DBS Live more, Bank less

OUR PATH TO

NET ZERO

SUPPORTING ASIA'S TRANSITION TO A LOW-CARBON ECONOMY

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Foreword

Almost a year after the COP26 summit, the steady drumbeat of warnings over the urgency of limiting global warming to 1.5°C above pre-industrial levels has continued. The Intergovernmental Panel on Climate Change's (IPCC) Sixth Assessment Report (AR6) painted a stark picture of climate change[1]. The AR6 reports reinforce the reality that the world is indeed warming and experiencing erratic and increasingly extreme weather events as a result of an ever-increasing volume of greenhouse gases (GHG) in the atmosphere derived from human activities.

Government policies and initiatives have become increasingly ambitious. Companies are responding by decarbonising their operations and developing plans to deliver lower carbon alternatives. Individuals are changing their behaviours, and increasingly voting with their wallets for greener choices. Meanwhile, there has been a marked increase in the uptake of sustainable finance solutions. All of these contribute to a global, green industrial revolution at a scale and pace unprecedented in human history. Despite these efforts, we are still not on track to limiting global warming to 1.5°C.

This is why more must be done, and the financial sector has a critical role to play.

As Southeast Asia's largest bank by assets, we recognise the responsibility we have – to support a fair and just transition to the benefit of people across the region in which we operate. That means protecting those who will otherwise risk devastation from the effects of climate change while preserving and supporting the region's ability to achieve sustainable and inclusive growth. It is a role that we feel especially appropriate to the philosophy of DBS. After all, it is embedded in our founding name – The Development Bank of Singapore – and aligns with our approach to sustainability, which is based on the following three pillars: (i) Responsible banking, (ii) Responsible business practices, and (iii) Impact beyond banking[2].

We have been adopting measures proactively to tackle climate change for several years. In early 2018, we issued a statement restricting our financing to coal-fired power projects to those using more advanced technologies and committing to stop financing new thermal coal mining projects. This was followed by a comprehensive end to financing any new thermal coal assets in April 2019. Since then, we have already started progressively phasing down on our thermal coal exposure.

We have been supporting clients through our sustainable and transition finance solutions – In 2020, DBS published the *Sustainable and Transition Finance Framework and Taxonomy* as part of our efforts to partner with clients from key industries to transition to a low-carbon economy – we were the first commercial bank to publish such a framework. In addition, we have surpassed our SGD50 billion sustainable finance target in June 2022, two years ahead of the target timeline of 2024.

Tackling climate change requires collective action. DBS is one of the founding shareholders of Climate Impact X (CIX), a Singapore-based global carbon exchange.

[1] IPCC's Sixth Assessment Report. https://www.ipcc.ch/assessment-report/ar6/

[2] https://www.dbs.com/sustainability/featured/our-approach

We believe we can do more. By strategically directing our financing towards lower carbon activities, we (together with the rest of the financial sector) can tilt the cost of financing and change the relative economics of investing in less carbon intensive activities compared with that of polluting activities. This presents a powerful lever to incentivise decarbonisation in the real economy.

Sustainable companies are future-proofing their businesses to remain resilient. Against this backdrop, setting ambitious and science-based decarbonisation targets and positioning our business to transition are in our own economic interest. By doing this, we not only protect our shareholders from the risks associated with being left behind in the transition but also help them gain from the tailwinds behind this megatrend.

Our net zero commitment is supported by actions. This is why we are delighted that DBS is presenting here its very first set of targets for our Scope 3 financed emissions. We have taken a broad, ambitious, and science-based approach, encompassing these sectors across all our markets: 1) Power, 2) Oil & Gas, 3) Automotive, 4) Steel, 5) Aviation, 6) Real Estate, 7) Shipping. In addition, we are also paving the way for future decarbonisation roadmaps by setting data coverage targets for the Food & Agribusiness, and Chemicals sectors. These nine sectors collectively cover the majority of global greenhouse gases[3].

While we are not new to promoting sustainability to our financings, they also represent one of the most comprehensive sets of targets in the global banking industry. While we recognise that these targets will be reviewed periodically as science and client data evolve, they will act as the "north star" for our financing activities guiding us towards net zero by 2050 through measurable change. And by setting these targets, we further signal our commitment to support the transition investment needs of our clients. **Our vision in the coming decades is for society at large, our clients and DBS to move towards a fair and just transition by 2050.**

We see our efforts as part of a united force. We are the first Singaporean bank to become a signatory to the Net-Zero Banking Alliance (NZBA) in October 2021. As of 2021, financial institutions, who have signed up to NZBA, an industry-led, UN-convened alliance as the banking element of the Glasgow Financial Alliance for Net Zero, collectively control about USD130 trillion of capital and have committed to putting their balance sheets to work.

The task of bringing this report to fruition and continuing to pave a credible path towards net zero has been a result of team effort across frontline businesses, risk management, finance, communications and technology functions at DBS. We would also like to acknowledge a team of collaborative and knowledgeable professionals from **Oliver Wyman** who supported DBS to navigate our path to net zero.

We are extremely humbled to be supporting Asia's transition and cordially invite you to join us on this endeavour.

Piyush Gupta
Chief Executive Officer

[3] World Resources Institute (2022). World Greenhouse Gas Emissions in 2019. https://www.wri.org/data/world-greenhouse-gas-emissions-2019

Contents

List of abbreviations

Abbreviations (alphabetical order)	
AER	Annual efficiency ratio
AR6	IPCC's Sixth Assessment Report
BF-BOF	Blast furnaces-basic oxygen furnace(s)
CCUS	Carbon capture, utilisation and storage
CIX	Climate Impact X
CO_2	Carbon dioxide
CRREM	Carbon Risk Real Estate Monitor
DCM	Debt capital markets
DRI-EAF	Direct reduced iron-electric arc furnace(s)
EAF	Electric arc furnaces
EAF-Scrap	Scrap-based electric arc furnace(s)
ECM	Equity capital markets
EU	European Union
EV	Electric vehicle(s)
GDP	Gross domestic product
GHG	Greenhouse gas(es)
IATA	International Air Transport Association
IBG	Institutional Banking Group
ICE	Internal combustion engine
IEA	International Energy Agency
IEA NZE	International Energy Agency's Net Zero Emissions by 2050 Scenario
IMO	International Maritime Organization
IPCC	Intergovernmental Panel on Climate Change
$kgCO_2/MWh$	Kilograms of CO_2 emissions per megawatt hour of power produced
$kgCO_2/p\text{-}km$	Kilograms of CO_2 emissions per passenger kilometre travelled
$kgCO_2/vehicle\text{-}km$	Kilograms of CO_2 from tailpipe emissions per vehicle kilometre travelled
$kgCO_2e/kg$	Kilogram of CO_2 equivalent per kilogram of crude steel produced
LLE	Loans and loan equivalent(s)
MPP	Mission Possible Partnership
$MtCO_2e$	Million tons of CO_2 equivalent
N/A	Not applicable
NGFS	Network for Greening the Financial System
NZBA	Net-Zero Banking Alliance
O&G	Oil & Gas
OEM	Original equipment manufacturer(s)

List of Abbreviations

PCAF	Partnership for Carbon Accounting Financials
REIT	Real estate investment trust(s)
SAF	Sustainable aviation fuel
SGX	Singapore Exchange
SPV	Special purpose vehicle(s)
TCFD	Task Force on Climate-Related Financial Disclosures

Executive summary

Executive summary

Addressing climate change is one of the greatest challenges today. International agreements, such as the Paris Agreement and the Glasgow Climate Pact, have garnered international consensus around the urgency of addressing this challenge by setting a clear goal of limiting global warming to 1.5°C above pre-industrial levels, halting and reversing global warming through reaching a net zero level of greenhouse gas (GHG) emissions by 2050. International agencies have spelled out the scale of this challenge, which requires an overhaul of all elements of the global economy, and time is of essence here.

We are mindful of the many environmental and social challenges in front of us, but we have chosen to prioritise climate change as the most immediate issue today given its urgency and how it is interrelated with other long-term and far-reaching environmental and social concerns.

In the context of climate change, we not only want to ensure a healthy planet but also accomplish a fair and just transition. As a bank, we believe that engaging with and empowering our clients to reduce their GHG footprint can be an important part of our contribution. It is our responsibility to reduce GHG emissions from our own operations and, more importantly, to engage with our clients to reduce their GHG footprint through the activities we finance. This category of GHG emissions is generally referred to as Category 15 downstream Scope 3 financed emissions attributed to a financial institution's financing activities[4].

DBS became a signatory of the Net-Zero Banking Alliance (NZBA) in October 2021. To cement our net zero commitment and fulfil our responsibilities as a NZBA signatory, we have established the very first set of targets for our Scope 3 financed emissions attributable to us as a bank. These targets will guide us on strategically channelling financing away from high-emitting activities towards low-carbon alternatives. By doing so, we expect to contribute by rebalancing the economic equation for the real economy and to accelerate the transition while facilitating sustainable and inclusive growth and prosperity. Through setting our net zero targets, we also protect our shareholders from the risks associated with being left behind in the transition and help them gain from the tailwinds against this megatrend.

We see the case for setting net zero targets as multi-faceted:

1. **Decarbonisation is a societal responsibility.** Banks have a critical role to play in mobilising capital to avoid the worst consequences of climate change, such as extreme weather conditions and uncontrolled temperature increases around the world. When it comes to DBS, this role is embedded not just in our sustainability pillars but in the origin of our founding name and purpose as The Development Bank of Singapore. Besides supporting Singapore's national effort in achieving net zero, we are also taking a proactive approach to accelerating the transition for the benefit of people across the region in which we operate. This means building a financing approach that facilitates transition, thereby protecting those who are most at risk from the devastating effects of climate change, and doing so in a way that enhances the ability of the region (and beyond) to achieve inclusive and sustainable growth.

[4] According to Greenhouse Gas Protocol, this type of GHG emissions is classified as Category 15 and can be described as downstream Scope 3 emissions associated with a financial institution's investment and financing activities. https://ghgprotocol.org

2 **Decarbonisation is a risk management imperative.** We believe that governmental and corporate efforts to decarbonise will radically change almost every aspect of the economy. Those that adapt and lead the transition will likely reap the benefit of economic reward. Conversely, those that fail to adapt may risk being left with stranded assets and uneconomical businesses. For financial institutions, unpreparedness for climate change may translate into material transition and physical risks of climate change. Strengthening climate risk management capability has been our strategic priority, with progress made in climate risk assessment, measurement and scenario analysis (details can be found in our 2021 Sustainability Report[5]).

3 **Decarbonisation is a business opportunity.** We see net zero as one of the key investment themes of the future. Many of our clients share the same philosophy as us and are developing and implementing robust plans to decarbonise and transition. We expect that these plans will inevitably involve investments, be it in new lines of low-carbon businesses and technologies, proactive retirement of carbon-intensive assets at risk of being stranded or obsolete, or reconfiguring the supply and distribution chains. This paradigm shift will affect all industries in the coming decades and will require massive investment. As estimated by the Intergovernmental Panel on Climate Change (IPCC) in 2021, this investment would amount to an additional USD3.5 trillion annually[6].

We present here a set of targets for our Scope 3 financed emissions which will guide us onto a path for DBS' financing to align with the world of net zero by 2050. Our approach is underpinned by the following four guiding principles:

a) Grounding our targets in science

b) Aspiring towards net zero while ensuring inclusive growth and prosperity

c) Targeting 2050 as the goal for net zero emissions with 2030 as the first interim checkpoint

d) Building partnerships with clients on the transition journey

We have included seven sectors across our markets in setting our emissions reduction targets, and they are: 1) Power, 2) Oil & Gas (O&G), 3) Automotive, 4) Steel, 5) Aviation, 6) Real Estate and 7) Shipping. We are also paving the way for future decarbonisation roadmaps by setting data coverage targets for the Food & Agribusiness, and Chemicals sectors.

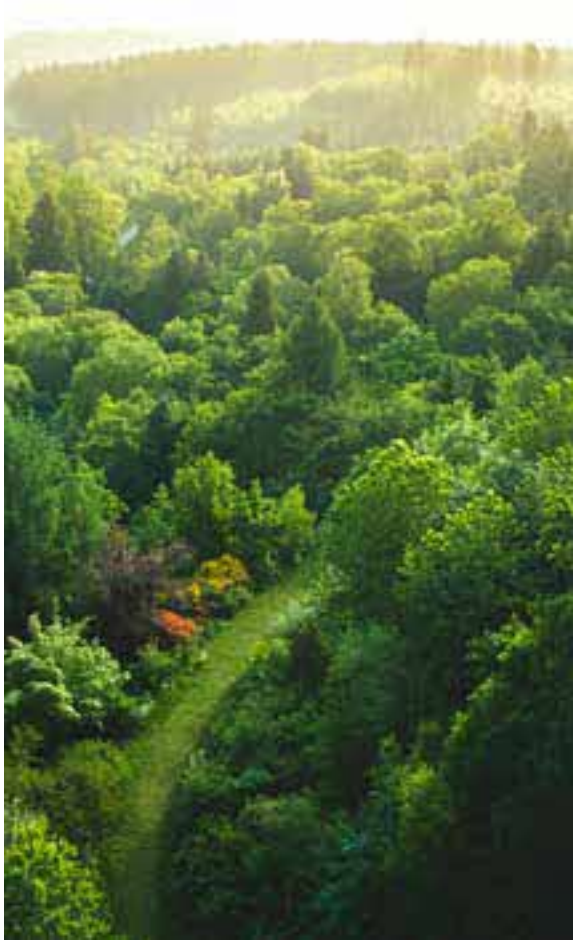
Given that these sectors collectively account for a majority of global GHG emissions, this sectoral coverage allows our targets to account for a material share of GHG emissions attributable to our corporate financing and capital markets activities. **They also represent one of the most comprehensive set of targets in the global banking industry thus far.**

By having such broad sectoral coverage, we anticipate that cross-sectoral synergies in terms of decarbonisation will be realised. For instance, when a power grid is being decarbonised, we would expect the GHG footprint of other sectors dependent on that grid, such as Real Estate and Automotive given the growth of electric vehicles (EV), to decarbonise as well. Over time, economy-wide decarbonisation can be achieved through these sectoral targets.

[5] https://www.dbs.com/iwov-resources/images/sustainability/reporting/pdf/web/DBS_SR2021.pdf?pid=sg-group-pweb-sustainability-pdf-dbs-sustainability-report-2021

[6] IPCC's Special Report – *Chapter 4 Strengthening and Implementing the Global Response.* https://www.ipcc.ch/site/assets/uploads/sites/2/2019/02/SR15_Chapter4_Low_Res.pdf

In order to set GHG emissions reduction targets consistent with net zero by 2050, we adopted globally-recognised, science-based, and net zero-consistent pathways which are aligned with limiting global warming to 1.5°C above pre-industrial levels. Despite widespread recognition that many emerging markets will, and should move to net zero at slower rates than their developed counterparts, we did not adjust our net zero approach to our emissions reduction target setting just because many of our markets[7] are based in a region expected to achieve a slower transition path. This implies that our emissions reduction targets are more ambitious than the current Nationally Determined Contributions (NDCs) of many of the countries in which we operate. DBS' targets aim directly for net zero by 2050, setting us on a path to be proactive and anticipatory, rather than merely reacting to stated governmental policy.



We have established different sets of targets for the select sectors as described below:

1 Target set one – emissions intensity reduction targets

For these six sectors (Power, Automotive, Aviation, Shipping, Steel and Real Estate), we are making a commitment to reduce the emissions intensity of our financing. While these sectors are instrumental to delivering essential goods and services and sustaining livelihoods in the economy, their activities need to become less carbon-intensive over time. The widespread technological innovation and transformation implied by net zero can spur higher growth and create material economic opportunities. In setting these emissions intensity reduction targets, we support these industries in their decarbonisation efforts.

- For four of these six sectors (**Power, Automotive, Steel** and **Aviation**) – we are expressing the target metric directly in terms of emissions intensity.

- For two of the six sectors (**Shipping** and **Real Estate**) – we are expressing the target metric as an "Alignment Delta" expressed as a percentage (%), which is derived based on emissions intensity. This Alignment Delta measures how our clients, constituents in sectors made up of varying asset types and activities, compare to a range of diverse underlying benchmarks. While this approach is well established in the shipping sector, it is novel in real estate. Real estate, made up of commercial, residential, hospitality and other assets, is an important sector in our Institutional Banking Group (IBG) portfolio. This Alignment Delta method has allowed us to include a much wider range of property types and countries in our Real Estate targets than what other banks have announced thus far.

[7] DBS is present in 18 markets globally, including six core markets in Asia, namely Singapore, Hong Kong, China, India, Indonesia and Taiwan.

2 Target set two – absolute emissions reduction targets

For **O&G**, we have chosen to set a target to reduce absolute financed emissions covering Scope 1, Scope 2 and Scope 3 emissions. We aim to reduce emissions from the O&G sector in line with the International Energy Agency's Net Zero Emissions by 2050 Scenario (IEA NZE)[8]. The IEA NZE describes a path for industrial sectors and countries that cumulatively arrives at net zero emissions by 2050 in line with scientific guidance on what is needed to avoid more than 1.5°C warming above pre-industrial levels. It places minimal reliance on carbon removal technologies and nature-based solutions which has become an industry reference point for what is required to achieve net zero by 2050.

As we progress towards our goal of reducing financed emissions from the O&G sector, we will continue working with companies in this sector of which many could be drivers of transition by investing in low-carbon energy sources and associated infrastructure.

3 Target set three – data coverage targets

For **Food & Agribusiness** and **Chemicals**, we have set data coverage targets at this juncture. Both sectors are diverse and hard-to-abate. Having gone through the process of the baselining and target setting exercise, it is evident to us that there is still limited industry consensus on the pathways to net zero target. Additionally, public disclosure of the relevant emissions intensity data is limited. Based on these two points, it is premature to set emissions reduction targets for these two sectors currently. However, we believe one of the first steps towards transition is quantification and disclosure of GHG emissions. To facilitate that, we have set data coverage targets committing us to encourage our clients to improve their GHG emissions reporting, thereby increasing emissions and production data coverage over time that will, in turn, enable us to set decarbonisation targets in the future.

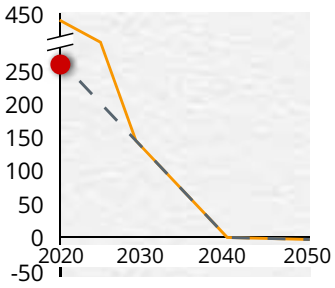
[8] IEA (2021), Net Zero by 2050, IEA, Paris. https://www.iea.org/reports/world-energy-model/net-zero-emissions-by-2050-scenario-nze

Our decarbonisation glidepaths and targets are summarised below and details can be found in subsequent chapters for the individual sectors.

