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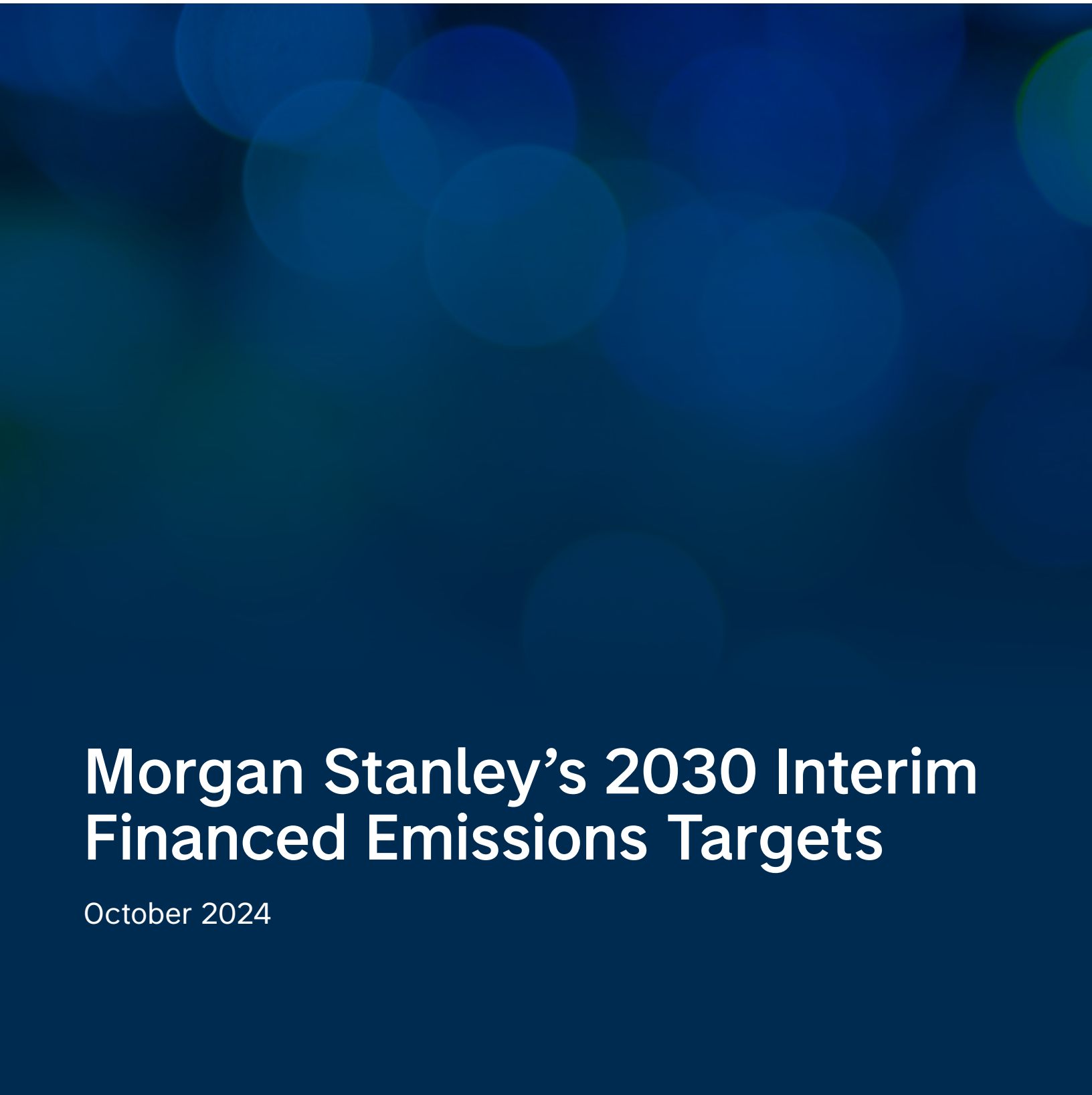

Morgan Stanley's 2030 Interim Financed Emissions Targets

October 2024

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Introduction

Climate change is one of the most complex issues of our time, presenting both risks and opportunities for commerce, government and civil society. As a global financial services firm, Morgan Stanley has an important role to play in helping to direct capital toward low-carbon solutions and achieve real-economy decarbonization.

For over a decade, we have considered climate change in our business, operations and risk management activities. Our guiding principles for the climate transition, as published in our 2023 ESG Report, will continue to be thoughtful, independent and pragmatic, with the best interests of our clients, shareholders and other stakeholders in mind.

In September 2020, we announced an ambition to achieve net-zero financed emissions by 2050, followed by sector-specific interim targets in November 2021. We are now refreshing our existing targets (for Power, Energy and Auto Manufacturing) and setting new targets for three additional sectors (Aviation, Chemicals and Mining).[1]

Our revised and new targets cover our corporate relationship lending exposure. Over time, we will assess our facilitated emissions and also include capital markets and event lending activities in our targets, updating our methodology as appropriate.[2]

This report summarizes the methodology we apply to creating and implementing our 2030 interim targets. It also outlines how we will work pragmatically toward reducing our financed emissions, in partnership with our clients.

Since we set our net-zero targets in September 2020, the collective efforts of the public and private sectors have worked to address the impacts of climate change. Billions of dollars in capital have been directed toward the development and deployment of climate solutions; the cost of many decarbonization technologies continues to decrease; and new laws have been passed that should help bend the global greenhouse gas emissions curve downward over time.

However, current government policies, technology adoption and consumption habits are not yet aligned with the Paris Agreement's ambition to limit the global temperature increase to 1.5°C above pre-industrial levels. Without sufficient change in the aforementioned factors in the coming years, our clients, and our firm, may not meet net-zero-aligned targets.

That said, we remain steadfast in our commitment to net-zero and will continue to engage with clients on climate transition strategies to help move the world to net-zero emissions by 2050. We strive to make progress toward our 2030 interim financed emissions targets and contribute to real-economy decarbonization by providing our clients with the advice and capital required to transform business models and reduce carbon intensity.

Our current 2030 goals reflect our best efforts at this point in time. However, we must acknowledge the limitations and challenges faced given the constantly evolving nature of data. These challenges can encompass company-reported data (such as low disclosure rates, changing methodologies and prior period restatements); availability of science-based decarbonization pathways; subjectivity of third-party vendor estimates and adjustments; and time lags in the release of relevant data. As climate-related data continues to develop and climate science evolves, we may reassess and update our methodologies and targets, as appropriate.

For more information on our firmwide approach to climate change, including governance, strategy and operational goals, please see our latest ESG Report here.

1 Although the disclosures in this report, including the interim targets, may be considered significant or material based on disclosure recommendations and broader definitions of "materiality" used by certain voluntary frameworks and reporting guidelines or those in non-U.S. jurisdictions, this should not be read as equating to materiality as that concept is used in Morgan Stanley's periodic filings with the U.S. Securities and Exchange Commission under the Securities Exchange Act of 1934, as amended. Please refer to the Disclaimers section of this report for more information.

2 Our original FELI targets included corporate relationship and event lending, whereas our new targets will include relationship lending only. The short term nature of event lending makes it more aligned with capital markets activities and thus will be incorporated into future facilitated emissions targets.

Target Setting Methodology

Key Cross-Sectoral Design Decisions for Our Target Setting

Moving to Physical Intensity-Based Metrics

Our targets continue to be based on sector-specific emissions intensity. Using an intensity approach allows us to proactively work with our clients on climate transition opportunities instead of simply reducing our emissions by withdrawing capital from carbon-intensive sectors.

However, going forward we are switching our target metric from financed emissions lending intensity (FELI) to physical intensity. Transitioning to a physical intensity metric removes the volatility of enterprise value including cash (EVIC) from the targets and better aligns the firm's approach with our clients' business activities and how they measure their decarbonization progress.

