OCBC Task Force on Climate-related Financial Disclosures Report

2021

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Section 1 - Introduction

OCBC acknowledges that climate change is the greatest environmental challenge facing society, businesses, and the economy. Consequently, businesses, investors and market participants globally have to contend with a plethora of short- and long-term climate-related risks.

This is OCBC's first report addressing the recommendations outlined by the Task Force on Climate-related Financial Disclosures (TCFD). OCBC hopes that this report will help our stakeholders understand the climate-related risks the Bank is facing, as well as the approaches the Bank is taking to manage risks and capitalise on new opportunities.

Our Public Commitment

OCBC supports the United Nations Sustainable Development Goals (SDG) with SDG 13 on Climate Action continuing to be a key focus of our sustainability efforts.

OCBC became a signatory to the TCFD in October 2019, and is now amongst more than 2,000 organisations globally that publicly support the TCFD recommendations. As a testament to OCBC's efforts to align our disclosures with those recommendations, and in line with the TCFD pillars, this inaugural TCFD report outlines OCBC's overarching approach to governance, strategy, risk management, as well as key metrics and targets linked to climate-related risks and opportunities.

Figure 1: Four pillars of climate-related financial disclosures

The organisation's governance around climate-related risks and opportunities

The actual and potential impacts of climate-related risks and opportunities on the organisation's business, strategy and financial planning

The processes used by the organisation to identify, assess and manage climate-related risks

The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Source: Implementing the Recommendations of the Task Force on Climate-related Financial Disclosure (June 2017)

In 2020, OCBC conducted the first assessment of financed emissions and climate-related risks in the context of the TCFD recommendations. The assessment used an external globally-recognised methodology[1], which firstly focused on an assessment of the financed carbon emissions of selected companies within OCBC's corporate loan portfolio, and then extended the assessment to climate-related transition and physical risks.

[1] The methodology relies upon company-specific data, estimates from proprietary models, and data/analyses from well-known international climate organisations and other relevant third parties. Where this report uses climate-related scenarios, they do not forecast future climate trends, but are intended to identify and assess potential implications of a range of plausible but presently uncertain future outcomes.

Section 2 - Governance

This section provides an outline of OCBC's governance framework for climate-related risks and opportunities.

The Board of Directors directs the sustainability agenda at OCBC, including for climate-related issues, and ensures that OCBC's material Environment, Social and Governance (ESG) factors are considered when setting the strategic direction of the Bank. Within the Board, the Board Risk Management Committee has oversight of effective management of all risks, which includes ESG risks such as climate change. ESG risks are described in our Responsible Financing frameworks, which are reviewed and approved regularly by our Board Risk Management Committee.

At the executive level, the Sustainability Council, chaired by the Group Chief Executive Officer, drives OCBC's Sustainability Strategy, which encompasses various initiatives on the SDGs including SDG 13 on Climate Action. The Sustainability Council is supported by the Sustainability Taskforce and Working Group in operationalising sustainability strategies and efforts across the Group.

On the business front, OCBC's Sustainable Finance Group drives business development, promotes investments in environmentally-sound projects and industries, as well as partners and supports clients embarking on their sustainability journeys. Through the development of a comprehensive and innovative range of sustainable financing solutions, OCBC enables clients to act on climate change and promotes sustainable development.

On the risk management front, Group Risk Management is responsible for establishing frameworks and policies for managing ESG risks. A Sustainability Stewardship Group, comprising a dedicated team of ESG specialists, independently reviews clients/transactions against the underlying ESG risks.

OCBC regularly reviews our governance structure with regard to ESG and climate-related risks to achieve long-term, sustainable growth.

Section 3 - Strategy

This section provides an overview of how OCBC considers climate-related risks and opportunities in strategic decision-making processes.

OCBC supports efforts to:

- limit global warming to less than 2°C above pre-industrial levels; and
- transition to a low carbon economy.[2]

Driving change towards a more sustainable future involves significant shifts in the market and regulatory environment and could heighten the risk of stranded assets with deteriorating financial returns. OCBC is addressing these short- and long-term climate-related risks through:

- Actively pursuing emerging opportunities in sustainable finance;
- Managing climate-related risks;
- Assessing climate-related risks through scenario analysis;
- Enhancing climate-related disclosures; and
- Raising awareness and building capacity.