Power

kgCO₂/MWh

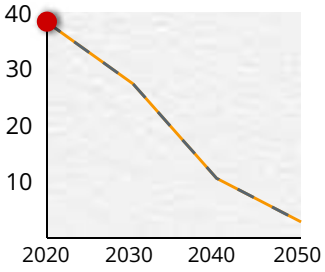
- IEA NZE
- DBS Target
- DBS portfolio position



Oil & Gas

MtCO₂e

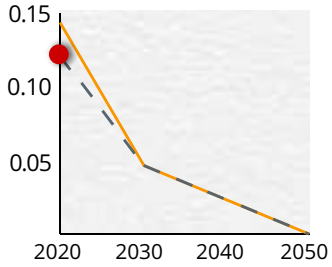
- IEA NZE
- DBS Target
- DBS portfolio position



Automotive

kgCO₂/vehicle-km

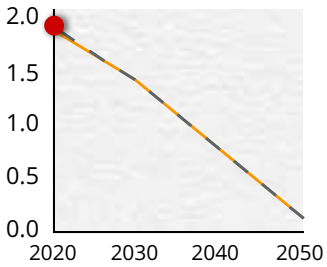
- IEA NZE
- DBS Target
- DBS portfolio position



Steel

kgCO₂e/kg

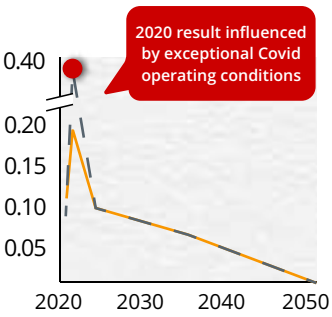
- MPP – Tech Moratorium scenario
- DBS Target
- DBS portfolio position



Aviation

kgCO₂/p-km

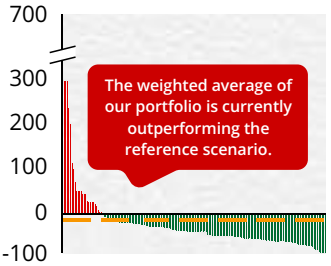
- IATA Fly Net Zero
- DBS Target
- DBS portfolio position



Real Estate

Alignment delta (%)

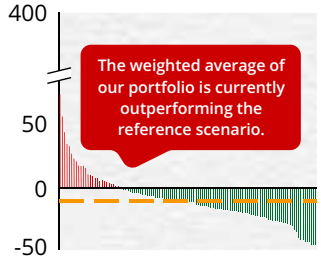
- Respective asset's emissions intensity is underperforming its relevant pathway
- Respective asset's emissions intensity is outperforming its relevant pathway
- DBS portfolio position – weighted average across relevant pathways



Shipping

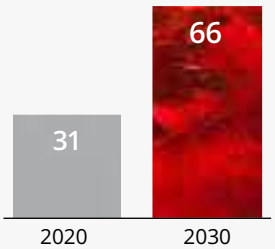
Alignment delta (%)

- Respective asset's emissions intensity is underperforming its relevant pathway
- Respective asset's emissions intensity is outperforming its relevant pathway
- DBS portfolio position – weighted average across relevant pathways



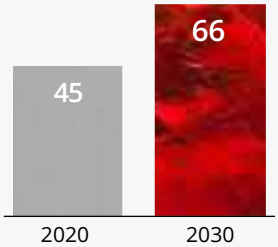
Food & Agribusiness

Data coverage (% large corporate clients reporting emissions and physical output)



Chemicals

Data coverage (% large corporate clients reporting emissions and physical output)



Comprehensive inclusion of our corporate financing activity – This is one of the most comprehensive sets of targets in the global banking industry. Our emissions reduction targets for Scope 3 financed emissions have included those we finance via corporate financing, which includes lending of our IBG portfolio (i.e. loan and loan equivalent), equity capital markets (ECM) and debt capital markets (DCM) activities[9]. We have used drawn facilities for loan and loan equivalent to compute our financed emissions, in line with guidance from the Partnership for Carbon Accounting Financials (PCAF).

Furthermore, these subsectors and types of financings represent the vast majority of our financed emissions, and constitute 31%[10] of our outstanding IBG portfolio.

In addition to targeting net zero by 2050, we have also set interim targets for 2030. While the path to net zero relies on as-yet undeveloped technological innovations, there is a clear, near-term imperative to materially reduce GHG emissions by scaling up and deploying existing and commercially available technologies. Our 2030 interim targets recognise this. Many of the key decarbonisation levers to achieve our interim targets focus on allocating more financing towards low-carbon activities.

Our 2030 interim targets were calibrated to be in line with our chosen science-based reference pathways regardless of our starting point (see table on the next page). In the Automotive, Real Estate and Shipping sectors – and especially the Power sector – our efforts to date mean that our portfolio has lower carbon emissions than the global or regional average. For others, such as Steel, the regional nature of our portfolio means that we start above the global average and therefore require a greater effort to bridge the gap.

Through our net zero journey, promoting climate change awareness and recognition along with its risks and opportunities is as important as financing transition activities, as this helps preparedness and drives both organisational and individual behavioural change. For our clients that have existing and future transition plans, our sectoral targets for the nine sectors highlight our commitment to supporting them on their transition journey.

We strive to realise our vision of being the **Best Bank for a Better World**. We recognise that our success in meeting our net zero targets is highly dependent on our clients' commitments and actions to decarbonise. We are also keenly aware of the scale of efforts required to achieve the targets and to fulfil our commitment as a NZBA signatory. From this point onwards, we intend to report our progress against our targets for the nine sectors on an annual basis and review our targets and our approach at least every five years. In addition, we have begun the work to operationalise and embed the targets into our corporate financing and client engagement activities.

[9] Please note that the financing activities covered in our Scope 3 financed emissions baselining approach have expanded to include DCM and ECM activities since the publication of our Sustainability Report in March 2022.

[10] Figure reported as approximately 34% in DBS' Sustainability Report 2021 has since been readjusted after further assessment.

Executive summary

Sector	Sub-sectors & types of financings included	Emission scopes included	Target metric	Reference scenario	2020 baseline *(and reference start-point)*[11]	2030 target *(reduction vs. baseline)*	2050 target
Power	• Power generation • Power equipment manufacturers	Scope 1 (generation) Scope 3 (equipment)	Emissions intensity ($kgCO_2/MWh$)	IEA NZE	260 (438)	138 (-47%)	0 (-100%)
Oil & Gas	• Upstream • Downstream • Integrated	Scope 1-3	Absolute financed emissions ($MtCO_2e$)	IEA NZE[12]	38.6 (N/A)	27.7 (-28%)	3.0 (-92%)
Automotive	• Automotive OEMs • Captive automotive finance companies[13] • Automotive distributors • Dedicated powertrain manufacturers	Scope 3 (tailpipe emissions of passenger vehicles)	Emissions intensity ($kgCO_2/vehicle\text{-}km$)	IEA NZE[14]	0.120 (0.144)	0.052 (-57%)	0 (-100%)
Steel	• Steel production	Scope 1-2	Emissions intensity ($kgCO_2e/kg$)	Mission Possible Partnership – Tech Moratorium scenario	1.95 (1.90)	1.42 (-27%)	0.14 (-93%)
Aviation	• Airlines • Aircraft leasing companies • Secured aircraft financing	Scope 1 for airlines and secured aircraft financing Scope 3 for aircraft leasing companies	Emissions intensity ($kgCO_2/p\text{-}km$)	IATA Fly Net Zero[15]	2020: 0.389 (0.191) 2019: 0.088 (0.107[16])	0.074 (-16%)[17]	0 (-100%)[18]
Real Estate	• Real estate owner-operators • Real estate special purpose vehicles • Real Estate Investment Trusts (REITs)	Scope 1-2 (operating emissions)	Alignment delta (%)	Carbon Risk Real Estate Monitor – Global Decarbonisation Pathways	-14.0%	≤0% (-42%)	≤0% (-95%)
Shipping	• Individual vessel financing	Scope 1	Alignment delta (%)	International Maritime Organization – Poseidon Principles	-11.8%	≤0% (-23%)	≤0% (-71%)
Food & Agribusiness	• Primary growers, producers and processors • Integrated agribusiness companies • Food and beverage manufacturers • Food retail • Animal protein and feed producers	N/A	Data coverage (% large corporate clients reporting emissions and physical output)	N/A	31% (N/A)	≥66%	N/A
Chemicals	• Petrochemicals • Commodity & diversified chemicals • Industrial gases • Specialty chemicals • Fertilisers & agrichemicals	N/A	Data coverage (% large corporate clients reporting emissions and physical output)	N/A	45% (N/A)	≥66%	N/A

[11] Calculated for DBS' clients as of August 2021; latest emissions data per client from 2020, or latest date in lieu of 2020 if required.

[12] Modified to additionally include emissions from methane flaring.

[13] Captive automotive finance companies refer to automotive finance or leasing or mobility service companies owned by and largely supporting captive brand sales of an automotive company in our value chain.

[14] Rebased to account for emissions only from new vehicles in each period and not emissions from the full global stock.

[15] Rebased to the IEA NZE emissions intensity for Aviation in 2020 as IATA Fly New Zero does not have 2019 data whereas the IEA NZE does, and because IATA Fly New Zero only accounts for passenger numbers and not passenger-kilometers.

[16] IEA NZE emissions intensity for Aviation in 2019, as IATA Fly Net Zero does not have data for 2019.

[17] Reduction vs. baseline for the Aviation sector calculated versus 2019, not 2020.

[18] Reduction vs. baseline for the Aviation sector calculated versus 2019, not 2020.

1 Our approach to setting targets

Our approach to setting targets

In this section, we present our approach to quantifying our baseline and target setting for GHG emissions attributable to DBS' financing (our downstream Scope 3 financed emissions). For seven of the nine sectors that we included in this target setting exercise, our approach has led us to set emissions reduction targets defined in terms of absolute emissions or emission intensities. However, we found that it was premature to quantify our emissions baseline or reach a sufficiently robust emissions reduction target at this time for two of the nine sectors, namely Food & Agribusiness and Chemicals. As such, we have set data coverage targets for these two sectors as our way of promoting market transparency.

For the seven sectors with emissions reduction targets, we have outlined our approach to target setting, including how we selected sectors and subsectors for this exercise, the methodologies adopted, and limitations and challenges encountered during the sectoral target setting exercise. This section also calls out key steps that we have taken to address sector-specific nuances.

Our approach to setting net zero targets is underpinned by the following guiding principles:

- **Grounding our targets in science**
- **Aspiring towards net zero while ensuring inclusive growth and prosperity**
- **Targeting 2050 as the goal for net zero emissions with 2030 as the first interim checkpoint**
- **Partnering clients on their transition journey**

1.1. Key principles of target setting

For such a pivotal exercise, it was imperative to develop key guiding principles that could steer us as we navigated towards defining our decarbonisation ambition. These principles are elaborated on below:

a Grounding our targets in science. Scientific consensus is clear that the world needs to rapidly and significantly reduce GHG emissions to achieve net zero by 2050 in order to limit global warming to no more than 1.5°C above pre-industrial levels to avoid the worst expected impacts from climate change. Scientists, economists and industry leaders have joined forces through several bodies, such as the International Energy Agency (IEA) and the various academic institutions that have developed scientific models underpinning reference scenarios released by the Network for Greening the Financial System (NGFS) to forecast annual GHG emissions under scenarios of varying levels and types of economic activities. We have assessed these various models, and ultimately used published and recognised scenarios from these credible bodies as our reference points for calibrating our net zero targets.

b **Aspiring towards net zero while ensuring inclusive growth and prosperity.** We strongly support the transition to a net zero future. We believe that not only does it bring consistent, continued economic growth and enhanced prosperity, it can also be a driver of stronger and more inclusive growth. Indeed, the IEA estimated that its net zero scenario would result in 0.5% higher global gross domestic product (GDP) growth than its scenario based on stated policies of governments during the 2020s[19]. This is the context in which we look at net zero coexisting with inclusive and sustainable growth and prosperity. This is also the context in which six of our targets aim to lower emissions intensity to achieve lower emissions per unit of output (i.e. megawattage of power, passenger-per-kilometre of transportation, and so forth).

c **Targeting 2050 as the goal for net zero emissions with 2030 as the first interim checkpoint.** We calibrated our targets to align our sectors with pathways to net zero global emissions by 2050. While this is consistent with the approach adopted by the international community (including NZBA), this principle puts us ahead of the stated ambitions of many of our core markets in Asia. Many of these markets either have less definitive targets or are aiming for net zero at later stages, such as 2060 and 2070, highlighting the reality that regions of the world are moving towards net zero at a different pace. Nonetheless, we have consciously chosen to keep 2050 as the net zero target timeline. We want to lead by example in following what science requires rather than current stated ambition levels of governments, and we believe that doing so can be consistent with inclusive and sustainable growth and prosperity. Furthermore, we have adopted global scenarios in most sectors as many of our clients are based in Asia but provide goods and services to the global economy. We have set 2030 as our first interim checkpoint to set us on course to achieve net zero by 2050. This allows us to focus our efforts on working with clients now on transition activities rather than treating the transition imperative as a problem to be tackled at some distant point in the future.

d **Building partnership with clients on the transition journey.** Many of our clients are making efforts to decarbonise their businesses, and their efforts and success play a critical role in our own plan in achieving our net zero goal. We are committed to supporting our clients' transition efforts and will work with our clients to devise, finance and achieve those plans. As part of our work to calibrate our targets, we have analysed the existing commitments of our clients across the seven sectors with emissions reduction targets. Our analysis suggests that if fully achieved, these existing decarbonisation plans and commitments of our clients would deliver decarbonisation equivalent to, on average, roughly half of the commitment we have from our starting point to our 2030 interim targets (although this varies by sector). Therefore, supporting our clients through transition finance to achieve their decarbonisation plans and commitments forms an important step towards our net zero goal.

[19] IEA's Net Zero by 2050: A Roadmap for the Global Energy Sector (2021). https://www.iea.org/reports/net-zero-by-2050

1.2. How we chose the nine sectors

To provide clarity, we have set targets for a total of nine sectors of which seven of them have emissions reduction targets, and they are: 1) Power, 2) O&G, 3) Automotive, 4) Steel, 5) Aviation, 6) Real Estate, and 7) Shipping. Although we attempted to apply the same process to the Food & Agribusiness and Chemicals sectors, it is premature to set emissions reduction targets for them at this juncture. Instead, we have devised data coverage targets, with an ambition to set emissions reductions targets once data quality and availability improves and reference pathways mature.

When we started work on setting our targets, we set ourselves the ambitious goal of including our most material sectors in the exercise. We are committed for our targets to be wide-reaching, reflecting the reality that reaching net zero requires nearly every part of the economy and society to act. That is, it is not enough to only decarbonise the highest emitting sectors, such as power and transportation. Neither is it enough to just set emissions reduction targets for fossil fuels.

There are interdependencies between sectors. For one sector to successfully pivot and decarbonise, it may require one or more than one sector to act in a synchronised manner. For instance, achieving a world of net zero requires the development of low-carbon alternatives for power. As stated by the IEA, the Power sector is required to reach net zero in 2040 for the world to achieve net zero by 2050[20]. This is because many industrial processes and transportation (particularly the rapid adoption of EV) will require electricity from low-carbon sources. Similarly, real estate also heavily relies upon grid electricity for its operations. Low-carbon power supply therefore plays a critical role in the economy-wide transition. In the short term, increasing energy efficiency is one of the main drivers of decarbonisation. However, in the longer term,

[20] IEA's Net Zero by 2050 – A Roadmap for the Global Energy Sector (2021). https://www.iea.org/reports/net-zero-by-2050

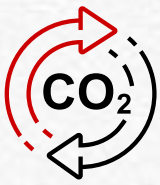
development of commercially-feasible and novel technologies for some hard-to-abate sectors, such as agriculture, chemicals, steel, as well as long-haul and freight transportation, will be expected to facilitate the transition, together with the use of CCUS. Hence, we recognise these interdependencies and have set targets for several sectors at once.

In choosing the initial set of sectors for target setting, we prioritised the following key considerations:

Sector selection focused on

high GHG-emitting sectors

&



sectors having readily available near-term decarbonisation technologies

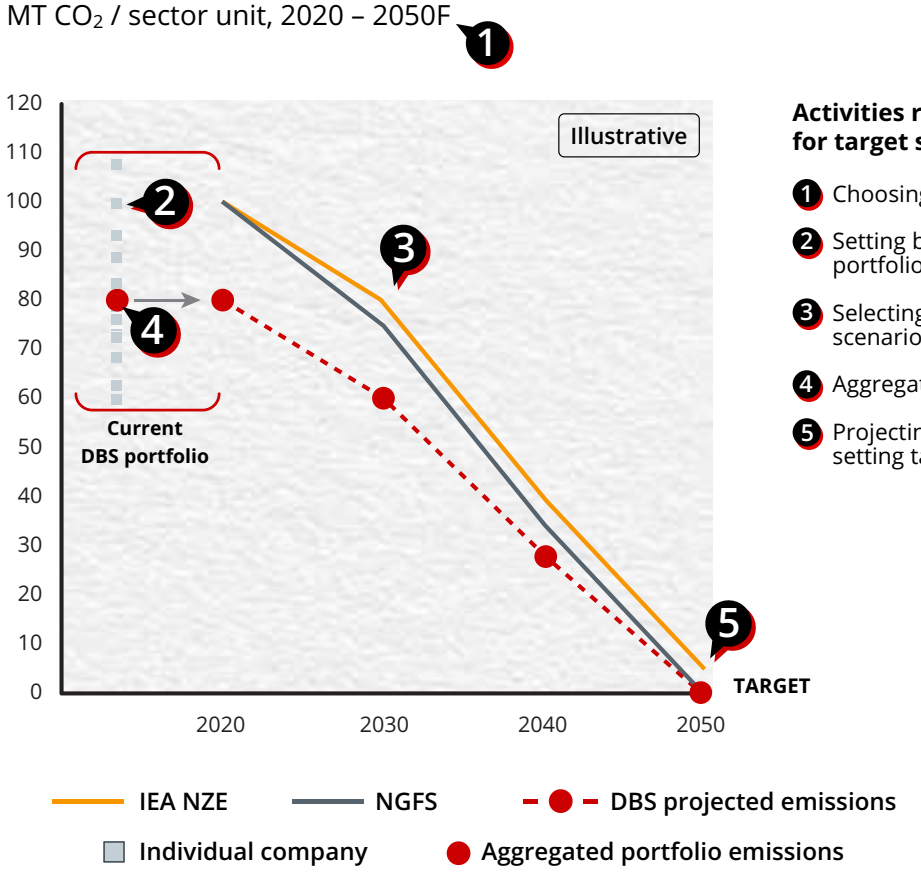
1. **High GHG-emitting sectors.** When selecting the sectors for target setting, one of the most important considerations was that the sectors should be high GHG-emitting, whether individually or collectively. These include power (energy), transportation, buildings (real estate), steel, agriculture, and chemicals. These sectors collectively account for a large majority of the Scope 3 financed emissions of corporate financing activities such that our targets would provide meaningful and impactful decarbonisation momentum.