Our physical intensity metric represents a portfolio-weighted view of our clients' own carbon intensity, as measured by a common sector activity unit, such as production or generation.

$$\sum \frac{\text{Client Lending Commitment}}{\text{Total Sector Lending Commitment}} \times \frac{\text{Annual Client Emissions}}{\text{Annual Client Production}}$$

Setting a Target Range of 1.5-1.7C

We set targets that are designed to strike an appropriate balance between being ambitious and credible while also being realistic about present near-term global challenges. At the current pace of decarbonization, the world is not on track to meet a 1.5°C scenario.[3]

As such, for all sectors, we have established a target range. Our upper bound target range references science-based climate scenarios that are in line with a 1.5°C outcome, while our lower bound range references a 1.7°C scenario outcome, which would remain in line with the Paris Agreement's goal to keep warming to "well below" 2°C.

Expanding Targets to New Sectors

Our target sectors are selected based on criteria including the significance of our financed emissions exposure, the number of clients within the sector, the availability of target setting guidance and the availability of recognized sector-specific decarbonization pathways. We are setting targets for six sectors that together represent approximately 65% of our corporate relationship lending portfolio's total absolute financed emissions.[4] This coverage percentage may change over time based on the availability of client data and our changing portfolio composition.

Within the selected six sectors, we aim to include the most emissions-intensive activities across the sector's value chain, with a view to identify where our clients' decarbonization strategies—and thus our financing—can have the greatest impact. In some sectors, we are unable to include a small number of clients due to a lack of data availability. We expect coverage to improve over time as client reporting matures.

There are several Net-Zero Banking Alliance (NZBA)[5]-defined carbon-intensive sectors that are not covered by our targets.[6] This is due to a number of factors including small portfolio sizes and/or a lack of decarbonization scenarios for the sectors. In addition, we note that the majority of our Aluminum sector financed emissions are covered by the Mining target, which includes mining companies with diversified operations.

We will continue to monitor changes to our portfolio exposures, the availability of methodologies and climate reference scenarios on an annual basis to reassess other high-carbon sectors for potential new targets.

Moving Baseline Year to 2022

Sourcing greenhouse gas emissions data continues to be a challenge, though we recognize that data continues to improve over time as clients report more information. We have moved our baseline year from 2019 to 2022 to use the most recent and highest quality data.

3 Intergovernmental Panel on Climate Change, AR6 Synthesis Report: Climate Change, 2023

4 As of December 2022, the base year period for the targets. The coverage metric considers the total scope 1, 2 and 3 emissions of all clients within the given sector. It includes clients that have been excluded from the targets for methodological or data availability limitation reasons, and, it is inclusive of all emissions scopes or categories (which may not be in-scope for all sector targets).

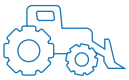
5 As a member of the NZBA, the frameworks and methodologies of this organization help inform our thinking toward setting climate-related targets and measuring our progress; however, our targets have been independently established.

6 The nine carbon-intensive sectors as defined by the NZBA are: agriculture, aluminum, cement, coal, commercial and residential real estate, iron and steel, oil and gas, power generation and transport.

Our 2030 Interim Targets

TARGET SUMMARY

The table below summarizes the 2030 interim targets that we have defined for each sector. All targets are inclusive of our corporate relationship lending exposure on a year-end committed basis. For further information, please refer to the following sections that detail the sector-specific methodologies, assumptions and risks.

SECTOR	IN-SCOPE EMISSIONS	METRIC	2022 BASELINE INTENSITY	2030 TARGET	2030 TARGET VALUE	TARGET 2022 BASELINE AFE (MMT)
 **Auto Manufacturing**	Scope 1 + 2 and Scope 3 (Category 11)	gCO_2e/vehicle km	153	29% to 45%	84 to 109	2.5
 **Aviation**	Scope 1	gCO_2e/revenue tonne km (RTK)	872	13% to 24%	663 to 759	1.1
 **Chemicals**	Scope 1 + 2	$kgCO_2e$/tonne produced	758	18% to 28%	546 to 622	0.9
 **Energy—End Use**	Scope 3 (Category 11)	gCO_2e/MJ	60.4	10% to 19%	48.9 to 54.4	11.1
 **Energy—Operational**	Scope 1 + 2	gCO_2e/MJ	6.7	12% to 20%	5.4 to 5.9	1.3
 **Mining**	Scope 1 + 2	tCO_2e/tonne CuEq	7.1	23% to 31%	4.9 to 5.5	0.4
 **Power**	Scope 1	$kgCO_2e$/MWh	355	45% to 60%	142 to 195	6.0

As the primary business activities of our clients may not align with the metric of each target denominator (i.e., they may be a service provider rather than a producer), not all clients within a given sector are within the scope of the 2030 targets. In addition, a small number of clients may fall within the scope of the target, however there may be insufficient data to include them at this time.

For most target sectors within our lending portfolio, we include a significant majority of the sector's value chain emissions through the target design. However, for the Chemicals and Mining sectors, there are some material scope 3 emissions that are not included at this time.

Within the Chemicals sector, companies can have significant downstream scope 3 emissions associated with customer usage of their products. Given the diversity of products, applications and end uses, it can be difficult for these companies to know—or influence—the ultimate form of their products or their end-of-life outcomes. Client measurement and reporting on these emissions is therefore limited and inconsistent, which limits our ability to consider scope 3 emissions in the target design at this time.

However, the economy-wide nature of scope 3 carbon accounting means that, in practice, one sector's scope 3 emissions may be included in scope 1 or 2 emissions targets for another. For example, Chemicals scope 3 upstream emissions are primarily driven by the use of hydrocarbons as feedstock and for energy-intensive industrial processes. The emissions associated with the extraction and processing of these inputs are substantively covered as the scope 1 and 2 emissions of our Energy—Operational sector target.

Similarly, Mining sector scope 3 downstream emissions are mostly driven by the processing and use of sold products, such as from the combustion of thermal coal for power generation, and iron ore, bauxite, alumina and metallurgical coal for metals production. While we do not have a metals production target at this time, emissions arising from power generation of all types (including from thermal coal) are considered within scope 1 emissions of our Power sector target.

We also disclose the absolute financed emissions (AFE) associated with each target on a committed exposure basis, in line with the emissions boundaries of the targets as outlined above in the 'In-Scope Emissions' column.

Auto Manufacturing

Passenger cars and vans are a key source of oil consumption and global emissions, encompassing more than 25% of global oil use and 10% of global energy-related CO_2 emissions in 2022.[7]

To achieve net-zero by 2050, the International Energy Agency (IEA) projects that around two-thirds of all light-duty vehicles sales will need to be electric vehicles (EVs) by 2030.[8]

TARGET SUMMARY

Activities	New sales of light-duty vehicles (LDVs) including light trucks
In-Scope Emissions	Scope 1 + 2 and Scope 3 Category 11 tailpipe emissions
Reference Climate Scenarios	IEA NZE 2050 and IEA APS 2050
Target Setting Approach	Portfolio intensity contraction, in line with scenario intensity contraction
2022 Baseline Intensity	153 gCO_2e/vehicle-km
2030 Target	29% to 45% portfolio intensity reduction
Data Sources	S&P Trucost, Asset Impact

TARGET BOUNDARIES

	UPSTREAM Scope 3 Emissions	OPERATIONAL Scope 1 and 2 Emissions	DOWNSTREAM Scope 3 Emissions
IN SCOPE	–	Emissions from production of vehicles by the original equipment manufacturers (OEM)	Tank-to-wheel (TTW) tailpipe emissions of vehicles during lifetime usage
OUT OF SCOPE	Manufacturing of auto parts, equipment, or batteries by suppliers	–	Production and transportation of fuels for vehicles or electricity generation for vehicle charging End-of-life recycling or retiring of used vehicles and parts

7 International Energy Agency (IEA), Cars and Vans landing page

8 IEA, Cars and Vans landing page

Our target covers activities related to the manufacturing and assembly of new light-duty passenger vehicles and light trucks and the lifetime emissions associated with the use of those vehicles.

Other vehicle types such as motorcycles, buses or heavy-duty vehicles (HDVs) are not within the scope of our target. Nor are the use of sold product emissions associated with other products that OEMs may manufacture, such as engines.