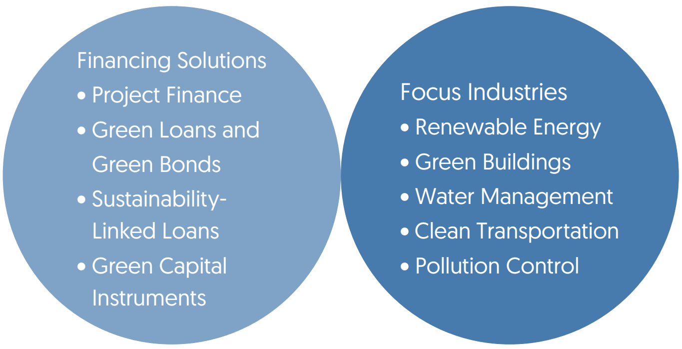
Sustainable Financing Solutions

OCBC is committed to increasing financing in green assets and projects, including renewable energy, energy efficiency, sustainable water and wastewater management, green buildings, and clean public transportation.

OCBC is channelling funds to support corporations and projects that reinforce economic and climate resiliency across our core markets. This is done through a combination of green bonds and green loans, as well as sustainability-linked loans, which incentivise and empower clients to enhance the sustainability and performance of their businesses and supply chains.

In 2020, we launched the OCBC SME Sustainable Finance Framework. The aim of the framework is to make it simpler for small and medium enterprises to access sustainable financing of up to S$20 million.

Figure 2: Sustainable financing solutions



Climate Risk Management

As part of OCBC's ongoing commitment to transition to a low carbon economy, we have established certain climate-related policies. Climate risk considerations have been incorporated into our Responsible Financing Policies as part of our Responsible Financing Framework. Further, following current best practices, we are now incorporating scenario analysis into the assessment of climate-related risks and opportunities in our loan portfolio.

Coal Sector Related Prohibitions

We have established prohibitions related to our coal sector lending, as combustion of coal is the largest single source of global warming, accounting for 29% of total man-made greenhouse gas (GHG) emissions and 44% of man-made CO_2 emissions.

Since 2019, OCBC has prohibited asset level project and corporate financing of coal fired power plants, including refinancing and expansions of existing plants. This prohibition was further expanded to include thermal coal mines in 2020.

With these prohibitions in place, OCBC will phase out our exposure to coal fired power plants and thermal coal mines over time.

Climate-related Disclosures and Transparency

OCBC recognises the importance of transparency and believes that comprehensive climate-related disclosures can help drive the global transition towards a low-carbon economy. We have set up an internal working group that will lead our efforts to progressively implement the recommendations set out by the TCFD. Moving forward, we will continue to enhance our climate disclosures beyond this inaugural TCFD report.

[2] You can find out more about this in our Climate Change Statement.

Raising Awareness and Building Capacity

OCBC has been actively championing environmental sustainability in the communities we serve and supporting efforts to develop climate expertise.

The #OCBCCares programme is among our community initiatives for galvanising climate action. Under this programme, we launched the #OCBCCares Environment Fund to support ground-up initiatives that enhance Singapore's sustainability landscape, funding a total of S$265,000 for 15 such initiatives from 2017 to 2019. Furthermore, we have also supported the OCBC Arboretum, a landmark project at the Singapore Botanic Gardens which conserves and studies 200 species of dipterocarp trees. The 2,000 trees at the Arboretum can store 80 million kg of CO_2 over their lifetimes. Research at the Arboretum can also improve future forestation and carbon storage projects.

As an extension of our ongoing efforts to rally the community to take climate action, we partnered Eco-Business to develop the inaugural OCBC Climate Index. The Index measures the current levels of environmental awareness and climate action among Singaporeans. We also launched a communications campaign featuring insights from the OCBC Climate Index to raise awareness about the carbon emissions from human activities and nudge environmentally sustainable behavioural change.

To equip OCBC employees with the right skills to contribute to the sustainability push, we launched a comprehensive suite of sustainability training modules under the Future Smart Programme for all employees. This initiative provides a structured approach towards grooming more subject matter experts in pertinent ESG topics, such as climate risk management.