2. **Sectors having readily available near-term decarbonisation technologies.** Sectors with readily available technologies in the near term should be prioritised, as these technologies are likely to be adopted by the sectors to allow interim targets to be achieved incrementally in the near term, paving the way towards net zero by 2050. These sectors include: 1) Power, for renewable energy technologies are already commercially available; 2) Automotive, for electrification of road transportation that is already underway; and 3) Steel, whereby electrification and use of steel scrap as a raw material for steel production have been commercially available and are currently considered key pathways towards decarbonisation for the sector.

1.3. Overall approach to setting emissions reduction targets

The approach we took to quantifying our emissions baseline and setting emissions reduction targets is illustrated below.

Example of sector-level emissions intensity pathway
MT CO_2 / sector unit, 2020 – 2050F



Activities required for target setting

1. Choosing a metric
2. Setting baseline for current portfolio emissions
3. Selecting a reference scenario
4. Aggregating emissions
5. Projecting forward and setting targets

1.3.1. Choosing a metric

For the seven sectors with emissions reduction targets, we have set targets using two types of metrics to reflect our goal of achieving sustainable growth in a net zero world (see table below).

Emissions intensity reduction targets (Power, Automotive, Steel, Aviation, Real Estate, and Shipping) – We adopted the use of emissions intensity as a metric for six sectors, forming the largest group. For this group, our objective (and therefore the target) is to lower emissions per unit output. This reflects our principle that sustainable and inclusive growth and prosperity will require greater output and activity, and that net zero requires that output from these sectors to be delivered at a lower level of GHG emissions. For four of these six sectors with intensity-based targets, we have opted to express the metric as the emissions intensity itself. For Shipping and Real Estate, we have chosen to express the metric as an "Alignment Delta" expressed in percentage (%), as these sectors have varying levels of details in their reference pathways (please see subsequent sections for more details).

Emissions reduction targets (O&G) – O&G is an exception to our principle that sustainable growth will require greater output and activity in a net zero world – that is, the path to net zero simply requires a lower usage of fossil fuels in total. We have therefore selected a metric that measures an emissions reduction target in its absolute GHG emissions. This may be achieved in part by improving the emissions intensity of O&G production and promoting the sector's production efficiency in the near term. However, we believe that ultimately, the world needs to pivot away from fossil fuels and towards lower carbon alternatives. Many of our O&G clients have decarbonisation commitments and plans, whereby they are expanding their businesses in renewable energy and in low-emission fuels such as sustainable aviation fuel (SAF), ammonia and hydrogen – all of which are critical in the transition of many hard-to-abate sectors, such as Aviation, Shipping and Steel.

For the Food & Agribusiness and Chemicals sectors, we found that it was premature to set a sufficiently robust emissions reduction target at this juncture. Instead, a data coverage target was set for these two sectors, which is measured in percentage (%) of large corporate clients.

Sector	Target metric
Power	Emissions intensity ($kgCO_2/MWh$)
Oil & Gas	Absolute financed emissions ($MtCO_2e$)
Automotive	Emissions intensity ($kgCO_2/vehicle\text{-}km$)
Steel	Emissions intensity ($kgCO_2e/kg$)
Aviation	Emissions intensity ($kgCO_2/p\text{-}km$)
Real Estate	Alignment delta (%)
Shipping	Alignment delta (%)

1.3.2. Setting a baseline for current portfolio emissions

Having selected the sectors and the metrics in which Scope 3 financed emissions are measured, we looked to establish the level of our Scope 3 financed emissions at the starting position (baseline). For each of the seven sectors, we established our starting position for our portfolio as of August 2020, providing the latest snapshot of our emissions baselines. We collected transactional information as of August 2021, GHG emissions data of our clients as well as the physical units of activity outputs that our clients made wherever emissions intensity metrics were adopted. Throughout the process, we collected the latest possible data with wider coverage of clients in-scope, which in most cases was for GHG emissions and activity output in 2020.

Calculating our sectoral baselines presented an optimisation challenge where it required us to make clear decisions in terms of sectoral coverage and scope of GHG emissions while balancing and navigating the data challenges. Four challenges emerged:

1 Which sectors and subsectors should be included in our baselining and target-setting exercise?

Each sector is made up of a series of subsectors that enable functioning and productivity as a sector. All the subsectors have a part to play in the transition. However, they are neither equal nor comparable from either a GHG emissions point of view or from a materiality perspective in terms of GHG emissions. Using the Power sector as an example, most GHG emissions are generated from the combustion of fossil fuels, rather than the grid operation itself. Moreover, science-based reference scenarios currently available often apply to only a segment of the sector due to the different nature of activities. Consequently, our baselining and target -setting effort focused on a set of subsectors within each of the seven sectors, as shown in the table on the next page.

When selecting subsectors to be included in our baselining exercise, we took into account four considerations: 1) whether the subsectors would represent a material exposure in DBS' corporate financing portfolio; 2) whether the subsectors would have control over their GHG emissions being measured or were key to decarbonising the sector; 3) whether data was readily available and of sufficient quality; and 4) whether the subsectors included could be compared on the same metric, in this case, largely in terms of emissions reduction metrics.

According to the World Resources Institute (WRI), the nine sectors for which we have selected collectively account for 57% of global emissions directly and another 33% indirectly[21], implying that our targets also likely represent a significant share of financed emissions attributable to us as a bank. The targets will apply across all markets in which we operate to ensure a bank-wide effort to decarbonise our IBG portfolio.

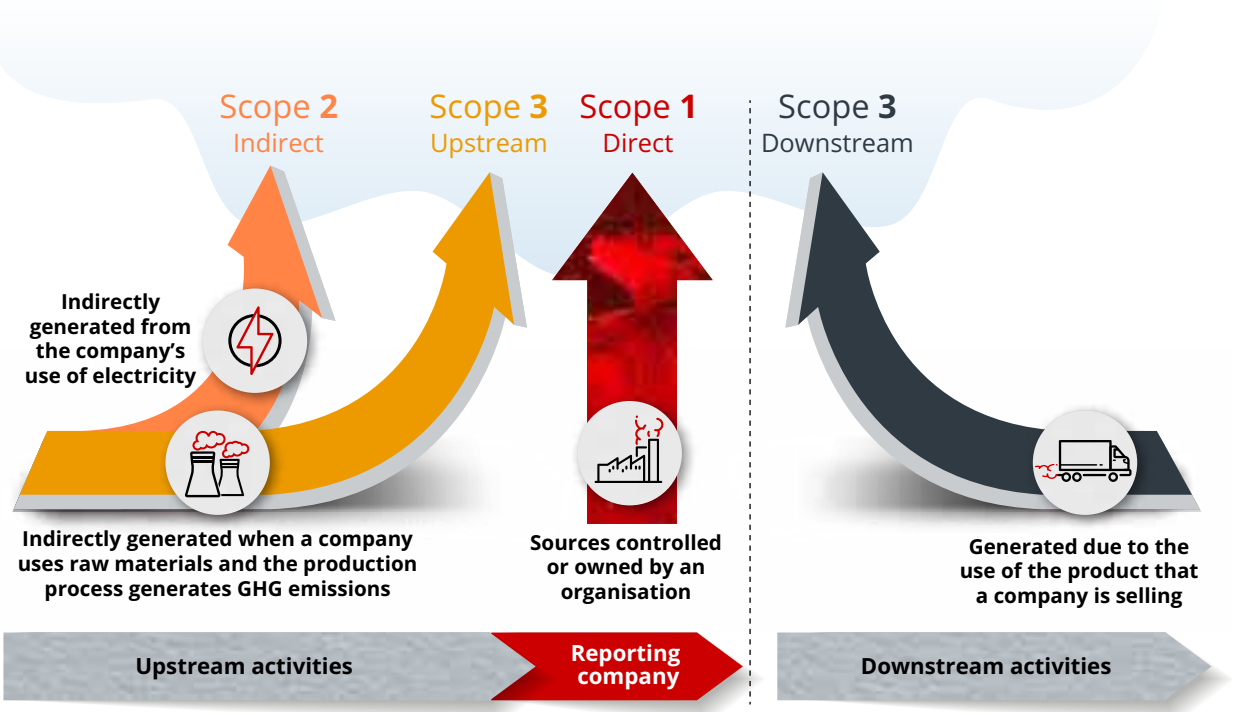
[21] World Resources Institute (2022). World Greenhouse Gas Emissions in 2019. https://www.wri.org/data/world-greenhouse-gas-emissions-2019

Sector	Sub-sectors & types of financings included
Power	Power generation Power equipment manufacturers
Oil & Gas	Upstream Downstream Integrated
Automotive	Original Equipment Manufacturers (OEMs) Automotive distributors Captive automotive finance companies Dedicated powertrain manufacturers
Steel	Steel production
Aviation	Airlines Aircraft leasing companies Secured aircraft financing
Real Estate	Real estate owner-operators Real estate SPVs Real Estate Investment Trusts (REITs)
Shipping	Individual vessel financing

2 Should emissions be measured at the specific project level, borrower level or the parent entity level?

We provide financing to different types of clients in a variety of ways. While some are for general purposes provided to parent corporates, others are ring-fenced for a particular legal entity within the parent corporate, for a specific purpose, or increasingly come with "use of proceeds" covenants. This gives rise to a way in which DBS can influence an outcome in terms of attributable Scope 3 financed emissions. Where our financing is for general corporate purposes, GHG emissions data at the corporate level would be used. Where financing is extended to a subsidiary of a corporate or ring-fenced to a specific project, for instance, if our financing is dedicated to a renewable energy project, we would then use GHG emissions data at the subsidiary level or at the project-specific level corresponding to the activities we finance, as appropriate and whenever data allows. The main objective of this approach is to capture the emissions profile of the activities we finance. In principle, as we progressively finance low GHG-emitting activities of our clients, this will shape our portfolio reflecting our progress against our emissions reduction targets. We recognise that this approach is not always possible due to a lack of quality data. Nonetheless, in the current baselining exercise, we have adopted this wherever data has allowe to reflec the specific entities and activities which we financed.

3 What scope of emissions should be included in our targets?



Scope 1 Direct

GHG emissions that occur from sources controlled or owned by an organisation. For example, for automotive original equipment manufacturers (OEM), this is the emissions generated from use of on-site diesel generators or other fuel combustion.

Scope 3 Upstream

Scope 3 upstream GHG emissions are indirectly generated when a company uses raw materials and the production process generates GHG emissions. For example, an OEM uses steel to manufacture cars. The manufacturer of steel generally requires the burning of metallurgical coal giving rise to Scope 3 upstream GHG emissions from the perspective of the automotive OEM but regarded as Scope 1 GHG emissions from the perspective of the steel mill in which the steel is produced.

Scope 2 Indirect

GHG emissions that are indirectly generated from the company's use of electricity, accounting for the burning of fossil fuels that is required to generate the electricity consumed.

Scope 3 Downstream

Scope 3 downstream emissions are generated due to the use of the product that a company is selling. Using automotive as an example, vehicle tailpipe emissions are regarded as downstream Scope 3 emissions from the perspective of automotive OEMs.

In evaluating and selecting the scope of GHG emissions to be included in our baselining and target-setting exercise, we followed four key criteria:

1) the most material GHG emission sources within the sector;
2) emissions that are within the control of the subsectors included;
3) the scope of emissions which corresponds to available reference scenarios for the sake of comparability; and
4) emissions where it is feasible to collect data.

We have included different scopes of emissions for each of the seven sectors with an emissions reduction target as shown in the table below.

4 Where to source GHG emissions and other data from?

Reporting and public disclosure of GHG emissions data is still an emerging practice. Emissions data availability varies significantly across geographies and within each of the sectors. While global guidance such as the Task Force on Climate-related Financial Disclosures (TCFD) is standardising what is reported, GHG emissions reporting on a consistent or comparable basis across all of our clients is not currently available. Consequently, for our initial baselining exercise, it was achieved on a best effort basis, and we have relied upon multiple sources of data, including but not limited to:

a) Company-reported emissions data as collected in third party databases, such as S&P Global's Trucost database;

b) Direct company-reported emissions sourced directly from our clients' climate disclosures such as their sustainability reports;

c) Bottom-up analyses of specific assets, for example, examining power output and generator type in the Power sector allowed us to estimate the emissions intensity of specific assets and assign these to their owners. Such analysis also enabled us to more accurately reflect emissions profiles when financing specific legal entities or providing ring-fenced financing; and

d) Proxies based on country, industry or activity averages and estimates that were published in literature research and other publicly available information including industry bodies.

Sector	Emission scopes included
Power	Scope 1 (generation) Scope 3 (equipment)
Oil & Gas	Scope 1-3
Automotive	Scope 3 (tailpipe emissions)
Steel	Scope 1-2
Aviation	Scope 1
Real Estate	Scope 1-2 (operating emissions)
Shipping	Scope 1

1.3.3. Selecting a reference scenario

Having quantified the baselines, the next step was to identify a reference scenario to which a decarbonisation glidepath would be projected. As we have committed to net zero by 2050, our targets were calibrated to this ambition – especially for the interim 2030 targets. We have set them with reference to science-based absolute emissions and emissions intensity net zero scenarios from several leading intragovernmental and industry organisations.

Two types of net zero reference scenarios were used in our target setting: 1) those that attempt to forecast emissions from the whole world, thus ensuring that the sum of all the sector and geography projections add up to net zero (i.e. from the IEA, and the NGFS, among others); and 2) those that are sector-specific, such as Mission Possible Partnership[22] (MPP) for Steel, the International Maritime Organization (IMO) for Shipping, and Carbon Risk Real Estate Monitor (CRREM) for Real Estate.

We have selected a reference scenario on a sector-by-sector basis, as shown in the table below. There are advantages to using a single source for all sectors to ensure that the parts add up to the whole. However, in practice, these models lack the richness desired for the sector-specific scenarios. Complementing this with additional scenarios has allowed us to include both Scope 1 and Scope 2 emissions for Steel; to create geography and property type specific benchmarks for commercial real estate (this is essential given the variety of properties we finance); and to account for the various vessel types and sizes for Shipping. Nonetheless, we have compared the overall decarbonisation trajectories of these sector-specific scenarios with the global scenario and have assessed that they are consistent with a path to net zero emissions by 2050.

Furthermore, we have considered the geographic mix of our portfolio when selecting a reference scenario. We deliberated between a region-specific pathway (which, given our dominant footprint in Asia, typically means a less ambitious near-term target) and a global pathway. This was determined on a case-by-case basis. But for all the seven sectors with emissions reduction targets other than real estate, we decided to choose a global pathway. This sets us on a path to achieving more ambitious targets and provides simplicity across our countries. Global pathways (i.e. IEA NZE scenario for the world) also reflect both the global nature of many of our clients and the industries in which they operate, as well as DBS' ambition in supporting our clients' decarbonisation efforts. For Real Estate, differences in climate across the various markets in which we operate in create different requirements for building operations. This includes heating and cooling which in turn requires the capture of multiple country-specific reference scenarios. In summary, we have set our initial net zero targets with reference to the following scenarios:

Sector	Reference scenario
Power	IEA NZE
Oil & Gas	IEA NZE
Automotive	IEA NZE
Steel	MPP – Tech Moratorium scenario
Aviation	IATA Fly Net Zero
Real Estate	CRREM Global Decarbonisation Pathways
Shipping	IMO – Poseidon Principles

[22] Net-Zero Steel Sector Transition Strategy. (2021). Mission Possible Partnership (MPP). https://missionpossiblepartnership.org/wp-content/uploads/2021/10/MPP-Steel_Transition-Strategy-Oct19-2021.pdf

1.3.4. Aggregating emissions

To establish a sector-level emission baseline, we needed to add up the emissions (or emissions intensities) of the individual borrowers in our portfolio. The primary decisions we had to make were the scope of financing to be included, and figures for drawn facilities (outstanding) to use when creating a weighted average for emissions intensities, or for calculating absolute financed emissions for the O&G sector. We have included the following financial products in our baselining and target setting exercise:

- Loans and loan equivalents (LLE[23]) of the IBG portfolio[24]
- Bonds held in DBS' IBG banking book
- ECM underwriting
- DCM underwriting

For ECM and DCM underwritings, we estimated the attributable Scope 3 financed emissions by taking the full amount DBS underwrote for a period of one year after the issuance, and weigh-averaging this amount over the respective issuer's enterprise value. Any amount retained by DBS continues to be counted thereafter as part of bonds held in the IBG banking book. We excluded positions held in the trading book, counterparty exposure (e.g. from derivatives contracts), and third-party positions (e.g. the investment holdings of our clients). These were excluded for pragmatic reasons to avoid undesirable volatility in our emissions results and to best reflect what DBS indeed provided financing for rather than facilitating trading or risk management (both of which are needed for an orderly transition to net zero).

Having determined in-scope drawn facility figures, emissions aggregation was then performed through two approaches for sectors using emissions intensity metrics, versus O&G, which uses an absolute emissions metric. In both cases we followed PCAF[25] guidance on how to aggregate emissions.

- For emissions intensity reduction metrics, emissions intensities per client were aggregated up to the sector level by weight-averaging across the clients, using drawn facilities as the weighting factor.

- For absolute emissions reduction metric, we calculated absolute financed emissions per client by accounting for our share of the client's emissions using the following equation:

$$\textit{Financed emissions} = \sum_{C} \textit{Company emissions}_{C} \; x \; \frac{\textit{Outstanding amount}_{C}}{\textit{Company value}_{C}}$$

With c = borrower or investee company

To do this, we calculated a ratio that would represent our share by dividing our financing to the client by the client's enterprise value. We then multiplied the client's emissions by this ratio to calculate our financed emissions. As the financed emissions are directly expressed in metric ton of GHG, aggregation across the sector was carried out by simply summing up our financed emissions to each client.

[23] LLE is defined as a class of credit facilities (essentially loans, leases, and standby letters of credit / guarantees issued by DBS on behalf of its borrowers) and debt instruments invested by the bank. Aggregation is based on the notional amount of each credit product and debt instrument

[24] In line with PCAF guidance, we include lending on the basis of the drawn facilities

[25] The Global GHG Accounting & Reporting Standard for the Financial Industry. (2020). Partnership for Carbon Accounting Financials (PCAF). https://carbonaccountingfinancials.com/files/downloads/PCAF-Global-GHG-Standard.pdf

1.3.5. Projecting forward and setting targets

The emissions reduction targets we have set for the seven sectors have two milestones: 1) an end goal to achieve net zero-consistent levels of emissions, or emissions intensity, by 2050; and 2) an interim target to achieve a material level of decarbonisation required to be on track by 2030.

We have also taken an additional step of first understanding the actions that might be taken by our existing clients, and then considering actions that we could take to direct our portfolio towards financing lower emitting activities. In no cases were we setting targets in a vacuum. Before committing, we have identified a set of actions required per sector. While our targets and actions are ambitious and critically rely on our clients' decarbonisation efforts and following through on commitments made in the markets which they operate in, we believe they are all achievable.