Portfolio Target Metric

Scope 1, 2, and Lifetime Scope 3 Tank-to-Wheel Emissions of New LDVs and Light Trucks

Lifetime Kilometers of New Global LDVs and Light Trucks

The metric numerator aggregates total company scope 1 and 2 emissions with estimated scope 3 (Category 11) lifetime tank-to-wheel (TTW) vehicle emissions. The metric denominator includes the estimated total lifetime kilometers for all new LDVs sold in the given year, which we assume to be 150,000km for all vehicles and regions.[9]

TTW emissions are generated during the use phase of internal combustion engine (ICE) vehicles through the combustion of petrol and diesel. Our data vendor estimates the annual carbon emissions for each manufacturer (at the vehicle level) by applying a vehicle fuel efficiency assumption informed by global World Harmonized Light Vehicle Test Procedure test cycle results. It is assumed that electric vehicles have zero TTW emissions, and hybrid vehicles have ~70% of the TTW emissions of ICE vehicles.

A well-to-wheel (WTW) emissions accounting approach considers TTW emissions as well as emissions from upstream fuel production and power generation for EV charging. While we recognize some clients report their fleet intensity using this metric, we do not include upstream emissions in our target metric. We consider that emissions associated with oil production and refining are substantively included under our Energy—Operational target, whilst the emissions associated with electricity grid generation are substantively included under our Power target.

Decarbonization Pathway

We use the IEA's Net Zero by 2050 (IEA NZE) and Announced Pledges Scenario (IEA APS) scenarios to inform the target rate of decarbonization for our portfolio.

The "passenger cars" sector CO_2 emissions are divided by the total passenger vehicle-kilometers activity indicator to infer the sector intensity reduction from 2022 to 2030 under each scenario. The IEA APS intensity reduction rate to 2030 forms the lower bound of our target range, and the IEA NZE intensity reduction rate to 2030 forms the upper bound of our target range.

We have made the following adjustments to the IEA scenarios:

- The IEA emissions pathways are inclusive of both new and existing vehicles. As our target is limited to new vehicles, we assume the rate of decarbonization for new vehicles is the same as the IEA new and existing boundary.
- IEA indicates a passenger vehicles weight threshold of 3.5 tonnes gross vehicle weight, in line with EU standards. We include certain passenger light trucks up to 7.5 tonnes, in line with our data vendors and U.S. Environmental Protection Agency (EPA) definitions.
- IEA only includes scope 3 tailpipe emissions; we include scope 1 and 2 emissions of OEMs and assume the same required rate of intensity reduction.
- IEA only includes CO_2 emissions; we include tailpipe emissions estimates on a CO_2 basis and scope 1 and 2 values on a CO_2-equivalent basis.[9]

We apply a contraction approach to target-setting to reduce our portfolio intensity by the same rate of reduction as the IEA NZE and IEA APS scenarios.[10]

9 IEA, Fuel Economy Roadmap, 2021 (page 2)

10 Includes all seven greenhouse gases as defined by the GHG Protocol (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3).

Key Decarbonization Levers and Implementation Challenges

Auto manufacturers have outlined three key opportunities to support the decarbonization of the industry: increase all-electric and hybrid passenger vehicle sales; continue to reduce the carbon intensity of new combustion engine vehicles; and reduce manufacturing emissions.

Although auto manufacturers are striving to improve operational efficiency and increase renewable power procurement, their primary focus will be on shifting the mix of their vehicle sales towards all-electric and hybrid passenger vehicles fleets.

Per the IEA, a net-zero by 2050 economy would require electric passenger car sales to increase by an average of 25% per year from 2023 to 2030, with EVs accounting for ~66% of new vehicles sold in 2030 compared with 18% of new vehicles sold in 2023.[11] Auto manufacturers have been quick to establish goals that align with this ambition, with almost all global players setting global EV targets ranging from 50% to 100% of total fleet sales by 2030, as well as WTW[12] fleet decarbonization targets to reduce the lifetime carbon intensity of a vehicle by 30-60% by 2030 or 2035.

The global policy environment to support this ambition is emerging: Regional vehicle emission reductions standards are providing direction; tax incentives are encouraging consumer uptake and the cost of hybrid and electric vehicles is decreasing with growing battery manufacturing supply capacity.

However, based on current observations and discussions with auto manufacturers, electrical vehicle adoption rates among consumers have not kept pace with what is needed for emission reduction targets in 2030 or 2050. Further, additional challenges remain in the development and rollout of EV-charging infrastructure which could hamper consumer preference and adoption in the near-term. For manufacturers, continued supply of critical minerals for battery production will also become increasingly important to sustain momentum.

If persistent, these headwinds could slow global uptake for EVs, and may lead to an outcome more closely aligned to the IEA's APS, in which EV sales are estimated to reach only ~46% of light-duty vehicle sales by 2030.

11 IEA, Global EV Outlook, 2024 (pages 11 and 105)

12 WTW typically includes tailpipe vehicle emissions as well as upstream supply chain emissions associated with fuel production and transportation, and electricity generation, required to power the vehicle during its lifetime.

Aviation

The aviation sector accounted for 28% of 2022 transport emissions, or 2% of global energy-related CO_2 emissions in 2022 (IEA).[13] Aviation emissions are expected to surpass their 2019 level by around 2025.[14]

To reach net-zero by 2050, the IEA anticipates that 2030 emissions rise 18% from 2022 whilst passenger travel increases by 82%.[15]

TARGET SUMMARY

Activities	Passenger and cargo activities of passenger airlines
In-Scope Emissions	Scope 1
Reference Climate Scenarios	MPP PRU and IEA APS 2050
Target Setting Approach	Portfolio intensity convergence, with target matching the referenced climate scenario intensity in 2030
2022 Baseline Intensity	872 gCO_2e/RTK
2030 Target	13% to 24% portfolio intensity reduction
Data Sources	Public company reports, S&P Trucost, U.S. Department of Transportation

TARGET BOUNDARIES

	UPSTREAM Scope 3 Emissions	OPERATIONAL Scope 1 and 2 Emissions	DOWNSTREAM Scope 3 Emissions
IN SCOPE	–	**Direct Emissions:** Fuel combustion in aircraft, ground fleet, and facilities	–
OUT OF SCOPE	Production and transportation of fuels for aircraft or ground fleet Supplier manufacturing of airplanes or fittings Onboard catering supplies and services	**Indirect Emissions:** Consumption of purchased electricity or other sources	Last mile transport for belly freight End of life of aircraft

[13] IEA, Aviation Sector landing page
[14] IEA, Aviation Sector landing page
[15] IEA, World Energy Outlook, 2023 (pages 280 and 281)

Our target boundary includes annual passenger and cargo activities by passenger airlines.

Dedicated cargo air freight and multi-modal logistic companies are not currently within the scope of our target boundary.

Portfolio Target Metric

$$\frac{\text{Scope 1 Emissions of Passenger Airlines}}{\text{Annual Revenue Tonne Kilometers (RTK)}}$$

The numerator includes companies' total scope 1 emissions each year. While jet fuel combustion emissions represent the significant majority of these emissions, other scope 1 emissions may also be included in company-reported values.

The denominator includes all revenue passenger and cargo tonne kilometers in the given year, reported in tonnes. All cargo activity of clients is included as belly freight and dedicated cargo activity could not be separated.

Selection of RTK as the denominator allows for the inclusion of both passenger and cargo activity data. Reported revenue passenger kilometers (RPK) values are converted into RTK with an assumed ratio of 100kg per passenger.

RTK values, or estimates, are available for all airlines, but where scope 1 emissions are not reported, we derive a physical intensity factor to estimate scope 1 emissions. This is calculated using all clients with reported emissions and RTK values in the given measurement year. An average of all intensities is taken, and one standard deviation is added to the average result to apply a more conservative estimation approach for client emissions.

Decarbonization Pathway

We use the Mission Possible Partnership's (MPP) 1.5°C Prudential (PRU) Aviation scenario to inform the upper bound target rate of decarbonization. MPP provides emissions pathways split by annual passenger aviation (including belly freight) and commercial cargo transport. These emissions are divided by passenger and belly freight RTK.