We have also been participating actively in industry stewardship efforts such as the workstreams under the MAS's Green Finance Industry Taskforce which co-developed the MAS Environmental Risk Management Guidelines. Looking ahead, we will continue to support and engage regulators, industry, customers and other stakeholders in building greater awareness on, and strengthening capabilities for, managing climate change.

OCBC's Sustainability Report contains further information on our sustainability efforts, including how we are managing the environmental footprint from our operations.

Section 4 - Risk Management

A robust risk management infrastructure is critical to OCBC's success in achieving our strategic goals and creating balanced, long-lasting value for our stakeholders.

This section provides an overview of OCBC's ESG risk management process and the results of our initial assessment of climate-related risks.

ESG Risk Management

Consistent with OCBC's overall risk management approach, we have embedded the Three Lines of Defence Model for ESG risk management:

- First Line of Defence – ESG risk assessments by relationship managers and ESG specialists
- Second Line of Defence – Systematic reviews of the assessments by the relevant Credit Approving Authority
- Third Line of Defence – Independent internal evaluation of the adequacy and effectiveness of risk management, supporting the overall oversight of risks by Group Audit

ESG Risk Assessment Process

Since 2017, OCBC has used a comprehensive ESG risk assessment process to ensure ESG risk management is integrated into all aspects of credit risk assessment under the Responsible Financing Framework.[3]

As part of the ESG risk assessment process, high risk clients/transactions or those with significant environmental and social risks will be referred to a dedicated team of ESG specialists for enhanced due diligence. In addition, transactions with high ESG or reputational risk are escalated to the Reputational Risk Review Group for review and clearance.

OCBC is a signatory to Equator Principles, under which there is a requirement to undertake Climate Change Risk Analysis incorporating physical and transition risk for financing projects in high carbon intensity industry sectors.

Assessment of Climate-related Transition Risks[4]

Our climate transition risk analysis comprised two key components:

- First, we estimated the carbon metrics (emissions and intensities of companies) for a sample of borrowers based on a combination of modelled and publicly disclosed data at the borrower level.
- Second, we analysed the exposure of sampled borrowers to future carbon price risks and examined the impact on our credit portfolio.

Scope:

A sample of 397 borrowers, making up about 6.5% of our non-bank corporate exposure, were selected for estimation of their carbon intensities. Our study focused on the borrowers in more carbon intensive sectors which are more likely to be impacted by efforts to combat climate change.

Table 1: Sector Breakdown

Sector	Examples of Sub Sectors included
Agriculture and Forestry	Paper Products, Agriculture Products (includes crop growers, owners of plantations and animal husbandry), Forest Products, Paper Packaging
Chemicals	Industrial Gases, Fertiliser & Agri Chemicals, Commodity Chemicals, Specialty Chemicals
Energy	Power Generation, Oil & Gas
Mining and Metals	Cement, Coal, Steel, Aluminium, Gold, Copper, Silver, Precious Metals
Transportation	Airlines, Shipping

[3] You can find out more about this in our ESG Risk Assessment Process.

[4] Transition risks arise as the transition to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Financial impacts of transition risks include the changes in asset valuations caused by the structural shift toward a low-carbon energy system etc.

Carbon Intensity Metric Calculation

OCBC used weighted average carbon intensity (WACI), a metric recommended by the TCFD, to gauge the carbon intensity of borrowers and sectors within the sample. Carbon intensity refers to carbon emissions per unit revenue. WACI is based on exposure-weighted carbon intensity of the sampled borrowers relative to the total outstanding loan exposure for the borrowers and sectors assessed.

Our study showed that sectors with the highest WACI were Energy[5], followed by Transportation. The results presented below, however, may not be comparable across banks, as they depend on the profile of borrowers sampled. In the case of OCBC, we concentrated our assessment on the portion of our portfolio representing higher carbon intensities.

Table 2: WACI according to Sectors

Selected Sectors	(as % of OCBC's Non-Bank Corporate Exposure)	WACI (tCO_2e/ million SGD)[6]
Agriculture and Forestry	0.9	549
Chemicals	0.2	139
Energy	2.7	1,646
Mining and Metals	1.2	390
Transportation	1.5	635

Analysis of Carbon Price Risk and Credit Rating Impacts on Borrowers

To understand potential carbon price risks, OCBC assessed the extent to which borrowers could be exposed to an Unpriced Carbon Cost (UCC) using the scenario analysis approach recommended by the TCFD.