As the first step, we collected the commitments of our largest clients (we did this for all nine sectors, but only used the data on the seven sectors with quantitative emissions reduction targets) and considered what this would imply on its own for our future emissions (or emissions intensity) reductions. While this is an important lever in every sector, it is not sufficient on its own in any sector for our portfolio to remain net zero-consistent in 2030.

Secondly, in some sectors where a significant proportion of our clients have not yet set net zero targets, we have built a range of forward-looking scenarios for actions our clients might take. This involved the investments that could be made into lower emitting technologies and activities, responsible divestment of high-emitting businesses, retrofitting of CCUS technologies, and in some cases, impacts of announced national government policies. For example, our automotive distribution clients are affected by national policies to phase out internal combustion engine (ICE) sales.

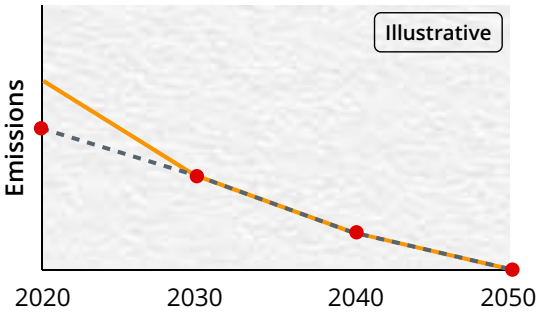
Finally, we have considered a range of actions that DBS can take and calibrated these actions to the 2030 and 2050 points. This includes, but is not limited to:

- Working with our clients that do not have targets to develop net zero plans.
- Working with our clients that have plans that are not yet net zero-consistent to strengthen and achieve more ambitious plans.
- Reducing our financing of high GHG-emitting parts of the sectors.
- Increasing our financing to low GHG-emitting parts of the sectors (e.g. increased lending to renewable energy).

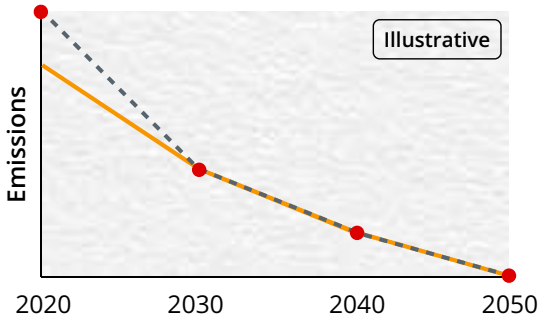
In the O&G sector, we have set an absolute GHG emissions reduction target. While part of the target would be met by helping our O&G clients reduce GHG emissions by halting operational emissions, the target requires us to reduce our financing to the sector over time. In all the other sectors which we have set emissions intensity reduction targets for, achieving net zero could be positive for revenue generation. We also believe these revenue opportunities to finance the transition outweigh what we will need to forgo in high GHG-emitting sectors.

Our overall philosophy has been to set targets that allow us to meet the reference scenario curves (as illustrated below) by 2030. This means that for sectors where our current portfolio starts above the line in 2020, our targeted decarbonisation trajectories are steeper to 2030. In addition, where our early efforts leave us below the 2020 starting point (such as the Power sector where nearly half of our Power portfolio are renewables), our decarbonisation glidepath towards 2030 is less steep than the reference scenario.

Example targets for sectors where DBS' starting point is lower than reference scenario emissions



Example targets for sectors where DBS' starting point is higher than reference scenario emissions



DBS — Reference scenario

1.3.6. Other considerations

We recognise our role as a financing enabler of the transition of others, and that our own Scope 1 and 2 emissions are relatively insignificant compared to that of our clients in the sectors covered by our targets. To best support our clients in accelerating their transition, it may become necessary to provide additional financing to high-emitting companies for the ultimate transition outcome. Such cases might include a power company that needs financing to accelerate the shut-down of a coal-fired power plant. While providing this financing would undoubtedly place a strain on our current emissions reduction targets, it would ultimately accelerate the path to net zero. Hence, in the future, we may investigate setting additional targets that apply for such financing to companies that are indeed rapidly transitioning, thereby taking these companies out of the scope of our current targets for transparency. Our targets will reflect the real world impact aligned to the progress made along the journey of transition at the point in time and will not be a mere shuffling of our portfolio. Thus far, we have not set additional targets for helping such clients to transition. If we do so in future, we will put in place robust governance to ensure that these targets are used only if absolutely necessary.

1.3.7. Treatment of carbon credits

Carbon credits could be an efficient way of unlocking capital for solutions that are needed to support the journey to net zero. There are various nature-based and technological solutions that facilitate avoidance, reduction or removal of GHG from the atmosphere, all of which are part of the global solution to net zero. Yet, carbon credits are also controversial – there is fear that carbon credits from poorly managed carbon-bearing projects can overstate the offsetting activity, and by so doing, reduce the pressure for gross decarbonisation. We are conscious of these potential drawbacks. However, high-quality carbon credits when properly used and managed could be an important tool in companies' overall decarbonisation toolkit and can enable companies to go above and beyond their internal reductions to help meet the decarbonisation goals.

In our client engagements, we stress that transition starts with a strategy. First and foremost, we aim to help our clients in developing science-based and credible decarbonisation strategies that include measuring their GHG footprint and setting emissions reduction targets. Using this as a basis, we then support the "PRO" hierarchy of action on decarbonisation:

- **P**revent: Our primary objective is to help clients minimise emissions by preventing unnecessary emissions from being created in the first instance. For example, we would advise O&G companies to stop methane leaks.
- **R**educe: Some emissions are still required to support business activities. We will help clients reduce these emissions through time, for instance, by employing higher efficiency technologies.
- **O**ffset: For residual emissions that are hard-to-abate or unavoidable, clients may buy high-quality carbon credits.

Most critically, we will stay abreast the discussions and ongoing work related to the High Ambition Pathway[26], which encourages companies to also compensate for their emissions while on the path to net zero, rather than the end point.

In all of this, we believe the following two considerations are essential.

1. **The quality of the carbon credits:** We support the goals of The Integrity Council for the Voluntary Carbon Market[27] to develop a set of Core Carbon Principles that will allow the development of consistently high-quality carbon credits.

2. **Transparency and appropriateness of claims:** We encourage our clients to be transparent and report on the progress they have made in their decarbonisation efforts, as well as how they have used carbon credits as part of their overall decarbonisation strategy. In line with best practices, companies' claims on where they are in their decarbonisation journey should not be misleading. We note the guidance released by the Voluntary Carbon Markets Integrity Initiative[28] as well as the implementation of legislation in various jurisdictions on this matter.

[26] https://www.iif.com/Portals/1/Files/High_Ambition_Path_to_Net_Zero.pdf

[27] https://icvcm.org/

[28] https://vcmintegrity.org/wp-content/uploads/2022/06/VCMI-Provisional-Claims-Code-of-Practice.pdf

At DBS, we are committed to maximising our impact beyond our client base. DBS is one of the founding shareholders of Climate Impact X (CIX), a global exchange and marketplace for high quality carbon credit headquartered in Singapore.[29]

1.4. Approach to setting data coverage targets

As noted above, for the Food & Agribusiness and Chemicals sectors, we found that there was insufficient data and appropriate scenarios to support an emissions-based net zero target to be set. To facilitate future target-setting, our objective (and therefore target) is to improve emissions data coverage, which is measured as a percentage of large corporate clients that report emissions and production data (see table below). One of the first steps towards making the transition to net zero is quantification and disclosure of GHG emissions, and we are committed to working with our clients to promote this.

Sector	
Food & Agribusiness	Data coverage (% large corporate clients reporting emissions and physical output)
Chemicals	Data coverage (% large corporate clients reporting emissions and physical output)

For both Food & Agribusiness and Chemicals sectors, we have included a broad set of subsectors to maximise the breadth of the sectors that we will be working with to increase data coverage, as shown in the table in the next page. We will be working with our clients to increase data reporting and to ensure that the reporting covers all three scopes of their emissions, to the extent possible.

[29] https://www.climateimpactx.com

Sector	Sub-sectors included
Food & Agribusiness	• Primary growers, producers and processors • Integrated agribusiness companies • Food and beverage manufacturers • Food retail • Animal protein and feed producers
Chemicals	• Petrochemicals • Commodity and diversified chemicals • Industrial gases • Specialty chemicals • Fertilisers & agrichemicals

Given the relative simplicity of the metric for Food & Agribusiness and Chemicals, we aggregated data coverage up to the sector level by counting the number of large corporate clients that had published both their GHG emissions and details on physical output, then divided this by the number of clients in the respective sectors. Given the nature of the data coverage targets for Food & Agribusiness and Chemicals, we did not perform an in-depth projection of these sectors' emissions. We will continually monitor our data targets and seek to revise them as the sectors' data landscape matures. We will also assess timeliness for setting emissions reduction targets when data coverage improves and there is greater clarity on the reference pathways involved.

1.5. Limitations of our approach and potential roadblocks

Across the seven sectors for which we have set quantitative emissions reduction targets, we have profiled the existing decarbonisation plans and net zero targets of our clients and have used these as a baseline for our projections. Our ability to meet our sector targets is largely contingent on our clients delivering on their own commitments and ambitions. Should a significant proportion of our clients fail to deliver on their targets, our ability to meet our own net zero targets will be affected. We also recognise that those plans depend on prevailing government policies and technological developments conducive to the development of commercially viable low-carbon alternatives, which is especially critical for the 2030-2050 period. This risk is intrinsic to our role as a bank and the fact that we are setting Scope 3 financed emissions targets on our financing portfolio. Companies, financial institutions and governments face complex and challenging trade-offs in this transition. The urgency to decarbonise needs to be balanced against the demands for energy security and inclusive and sustainable economic growth, especially in emerging markets. While the transition journey will not be smooth, we are committed to positively accelerating the transition towards net zero.

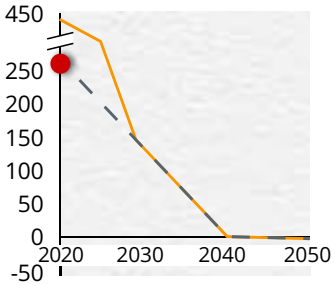
2 Our net zero aligned emissions reduction targets

Our net zero aligned emissions reduction targets

2.1. Overview of our emissions reduction targets

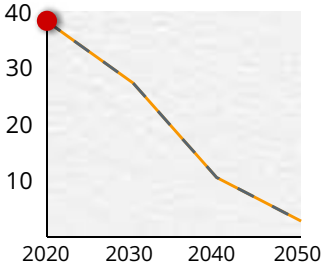
Power
kgCO₂/MWh

- IEA NZE
- DBS Target
- DBS portfolio position



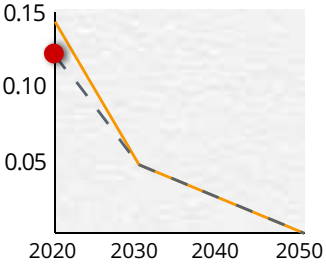
Oil & Gas
MtCO₂e

- IEA NZE
- DBS Target
- DBS portfolio position



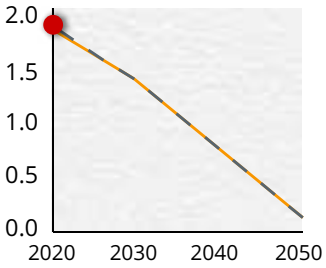
Automotive
kgCO₂/vehicle-km

- IEA NZE
- DBS Target
- DBS portfolio position



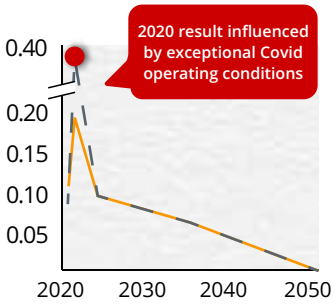
Steel
kgCO₂e/kg

- MPP – Tech Moratorium scenario
- DBS Target
- DBS portfolio position



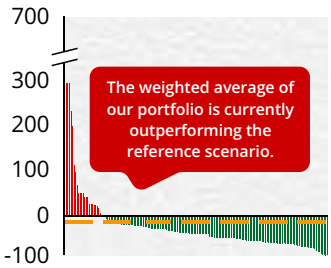
Aviation
kgCO₂/p-km

- IATA Fly Net Zero
- DBS Target
- DBS portfolio position



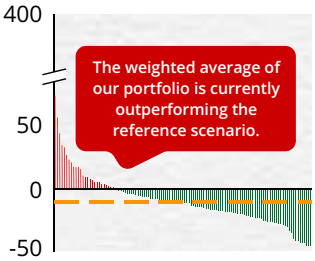
Real Estate
Alignment delta (%)

- Respective asset's emissions intensity is underperforming its relevant pathway
- Respective asset's emissions intensity is outperforming its relevant pathway
- DBS portfolio position – weighted average across relevant pathways



Shipping
Alignment delta (%)

- Respective asset's emissions intensity is underperforming its relevant pathway
- Respective asset's emissions intensity is outperforming its relevant pathway
- DBS portfolio position – weighted average across relevant pathways



02 | Our net zero aligned emissions reduction targets

Sector	Sub-sectors & types of financings included	Emission scopes included	Target metric	Reference scenario	2021 baseline *(and reference start-point)*[30]	2030 target *(reduction vs. baseline)*	2050 target
Power	• Power generation • Power equipment manufacturers	Scope 1 (generation) Scope 3 (equipment)	Emissions intensity ($kgCO_2/MWh$)	IEA NZE	260 (438)	138 (-47%)	0 (-100%)
Oil & Gas	• Upstream • Downstream • Integrated	Scope 1-3	Absolute financed emissions ($MtCO_2e$)	IEA NZE[31]	38.6 (N/A)	27.7 (-28%)	3.0 (-92%)
Automotive	• Automotive OEMs • Captive automotive finance companies • Automotive distributors • Dedicated powertrain manufacturers	Scope 3 (tailpipe emissions)	Emissions intensity ($kgCO_2$/vehicle-km)	IEA NZE[32]	0.120 (0.144)	0.052 (-57%)	0 (-100%)
Steel	• Steel production	Scope 1-2	Emissions intensity ($kgCO_2e/kg$)	MPP – Tech Moratorium scenario	1.95 (1.90)	1.42 (-27%)	0.14 (-93%)
Aviation	• Airlines • Aircraft leasing companies • Secured aircraft financing	Scope 1 for airlines and secured aircraft financing Scope 3 for aircraft leasing companies	Emissions intensity ($kgCO_2$/p-km)	IATA Fly Net Zero[33]	2020: 0.389 (0.191) 2019: 0.088 (0.107[34])	0.074 (-16%)[35]	0 (-100%)
Real Estate	• Real estate owner-operators • Real estate SPVs • REITs	Scope 1-2 (operating emissions)	Alignment delta (%)	CRREM – Global Decarbonisation Pathways	-14.0%	≤0% (-42%)	≤0% (-95%)
Shipping	• Individual vessel financing	Scope 1	Alignment delta (%)	IMO – Poseidon Principles	-11.8%	≤0% (-23%)	≤0% (-71%)

[30] Calculated for DBS' clients as of August 2021; latest emissions data per client from 2020, or latest date in lieu of 2020 if required

[31] Modified to additionally include emissions from methane flaring.

[32] Rebased to account for emissions only from new vehicles in each period and not emissions from the full global stock.

[33] Rebased to the IEA NZE emissions intensity for Aviation in 2020 as IATA Fly New Zero does not have 2019 data whereas the IEA NZE does, and because IATA Fly New Zero only accounts for passenger numbers and not passenger-kilometers.

[34] IEA NZE emissions intensity for Aviation in 2019, as IATA Fly Net Zero does not have data for 2019.

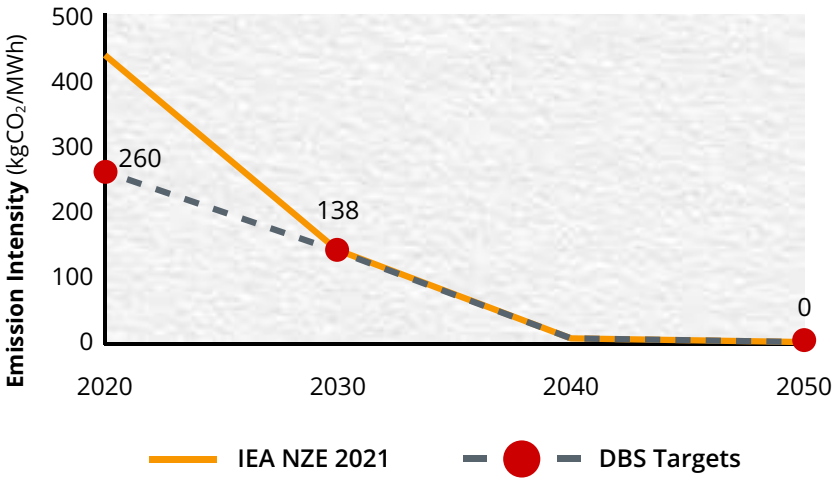
[35] Reduction vs. baseline for the Aviation sector calculated versus 2019, not 2020

2.2. Power

> As identified by IEA, decarbonising the power sector is critical for the global economy to reach net zero by 2050. At DBS we are committed to help our clients chart their own pathways consistent with IEA's net zero targets. This will mean advising and financing our clients to meet the growing energy needs of our societies in a sustainable manner.

Kelvin Wong
Deputy Head of Energy, Renewables and Infrastructure

Power Sector Targets



Year	IEA NZE reference ($kgCO_2$/MWh)	DBS targets ($kgCO_2$/MWh)	% Reduction vs. 2020
2020	438	260	-
2030	138	138	47%
2050	0	0	100%

What's included?

Power generation
(Scope 1 emissions)

Power part manufacturers
(Scope 3 emissions)

Reference scenario

- IEA Net Zero Emissions 2021 – global reference pathway

How we will achieve our targets

- Helping our clients to achieve their decarbonisation targets, and encouraging more to set and achieve them
- Exiting thermal coal
- Increasing share of renewable energy in our portfolio
- CCUS after 2030

2.2.1. Net zero in Power

Use of emission intensity. Power, more than any other sector, must decarbonise if the world is to achieve net zero emissions by 2050. The sector is the single biggest source of carbon emissions, accounting for about 40% of all global emissions[36], largely due to the burning of coal and natural gas in fossil fuel-based power generation. Power also plays a vital role in the transition to net zero because electrification is a key lever for decarbonising other industries that depend on grid electricity, chiefly automotive, real estate, and hard-to-abate sectors such as steel and cement. A significant change in the way power is delivered is therefore needed, involving the production of power without generating net GHG emissions.

Adoption of IEA NZE. Achieving net zero requires the Power sector to significantly ramp up production of renewable energy, such as wind, solar and geothermal and provide this through effective storage and efficient grid systems. In order to fulfil the IEA NZE scenario, not only is a two-thirds reduction in emissions intensity of power production by 2030 required, the sector also needs to reach zero emissions intensity by 2040, ahead of other sectors' net zero timelines.