We have made the following adjustments to the MPP scenario:

- As belly freight RTKs are included within cargo volume projections, the share of belly freight is assumed as 53%.[16]
- MPP data is provided in five-year increments with 2020 being the latest year available. We therefore use International Air Transport Association (IATA) passenger and belly freight flight data from 2020 to 2022 to infer the MPP pathway over the same period and establish a 2022 baseline intensity.[17]
- As MPP does not have a 1.7°C pathway available, we derive a pathway with reference to the IEA APS physical intensity rate of reduction for the Aviation sector.[18] The APS intensity rate of change from 2022 to 2030 (-29%) is then applied to the MPP 2022 intensity to calculate an inferred 1.7°C intensity for 2030.

We apply a convergence approach to target-setting, aligning our target 2030 portfolio intensity to the 2030 intensities outlined by our chosen climate reference scenarios.

16 In line with MPP scenario assumption.

17 International Air Transport Association (IATA), Global Outlook for Air Transport, 2023 (page 17)

18 IEA, World Energy Outlook, 2023 (pages 268 and 269)

Key Decarbonization Levers and Implementation Challenges

Airlines can reduce their carbon footprints through three primary levers: operating a more energy efficient fleet;[19] optimizing route and airspace to reduce time in flight;[20] and procuring low-carbon fuels.

To achieve a low-carbon economy, increased production and use of sustainable aviation fuel (SAF) will be required. SAF includes fuels that are produced from non-fossil-fuel-derived sources (such as non-food crops, waste oils, municipal waste) and are blended for use with traditional kerosene jet fuel. The IEA NZE projects SAF will need to account for 10% of total jet fuel mix by 2030,[21] compared with less than 0.1% today. However, the International Civil Aviation Organization (ICAO) projects that SAF production in 2030 will reach just 2.5% to 5% of global jet fuel demand.[22]

While many global airlines have established public targets to utilize 10% of SAF in their fuel mix by 2030, some have taken a more cautious approach and set targets in the 5% to 7.5% range. We also note that some airlines have set their interim target date as 2035, which could mean they make most progress toward their targets post-2030.

Global policies that support SAF production and usage are gaining traction. For example, the U.S. Inflation Reduction Act allotted $3.3 billion to tax credits and grant programs allocated to SAF, with a target of producing three billion gallons by 2030. Elsewhere, the U.K. is aiming to have five SAF plants under construction by 2025.[23]

There remain significant challenges ahead to ensure that supply can meet demand at cost parity, which will be a key determinant for airline companies to achieve their interim emission reduction targets and thus for us to achieve our own aviation target.

19 IATA, Net Zero 2050: new aircraft technology, 2024 (page 1)
20 IEA, Aviation Sector landing page
21 IEA, Aviation Sector landing page
22 International Civil Aviation Organization, Short Term Projections of SAF Production, 2023
23 IEA, Aviation Sector landing page

Chemicals

The chemicals sector represents 3.5% of global CO_2 emissions and is the third largest industrial sector in terms of direct CO_2 emissions following iron & steel and cement.[24]

Production of primary chemicals requires energy-intensive transformation processes to break apart and combine elements into new forms. Around half of the sector's inputs (primarily petrochemical hydrocarbons) are used as fuel for energy, while the other half forms feedstock for new products.[25]

Chemicals are embedded across other industries, with more than 95% of manufactured goods using chemical products.[26] To support the needs of a growing global population, primary chemical demand in a net-zero economy is still expected to grow by 20% from 2022 to 2030, while emissions decrease by ~14%.[27]

TARGET SUMMARY

Activities	Chemical product manufacturers (commodity, diversified, fertilizers and agricultural, specialty)
In-Scope Emissions	Scope 1 and 2
Reference Climate Scenarios	IEA NZE 2050 and IEA APS 2050
Target Setting Approach	Portfolio intensity contraction, in line with scenario intensity contraction
2022 Baseline Intensity	758 $kgCO_2e$/tonne produced
2030 Target	18% to 28% portfolio intensity reduction
Data Sources	Company reports

TARGET BOUNDARIES

	UPSTREAM Scope 3 Emissions	OPERATIONAL Scope 1 and 2 Emissions	DOWNSTREAM Scope 3 Emissions
IN SCOPE	–	Direct and Indirect operational emissions	–
OUT OF SCOPE	Extraction, refining, transportation of petrochemicals (for feedstock or fuel)	–	Final product manufacturing Mechanical or advanced recycling of products/chemicals Disposal or other end-of-life treatment of sold products

[24] IEA, Net Zero Roadmap, 2023 (page 198)
[25] IEA, The Future of Petrochemicals, 2018 (page 14)
[26] World Economic Forum, Implementing Low Carbon Emitting Technologies in the Chemical Industry, 2021 (page 9)
[27] IEA, Net Zero Roadmap, 2023 (page 97)

Chemicals is a highly diverse sector covering a range of different chemical processes and products.

Within our Chemicals target, we include companies that produce primary and intermediate chemicals, base chemicals, specialty chemicals, consumer chemicals and agricultural chemicals and fertilizers. We do not include companies that produce pharmaceuticals or industrial gases, as we consider these companies to have dissimilar activity profiles and decarbonization levers compared to our in-scope sub-sectors. Mechanical and advanced recycling processes are also currently out-of-scope for our target design.

Although the carbon intensity of basic chemical production can be higher than that of intermediary and downstream production, all chemical production is included to enable a sector-wide target.

Portfolio Target Metric

$$\frac{\text{Scope 1 and Scope 2 Emissions}}{\text{Annual Chemical Production in Tonnes}}$$

The metric numerator includes companies' total annual scope 1 and 2 emissions. The denominator includes all production of chemicals in the given year, reported in tonnes.[28]

Total chemical production is not a less commonly reported value by chemical manufacturers, however company-reported scope 1 and 2 emissions intensity metrics (over tonnes produced or sold) is more often reported. We include clients who either reported this physical intensity metric, or where we could derive this value based on reported scope 1 and 2 emissions alongside annual production. Public company reporting and CDP reporting are our primary sources for this data.

To address data gaps where clients do not report a carbon intensity metric or a total production value, we derive an average sector production efficiency proxy. This metric is production (in tonnes) to energy consumed for chemical production processes (in MWh), based on reported values from clients in the given reporting year. We use the proxy ratio to estimate the production denominator where clients report their energy consumed for chemical processes, and use their actual reported emissions values in the numerator.

Although scope 3 emissions are often material for chemical producers, they are not included in our target design at this time. Upstream emissions associated with the purchase of gas, coal or natural gas liquids (NGLs) for energy or feedstock are excluded as we consider these emissions to be covered under our Mining and Energy—Operational targets. While we note that some chemical companies are beginning to establish targets that include these emissions, this appears to be an early emerging practice.

Downstream scope 3 emissions (which consider emissions from the processing, use of and end-of-life treatment of sold products) are also excluded due to the complexity of measurement for chemical producers, their relatively low ability to influence these emissions and the absence of directly relevant climate reference scenarios.

Decarbonization Pathway

We use the IEA NZE and IEA APS scenarios to inform our chemical portfolio target rate of decarbonization.

The "whole of sector" CO_2 emissions from IEA are divided by production for the seven "primary chemicals" (representing ~66% of total sector emissions)[29] to infer the sector intensity reduction from 2022 to 2030 under each scenario. The IEA APS intensity reduction rate to 2030 forms the lower bound of our target range, and the IEA NZE intensity reduction rate to 2030 forms the upper bound of our target range.

We make the following adjustments to the IEA scenarios:

- The IEA activity pathway only includes primary chemical production, so we assume the same rate of decarbonization is required for non-primary chemical production.
- IEA only includes direct process emissions from chemical production. We include all scope 1 and 2 emissions of chemical producers and assume the same required rate of intensity reduction.
- IEA only includes CO_2 emissions. We include client-reported values on a CO_2-equivalent basis.[30]

We apply a contraction approach to target-setting to reduce our portfolio intensity by the same rate of reduction as the IEA NZE and IEA APS scenarios.