The UCC is the difference between what a company pays for estimated amounts of Scope 1 and Scope 2 emissions today, and what they may pay in the future. It depends on both the sectors and locations of company operations.

In determining the UCC, current carbon prices were estimated based on existing global emissions trading schemes and taxes on carbon or fossil fuels. Future carbon prices over the short-, medium- and long-term horizons were projected using three carbon price pathways based on research by the Organisation for Economic Co-operation and Development (OECD) and the International Energy Agency (IEA). They are as follows:

- **A Low Carbon Price Scenario** that assumes full implementation of countries' Nationally Determined Contributions (NDCs), some of which are not expected to meet the Paris Agreement's goal of limiting global warming to 2°C above pre-industrial levels by 2100.
- **A Medium Carbon Price Scenario** that assumes full implementation of policies in line with the Paris Agreement's goal of 2°C, but with action delayed in the short term and a steeper increase in carbon prices after 2030.
- **A High Carbon Price Scenario** that assumes full implementation of policies in line with the Paris Agreement's goal of 2°C.

Based on our assessment, we found that certain carbon intensive borrowers in our core markets may be negatively affected by transition risks arising from higher carbon-related costs under stricter carbon tax regimes. The impact could be greater if the higher costs cannot be passed through to their customers.

When applying our credit risk models to a sample of high emission borrowers to evaluate their potential credit deterioration arising from the impact of higher carbon cost on their cash flows, we found that the sampled portfolio is generally expected to remain resilient, with minor credit rating downgrades of less than one notch on average under the high carbon price scenario over a ten year horizon. Sixty-four borrowers in the sample were identified as being more vulnerable to transition risks with 2 or more notches downgrade in credit ratings in the same scenario. These borrowers engage in activities relating to fossil fuel power generation, metal production and processing, as well as air and sea transportation.

Despite facing data availability and other technical challenges, this assessment has been a constructive step forward by providing an initial understanding and quantitative view of how our credit portfolio may be impacted by transition risks under various carbon price trajectories. Looking ahead, OCBC will continue to work with regulators, the industry, and specialists to strengthen the transition risk assessment approach as data, tools and methodologies continue to improve.

[5] The power utility companies included under the Energy sector as part of this exercise were primarily fossil fuel based and contribute significantly to the Scope 1 financed emissions of the selected borrowers, and have a high weighted average carbon intensity.
[6] tCO_2e: tonnes of carbon dioxide equivalent

Assessment of Climate-related Physical Risks[7]

Similar to the transition risk assessment, OCBC applied the scenario analysis approach to assess the physical risk exposure faced by three asset-heavy sectors within our credit portfolio: agriculture and forestry, real estate and utilities.

This assessment was done using asset datasets and climate risk maps covering seven types of climate-related hazards – water stress, floods, heatwaves, coldwaves, hurricanes, wildfires and coastal floods – across three time periods (2020, 2030 and 2050) and three climate scenarios based on the Intergovernmental Panel on Climate Change Representative Concentration Pathways (RCPs[8]):

- **High Climate Change Scenario (RCP 8.5):** Continuation of "business as usual" emissions growth. This scenario is expected to result in warming of more than 4°C by 2100.
- **Moderate Climate Change Scenario (RCP 4.5):** Strong mitigation actions to reduce emissions to half of current levels by 2080. This scenario is likely to result in warming of more than 2°C by 2100.
- **Low Climate Change Scenario (RCP 2.6):** Aggressive mitigation actions to halve emissions by 2050. This scenario is likely to result in warming of less than 2°C by 2100.

In carrying out the assessment, a sample of 57 borrowers within the three sectors was first identified. The asset locations of these borrowers were subsequently overlaid with climate risk maps to evaluate their exposure to the seven types of climate-related hazards. This process generated a physical risk score for each borrower which could be used to compute the physical risks at the sectoral and portfolio levels.

Covering 2,810 assets, the assessment found that under the high climate change scenario in 2050, borrowers in the three sectors could be impacted by acute and chronic physical risks such as heatwaves, water stress and flooding, with agriculture and forestry having a relatively higher risk score due to water stress and heatwaves. Overall, the sampled portfolio's exposure to physical risk impact was found to be low.