While decarbonisation of power is central to every country's NDCs plans, it is also the case that countries have different energy mixes, as well as widely divergent plans when it comes to decarbonisation. Achieving net zero is further complicated by several factors, especially in emerging markets:

- Fossil fuel-based power plants have long lifespans of around 25-40 years typically. Retiring them prematurely involves writing down these assets. Without early retirement (or the retrofitting of CCUS technology), the Power sector will not be able to transition fast enough to reach net zero by 2040, which is required for the world economy to reach net zero by 2050[37].
- The supply of energy, as well as security of supply, is critical for stability and economic growth especially in emerging markets. Fossil fuel-based power is a stable, non-intermittent source of power that can be delivered in a consistent manner.
- Access to types of renewable energy is not equal across countries. For instance, solar energy often requires use of a vast land area. This presents a challenge for land-scarce and densely populated cities such as Singapore and Hong Kong.
- Currently, most sources of renewable energy suffer from intermittency which makes them unreliable as a single source of power without storage and a highly effective grid system.

[36] Greenhouse Gas Emissions from Energy: Overview – Analysis - IEA

[37] Net Zero by 2050 – Analysis - IEA

2.2.2. DBS' targets for the Power sector

DBS provides a range of financial services to clients in the Power sector. Our financing covers the whole value chain from power equipment manufacturers, through power generation, to transmission, grids and downstream distributors.

We are setting commitments to achieve net zero consistent levels of emissions intensity for our financing to the Power sector, using the landmark global IEA NZE scenario as the reference pathway. An emissions intensity target is set for this sector, measured in kilograms of CO_2 emissions per megawatt hour of power produced ($kgCO_2/MWh$). We have included two subsectors from the Power sector within the targets:

1. **Companies involved in power generation** (both fossil fuel-based and renewable energy) based on their Scope 1 emissions (that is, the emissions released from power generation); and

2. **Power equipment manufacturers** based on their Scope 3 emissions[38] (that is, the power equipment produced is tagged to the type of power that the equipment generates). This, in turn, motivates our financing towards companies manufacturing renewable energy equipment, such as wind turbines and solar panels, which are critical to the scaling up of renewable energy. It also reflects the industry trend towards distributed power generation at a smaller scale, for instance, through the use of rooftop solar panels.

[38] Infrastructure & Supply Chain emissions as extracted from IPCC. https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_annex-iii.pdf

02 | Our net zero aligned emissions reduction targets

Renewable energy currently comprises around half of our Power portfolio

We have implemented our thermal coal financing policy since 2018, and our remaining exposure will run off by 2039.

1) **No new thermal coal assets;**
2) **Cease the onboarding of new customers who derive more than 25% of their revenue from thermal coal with immediate effect, and lower the threshold as time progresses;**
3) **Stop financing customers who derive more than 50% of revenue from thermal coal from January 2026, except for their non-thermal coal or renewable energy activities, and lower the threshold as time progresses;**
4) **Disclose DBS' thermal coal exposure annually in its Sustainability Report to provide transparency on progress made.**

Our targets are set on the basis of the activities we are financing. As mentioned earlier in Section 1, if we provide ring-fenced financing to a company for the development of a wind farm, we will include carbon emissions from the wind-farm activities rather than all the diversified activities of the parent company. Through our targets, we hope to contribute to global energy security by helping countries to wean themselves off fossil fuels and embrace renewables. Our Power portfolio starts with a notably lower emissions intensity than the IEA NZE scenario, reflecting the reshaping of our Power portfolio towards lower-emission activities in recent years. Renewable energy now comprises nearly half of our total Power portfolio. It also reflects our efforts to reduce thermal coal financing since 2018[39].

In line with the IEA NZE scenario, we are committed to a 47% reduction in emissions intensity by 2030 compared with our 2020 baseline position. We recognise that this is ambitious given our footprint in Asia, where demand for power is expected to continue to grow and where many governments have so far made plans to achieve net zero only beyond 2050. Nonetheless, DBS is committed to net zero by 2050, and we will proactively direct our financing towards lower emissions activities in the Power sector through the following key commitments:

- We are committed to phasing out thermal coal exposure. We have long recognised that while thermal coal represents an insignificant part (i.e. 0.26% of total IBG exposure at the end of 2021) of our portfolio[40], it has an outsized impact on the emissions intensity of our Power portfolio.
- We will encourage and support our clients in setting and achieving their decarbonisation targets by financing their transition activities and focusing on clients with ambitious decarbonisation targets.
- We will increase the share of renewable activities in our Power portfolio (i.e. specialist renewable companies, through ring-fenced specific purpose lending to renewable activities, or to the renewable subsidiaries of parent corporates).

[39] https://www.dbs.com/sustainability/responsible-banking/responsible-financing/our-approach-to-phase-out-thermal-coal-financing

[40] DBS Sustainability Report 2021

2.2.3. Future development and dependencies

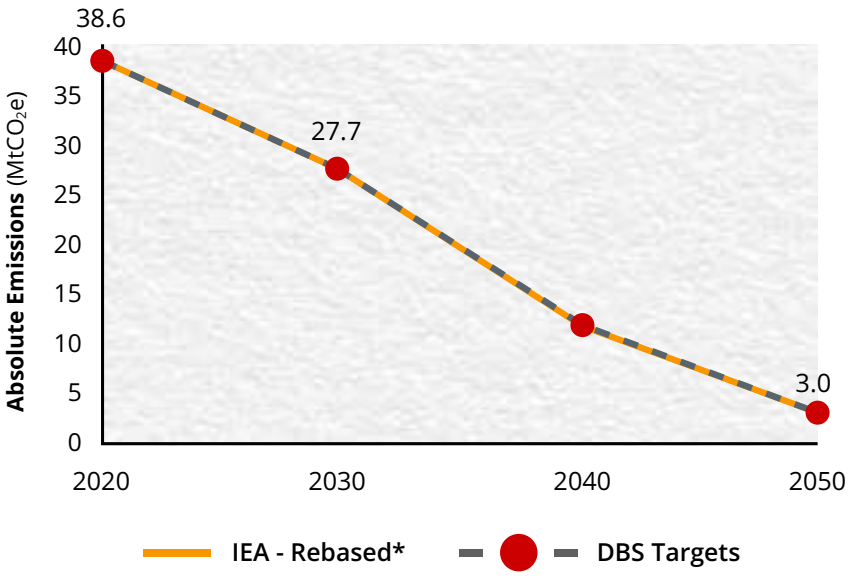
The achievement of our interim target and ultimately net zero goal relies on the continued phase-out of fossil fuel-based power from our Power portfolio and on significant growth in our renewable energy portfolio. This is underpinned by: 1) government policy, whereby carbon taxes change the economic trade-off between unabated coal and gas and renewable energy decisively; 2) technological change; and 3) scaling up of renewable equipment manufacturing. We are mindful that if these trends do not continue or reverse, it will be challenging for us to achieve our targets. This is especially so for the 2030-2050 period, which requires either CCUS to be retrofitted at scale or a significant degree of early retirement of fossil fuel-based power plants (which in turn is likely to require policy shifts, such as increases in carbon taxes and economic relief measures for renewable energy). While not included in our targets, the success of the power transition will also depend on improvements in grid infrastructure, battery storage and on the scaling up of supply chains, including the mining of critical minerals for renewable energy sources.

2.3. Oil & Gas (O&G)

"While energy security continues to grow in priority amidst overarching global uncertainties, the importance of extractive hydrocarbons to many countries remains apparent. However, it is also clear that in the longer term there is a collective need to work towards a net zero economy. Today DBS is signalling a clear intent to support that pathway to net zero for the Asian economies and beyond, and this is underpinned by our lending targets for the Oil & Gas sector."

Lim Wee Seng
Group Head of Energy, Renewables and Infrastructure

Oil & Gas Targets



Year	DBS targets (MtCO2e)	% Reduction vs. 2020
2020	38.6	-
2030	27.7	28%
2050	3.0	92%

What's included?

All Scopes of emissions: 1, 2 and 3 (downstream)

Upstream O&G

Downstream refiners and distributors

Integrated Oil Companies (including National Oil Companies)

Reference scenario

- IEA Net Zero Emissions 2021 – global reference pathway

How we will achieve our targets

- Supporting our clients to meet their transition targets by financing their decarbonisation efforts
- Reducing exposure, especially to high-emitting parts of the O&G value chain
- Directing our financing to companies that are diversifying away from pure O&G production

* IEA reference pathway starting point is rebased to DBS' portfolio starting point, values not directly comparable

2.3.1. Net zero in O&G

O&G is a significant source of GHG emissions globally, largely through combustion of O&G for energy, though also through other chemical processes such as production of hydrogen gas from methane. Reducing GHG emissions from the sector is pivotal to achieving net zero by 2050. O&G companies contribute GHG emissions through all three GHG emission scopes. The processes of extraction, transportation and refining generate Scope 1 emissions. These processes require electricity and generate Scope 2 emissions. End-products are typically burned or used as a feedstock for the petrochemicals industry and therefore generate Scope 3 emissions. In our target setting exercise, we have chosen to include all three emission scopes in our targets.

In the context of the NZE IEA scenario, and unlike the power sector, economic development and inclusive growth and prosperity towards net zero does not rely on expansion or continued use of current levels of O&G products altogether. In line with our net zero commitment, our decarbonisation targets for 2030 and 2050 for the O&G sector are not to produce the same O&G products with lower emissions but to produce fewer O&G products in total. Therefore, we expect the transition in other sectors to reduce demand gradually but significantly for O&G products over time. Meanwhile, we expect many O&G companies will increase their focus and investments on alternatives to O&G products to serve societal need for energy with new technologies. Our emissions reduction targets for the O&G sector capture both sides of this equation. Outside the O&G sector, we are committed to support transition efforts in the industries that currently rely on O&G to reduce their O&G demand. Simultaneously, we will also motivate our clients in the O&G sector to transition and grow their alternative energy activities and, over time, restrict financing to clients that are not transitioning away from production of O&G products. As a result, our targets for the O&G sector are set as an absolute financed emissions target, rather than an emissions intensity metric. To calculate our Scope 3 financed emissions, we have followed the industry methodology set out by the PCAF as described in Section 1.3.2.

That does not mean that there is no role for O&G companies in the transition. In fact, such companies can play a critical role in transition, and many are already making moves supporting transition. This includes:

- Focusing on reducing Scope 1 GHG emissions from their own operations. While this may represent a small portion of the total GHG emissions from the O&G sector, this can bring about a noticeable and short-term reduction in the overall sector emissions.
- Focusing on sustainable fuels – particularly, SAF, low-emission biofuels, hydrogen and ammonia. These play a critical role in the decarbonisation of hard-to-abate sectors, such as aviation and shipping. Supporting net zero requires these fuels to be produced commercially and used in low-carbon processes. In the short-term, even incremental gains over fossil fuels can be positive.
- Diversifying away from O&G and increasing the provision of renewable energy.

It is also important to address demand for fossil fuels and the supply of them in parallel. It is neither realistic nor desirable to abruptly cut off fossil fuel supply without offering commercially-viable alternatives, while demand remains high. Using the Aviation sector as an example, it is unrealistic at this point in time for the sector to achieve net zero as a significant increase in quantity and quality of SAF has yet to be achieved while the demand for air travel is expected to increase.

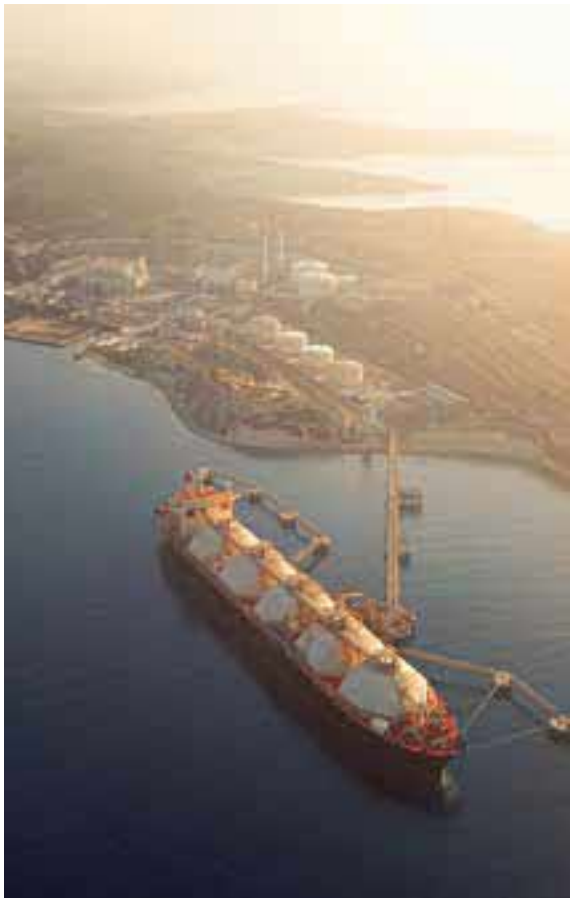
2.3.2. DBS' targets for the O&G sector

Our absolute emissions targets for the O&G sector cover upstream, downstream and integrated companies, making it one of the most extensive targets set to date by any financial institution.

The O&G sector has a complex value chain. Companies can specialise in upstream (exploration and production); midstream (transportation and storage); servicing (such as oil rig maintenance); downstream (refining and distribution); and trading, or they can be integrated across the value chain. DBS' O&G portfolio includes a mix of specialist companies and integrated companies.

As mentioned above, we have set a target to reduce absolute GHG emissions measured in million tons of CO_2 equivalent ($MtCO_2e$) from our drawn facilities to the O&G sector, for which the path to net zero simply requires a lower usage of fossil fuels in total. **Our absolute emissions targets for the O&G sector cover upstream, downstream and integrated companies, making it one of the most extensive targets set to date by any financial institution.** Our guiding principle has been to include companies that can be considered responsible for those emissions and where data is available. This includes companies involved in the extraction of O&G, and so includes our pure upstream, as well as integrated oil companies that are involved in upstream extraction. We have also included pure downstream refining companies. Such companies are responsible for providing O&G products and thus responsible for material Scope 1 emissions, and so can also be included. As our targets are measured in absolute GHG emissions, this creates some double counting: the same O&G products extracted by upstream or integrated companies may be refined by downstream companies, and thus Scope 3 GHG emissions may be included twice. We acknowledge this double count and make no attempt to eliminate it in our targets. Including the double count motivates us to take actions with both sets of companies rather than surmising that some companies have diminished responsibility for emissions as they are allocated elsewhere.

We will achieve this interim target through a range of measures, including:



- Supporting our clients in meeting their existing net zero targets. We have estimated that if the 2030 commitments of our existing clients are fully met, this will result in just under a 10% reduction in our absolute GHG emissions.
- Working with our clients to support them in making and strengthening existing commitments to decarbonise, and then financing these transitionary efforts.
- Providing ring-fenced financing to support transition fuel and renewable energy businesses of O&G companies.
- Directing our financing to clients that produce lower emissions through more efficient processes.
- Applying a critical risk management lens to any financing (especially longer term) that we provide to the O&G sector. As demand is anticipated to drop and carbon taxes are introduced, high-cost extraction and refining are expected to become increasingly uneconomic over time. Assessing this risk will result in differentiated financing costs and availability.

2.3.3. Future development and dependencies

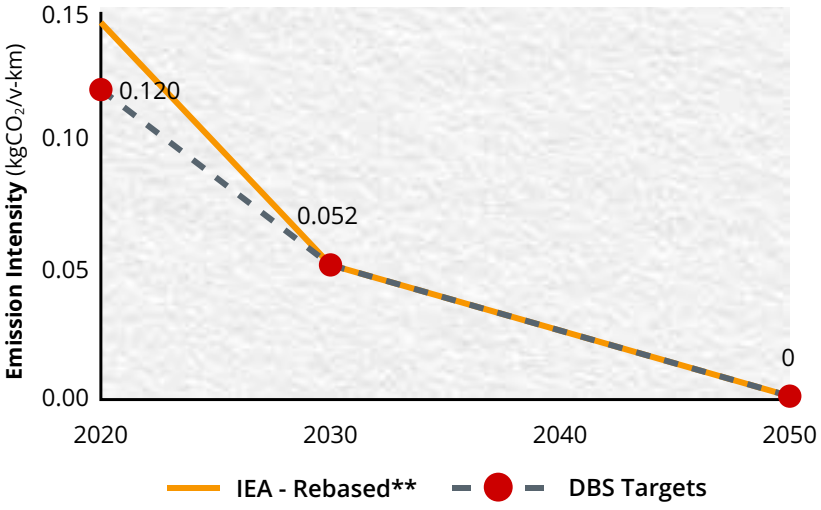
The O&G sector is one side of a supply-demand equation. Without concerted efforts to reduce O&G demand (through the transition of the power, transportation and industrial sectors in particular), reducing the supply of O&G products will be neither possible nor desirable. DBS is playing its part on both sides of this supply-demand equation. However, this also hinges upon the continued application and strengthening of government policies and corporate efforts. We also rely on the success of our O&G clients in pivoting their businesses towards lower-emitting fuels, renewable energy and other activities. We are fully committed to supporting our clients in these efforts, which are key to net zero not only in O&G but in many of the hard-to-abate sectors.

2.4. Automotive

> The transition in the automotive sector is well under way. Improvements in electric vehicle (EV) technology is accelerating, and societies are starting to shift to green transportation. Many of our automotive clients have made clear commitments to move away from internal combustion engines. DBS will seek to be an active driver of this transition through our activity across the end-to-end EV value chain.

Adrian Chai
Group Head of Consumer Products, Automotive, Food & Agribusiness and Industrials

Automotive Targets



Year	IEA NZE reference ($kgCO_2$/v-km)	DBS targets ($kgCO_2$/v-km)	% Reduction vs. 2020
2020	0.144	0.120	-
2030	0.052	0.052	57%
2050	0	0	100%

What's included?

Tailpipe emissions (Scope 3 downstream)

Focus on new passenger vehicles only

Multiple parts of the value chain

- Automotive OEMs
- Captive automotive finance companies*
- Automotive distributors
- Dedicated powertrain manufactures

Reference scenario

- IEA Net Zero Emissions 2021 (Rebased)** – global reference pathway

How we will achieve our targets

- Growing with clients that are better placed in the transition journey
- Further increasing our financing across the EV value chain
- Supporting our clients to establish transition plans and working towards achieving those plans

* Captive automotive finance companies refer to automotive finance, leasing or mobility service companies owned by and largely supporting captive brand sales of an automotive company in our value chain

** IEA NZE reference scenario for the Automotive sector has been rebased to account only for the emission intensity of new vehicle sales, instead of existing vehicle stock

2.4.1. Net zero in Automotive

Emissions from all automotive vehicles ranging from passenger vehicles to heavy duty trucks account for 12% of global emissions[41]. These emissions include those arising from vehicle manufacturing processes (Scope 1 and Scope 2) and materials used in manufacture such as steel and aluminium (upstream Scope 3). However, the most material of all are that from tailpipe emissions when vehicles are in operation (downstream Scope 3). Given the materiality of downstream Scope 3 emissions to the decarbonisation pathway of the automotive sector, the accelerated industry transition towards EVs[42] is the most important consideration. This is also demonstrated in the IEA NZE, which focuses on tailpipe emissions. Its net zero scenario stipulates that 60% of all new vehicle sales should be EVs by 2030 and 100% by 2050 compared with 5% today[43].

