFC's EDGE model is used for statistical modelling of buildings.

<sup>16</sup> Harmonized Grid Emission factor data set can be accessed at: [https://unfccc.int/sites/default/files/resource/Harmonized\\_Grid\\_Emission\\_factor\\_data\\_set.xlsx](https://unfccc.int/sites/default/files/resource/Harmonized_Grid_Emission_factor_data_set.xlsx)

<sup>17</sup> Government of the UK, Department for Business, Energy & Industrial strategy, "Government conversion factors for company reporting of greenhouse gas emissions", at: <https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting>



## Appendix: Infographic Equivalences

Financed emissions avoided (tCO <sub>2</sub> e)	Number of cars driven for 1 year <sup>18</sup>	Number of trees, annual sequestration <sup>19</sup>	Barrels of oil equivalent <sup>20</sup>
123,847	31,895	8,173,923	286,733

<sup>18</sup> Based on the annual average mileage per car in Singapore. <https://datamall.lta.gov.sg/content/datamall/en/static-data.html>

<sup>19</sup> Calculated using an average CO<sub>2</sub> uptake of 15.2 kg per mature tree, based on the US EPA estimation for carbon sequestration by trees in an average US forest. <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references#pineforests>

<sup>20</sup> The combustion of 1 barrel of oil emits approximately 0.43 tCO<sub>2</sub>e. <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references#oil>

## Disclaimer

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In case of discrepancies between the English language and translated versions, the English language version shall prevail.

## About Sustainalytics, a Morningstar Company

Sustainalytics, a Morningstar Company, is a leading ESG research, ratings and data firm that supports investors around the world with the development and implementation of responsible investment strategies. For more than 30 years, the firm has been at the forefront of developing high-quality, innovative solutions to meet the evolving needs of global investors. Today, Sustainalytics works with hundreds of the world’s leading asset managers and pension funds who incorporate ESG and corporate governance information and assessments into their investment processes. Sustainalytics also works with hundreds of companies and their financial intermediaries to help them consider sustainability in policies, practices and capital projects. With 17 offices globally, Sustainalytics has more than 1500 staff members, including more than 500 analysts with varied multidisciplinary expertise across more than 40 industry groups.

For more information, visit [www.sustainalytics.com](http://www.sustainalytics.com)

Or contact us [contact@sustainalytics.com](mailto:contact@sustainalytics.com)





**INDEPENDENT PRACTITIONER'S LIMITED ASSURANCE REPORT ON THE ALLOCATION OF PROCEEDS RAISED THROUGH THE ISSUANCE OF THE OCBC GREEN BOND AS SET OUT IN THE OCBC GREEN BOND REPORT AS AT 31 DECEMBER 2021**

**To the Board of Directors of Oversea-Chinese Banking Corporation Limited**

We have been engaged by Oversea-Chinese Banking Corporation Limited ("OCBC") to undertake a limited assurance engagement in respect of the allocation of proceeds raised through the issuance of the OCBC Green Bond as set out on page 3 of the OCBC Green Bond Report as at 31 December 2021 ("the Selected Information").

Our assurance engagement was with respect to the period ended 31 December 2021. We have not performed any procedures with respect to (i) earlier periods and (ii) any other elements included in the OCBC Green Bond Report, and in the website and other publications, and therefore do not express any conclusion thereon.

*Reporting Criteria*

The Selected Information has been assessed against the OCBC Sustainability Bond Framework (March 2020)<sup>1</sup> ("the Framework").

*Management's Responsibility*

Management of OCBC is responsible for preparation of the Selected Information in accordance with the Framework. This responsibility includes designing, implementing and maintaining internal controls relevant to the preparation of the Selected Information that is free from material misstatement, whether due to fraud or error.

*Practitioner's Independence and Quality Control*

We have complied with the independence and other ethical requirements of the Accounting and Corporate Regulatory Authority (ACRA) Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities (ACRA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies Singapore Standard on Quality Control 1 and, accordingly, 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.

*Practitioner's Responsibility*

Our responsibility is to express a limited assurance conclusion on the Selected Information based on the procedures we have performed and the evidence we have obtained. We performed our limited assurance engagement in accordance with Singapore Standard on Assurance Engagements 3000 (Revised) – Assurance Engagements other than Audits or Reviews of Historical Financial Information ("Standard"). This Standard requires that we plan and perform our work to form the conclusion about whether the Selected Information is free from material misstatement. The extent of our procedures depends on our professional judgment and our assessment of the engagement risk.

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<sup>1</sup> The OCBC Sustainability Bond Framework (March 2020) can be found on the OCBC website at: <https://www.ocbc.com/assets/pdf/green%20bond/ocbc%20sustainability%20bond%20framework.pdf>



A limited assurance engagement involves assessing the suitability in the circumstances of OCBC's use of the Framework as the basis for the preparation of the Selected Information, assessing the risks of material misstatement of the Selected Information whether due to fraud or error, responding to the assessed risks as necessary in the circumstances, and evaluating the overall presentation of the Selected Information. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

The procedures performed included inquiries, observation of processes performed, inspection of documents and agreeing or reconciling with underlying records. Given the circumstances of the engagement, we also performed the following:

- interviewed management and personnel in relation to the Selected Information;
- obtained an understanding of how the Selected Information is gathered, collated and aggregated internally;
- performed limited substantive testing, on a selective basis, of the Selected Information to check that data had been appropriately measured, recorded, collated and reported, to the extent we considered necessary and appropriate to provide sufficient evidence for our conclusion; and
- considered the disclosure and presentation of the Selected Information.

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

#### *Inherent Limitations*

In designing these procedures, we considered the system of internal controls in relation to the Selected Information and reliance has been placed on internal controls where appropriate. Because of the inherent limitations in any accounting and internal control system, errors and irregularities may nevertheless occur and not be detected.

#### *Conclusion*

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Selected Information as at 31 December 2021 is not prepared, in all material respects, in accordance with the Framework.

#### *Purpose and Restriction on Distribution and Use*

Without modifying our conclusion, we draw attention to the fact that the Selected Information was prepared for inclusion in the OCBC Green Bond Report by the management of OCBC as required by the Framework ("Purpose"). As a result, the Selected Information may not be suitable for another purpose.



Our report is intended solely for the Purpose set forth in the paragraph above and should not be used for any other purpose. Save for the disclosure of our report in the OCBC Green Bond Report and on OCBC's website, neither this report nor its contents or any part thereof may be distributed to, discussed with or otherwise disclosed to any third party without our prior written consent. OCBC is responsible for information other than our report and our report does not cover this other information, and we do not express any form of assurance conclusion thereon. To the fullest extent permitted by law, we do not accept any liability or assume any responsibility to anyone else other than OCBC for our work or this report except where terms are expressly agreed between us in writing. Any reliance placed on this report by any third party is entirely at its own risk. OCBC is responsible for its website and that we do not accept responsibility for any changes that may have occurred to the Selected Information or Framework since the publication of our report in the OCBC Green Bond Report.

Yours faithfully

*PricewaterhouseCoopers LLP*

PricewaterhouseCoopers LLP  
Public Accountants and Chartered Accountants  
Singapore  
13 September 2022