[28] Or tonnes of sold product, depending on availability of company-reported data

[29] IEA, Net Zero by 2050: A Roadmap for the Global Energy Sector, 2021

[30] Includes all seven greenhouse gases as defined by the GHG Protocol (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3).

Key Decarbonization Levers and Implementation Challenges

To achieve a total sector emissions reduction of ~14% by 2030—alongside an expected 20% increased demand for chemicals—the IEA sets out five key mitigation measures, giving similar abatement potential to each by 2030.[31] These are: avoid demand through improving plastic recycling rates; improve energy efficiency of production; increase electrification of operations; introduce low carbon feedstock (e.g., hydrogen-based electrolytic production); and significantly improve CO_2 capture of fugitive process emissions.

Whole-of-value-chain solutions will be required to increase the share of waste plastics collected, and many chemical companies are actively participating in global and local initiatives to stimulate both supply and demand.

Our analysis suggests that our clients have made progress on their short-term targets, with some achieving ~25% to 50% of their 2030 decarbonization ambitions to date. Continuing this momentum will require increased focus on operational facility improvements that may necessitate significant capital investment, as the most impactful decarbonization solutions are only beginning to reach commercial scale and viability.

For example, high-value chemical production requires high temperatures that are currently generated by fossil fuels. Although green hydrogen (produced by water and renewable electricity) is emerging as a substitute fuel source, the costs to scale this technology could prove prohibitive to chemical producers in the near term. To achieve the IEA NZE scenario, 7% of chemicals production in 2030 will need to be fueled by green hydrogen, compared with less than 0.5% today.[32,33]

Deployment of carbon capture technologies for new and existing production plants could be another path forward. Though carbon capture, utilization and storage (CCUS) is still at the early stages of development, to be on track for a net-zero by 2050 outcome the IEA estimates that CO_2 capture for the chemical sector will have to increase from four million tonnes in 2022 to 52 million tonnes in 2030.[34]

31 IEA, Net Zero Roadmap, 2023 (page 97)
32 IEA, Net Zero Roadmap, 2023 (page 97)
33 S&P Global, Decarbonizing chemicals part one, 2023
34 IEA, Net Zero Roadmap, 2023 (page 97)

Energy—End Use

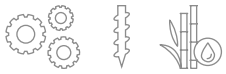
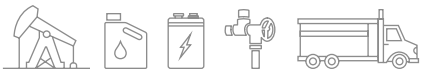
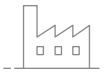
The primary source of greenhouse gas emissions from the energy sector is the combustion of oil and gas products for energy and heat. These emissions arise from commercial activities such as power generation and industrial processes as well as commercial and consumer activities such as transportation. Collectively, we consider these to represent the "end use" emissions of hydrocarbons produced by energy companies.

In 2020, end use energy emissions accounted for around 63% of global greenhouse gas emissions.[35] To be on track for a net-zero global economy, the IEA estimates that energy end use emissions must reduce by 26% by 2030 compared with 2022.[36]

TARGET SUMMARY

Activities	Integrated, production, and refining companies
In-Scope Emissions	Scope 3, Category 11 emissions
Reference Climate Scenarios	IEA NZE 2050 and IEA APS 2050
Target Setting Approach	Portfolio intensity contraction, in line with scenario intensity contraction
2022 Baseline Intensity	60.4 gCO_2e/MJ
2030 Target	10% to 19% portfolio intensity reduction
Data Sources	Company reports, S&P, Wood Mackenzie

TARGET BOUNDARIES

	UPSTREAM Scope 3 Emissions	OPERATIONAL Scope 1 and 2 Emissions	DOWNSTREAM Scope 3 Emissions
IN SCOPE	–	–	 Combustion of fuel for energy use
OUT OF SCOPE	 Operational components Upstream drilling Upstream biofuel production	 Exploration & Production (crude oil, natural gas, biofuel production) Refining (NGLs, biofuels) Renewable power generation (Energy company power generation) Midstream operations (pipelines, storage, transportation)	 Non-energy use of products

[35] Climate Watch and the World Resources Institute, Global greenhouse gas emissions by sector, 2020

[36] IEA, Oil and gas in net zero transitions, 2023 (page 25)

Our Energy—End Use target considers the primary forms of energy supplied by oil and gas producers and the end use emissions associated with these products. Companies with oil or gas sold product volumes from production or refining activities are considered to be "producers" and are included in scope of the target.

Suppliers or service providers to producers (such as oil and gas drillers or storage and transportation companies) are out of scope for this target.

While non-energy use of hydrocarbons (such as in feedstock for chemical transformation) is excluded from this target's scope, it is often not possible to know what share of sold products may have been used for this purpose. Therefore, our targets assume that all sold product from producers have a combustion end use.

Portfolio Target Metric

$$\frac{\text{Scope 3 End Use Emissions}}{\text{Energy Produced (MJ)}}$$

The metric numerator aggregates total end use of sold product scope 3 category 11 emissions. Client-reported emissions data is preferred. However, where not available, a production-based emissions intensity factor is used to estimate end use emissions.

For crude oil and natural gas products, emission-intensity factors are sourced from the EPA's Emission Factors for Greenhouse Gas Inventories. For refined products, the factor is derived from EPA factors based on the average disaggregated final products produced from a barrel of crude oil.

As emissions from the combustion of biofuels represent a biogenic carbon release, zero emissions are assigned to this fuel source. Renewable power generation is similarly considered to have zero end use emissions.

The metric denominator includes the total energy produced from sold products, including both fossil- and renewable-based energy sources, such as oil, gas, NGLs, bioenergy, hydrogen and/or renewables electricity generation.

Decarbonization Pathway

We use the IEA NZE and IEA APS scenarios to inform our portfolio target rate of decarbonization.

The numerator (emissions) of the intensity metric includes the CO_2 emissions from global combustion from oil and gas activities, as well as bioenergy and waste activities. The denominator (production) includes the energy supply values for oil used for energy purposes, natural gas, modern bioenergy and an estimated share of solar and wind power generation attributed to Energy sector companies.

We have made the following adjustments to the IEA scenarios:

- The share of solar and wind power generation attributed to Energy sector companies is aligned to the IEA's estimates for annual global investment in these technologies by the Oil and Gas sector, representing 1.8% in 2022 and 8% in 2030.[37]
- While the scenario only includes CO_2 emissions, we also include clients' emissions when reported in CO_2e.[38]

We apply a contraction approach to target setting to reduce our portfolio intensity by the same rate of reduction as the IEA NZE and IEA APS scenarios.

Key Decarbonization Levers and Implementation Challenges

Reducing end use emissions intensity requires a transition toward lower carbon (such as biofuels, biogas or hydrogen) and zero-carbon energy sources (such as renewable electricity generation) in the producer's energy supply mix.

The IEA anticipates that to reach net-zero by 2050, the production of low-emission biofuels will need to increase six-fold, biomethane 13-fold, and hydrogen over 110-fold between 2022 to 2030.[39]

Certain energy clients have started establishing decarbonization targets that reflect this ambition to reduce their end use intensity. Further, many others have made capital commitments even in the absence of such emission reduction targets. However, as with other sectors, there could be exogenous challenges that would impact our clients' ability to reach their emission reduction targets.

This will include the need to balance regional energy security from heightened geopolitical risks with the increasing global energy demand needed to support growth in developing economies. There will also be greater power grid consumption due to the advancement of digital technologies and the expansion of EV infrastructure.

37 IEA, The Oil and Gas Industry in Net Zero Transitions, 2023 (pages 87, 143 and supporting data tables)
38 Includes all seven greenhouse gases as defined by the GHG Protocol (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3).
39 IEA, The Oil and Gas Industry in Net Zero Transitions, 2023 (pages 98 and 100)

Energy—Operational

End use emissions account for 85% of the energy sector's total emissions, with the remaining 15% arising from onsite processes for the extraction, refinement and transport of hydrocarbon products.[40]

Operational emissions can occur through venting, flaring and fugitive emissions from leaks, while onsite equipment traditionally requires liquid fossil fuels. Significant energy is also required to transform hydrocarbons from one product state to the next.