Substitution between types of transportation undoubtedly plays an important role in the path to net zero. For example, replacing individual car usage or flights with mass transit rail transportation would dramatically reduce emissions even without additional electrification. Nonetheless, all realistic paths to net zero involve the continued growth in automotive transport, yet not without electrification yielding a dramatic reduction in the sector's tailpipe emissions. We follow this logic by setting an emissions intensity reduction target measured in kilograms of CO_2 from tailpipe emissions per vehicle kilometre travelled ($kgCO_2$/vehicle-km). Reduction of indirect emissions from additional EVs will occur by greening electricity supplies – the focus of our Power sector targets.

[41] World Resources Institute (2022). World Greenhouse Gas Emissions in 2019. https://www.wri.org/data/world-greenhouse-gas-emissions-2019

[42] The IEA NZE defines EVs as battery electric vehicles, plug-in hybrid electric vehicles. We additionally include fuel cell electric vehicles in the term in this document

[43] International Energy Agency (2021), Net Zero by 2050, IEA, Paris

2.4.2. DBS' targets for the Automotive sector

DBS' financing of the Automotive sector covers multiple players along the value chain, from parts manufacturers to OEMs and their captive financing companies, as well as distributors and mobility service providers. We have included OEMs, distributors (both captive and multi-brand), captive finance companies and parts manufacturers that are dedicated to powertrain production (both EV and internal combustion engine, or ICE) in our targets. We attributed to each player the vehicle tailpipe emissions that they contribute to by making, selling or financing, thereby focusing on all material segments and enablers of the broader sector's transition pathway. We have established baseline emissions for automotive companies through a bottom-up estimation based on the mix of vehicles manufactured, financed and distributed. Key factors such as engine type and size were also considered when differentiating emissions across vehicle types.

Our targets include only companies involved in the manufacturing or financing of passenger vehicles, making up the bulk of our portfolio. For our Automotive target setting, we have chosen the IEA NZE scenario which specifies an emissions trajectory for passenger vehicles consistent with our scope. We have made no adjustment for the countries in which we operate. This includes countries like Singapore which has made strong policy commitments to electrify its vehicle fleet[44] as well as India and Indonesia, which will likely require more time to build the necessary infrastructure (including their power infrastructure) to support a large-scale shift toward EVs.

Our metric takes the emissions intensities of newly-manufactured cars rather than the stock of vehicles. As we mostly finance the value chain for new cars, this benchmark is most reflective of our clients' activities and the emissions we influence.

DBS' portfolio in 2020 had a baseline emissions intensity slightly lower than industry average, reflecting a client selection of companies that are better positioned in the transition journey than the global average. To demonstrate our commitment to decarbonisation besides the net zero commitment by 2050, we have also set our interim target of a 57% emissions intensity reduction by 2030 compared to our 2020 baseline.

[44] LTA | Our EV Vision

We will achieve this by:

- **Growing with clients that are better placed in the transition journey.** Almost every major OEM has existing plans to transition to net zero. The successful achievement of these plans along with the achievement of country commitments in our key markets can deliver about two-thirds of the decarbonisation required to achieve our interim target for 2030.
- **Further increasing our financing across the EV value chain.** Directing an increasing portion of our sector financing to the EV ecosystem, either to companies that exclusively focus on EVs or through ring-fenced or special purpose financing to EV-related activities and subsidiaries of broader automotive companies.
- **Supporting our clients to establish transition plans and working towards achieving those plans.** This will be especially important for our clients in developing markets and for downstream automotive distributors. These companies are typically less advanced in their transition plans than global OEMs. We will encourage these clients to define and strengthen such plans and we will support their implementation with our financing. One example could be financing solutions that enable automotive distributors to secure distribution for a suitably broad range of EV models.

2.4.3. Future development and dependencies

In setting these targets for the Automotive sector, we have focused on the most material source of emissions: tailpipe emissions from passenger vehicles. However, we may in future consider expanding this to include commercial vehicles and widening the scope of emissions to include upstream Scope 3 and manufacturing emissions.

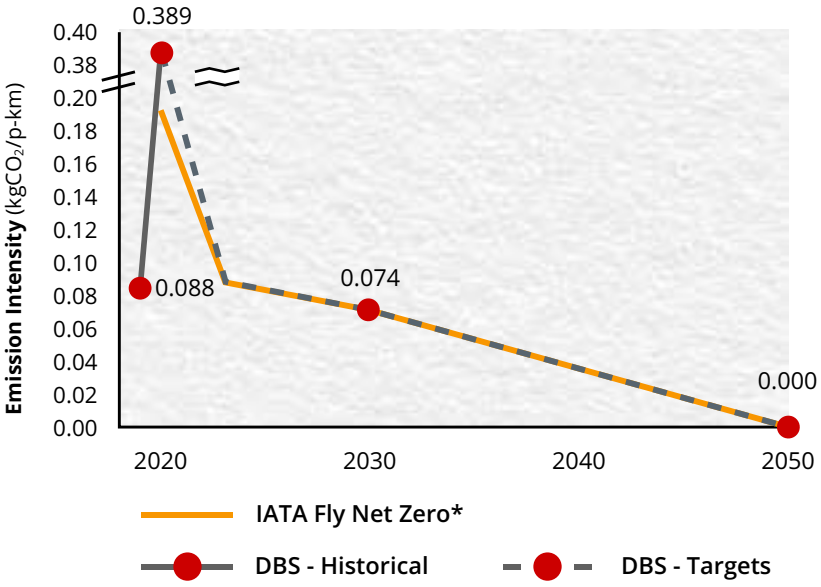
While we have set an ambitious target, it must be noted that our portfolio transition pathway places significant reliance on both our large clients and key markets in achieving their decarbonisation commitments. This, in turn, is predicated on the industry's accelerated pivot to EVs, itself dependent on various factors such as convergence of price of EVs on par with ICEs, availability of raw materials and charging infrastructure to support the pace of electrification. If the EV adoption trend does not continue at the pace expected, it will be challenging for us to achieve our targets.

2.5. Aviation

"The aviation sector has done more than any other to make the world a smaller and more interconnected place, while flying today is also very safe due to regulations and rigorous safety testing. We now need technological improvements to use lower emissions fuels and design more efficient aircraft, without compromising on this connectivity and safety. This may take some time, but the aviation industry as a whole has committed to this endeavour. DBS will play its part by working with our clients to promote cleaner fuels and adoption of better technology, while facilitating access to carbon offsetting solutions until low emissions technologies mature."

Max Lim
Group Head of Shipping, Aviation, Logistics and Transportation

Aviation Targets



Year	IEA NZE reference ($kgCO_2$/p-km)	DBS targets ($kgCO_2$/p-km)	% Reduction vs. 2019
2019	-	0.088	-
2020	0.191	0.389	-
2030	0.074	0.074	16%
2050	0	0	100%

What's included?

Scope 1 emissions for airlines and secured aircraft financing
Scope 3 emissions for aircraft leasing companies

Airline operators and lessors

Secured aircraft financing

Reference scenario

- IATA Fly Net Zero* – global reference scenario

How we will achieve our targets

- Helping our clients to achieve their existing plans, and encouraging those that have not yet made meaningful decarbonisation plans to do so
- Financing more energy efficient aircraft
- Supporting the growth and adoption of sustainable aviation fuel
- Financing novel aviation technologies, as they come to market (likely post 2030)
- Helping clients to access high-quality offsets

* IATA's Fly Net Zero scenario was rebased to the same starting point for aviation in the IEA NZE, as IATA does not provide a 2019 starting point, nor number of kilometres travelled

2.5.1. Net zero in Aviation

Aviation is responsible for about 2% of total global GHG emissions[45], with most of these coming from the combustion of aviation fuel. For airline operators, this represents about 98% of their total Scope 1 and Scope 2 GHG emissions[46]. Demand for air travel, as predicted by the International Air Transport Association (IATA), is expected to increase to 5.6 billion scheduled passengers in 2030[47], up from 4.5 billion in 2019 and 1.8 billion in 2020[48]. Much of this will be driven by increased demand in emerging markets, especially in Asia and specifically Southeast Asia, where rail alternatives are mostly unviable. We have adopted a physical emissions intensity metric based on kilograms of CO_2 emissions per passenger kilometre travelled ($kgCO_2$/p-km).

Currently, aviation is considered a hard-to-abate sector. Novel aircraft designs and technologies that may greatly reduce the emissions intensity of flying are firmly in the design stages. However, most are unlikely to be commercially viable until the 2030s at the earliest, in part due to the sector's rigorous safety standards. Nonetheless, there are various ongoing efforts to develop advanced aircraft configurations with radical new aerodynamic designs to improve energy efficiency. Meanwhile, other industry efforts are focused on overhauling the source of energy used by aircraft, by for example the use of (green) hydrogen or the use of batteries to power fully electric or hybrid aircraft. Based on currently available technologies, decarbonisation of aviation in the near future, especially this decade, largely depends on three enablers:

- **Renewing the global fleet with best-in-class energy-efficient aircraft.** The process of renewing the global fleet and retiring older aircraft has improved fuel efficiency by 80% compared to 50 years ago, and is expected to continue to yield approximately 1% annual improvement in fuel efficiency per year[49].

- **Use of lower GHG-emitting fuels.** The key lever here is the use of SAF, which is a type of biofuel that can provide similar calorific value to traditional jet fuel while emitting less CO_2. According to IATA, SAF can reduce emissions by up to 80% during its full lifecycle as compared to traditional jet fuel[50]. Although SAF is already available, it has yet to be produced at a scale for wide use, or as a commercially viable wholesale alternative to fossil fuel based jet fuel. Ramping up the supply of SAF, reducing its cost and increasing usage will be essential to decarbonising the sector.

- **Use of high-quality carbon offsets.** IATA is transparent in its *Net zero carbon 2050 resolution*[51] that decarbonising the aviation sector relies on the use of approved offsets including carbon capture and storage technology. This is especially so in the short term while SAF and novel aircraft technology are being developed and scaled.

[45] World Resources Institute (2022). World Greenhouse Gas Emissions in 2019. https://www.wri.org/data/world-greenhouse-gas-emissions-2019
[46] Management Quality and Carbon Performance of Airlines: March 2019. (2019). Transition Pathway Initiative (TPI). https://www.transitionpathwayinitiative.org/publications/35.pdf?type=Publication
[47] IATA Fly Net Zero Fact sheet
[48] Statista – Number of scheduled passengers boarded by the global airline industry from 2004 to 2022
[49] IATA's Fly Net Zero scenario expects the aviation industry to improve fuel efficiency by 15-25% over the next two decades
[50] IATA - Sustainable Aviation Fuel
[51] https://www.iata.org/contentassets/b3783d24c5834634af59148c718472bb/factsheet_netzeroresolution.pdf

2.5.2. DBS' targets for the Aviation sector

Aviation clients included in our targets are the airline operators and lessors to which we provide secured aircraft financing and general financing. In our financed emissions baselining exercise for this sector, we primarily sourced data from reports publicly disclosed by airline operators and lessors. Most of our airline operator clients are signatories to the IATA Fly Net Zero – a commitment to achieve net zero by 2050 – and consequently report their GHG emissions. Additionally, we adopted a bottom-up approach to determining emission intensity based on aircraft ownership, fuel efficiency and fuel consumption, as well as passenger load factors.

The IATA Fly Net Zero scenario is the industry standard with 292 signatories from airlines as of July 2022[52]. DBS supports the industry effort by adopting its reference scenario.

Choosing the baseline year was complex given that 2020 was an extraordinary year due to COVID-19 lockdowns and border restrictions – all of which significantly impacted air travel demand and led to reduced absolute GHG emissions. However, airlines were still operating either at a lower capacity or operating air freight, using converted aircraft. As a result, emissions intensity measured per passenger kilometre rose dramatically, as evidenced from the significant increase in our portfolio emission intensity between 2019 and 2020. We therefore do not believe that 2020 emissions intensity was representative of a normal year, nor can be a realistic starting point from which to measure. Instead, our stance is that 2019 would be representative of the last "normal" year, so we have chosen that year as our starting point.

In line with IATA, our interim decarbonisation target for the Aviation sector is a 16% reduction of GHG emissions intensity through our financing by 2030. This will be achieved by:

- **Helping our clients achieve their existing plans and encouraging those that have not yet made meaningful decarbonisation plans to do so.** Given that most of our airline operator clients have already committed to IATA Fly Net Zero, we believe that their achievement of nearer term targets that are aligned to this will be pivotal to meeting the 2030 target.

- **Financing more energy efficient aircraft.** Our financing will help clients to be at the forefront of efforts to introduce more energy efficient aircraft and thereby lower the emissions intensity of their fleets. We will continue to focus on supporting our clients in replacing their aircraft with more energy efficient ones. These efforts on aircraft should help lower the emissions intensity of the fleet we finance.

[52] IATA - Fly Net Zero

- **Supporting the growth and adoption of SAF.** This will be done through our efforts in the O&G sector to increase the supply of SAF, while working with airline operators to encourage its adoption.

- **Financing novel aviation technologies**. We will consider the financing of novel technologies as they come to market, including hydrogen and electric aircraft. However, we are unlikely to rely on this until well after 2030.

- **Helping clients to access high-quality offsets.** We will continue to encourage our clients to responsibly use offsets wherever emissions prevention or reduction is possible. However, where offsets are required, we will help our clients access them. This is one of the reasons we jointly created CIX – a global carbon credit exchange and marketplace for high-quality carbon credits.

While the 16% reduction may seem less aggressive than our targets for the other sectors, this reflects the current technological challenges in decarbonising aviation. SAF is one of the key levers needed to decarbonise aviation – IATA's Fly Net Zero scenario attributes 65% of aviation sector decarbonisation to use of SAF rather than fossil fuel-based jet fuel. However, SAF is currently neither available in sufficient volume nor at a competitive price. Furthermore, technological solutions are either limited as further progress in aircraft design is needed or are still at an experimental stage, as seen with hydrogen-fuelled aircraft.

2.5.3. Future development and dependencies

To achieve our interim target by 2030, we depend on airline operators formulating and executing their decarbonisation strategies, as well as achieving their near-term targets. This largely hinges upon their ability to bounce back strongly from COVID-19-induced turmoil. For instance, near-term decarbonisation requires continued investment in improving fleet efficiency and increasing the use of SAF, as well as the procurement of high-quality offsets. The costs of such activities may be prohibitive when companies are in recovery mode. In addition, as demand for air travel grows and new routes are opened, the balance between short-haul versus long-haul is likely to change. This will affect the sector's emissions intensity because short-haul aviation is more emissions-intensive per passenger-kilometre. Our ability to achieve our targets will therefore be affected by the shape of demand for air travel in coming years. Our clients cannot transition alone and will require the support from their ecosystem partners, including energy players and aircraft manufacturers. Our aviation clients – and consequently our targets – are dependent on the timely development and scaling of SAF to ensure sufficient supply at a commercially viable cost, as well as the continued innovation in aircraft design. Through our strategy to support the O&G sector to diversify into alternate fuels, we will be helping to scale SAF sufficiently through transition finance and therefore materially decarbonise the aviation sector. In addition, our work in setting up CIX demonstrates our commitment to helping our clients access high-quality offsets.

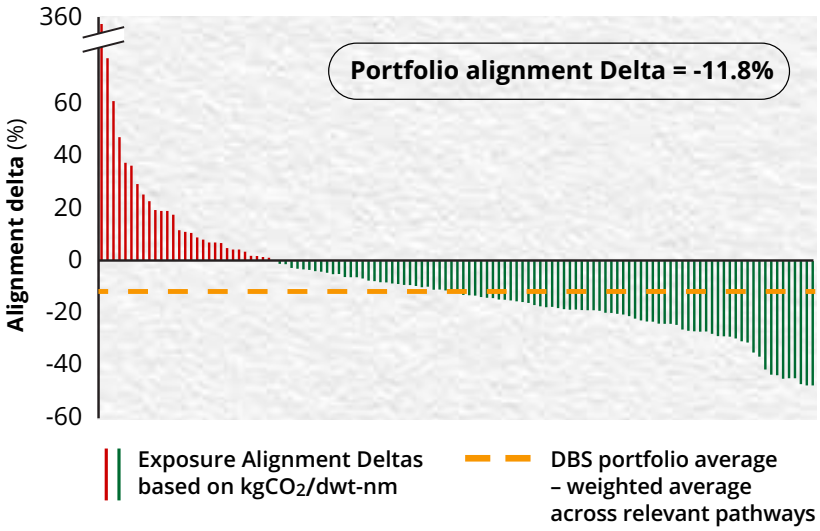
We have set our targets in the wake of the COVID-19 pandemic, which had a seismic impact on the sector. We recognise that the industry is still recovering and the support that we give to our clients to help with that may, in the short term, cause misalignment with our 2030 interim target. We will monitor closely and may revise our 2030 target if COVID-19 induced turmoil takes longer than expected to subside.

2.6. Shipping

"Shipping is a critical enabler in our interconnected global economy. Powering the global fleet with zero emissions fuels will take a joint global effort. The technologies to do so are rapidly improving and the will to do so is increasing as companies focus on greening their supply chains. DBS will play its part by working with our shipping clients to promote adoption of technologies and fuels that support green shipping."

Max Lim
Group Head of Shipping, Aviation, Logistics and Transportation

Shipping Portfolio Alignment Delta
2020



Year	Alignment Delta (current 2020, and targets)	Implied % Reduction in emissions intensity vs. 2020
2020	-11.8%	-
2030	≤ 0%	23%
2050	≤ 0%	71%

What's included?

Approach consistent with Poseidon Principles for financing to the Shipping industry

Scope 1 emissions

Financed vessels

Reference scenario

- IMO – Poseidon Principles

How we will achieve our targets

- Financing more efficient ships
- Supporting the adoption of lower-GHG emitting fuels

2.6.1. Net zero in Shipping

Shipping accounts for nearly 3% of global emissions[53]. As with aviation, the overwhelming source of GHG emissions comes from the combustion of fuel in ships. While localisation of supply chains can reduce demand for shipping, overall economic growth is expected to increase demand for shipping in coming decades. Therefore, the route to net zero relies on reducing the physical emissions intensity of ships, and we have set our targets on this basis.

