



Live more,  
Bank less

OUR PATH TO

NET ZERO

SUPPORTING ASIA'S TRANSITION  
TO A LOW-CARBON ECONOMY

STEEL

**Disclaimer**

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## List of abbreviations

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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 <sub>2</sub>	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 <sub>2</sub> /MWh	Kilograms of CO <sub>2</sub> emissions per megawatt hour of power produced
kgCO <sub>2</sub> /p-km	Kilograms of CO <sub>2</sub> emissions per passenger kilometre travelled
kgCO <sub>2</sub> /vehicle-km	Kilograms of CO <sub>2</sub> from tailpipe emissions per vehicle kilometre travelled
kgCO <sub>2e</sub> /kg	Kilogram of CO <sub>2</sub> equivalent per kilogram of crude steel produced
LLE	Loans and loan equivalent(s)
MPP	Mission Possible Partnership
MtCO <sub>2e</sub>	Million tons of CO <sub>2</sub> 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

02 | Our net zero aligned emissions reduction targets

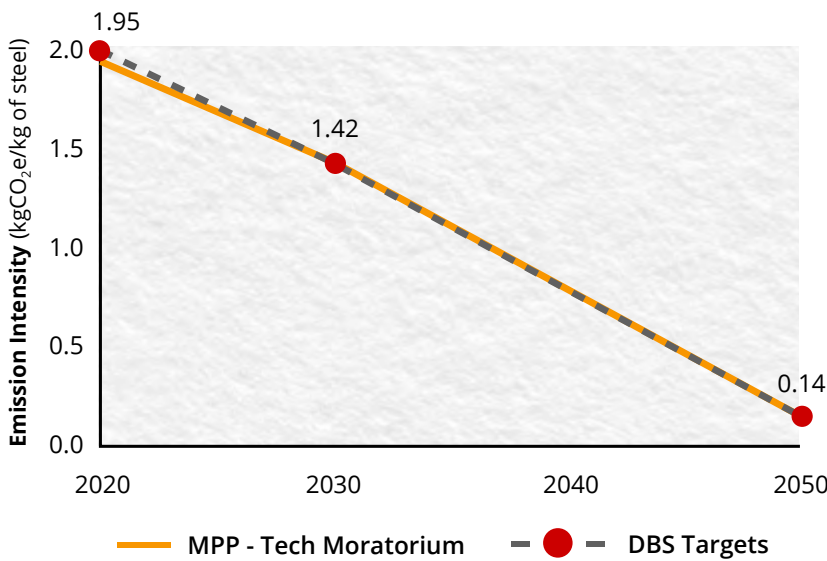
## 2.7. Steel

“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 <sub>2</sub> e/kg steel)	DBS targets (kgCO <sub>2</sub> e/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<sup>57</sup>. 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<sub>2</sub>e per kilogram of crude steel produced (kgCO<sub>2</sub>e/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<sup>58</sup>, 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.

<sup>57</sup> World Steel Association – Presentation: Climate Change and the Production of Iron and Steel (2021)

<sup>58</sup> 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<sup>59</sup>, 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.

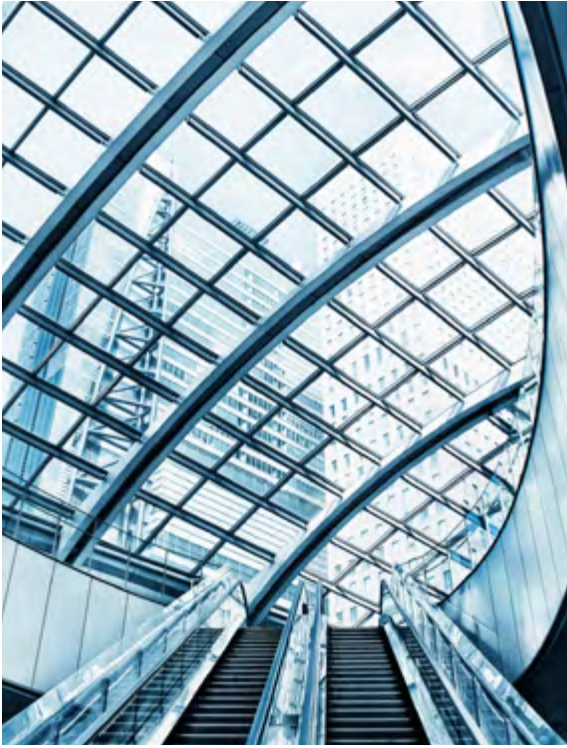
The steel production value chain runs from mining through primary steel production in mills to product manufacturing. Noting where the principal source of GHG emissions is and to be consistent with reference pathways, we have focused our target on primary steel production in steel mills. We included 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<sub>2</sub>e/kg, which is slightly above the starting global average of 1.90 kgCO<sub>2</sub>e/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.

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

02 | Our net zero aligned emissions reduction targets

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.



“ **C**ommitting 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.

“ **A**s 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.

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**Yulanda Chung**  
Head of Sustainability,  
Institutional Banking Group



**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.

04 | The way forward

**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.