To reach net-zero by 2050, the IEA projects that global operational emissions from energy producers will need to be reduced by 60% by 2030 compared with 2022.

TARGET SUMMARY

Activities	Integrated, production and refining companies
In-Scope Emissions	Scope 1 and 2
Reference Climate Scenarios	IEA NZE 2050 and IEA APS 2050
Target Setting Approach	Portfolio intensity convergence, with target matching the referenced climate scenario intensity in 2030
2022 Baseline Intensity	6.7 gCO_2e/MJ
2030 Target	12% to 20% portfolio intensity reduction
Data Sources	Company reports, S&P, Wood Mackenzie

TARGET BOUNDARIES

	UPSTREAM Scope 3 Emissions	OPERATIONAL Scope 1 and 2 Emissions	DOWNSTREAM Scope 3 Emissions
IN SCOPE	–	**Exploration & Production** (crude oil, natural gas, biofuel production) **Refining** (NGLs, biofuels) **Renewable power generation** (Energy company power generation)	–
OUT OF SCOPE	Operational components Upstream drilling Upstream biofuel production	Midstream operations (pipelines, storage, transportation)	Energy and non-energy use of products

[40] IEA, Emissions in Oil and Gas Operations in Net Zero Transitions, 2023 (page 3)

Our operational target is inclusive of onsite emissions associated with upstream exploration and production activities and downstream refining, including power consumption.

Suppliers or service providers to producers (such as oil and gas drillers or storage and transportation companies) are not in scope of this target as they do not produce energy and are inherently less carbon-intensive than producers.

Portfolio Target Metric

$$\frac{\text{Scope 1 and 2 Emissions}}{\text{Energy Produced (MJ)}}$$

The metric numerator aggregates total operational scope 1 and 2 emissions. Client-reported emissions data is preferred. However, where not available, a production-based emissions intensity factor is used to estimate operational emissions.

This factor is derived from reported scope 1 and 2 production intensities of clients in our portfolio for the reporting year. An average of all intensities is taken, and one standard deviation is added to the average result to apply a more conservative estimation approach for client emissions.

The metric denominator includes the estimated total energy produced by the company, including both fossil- and renewable-based energy, such as oil, gas, NGLs, bioenergy, hydrogen and/or renewables electricity.

Production volumes are procured from data vendors and, where not available, through company reports to help fill data coverage gaps.

Decarbonization Pathway

We use the IEA NZE and IEA APS scenarios to inform our portfolio target rate of decarbonization. In its 2023 Oil and Gas in Net Zero Transition Report, the IEA provided 2022 and 2030 estimated operational emissions for the oil and gas industry.[41] We use the same production activities as our End Use target scenario, in addition to non-energy use oil production.

The baseline intensity of our portfolio is 6.7 gCO_2e/MJ, which is ~50% lower than the IEA 2022 operational emissions intensity of 13.6 gCO_2e/MJ. We believe this is primarily due to our clients operating in countries with a lower carbon-intensity and with a higher than average share of natural gas production.[42]

We also note that many of our clients have made progress toward their operational emissions targets, with clients achieving, on average, roughly one-third of their targets as of 2022.

Based on the above analysis of our clients' operational emissions, we do not believe the 2022-2030 emissions intensity rates of reduction implied by the IEA should be adopted for our target.

Instead, for our 1.5°C-aligned boundary, we use a convergence approach. This implies a 20% reduction in our portfolio's operational emissions intensity from 2022 to reach the IEA NZE intensity for operational emissions in 2030.

We have made the following adjustments to the IEA scenarios:

- The share of solar and wind power generation attributed to Energy sector companies is aligned to the IEA's estimates for annual global investment in these technologies by the Oil and Gas sector, representing 1.8% in 2022 and 8% in 2030.[43]
- For our 1.7°C-aligned boundary, the IEA's 2030 APS operational emissions intensity is above our portfolio's baseline intensity. We therefore derive our 1.7°C target boundary by comparing the percent reduction of the APS intensity pathway (-35%) relative to the NZE intensity pathway (-61%). This ratio is then multiplied by the IEA NZE convergence target of -12% to arrive at the 1.7°C derived target boundary.

41 IEA, The Oil and Gas Industry in Net Zero Transitions, 2023 (page 138)
42 IEA, The Oil and Gas Industry in Net Zero Transitions, 2023 (page 69)
43 IEA, The Oil and Gas Industry in Net Zero Transitions, 2023 (pages 87, 143 and supporting data tables)

Key Decarbonization Levers and Implementation Challenges

According to the IEA,[44] reducing methane emissions, eliminating routine flaring and electrifying operations are the three primary decarbonization levers that could account for >75% of operational emission reductions to 2030, followed by CCUS and expanding the use of low-emission hydrogen in refining processes.

Methane is a significant opportunity for oil and gas companies to reduce emissions, with the IEA estimating that almost 45% of oil and gas methane emissions can be avoided at no net cost.[45] Seventy percent of emissions can be abated using existing technologies that, for example, help improve leak detection and repair practices, as well as reduce routine venting.[46] To reduce routine flaring, energy companies can reinject the gas to support reservoir pressure or convert it to useable energy for onsite purposes or other salable products. Electrifying operations focuses on replacing natural-gas powered instruments with ones using renewable power.

Similar to our Energy—End Use target, exogenous factors including policy support and technological progress will impact clients' ability to reach their emission reduction targets.

[44] IEA, Emissions in Oil and Gas Operations in Net Zero Transitions, 2023 (page 5)
[45] IEA, Curtailing Methane Emissions from Fossil Fuel Operations, 2021 (page 12)
[46] IEA, Curtailing Methane Emissions from Fossil Fuel Operations, 2021 (page 11)

Mining

The mining industry accounts for between 4% to 7% of global emissions, with significant differences in emissions intensity by commodity.[47]

A growing global population and technological advancements will continue to increase demand for most metals and minerals, which could partly be offset by increased investment in recycling solutions to improve recycling rates.[48] In addition, demand for metals and minerals that are critical for clean energy technologies—and thus the low carbon transition—could triple between 2022 and 2030.[49] Despite this anticipated demand growth, the mining sector's absolute CO_2 emissions need to reduce by 26% by 2030 to be aligned with achieving net-zero by 2050.[50]

TARGET SUMMARY

Activities	Extraction and processing of minerals and metal ores; integrated production of alumina and aluminum (by mining companies)
In-Scope Emissions	Scope 1 and 2
Reference Climate Scenarios	NGFS Net Zero 2050, NGFS Below 2˚C, MPP PRU Roadmap, and IEA APS 2050
Target Setting Approach	Portfolio intensity contraction, in line with scenario intensity contraction
2022 Baseline Intensity	7.1 tCO_2e/per copper-equivalent (CuEq) tonne produced
2030 Target	23% to 31% portfolio intensity reduction
Data Sources	Company reports, S&P, Wood Mackenzie, Broker Research

TARGET BOUNDARIES

	UPSTREAM Scope 3 Emissions	OPERATIONAL Scope 1 and 2 Emissions	DOWNSTREAM Scope 3 Emissions
IN SCOPE	–	**Mining Indirect and Direct Emissions** (diesel fleet, mining operations, power procurement, etc.) **Aluminum Indirect and Direct Emissions** (Alumina refining and aluminum smelting)	–
OUT OF SCOPE	Supplier manufacturing of mining equipment and aluminum facilities Production of fuels for on-site vehicles or electricity generation for vehicle charging	–	Use of sold products Aluminum processing (e.g., rolling and extrusion)

47 McKinsey, Climate risk and decarbonization: What every mining CEO needs to know, 2020 (page 2)
48 McKinsey, Climate risk and decarbonization: What every mining CEO needs to know, 2020 (page 6)
49 IEA, Global Critical Minerals Outlook, 2024 (page 7)
50 Based on Global Change Analysis Model (GCAM) and Network for Greening the Financial System (NGFS) assumptions, detailed on following page.