The industry is made up of a wide variety of ships including bulk carriers, container ships, tankers, and a range of specialised ships that can be further categorised by size. It relies on a range of differently sized vessels for different routes and purposes. These cannot be easily substituted across vessel types and sizes as they have vastly different levels of emissions intensity – creating a problem of comparability. This means it is impractical to simply set a target based on an average emissions intensity level for the industry.

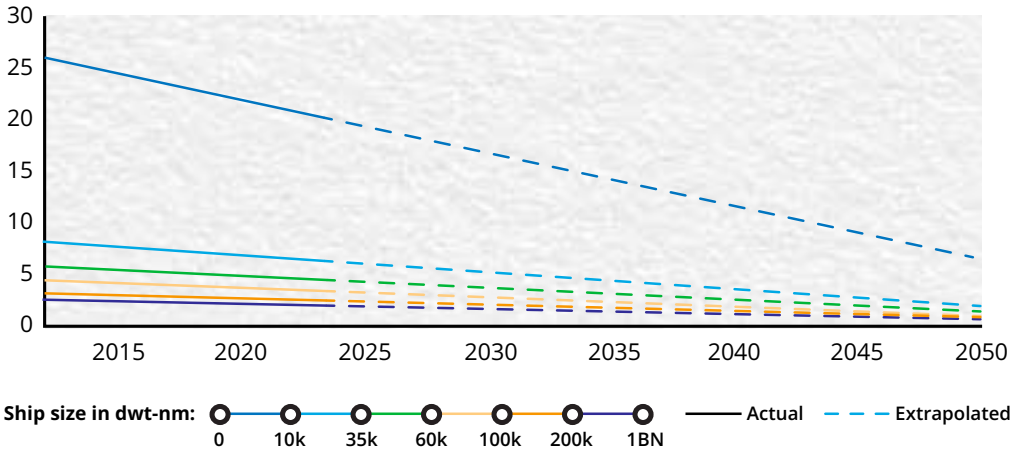
The International Maritime Organization (IMO) has developed an elegant solution to this problem. It has published requirements for different vessel types and sizes' Annual Efficiency Ratio (AER), or Scope 1 emissions intensity measured in gCO_2/deadweight tonnage per nautical mile until 2023. We extrapolated the IMO's climate ambitions to reduce the absolute emissions of the sector by at least 50% by 2050 from 2008 levels onto these starting requirements[54], thereby creating a series of benchmarks for each vessel type and size through to 2050 (see the chart in the next page). Based on our starting portfolio of vessels and estimates for growth in the volume of shipping, this implies an aggregate 23% and 71% reduction in portfolio-level emission intensity by 2030 and 2050, respectively[55]. We note that the IMO's targets are not explicitly calibrated to achieving net zero in 2050. We expect the IMO to revise these targets to align to net zero in future and will review our targets accordingly.

[53] Fourth Greenhouse Gas Study 2020 (imo.org)

[54] This extrapolation is consistent with the methodology adopted under the Poseidon Principles to estimate the carbon intensity improvement required across all ship types through to 2050 based on IMO's ambitions.

[55] As shipping activity is expected to grow rapidly, IMO's absolute emissions commitment translate into a greater decrease in emissions intensity.

Example: Reference Scenario for Dry Bulk, by vessel size
gCO_2/dwt-nm



Shipping is considered a hard-to-abate sector. Two main decarbonisation levers that the sector relies on are (i) increased efficiency of new ships over time, and (ii) development and adoption of vessels that can operate with low-carbon fuel alternatives to traditional bunker fuel, such as biofuels, ammonia or hydrogen. This is not sufficient for the industry to achieve net zero emissions by 2050, but if taken together with other industries and offsetting activities, it can be consistent with a global transition towards net zero carbon emissions.

2.6.2. DBS' targets for the Shipping sector

DBS' starting performance and targets are aligned with the methodology for financed vessels as set out by the Poseidon Principles[56]. Based on reference benchmarks for each vessel type and size, we have compared each financed vessel's emission intensity against its corresponding benchmark. This difference constitutes the vessel's "alignment delta". DBS' portfolio alignment delta is then weight-aggregated from its financed vessels' share of the portfolio. In doing so, we included all the ships that we financed with over 5,000 gross tonnage and which were engaged in international waters (per the Poseidon Principles). An alignment delta of zero at the portfolio level means we are in line with our target; a positive alignment delta means our portfolio has an above target emissions intensity; and a negative alignment delta means we are ahead of track.

Our starting alignment delta is -11.8%, indicating an average emissions intensity well below the starting benchmark. This reflects our portfolio being weighted towards more efficient vessels and gives us a head start towards achieving our decarbonisation target of keeping our portfolio alignment delta at or below zero.

[56] https://www.poseidonprinciples.org/finance/ as of June 2022

To maintain our portfolio's alignment delta at or below zero, we will need to direct our financing towards more efficient ships. We will also collaborate with our shipping clients to encourage them to renew their fleet with lower-carbon vessels either currently in the market (e.g. dual fuel liquefied natural gas carriers) or once they become commercially viable (e.g. methanol or ammonia-powered vessels). In addition to financing more efficient vessels, we will also encourage our clients to adopt lower emitting fuels.

2.6.3. Future developments and dependencies

To achieve our targets, we require continued efficiency gains in ships and the gradual development and adoption of vessels capable of running on lower-emission alternatives to traditional bunker fuel. This will be particularly so for the later years of the transition journey, because achieving 71% or more emission intensity reduction by 2050 is largely contingent on technologies that are not currently available or commercially viable. We will work with the shipping industry to promote adoption of lower emissions fuels. This will require financing the retrofitting of ships with upgraded engine technology capable of running on new fuels. In some instances, it will require going further and financing entirely new ships that are built to run on lower-emission fuels. For instance, ammonia fuel has a lower energy density than traditional bunker fuel, which means hulls must be designed to carry larger fuel tanks, or else ship ranges will decrease. Beyond the Shipping sector, our work with the O&G sector to finance the increased production of lower emission fuels will further help to decarbonise shipping by increasing the supply of low-carbon fuels.

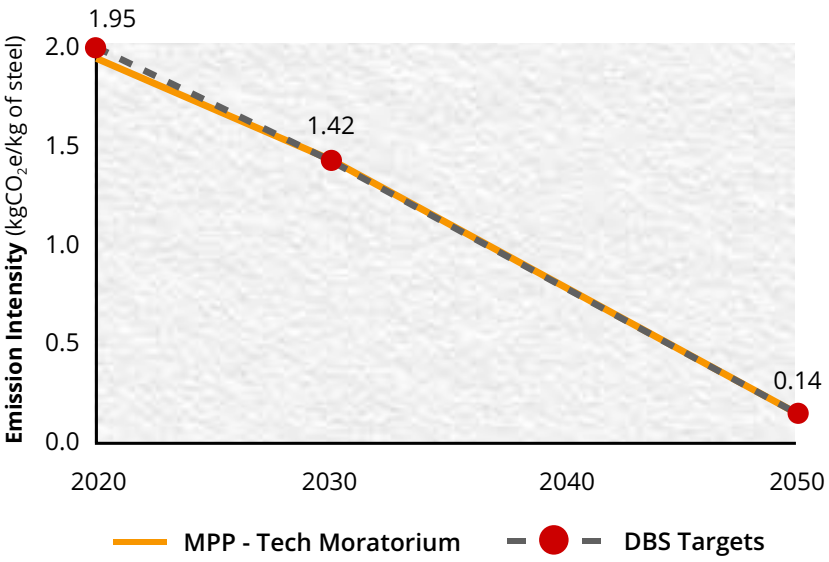
As with all our targets, our targets for Shipping are likely to evolve over time. The IMO has so far provided pathways out only to 2023 but has also committed to extending that, and has indicated that it may increase its decarbonisation ambition to better align to net zero. The achievement of these targets are also contingent on the support and contributions of our clients' ecosystem partners as mentioned above (for example, the O&G sector).

2.7. Steel

"Steel has long been positioned as a hard-to-abate sector, but recent technological developments and fresh commitments from incumbents show that the transition is starting to gain momentum. DBS' pledge to meet the net zero targets for steel will drive a strategic focus on working with our clients to scale sustainable steel production."

Mike Zhang
Group Head of Metals & Mining

Steel targets



Year	MPP reference ($kgCO_2e$/kg steel)	DBS targets ($kgCO_2e$/kg steel)	% Reduction vs. 2020
2020	1.90	1.95	-
2030	1.42	1.42	27%
2050	0.14	0.14	93%

What's included?

Scope 1 and 2 emissions

Steel manufacturers (mills) and dedicated trading arms

Reference scenario

- Mission Possible Partnership – Tech Moratorium

How we will achieve our targets

- Focusing our financing on clients with net zero targets, and support our clients in making sufficient decarbonisation commitments
- Financing investments in low emissions technologies in the Steel sector
- Financing deployment of CCUS in later years

2.7.1. Net zero in Steel

Steel plays a critical role in the global economy. It is essential for buildings, vehicles and a range of other industries and has few known substitutes, and it is also a material source of GHG emissions. The World Steel Association estimates that 7-9% of all global emissions come from the steel industry[57]. The importance of steel to the global economy is unlikely to materially diminish over time. Therefore, the most plausible path to net zero for steel is through the decarbonisation of steel production, rather than the replacement of steel with alternatives. This means that we are setting a target based on physical emissions intensity, defined as $kgCO_2e$ per kilogram of crude steel produced ($kgCO_2e/kg$).

The primary source of GHG emissions from steel production is the type of fuel used to power the steel production process. There are currently two major steelmaking routes, each with significantly different GHG emission intensities: (i) blast furnaces-basic oxygen furnaces (BF-BOF), and (ii) electric arc furnaces (EAF). As of 2021, about 70% of steel was produced via BF-BOF[58], which is noticeably more emissions-intensive than EAF since it requires the burning of metallurgical coal to process iron ore for primary steel production. EAF plants, on the other hand, are less emissions-intensive, can be electrified, and currently account for the remaining 30% of the global steel production. There are two types of EAF: (i) direct reduced iron EAF (DRI-EAF), which is used for production of primary steel from directly reduced iron, and (ii) scrap-based EAF, which is used for production of secondary steel from scrap. The DRI process uses hydrogen which is expected to be increasingly made through greener processes over time, while the EAF portion of both types is powered by electricity, which has the potential to be generated from renewable energy. Furthermore, as EAF plants can process large amounts of scrap (up to 100% as compared to up to 30% for BF-BOF plants) by melting it, fundamentally less energy is required, notwithstanding its different source.

For the Steel sector, the path to decarbonisation therefore involves:

- Pivoting steel production from emissions-intensive BF-BOF steelmaking to EAF steelmaking (be it scrap-based EAF or DRI-EAF that still processes primary steel but is predominantly powered by energy sources with lower emissions than that of coal).
- Increasing the recycling of steel to facilitate increased production via EAF.
- Using renewable energy to power EAF plants.
- Adopting CCUS in steel mills to capture GHG emissions generated, as well as pivoting to steel produced by novel technology (e.g. hydrogen-powered DRI-EAF, iron ore electrolysis) once this becomes commercially viable.

[57] World Steel Association – Presentation: Climate Change and the Production of Iron and Steel (2021)

[58] Global crude steel production by process route and scenario, 2019-2050. (2020). IEA. https://www.iea.org/data-and-statistics/charts/global-crude-steel-production-by-process-route-and-scenario-2019-2050

2.7.2. DBS' targets for the Steel sector

Our steel exposure is heavily concentrated in Asia, particularly in China and India. China and India account for roughly 60% of global steel production[59], with China dominating global production of primary steel with a heavy skew towards BF-BOF production. This geographic concentration of our portfolio has led to a higher than global average emissions intensity.

The steel production value chain runs from mining through primary steel production in mills to product manufacturing. Noting where the principal source of GHG emissions is and to be consistent with reference pathways, we have focused our target on primary steel production in steel mills. We included both our direct financing to steel mills, as well as our financing to their dedicated trading arms, which were treated as if they were the steel mills themselves. Focusing on steel mills is consistent with the approach taken by other banks when setting targets for the steel industry. To derive a portfolio baseline, we have adopted a bottom-up approach mapping steel plants to their respective companies. We then assigned individual mills an emissions intensity based on their proportion of crude steel production from three key steelmaking methods (i.e. BF-BOF, DRI-EAF and EAF-Scrap), taking into account the GHG emissions from electricity use in their respective country of operations. Therefore, this approach accounts for both Scope 1 and Scope 2 emissions from steel production. Based on this approach, our starting point for the Steel sector is estimated at 1.95 $kgCO_2e/kg$, which is slightly above the starting global average of 1.90 $kgCO_2e/kg$.

Our approach is aligned with the reference pathways from the Mission Possible Partnership (MPP), a coalition of public and private sector partners that supports the global economy transition to net zero. One of MPP's pathways considers a "tech moratorium", under which only near-zero or zero-emissions steelmaking technology is invested in from 2030 (meaning that, for example, no unabated BF-BOF plants would be built from 2030). We took this reference scenario at the global level without adjustment for regional differences. We acknowledge that this is an ambitious approach because it does not consider either our starting position being overweighted in higher-emissions regions, nor the announced national net zero commitments by 2060 and 2070 by China and India, respectively. This reflects our view of Steel as a global industry and our commitment to be at the forefront of the transition. We see significant investment requirements for the sector and believe the opportunities from embracing net zero far outweigh the costs.

[59] 2021 World Steel in Figures. (2021). Worldsteel. https://worldsteel.org/wp-content/uploads/2021-World-Steel-in-Figures.pdf

Our plan to achieve these targets includes:

- **Supporting our clients in meeting their existing decarbonisation and net zero targets.** Many of our clients are taking significant steps to decarbonise. We have estimated that this will only fulfil about half of our commitment to 2030 based on currently known plans.
- **Working with our clients to set decarbonisation targets** and to strengthen their existing plans.
- **Focusing on leaders in the sector.** By directing our financing towards the more GHG-efficient companies in the sector we will play our part in supporting the sector to decarbonise and help achieve our own targets.
- **Financing investments in new technologies and innovations** that help to decarbonise steel production, with part of our exposure directed to EAF development.

2.7.3. Future development and dependencies

As with all the sectors, we rely on our clients to take action towards decarbonisation. We stand ready to support and facilitate our clients through financing and encouragement but note that many of them are heavily state-supported. This may dilute or wholly affect our influence and increase our dependence on national policies.

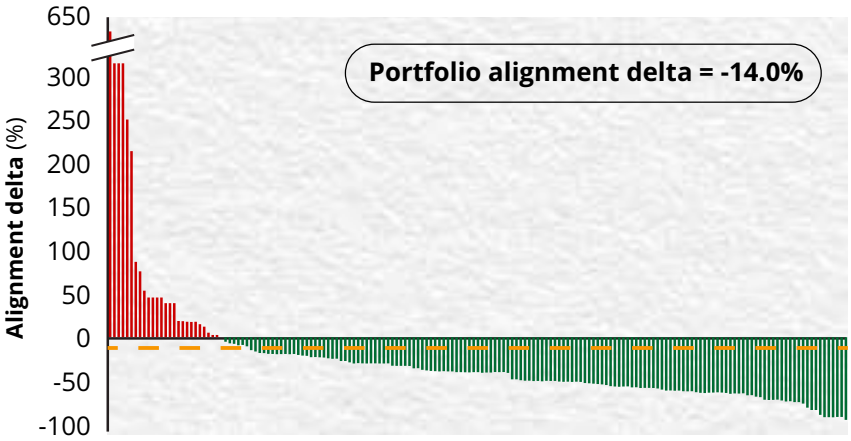
Our net zero targets are calibrated on the MPP Tech Moratorium scenario, which contains the relatively optimistic assumption that steelmakers will no longer invest in new emissions-intensive plants from 2030, facilitated by the development of commercially viable low-carbon alternatives. Should this not materialise, it will be extremely difficult for us to meet our targets. At present, economic reality does not incentivise steel companies to make this change since lower carbon steel manufacturing is materially more expensive than the traditional coal-powered method. To achieve low-carbon transition at scale, there will need to be a combination of technological innovation to reduce this cost difference (the "green premium"), client willingness to pay more, and government policies such as carbon taxes and incentives that improve the economics. Skewing our portfolio towards more efficient clients and low-carbon steel plants would help but will not be sufficient in the absence of a concerted industry-wide effort.

2.8. Real Estate

"While real estate assets remain largely dependent on the decarbonisation of the power grid to reach net-zero, there are other opportunities at hand to decarbonise. Improving building energy efficiency is increasingly both sustainable and economical, and securing a renewable power supply has become more accessible than ever before. DBS will support our clients as they adopt green technologies and sustainable construction methods to enhance their building efficiencies that serve the needs of the future."

Chew Chong Lim
Group Head of Real Estate

Real Estate Alignment Delta
2020



Year	Alignment Delta (current 2020, and targets)	Implied % Reduction in emissions intensity vs. 2020 (vs. underlying CRREM benchmarks)
2020	-14.0%	-
2030	≤ 0%	42%
2050	≤ 0%	95%

What's included?

Scope 1 and 2 emissions from building operational activity

Real estate developers that invest in and/or manage properties, REITs and individual properties

All major property types and material countries covered

Reference scenario

- Carbon Risk Real Estate Monitor (CRREM) Net Zero benchmarks by country and property type
- Alignment Delta approach taken

How we will achieve our targets

- Supporting our clients in meeting their targets
- Financing more efficient buildings
- Supporting our clients in tapping on renewable energy to power building operations

2.8.1. Net zero in Real Estate

Real estate is a material – albeit indirect – contributor to global GHG emissions. GHG emissions are emitted through the construction process (primarily but indirectly through the use of materials like steel and cement). During the lifetime of constructed buildings, building use generates emissions directly through on-site fuel consumption (e.g. for heating and cooling) and indirectly via electricity consumption. The latter is the most important source of emissions, as buildings are a large consumer of electricity, and through this route, account for about 17.5% of all global emissions[60,61].

In developing our targets for the Real Estate sector, we have considered the operational emissions of buildings – that is direct Scope 1 emissions of existing buildings (e.g. through gas-power heating) and indirect Scope 2 emissions from electricity usage. The world in 2050 will undoubtedly continue to require buildings, hence, we measured physical emissions intensity in $kgCO_2/m^2$ of gross floor area of our clients. Levels of emissions differ greatly across the regions that we are active in – we reflected this in our target to help us best serve clients, respecting their markets' specifics. This was done by setting an alignment delta target, which compares emissions intensity for each client against a reference scenario that is appropriate for that client's building type and geography, expressing the level of alignment as a percentage. Our target is to keep this alignment below 0% on average for the portfolio.

The route to net zero for commercial real estate has three primary levers:

- **Improving energy efficiency of buildings.** Technologies such as improved insulation, heat pumps, and electricity optimisation technologies help make buildings more energy efficient.
- **Improving the emissions intensity of the energy supply.** This can be achieved either through the decarbonisation of national electricity grids resulting from the Power sector's decarbonisation, or through direct efforts by commercial real estate companies to procure their own clean energy. The latter solution is possible by building installations (e.g. rooftop solar panels) and, in some cases, through specific power purchase agreements.
- **Reducing Scope 1 emissions through electrification** (e.g. of heating and cooling). In the short term, electrifying these typically yield lower carbon emissions than typical methods of burning fossil-fuels on-site, while in the long term, expected uptake of green power will lower emissions to almost zero.