While this assessment does not cover the financial impact of the physical risks, it has provided a high-level understanding of the key types of physical risks affecting our borrowers. Moving forward, OCBC will continue to strengthen our understanding of the materiality and impact of physical risks on our portfolios in tandem with the advancements in data availability, tools and methodologies.

[7] Physical risks, such as extreme weather events and long-term changes in climate patterns, can lead to financial losses due to damage to assets, supply chain disruptions, declining agricultural yields and other direct and indirect factors. Acute physical risks refer to specific weather events such as heatwaves, wildfires and cyclones and floods, while chronic physical risks refer to longer-term shifts in climate patterns, such as sea level rise and rising mean temperatures.

[8] Representative Concentration Pathways (RCPs) are possible trajectories for greenhouse gas emissions, air pollutant emissions and land-use changes defined by the Intergovernmental Panel for Climate Change (IPCC) in its Fifth Assessment Report.

Section 5 - Metrics and Targets

In line with the TCFD recommendations, this section summarises information related to:

- Metrics used by OCBC to assess greenhouse gas (GHG) emissions; and
- Targets used by OCBC to manage climate-related risks and opportunities and performance against these targets.

Disclosure of Metrics

In addition to the WACI metric shown in this report, OCBC has also been reporting our Scope 2 GHG emissions since 2017 as part of the annual sustainability report. OCBC's Scope 2 GHG emissions in 2020 were 65,188 tCO_2e, with a year-on-year decrease of 8.6%. We follow the GHG Protocol for guidance on measuring and reporting of our emissions. More information on our Scope 2 emissions is available in our Sustainability Report 2020.

We are also assessing our Scope 1 and Scope 3 emissions which will be published in due time.

Targets

Sustainable Finance Target of 25 by 25

In early 2020, OCBC met and exceeded our declared intention of building a sustainable finance portfolio of S$10 billion by 2022 and has since revised our goal to "25 by 25", or S$25 billion by 2025. In addition, OCBC's efforts in pioneering innovative solutions to support our customers' sustainability journeys have seen OCBC top the sustainable finance league tables in our key markets. As sustainable financing evolves, OCBC will continue to develop a comprehensive range of solutions and provide support to address the financially material risks our customers face, while actively seeking out new opportunities. OCBC is further committed to leading the way in the fight against climate change by using our significant platform and resources to positively influence our customers.

Next Steps

Enhance our Climate Risk Management Efforts

We recognise that reducing carbon emissions is a shared societal responsibility, and there is room for OCBC to do more. As an organisation, we aim to continue aligning ourselves with the recommendations put forward by the TCFD and strengthening our understanding in the following areas:

- Establishing and systematically embedding a structured engagement process to better understand our borrowers' transition plans.
- Broadening the scope of analysis and strengthening the transition risk scenario analysis and stress tests.
- Working towards reducing our operational carbon emissions through:
  - Measuring and tracking OCBC's operational carbon emissions for Scope 1, Scope 2 and selected Scope 3 emissions related to our operations; and
  - Reducing the emissions through optimisation of current systems, producing renewable energy and/or purchasing Carbon Credits/Renewable Energy Certificates (RECs).

Section 6 - Looking Forward

OCBC is committed to supporting the transition to a low carbon economy and recognises that high-quality disclosure is a critical component of this effort. The TCFD report will continue to inform OCBC's strategic priorities of putting customers first, building a sustainable future, acting with integrity, valuing our people, and engaging communities.

Our Board of Directors and senior management will continue to exercise oversight over the management and monitoring of sustainability at OCBC at both the strategy formulation and decision-making level. This includes assessing environmental risks across OCBC's lending portfolio and implementing the recommendations put forward by the TCFD.

OCBC has made several strides towards the targets we set but is cognisant of the challenges that still lie ahead. Looking forward, we are committed to driving performance across our material ESG factors, meeting targets and evolving practices as required. We recognise that tackling climate change requires collective action and are committed to collaborating and partnering with others to drive systemic change.

OCBC's success is not only interwoven with the success of all our stakeholders – it is also inextricably linked to the health of the planet. We are committed to keeping climate change top of mind to ensure that OCBC stays relevant, builds resilience, and creates sustainable long-term value.

OCBC Bank

Oversea-Chinese Banking Corporation Limited
(Incorporated in Singapore)

Company Registration Number: 193200032W