Our target boundary includes all specialized and diversified mining extraction and production activities. This includes companies with a primary Global Industry Classification Standard (GICS) code in diversified metals & mining, copper, gold, precious metals & minerals and silver, as well as certain clients classified in steel that were identified to be primarily metallurgical coal or iron ore miners.

Some diversified miners operate vertically integrated alumina and aluminum production facilities. To reflect the full carbon intensity of these companies, aluminum-related emissions and production are included in our target metric.

Portfolio Target Metric

$$\frac{\text{Scope 1 and 2 Emissions}}{\text{Annual Production in Copper Equivalent (CuEq) Tonnes}}$$

The numerator includes all scope 1 and 2 emissions of all pure play and diversified miners in our portfolio. The metric denominator includes the copper equivalent (CuEq) total production of all mined products and produced alumina/aluminum, when applicable. CuEq is defined as the weight (in tonnes) of copper that has a revenue equal to that of the commodity in question.

Emissions and production data are sourced from company reports. All production data is matched with clients' emission reporting boundaries.

CuEq production is used as the denominator to standardize client production values. Using CuEq production to compare companies is a common practice within the mining sector. To minimize pricing volatility, two key decisions were leveraged for price selection: estimated long-range prices were used for each commodity;[51] long-range price estimates will be held constant through all years of the target.[52]

Decarbonization Pathway

Given the coverage includes both mining and aluminum activities of mining clients, we have developed a climate scenario pathway that incorporates both mining and aluminum production (on a CuEq production weighted basis).

We use the open-source Global Change Analysis Model (GCAM) integrated assessment model to estimate the emissions for the mining pathway. GCAM, using Morgan Stanley's scenario modeling capabilities, provides granular scope 1 and 2 CO_2 emissions estimates for mining operations. Morgan Stanley uses the Network for Greening the Financial System's (NGFS) GCAM assumptions to build the 1.5°C and 1.7°C emission forecasts.

The GCAM model, however, does not provide production forecasts for mining in 1.5°C and 1.7°C scenarios. We therefore use the Transition Pathway Initiative's (TPI) diversified mining pathway to provide 1.5°C and 1.7°C-aligned production forecasts for copper, nickel, diamonds and a range of other materials, including iron ore and bauxite. IEA NZE and APS are used for metallurgical coal production. The NGFS-based GCAM emissions are divided over the sum of TPI-provided and IEA-provided production data, on a copper equivalent basis for 1.5°C and 1.7°C scenarios, respectively.

We use the Mission Possible Partnership (MPP) estimates for both the CO_2e scope 1 and 2 emissions and alumina and aluminum production data under a 1.5°C-aligned scenario (their Prudential scenario). Similar to the Aviation sector, MPP does not have a 1.7°C pathway available for aluminum production, so we use the IEA APS pathway as a proxy.

To use the blend GCAM and MPP models, we make following adjustments:

- The IEA APS aluminum production emissions are divided over aluminum production data. This rate of change of the unadjusted APS intensity from 2022 to 2030 (15%) is then applied to the MPP 2022 intensity to develop a 1.7°C pathway.
- A proprietary approach is required to ensure that the different emission intensities of mining and aluminum do not result in a skew in the combined sector emissions intensity calculation. To do this, we weight the decarbonization pathways of aluminum and mining by the ratio of total sector production (mining or aluminum) over total aluminum and mining production, on a CuEq basis.
- While the scenario only includes CO_2 emissions, we also include clients' emissions when reported in CO_2e.[53]

We apply a contraction approach for our mining target, reducing our portfolio intensity between 2022–2030 by the same rate of reduction rate as our blended GCAM and MPP scenarios.

51 Utilizing an aggregation of brokers' long term commodity price estimates procured by Morgan Stanley investment teams and 10 year historic averages where broker forecasts were not available.

52 Long term price forecasts tend to range around five to seven years, varying by broker.

53 Includes all seven greenhouse gases as defined by the GHG Protocol (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3).

Key Decarbonization Levers and Implementation Challenges

Across the sector, mining companies can reduce the carbon intensity of their operations by investing in onsite renewable power generation, replacing diesel vehicles with low-carbon alternatives and, for miners with underground operations, implementing methane capture and abatement solutions.[54]

Although EV prototypes have been emerging in recent years, the high payload capacity of mining trucks will remain a challenge for large-scale development, commercialization and uptake in the near term. Preparing the electrical infrastructure to charge these vehicles presents a parallel problem. Remote mining locations may mean that utility grid connection is not a possibility, and thus greater investment will be required in onsite renewables (of sufficient capacity) to power this equipment.

For miners with aluminum production activities, emission reduction levers could include recovery and scaling of recycled production, increased efficiency and electrification of aluminum production. Under IEA NZE, secondary aluminum production increases from 36% to 42% by 2030, energy efficiency accounts for ~20% to 30% of emission reductions from 2022 to 2030 and increased electrification accounts for >50% of aluminum decarbonization.[55]

However, the decarbonization of aluminum could face a number of key challenges. Firstly, the consistent power demand requirements of production might not always be met by intermittent renewable sources (such as solar and wind). Further, recycled production becomes more challenging with composite materials. Lastly, essential levers such as low-carbon anode technology will likely not be ready for large-scale deployment before 2030.[56]

[54] McKinsey & Company, Climate risk and decarbonization: What every mining CEO needs to know, 2020 (page 9)
[55] IEA, Net Zero Roadmap, 2023 (page 95)
[56] Mission Possible Partnership, Making Net Zero Aluminum Possible, 2023 (pages 11, 14 and 27)

Power

Electricity generation accounted for more than 36% of global CO_2 energy-related emissions in 2022.[57] Demand for power under a net-zero economy by 2050 will continue to increase, driven by economic growth and the electrification of other forms of energy. To achieve net-zero, the IEA anticipates 76% of global power production will need to come from renewable sources by 2030.[58]

TARGET SUMMARY

Activities	Power generation activities of Power companies
In-Scope Emissions	Scope 1
Reference Climate Scenarios	IEA NZE 2050 and IEA APS 2050
Target Setting Approach	Portfolio intensity contraction, in line with scenario intensity contraction
2022 Baseline Intensity	355 $kgCO_2e/MWh$
2030 Target	45% to 60% portfolio intensity reduction
Data Sources	Company reports, S&P, U.S. Energy Information Administration (EIA)

TARGET BOUNDARIES

	UPSTREAM Scope 3 Emissions	OPERATIONAL Scope 1 and 2 Emissions	DOWNSTREAM Scope 3 Emissions
IN SCOPE	–	Grid power generation	–
OUT OF SCOPE	Equipment and construction Fossil fuel extraction, production, and refining	Transmission & Distribution Onsite electricity consumption Retail & Marketing pureplayers	Plant retiring

[57] IEA, World Energy Outlook, 2023 (derived from page 280, figure A.4c)
[58] IEA, World Energy Outlook, 2023 (derived from page 279, figure A.3c)

Our target boundary includes the scope 1 emissions of companies where a primary business activity is electricity generation. This includes clients across four sub-industries: renewable developers; electric-only utilities; multi-utilities; and independent power producers.

We exclude the following clients and activities: clients where no generation data is available; construction and equipment used for building facilities; upstream fuel sourcing for power generation; transmission and distribution activities and companies; pure-player retail and marketers; indirect scope 2 emissions; and downstream emissions that come from retiring operations.

Portfolio Target Metric

$$\frac{\text{Scope 1 Emissions}}{\text{Annual Power Generation (MWh)}}$$

The metric numerator aggregates the total direct scope 1 operational emissions from the generation of electricity. The metric denominator includes the total annual power generation in the given year.

For emissions data, we use a data vendor supplemented by company reports. We also source production data from our data vendor, which provides power generation in GWh by generation asset. Where data is not available, we use the EIA's annual electric generator report data and make additional estimates when necessary.

Decarbonization Pathway

We use the IEA NZE and IEA APS scenarios to inform our portfolio rate of decarbonization.