[60] This "Scope 2" emission is of course the same as the "Scope 1" emission created by the Power sector. We recognise and make no efforts to eliminate this double count.

[61] World Resources Institute (2022). World Greenhouse Gas Emissions in 2019. https://www.wri.org/data/world-greenhouse-gas-emissions-2019

2.8.2. DBS' targets for the Real Estate sector

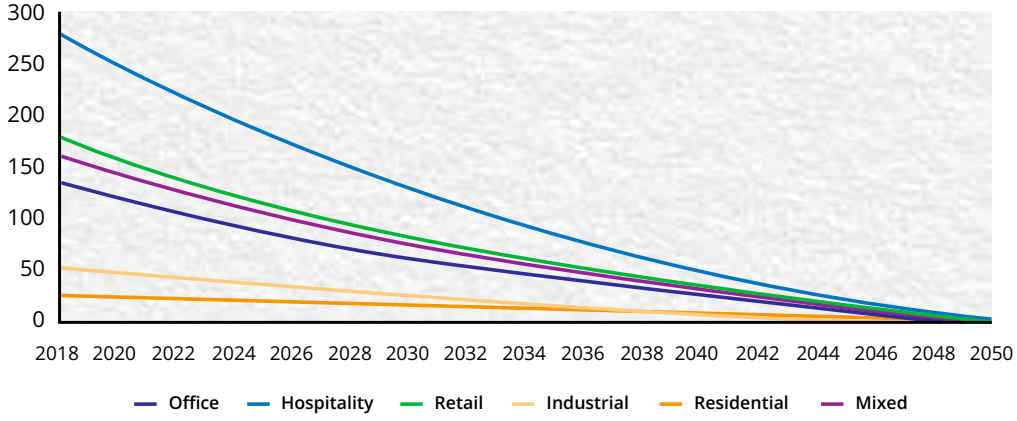
Commercial Real Estate is an important sector in DBS' IBG portfolio, which includes loans made to finance individual properties and financing to real estate corporates that invest in and manage buildings as well as REITs. All of these are included in the scope of our targets.

Our portfolio is diverse both geographically and in the types of buildings we finance. This creates a challenge when setting net zero targets since both regions and property types have very different emissions intensities. For instance, buildings in northern China will require heating in a way that those in Singapore do not. Similarly, residential buildings will typically consume less energy than hotels. This challenge – together with a general paucity of data – has so far resulted in relatively few banks setting net zero targets for this sector. Those that have done so typically have restricted scope to a narrow range of geographies and property types and have used national plans to set targets. In contrast, our target has a wider scope as we have included all the major geographies in which our corporate clients and REITs operate. We have also incorporated a range of property types, including industrial, office, hotels, retail and residential buildings[62].

To achieve this, we have relied on pathways provided by CRREM, a public-private collaboration based in the European Union (EU) focusing on supporting the decarbonisation of the real estate sector. CRREM has developed a set of country and property type specific reference pathways, including individual benchmarks for our major property types and countries.

Example: Reference Scenario for Singapore, by asset type

$kgCO_2/m^2$



Similar to the approach taken for Shipping, we have benchmarked each of our borrowers to the corresponding CRREM curves based on country and property type, and calculated an Alignment Delta of individual borrower/transaction. This alignment delta is then weight-averaged to determine whether our commercial real estate portfolio is wholly in line with the path towards net zero. An alignment delta of zero means we are in line; a positive alignment delta means our portfolio has underperformed the target emissions intensity; and a negative alignment delta means we are tracking ahead (outperform).

[62] Data centres have excluded from this exercise, due to the lack of an appropriate reference benchmark from CRREM.

Over the course of baselining and target setting exercise, we recognise that data availability is a challenge for commercial real estate. The data we have used in this target setting exercise is sourced either from publicly disclosed company reports of emissions or from building-level databases with the energy intensities of financed buildings[63]. Our starting alignment delta is -14.0%, representing an emissions intensity that is better than the industry average. However, many of our clients have not reported emissions and therefore were assigned an alignment delta of zero – which would not affect the baseline. Given this exclusion, the starting alignment delta may not be a full reflection of the true emissions from our real estate portfolio. There may be some positive bias in companies that are reporting (i.e. those with lower emissions are more likely to report them) and when we restate our alignment delta in future reporting with more data, it may well go up. Nonetheless, our commitment to net zero remains unchanged.

Consequently, our plan to achieve our targets includes:

- Working with our clients to help them formulate and achieve net zero plans.
- Supporting our clients in their investments to improve building efficiency through new investments and retrofitting.
- Financing more efficient buildings, focusing on those with better building ratings.
- It is noted that decarbonisation in Real Estate is generally highly dependent on decarbonisation of the power grid, thus our decarbonisation work in the Power sector.

2.8.3. Future development and dependencies

Achieving our targets partly depend on the efforts of real estate companies and largely on the successful decarbonisation of the Power sector. Essentially, without decarbonisation of the power grid, the Real Estate sector would generally not succeed in sufficient decarbonisation to remain on track for net zero. Consequently, DBS would fail to meet its targets. While we are playing our part in decarbonisation of the Power sector through our aggressive targets, we will also need governments, policy makers, and the Power industry to be mobilised as well.

[63] This is only applicable in Singapore thus far, where select buildings have reported their energy intensities as part of an annual benchmarking exercise by the Building and Construction Authority (BCA)

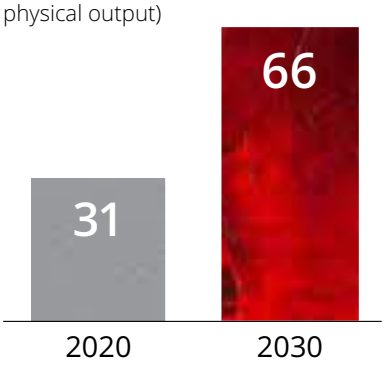
3 Our data coverage targets

Our data coverage targets

3.1. Overview of our data coverage targets

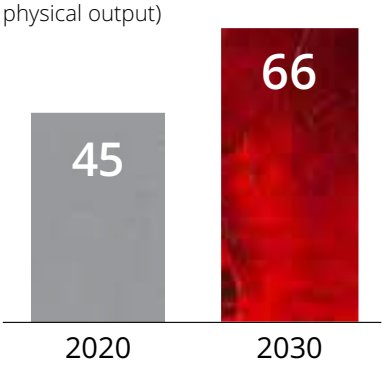
Food & Agribusiness

Data coverage (% large corporate clients reporting emissions and physical output)



Chemicals

Data coverage (% large corporate clients reporting emissions and physical output)



Sector	Sub-sectors & types of financings included	Target metric	2020 baseline *(and reference start-point)*[64]	2030 target *(reduction vs. baseline)*	2050 target
Food & Agribusiness	• Primary growers, producers and processors • Integrated agribusiness companies • Food and beverage manufacturers • Food retail • Animal protein and feed producers	Data coverage (% large corporate clients reporting emissions and physical output)	31% (N/A)	≥66%	N/A
Chemicals	• Petrochemicals • Commodity & diversified chemicals • Industrial gases • Specialty chemicals • Fertilisers & agrichemicals	Data coverage (% large corporate clients reporting emissions and physical output)	45% (N/A)	≥66%	N/A

[64] Calculated for DBS' clients as of August 2021; latest emissions data per client from 2020, or latest date in lieu of 2020 if required

3.2. Food & Agribusiness

"World hunger refuses to abate. With the increasing pressure of feeding a growing world population, maintaining the balance between food production and GHG emissions has been one of the key challenges of the Food & Agribusiness sector. Limited availability of reported data across the sector increases the challenge of measuring and reporting emissions intensity in a robust and consistent manner. There is also a lack of industry consensus on the pathways to net zero target. DBS will continue to play an active role in working with our clients to support sustainability initiatives including improving GHG emissions reporting."

Adrian Chai
Group Head of Consumer Products, Automotive, Food & Agribusiness and Industrials

Our commitment:

DBS will exercise its influence to encourage clients to improve their GHG emissions reporting, thereby increasing emissions and production data coverage over time. We target raising coverage from less than one-third to at least two-thirds of our large corporate clients (by client count) in 2030.

DBS will monitor our data target annually and seek to revise our data coverage target as the Food & Agribusiness sector's data landscape matures.

DBS will stay abreast of developments and set a quantitative emissions reduction target once data availability and quality noticeably improve and emissions reductions pathways for the Food & Agribusiness sector become more established.

3.2.1. Net zero in Food & Agribusiness

The Food & Agribusiness sector is considered a high GHG-emitting sector and accounts for about a quarter of all global emissions[65]. GHGs are released across the entire value chain, from land use change, farming, food processing and manufacturing, transportation, to the selling of agricultural products and foodstuffs. Close to 60% of Food & Agribusiness emissions come from the farming of crops and livestock where approximately 25% is released from related land-use change and the remaining 15% from agricultural product and foodstuff distribution and retail[66].

There are currently no clear supply-side decarbonisation levers that can significantly reduce GHG emissions of the high emitting segments of the value chain at a commercially viable scale, while meeting growing demand for food. For example, methane produced from cows' enteric fermentation is a significant contributor to GHG emissions but, currently, there are no commercially viable solutions that can significantly reduce emissions here. On the demand-side, there are ways to change consumer foodstuff consumption patterns to reduce consumption of the highest emitting produce and food waste and shift towards products with smaller GHG footprints. However, there is no industry consensus or forecast on the required reductions. Nonetheless, these options are beyond the scope of influence of the sector in directly reducing its GHG emissions.

3.2.2. DBS' targets for the Food & Agribusiness sector

Our Food & Agribusiness portfolio is diverse and includes exposure to players across the value chain ranging from diversified integrated agribusiness players to food and beverage manufacturers, primary growers, producers, processors, and food retailers. Given that Food & Agribusiness products can have varying emissions and companies along the value chain process often produce or work with multiple types of products, the process of setting a decarbonisation target is complicated.

Through the sectoral baselining exercise, it was discovered that close to 70% of our large corporate clients currently did not disclose either emissions or activity data. Limited availability of reported data in our portfolio raises the challenge of measuring an accurate emissions intensity for the portfolio. To add to the data challenge, there is little sector consensus on the pathways to a net zero future. Available industry reference pathways differ significantly in their starting points and trajectories due to varying inclusions across scopes of emissions, types of products and emissions from land-use change, which can include significant negative emissions.

DBS therefore believes that it is premature to set a GHG emissions reduction target for the Food & Agribusiness portfolio at present. So far, only a handful of banks have set targets for the Food & Agribusiness sector and only for a limited sub-scope of their portfolio that is not comparable to DBS' Food & Agribusiness portfolio. Nonetheless, to pave the way to transition, DBS aims to use its influence to encourage large corporate clients to improve their reporting over time. This includes both absolute emissions as well as data on company production to calculate emissions intensities. DBS will stay abreast of developments in industry guidance on the reference scenario and will seek to set an emissions-based target when it is feasible to do so.

[65] Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. (2014) IPCC. Based on global emissions from 2010. https://www.ipcc.ch/report/ar5/wg3/

[66] RJ. Poore and T. Nemecek (2018). Reducing food's environmental impacts through producers and consumers, Science, Vol. 360, 987-992. https://www.science.org/doi/10.1126/science.aaq0216

3.3. Chemicals

"The chemical industry is a key enabler for practically every other industry, producing a wide array of products, with each having differing levels of GHG emissions intensity. This diverse product and emissions mix has led to difficulty in setting a standard path to net zero for the sector. The emissions reporting by corporates in the sector varies widely. Accordingly, DBS will be working with its clients to encourage them to measure and report their own levels of emissions and production, to improve the overall emissions data coverage for the sector."

Adrian Chai
Group Head of Consumer Products, Automotive, Food & Agribusiness and Industrials

Our commitment:

DBS will exercise its influence to motivate clients in improving their reporting of emissions, thereby increasing emissions and production data coverage. We target raising data coverage from 45% to at least two-thirds of our large corporate clients (by client count) by 2030.

DBS will monitor its data target annually and seek to revise its data coverage target as the Chemicals sector's data landscape matures.

DBS will stay abreast of developments and set a quantitative emissions reduction target once data availability and quality noticeably improve and emissions reductions pathways for the Chemicals sector become more established.

3.3.1. Net zero in Chemicals

Chemicals is a high-emitting sector that contributes to about 5% of all global emissions[67]. GHG emissions occur through the production of chemicals from energy-usage. For example, the Haber-Bosch process used to produce ammonia is highly energy-intensive due to the need to heat and pressurise the reaction, as well as the release of GHG as by-products from chemical processes.

There are decarbonisation options in the near term driven by enhancing both process and resource efficiencies across the value chain, for example, by switching from coal to gas fuel for power. In the longer term, nascent low-carbon technologies like green hydrogen production and CCUS can contribute to deep GHG reductions when they are available at a commercial scale. However, the applicability and impact of decarbonisation options vary significantly across a wide spectrum of chemicals.

3.3.2. DBS' targets for the Chemicals sector

There are certain challenges when it comes to measuring a meaningful emissions intensity in the Chemicals sector that can be compared to a standardised sector reference pathway. Firstly, the sector is extremely heterogenous in terms of the types of chemicals produced. Companies often make a wide array of chemicals, each with different levels of emissions intensities depending on the process and use of the chemicals. Secondly, there are currently no suitable sets of decarbonisation pathways for the sector. Available sector reference pathways vary significantly in their starting points and trajectories due to varying inclusions across scopes of emissions and types of chemicals. This lack of sector standards combined with the heterogeneity of chemicals makes it difficult to confidently determine where the current emissions performance of DBS' Chemicals portfolio stands and the trajectory it needs to follow to reach net zero. Lastly, emissions intensity data coverage is limited. Based on our assessment, over half of large corporate companies in DBS' Chemicals portfolio have yet to report emissions or production data. Additionally, the companies that do report typically do so with limited granularity across the different types of chemicals they manufactured. This lack of granularity in companies' reported emissions can pose a challenge when comparing companies' emissions to a decarbonisation pathway even when a suitable one is available as different chemicals may be included in companies' reports compared to the decarbonisation pathway. Given the lack of a clear pathway and limited data coverage thus far, a decarbonisation target to align with net zero for the Chemicals sector has not yet been set by any bank, as far as we are aware.

Having gone this far, we believe that it is appropriate for us to provide a conducive setting for decarbonisation target setting in the future. As such, DBS is committed to improving data coverage of its large corporate clients while staying abreast of developments in sector guidance on the reference pathway.

[67] According to carbon emissions data provided from the IEA Net Zero by 2050 report

3.4. Future developments and dependencies for Food & Agribusiness and Chemicals sectors

We will monitor our progress on the level of our data coverage targets for the Food & Agribusiness and Chemicals sectors. We anticipate that industry players and non-industry bodies will play a part, as we encourage our Chemicals and Food & Agribusiness clients to publish data. We are confident that other financial institutions will also be working with their clients on data disclosure. Furthermore, mandatory corporate governance, especially in relation to climate reporting, is on the rise globally. There is an increasing number of regulators and financial market operators with regulatory mandates requiring TCFD reporting (such as SGX), as well as developments related to the International Sustainability Standards Board which is expected to establish a global base line for sustainability reporting. Furthermore, we see global efforts in further developing GHG emissions measurement methodologies as well as digital technologies which will improve the sourcing and processing of environmental, social and governance data. As such, we remain optimistic and are open to revising our data coverage targets upwards, as these developments materialize.

In addition to data disclosure developments, we anticipate developments in the availability of reference scenarios in the coming years. Several bodies are working to create consensus around the level and speed of decarbonisation that are required in the Food & Agribusiness and Chemicals sectors. For instance, the MPP is working on recommendations for ways to decarbonise the Chemicals sector. As scenarios for these sectors further solidify, we will be better able to set our own quantitative emissions reduction targets. At the next review cycle, we will assess the feasibility of establishing emissions reduction targets for these two sectors.

4 The way forward

"Committing to net zero by 2050 and setting our 2030 interim targets mark an important milestone of DBS. Navigating this transition will be a long-term endeavour. Much needs to be done in order to fulfil our commitments set out in this report. It will entail a fundamental change in how we do business – both internally and externally. We will enhance the monitoring and reporting of our targets, review our targets and methodologies at regular intervals, and most importantly, support our clients on their transition to adapt to a net zero world."

Yulanda Chung
Head of Sustainability,
Institutional Banking Group

"As we continue on our journey to supporting a just transition, we are working hard to integrate sustainability into everything we do. To achieve this, our employees are our greatest asset and we are enabling them to deliver new solutions to our clients. We will be very focussed on creating a robust ESG data architecture, develop new analytics tools, and above all, invest in our people by offering the relevant learning and development tools so that they can effect a fair and just transition with confidence."

Helge Muenkel
Group Chief Sustainability Officer

The way forward

1. **Monitoring and reporting annually our progress against our targets** – As an early adopter of the TCFD, we have been reporting under the recommendations since 2018. Now as a signatory to NZBA, we remain committed to being transparent about our efforts and will report annually our progress against both our 2030 interim targets and 2050 net zero targets within our sustainability reports. For the seven sectors of which we have set emissions reduction targets, this will entail updating the annual financed emissions for the sectors and analysing the progress against previous years and the respective targets.

2. **Reviewing periodically and, if appropriate, updating our targets and methodologies** – We expect the reference scenarios against which we have calibrated our emissions reduction targets to continually evolve. Precedent suggests that organisations that own these reference scenarios typically update them periodically. However, we do not intend to update our interim targets for 2030 each time these reference scenarios are revised or updated. Doing so would potentially create business uncertainty, both internally for our business planning and externally in our client engagements. However, we intend to review and, if necessary, revise our targets at least once every five years hereafter. Building on the foundation of this round of target setting, we look forward to the next round with more confidence of our approach.

3 **Supporting our clients on their transition journey** – Our ability to achieve our net zero ambition relies heavily upon the success of our clients in delivering their own transition plans. Hence, we are committed to engaging with our clients and supporting them to transition their businesses through sustainable and transition finance. In the past few years, we have seen a significant increase in the demand for sustainable finance solutions, such as sustainability-linked and green loans. To accelerate the transition and meet the vast investment needs in the next few decades, we will proactively partner our customers, providing them with financial advisory and transition finance solutions, as we collectively work towards a low-carbon future.

- **To our clients:** we applaud your efforts to transition to net zero, and we stand shoulder-to-shoulder with you in those journeys.
- **To our investors:** we hear your demand for us to support the transition to net zero and we want to lead the way.
- **And to the wider community:** we are ready to support you in your decarbonisation efforts and realise a fair and just transition by 2050 in a world where no one is left behind.