IEA provides power generation intensity estimates at global and regional levels across both IEA NZE and IEA APS. The IEA APS intensity reduction rate to 2030 forms the lower bound of our target range, and the IEA NZE intensity reduction rate to 2030 forms the upper bound.

We have made the following adjustments to the IEA scenarios:

- The IEA emissions pathways are limited to emissions from power generation. We assume the same required rate of decarbonization for non-power generation scope 1 emissions (such as SF_6 for electrical switchgear and fuel consumption from vehicle fleets and operation of company-owned buildings)
- IEA includes only CO_2 emissions; we include client reported values on a CO_2-equivalent basis[59]

We apply a contraction approach to reduce our portfolio intensity by the same rate of reduction as the IEA NZE and IEA APS scenarios.

Key Decarbonization Levers and Implementation Challenges

There are three primary levers for decarbonization of the power sector: increasing the contribution of carbon-free or carbon neutral generation to the overall energy generation mix, both by increasing investment in renewable projects and retiring unabated coal-fired and natural gas power plants; deployment of CCUS for new and existing coal and natural gas generation assets; and increasing investments in utility-scale and behind-the-meter energy storage to mitigate the intermittency of renewable power generation.

Ongoing policy support and funding availability will both impact whether renewable capacity can be built at a sufficient pace to more than satisfy demand for incremental power, such as additional required power to support growth in artificial intelligence (AI) technologies and change the overall carbon intensity of power generation globally.[60]

[59] Includes all seven greenhouse gases as defined by the GHG Protocol (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6, NF_3).
[60] Morgan Stanley, Powering the AI Revolution, 2024

Implementation Strategy

We will work toward our 2030 interim targets by assessing clients, integrating climate into lending decisions, engaging with clients and disclosing progress.

Assessing Clients

Morgan Stanley's proprietary Climate Strategy Assessment Framework (CSAF) provides us with a data-driven assessment of our clients' climate strategies. We assess a range of quantitative and qualitative factors, including our clients' net-zero and interim targets, climate-related governance and actions taken toward reducing greenhouse gas emissions. The CSAF ultimately classifies clients into one of six categories, including limited actions, transition-aligned and green. The CSAF provides a forward-looking perspective on transition readiness, which is additive to the measurement of a client's current carbon intensity, as reflected in our physical intensity metric.

Integrating Climate Into Lending Decisions

A client's approach to climate transition is one of several factors considered when our firm makes lending decisions. We will continue to consider our clients' approaches to climate transition in our corporate portfolio lending decisions using both the physical intensity metrics and the CSAF profiles. In some cases, lending to companies that are transitioning may result in temporary increases in our financed emissions. We are aware of the unintended consequences of withdrawing financing from transitioning clients and sectors too rapidly, as well as the need to balance climate considerations with real-time energy security needs.

Engaging with Clients

We will focus on working with our clients across sectors as they develop decarbonization plans that seek to reduce their own emissions and thus contribute to decarbonizing the global economy. As we have outlined in this report, the path to a low-carbon economy is not straightforward and many challenges need to be overcome before the world will be on track to limit warming to 1.5°C. As a global leader in financial services, we will continue to develop and distribute innovative products and solutions that serve our clients and help them achieve their climate-related ambitions. We believe that this can lead to real-economy decarbonization and progress toward our decarbonization targets.

Disclosing Progress

We will continue to report annual progress toward our 2030 sectoral physical intensity targets in our firm ESG report.

DISCLAIMERS

FORWARD-LOOKING STATEMENTS

Certain statements herein, including expectations related to financed emissions targets, including interim targets, and the achievement thereof, may be "forward-looking statements" within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Actual results or actions may differ from anticipated approaches and targets set forth in the forward-looking statements. These statements are not historical facts or statements of current conditions, but instead are based on management's current expectations and are subject to uncertainty and changes in circumstances. These statements are not guarantees of future results or occurrences and involve certain known and unknown risks, uncertainties and assumptions that are difficult to predict and are often beyond our control. In addition, this report contains statements based on hypothetical scenarios and assumptions, which may not occur or differ significantly from actual events, and these statements should not necessarily be viewed as being representative of current or actual risk or forecasts of expected risk.

Actual results and financial conditions may differ materially from those included in these statements due to a variety of factors, including, among others, data quality and availability, global socio-demographic, political and economic trends; energy prices; technological innovations; climate-related conditions and weather events; counterparty and client behavior, including the ability to reach climate targets and execute on transition plans, and financial health; the evolution of consumer behavior; insurance applicability, legislative and regulatory changes; the need for thoughtful climate policies, the challenge of balancing short-term targets with the need to facilitate an orderly transition and energy security; and other unforeseen events or conditions, and the precautionary statements included in this report and those contained in Morgan Stanley's periodic filings with the Securities and Exchange Commission (SEC) under the Securities Exchange Act of 1934 (Exchange Act). Certain forward-looking statements included in this report are also based on assumptions, standards, metrics, methodologies and frameworks for measurement, reporting and analysis of climate change that continue to evolve, vary across jurisdictions and regulatory bodies and are the subject of proposed regulatory changes in multiple jurisdictions, which may have a material impact on our future measurement and reporting, as well as the results of the efforts set forth in this report. Any forward-looking statements made by or on behalf of Morgan Stanley speak only as to the date they are made, and Morgan Stanley does not undertake to update forward-looking statements to reflect the impact of circumstances or events that arise after the date the forward-looking statements were made.

MATERIALITY

The disclosures included in this report are being provided to the public in an effort to provide transparency into our climate transition initiatives and to further enhance our collective understanding of issues around setting and attaining climate targets. Our approaches to the disclosures included in this report differ in significant ways from those included in mandatory regulatory reporting, including under SEC rules and regulations.

Information within this report may be presented from a different perspective or in more detail than disclosures mandated by our global regulators. In particular, while the foregoing discussion describes potential future events that may be significant or material (based on disclosure recommendations and broader definitions of materiality used by certain voluntary external frameworks and reporting guidelines or those in non-U.S. jurisdictions), the significance or materiality of those potential events should not be read as equating to or arising to the level of materiality as required under U.S. federal securities laws, including as the concept is used in Morgan Stanley's periodic filings with the SEC under the Exchange Act. In addition, any discussion of forward-looking statements in this report is not an indication that the subject or information is material to Morgan Stanley for U.S. federal securities laws and regulations reporting purposes. We continue to monitor the climate disclosure landscape and evolve our reporting accordingly.

USE OF THIRD-PARTY INFORMATION AND ESTIMATES

No reports, documents or websites that are cited or referred to in this report shall be deemed to form part of this report. In addition, the methodology used to establish financed emission targets and track future progress against such targets contained in this report utilize emission frameworks, scenarios and estimates that have been derived from publicly available information released by third-party sources, which Morgan Stanley believes to be reasonable, although Morgan Stanley has only been able to complete limited validation. Third-party climate information may not reflect the latest or most accurate data. To the extent that such third-party information we use is subsequently determined to be erroneous or otherwise not in keeping with best practices, it may affect our disclosures. Additionally, in the absence of company-specific emissions data, some financed emissions will be estimated using emissions and activity factors provided by third-party sources or derived by Morgan Stanley. Certain third-party information, such as scope 3 emissions and emissions factors, may change over time as methodologies evolve and are refined or current data changes or is restated or new data is added. Our ability to measure progress toward our targets, goals, aspirations or objectives is subject to the quality and availability of such data, as discussed in this report. These and other factors could cause results to differ materially from those expressed in the estimates and beliefs made by third parties and by Morgan Stanley.

Given the inherent uncertainty of the estimates, assumptions and timelines contained in this report, we may not be able to anticipate whether or the degree to which we will be able to meet our climate targets or plans in advance. Morgan Stanley also cannot guarantee that the data provided in its reports will be consistent year-over-year, as data quality, particularly climate-related data improves. This data should not be interpreted as any form of guarantee or assurance of accuracy, future results or trends and Morgan Stanley makes no representation or warranty as to third party information.

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This material was published on October 28th, 2024.

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CRC 3826040 10/2024