JPMorgan Chase & Co.

Carbon Compass℠

Paris-Aligned Financing Commitment Methodology

May 2021

Contents

1 Introduction

Climate change is a critical and urgent issue, and addressing it is a global necessity. Reducing greenhouse gas (GHG) emissions – the main cause of climate change – will require collective ambition and action across the public and private sectors. As a major inter-governmental accord, the Paris Climate Agreement (Paris Agreement or Paris) was an important step toward that collective ambition – aiming to limit the global average temperature rise to well below 2 degrees Celsius, and ideally to 1.5 degrees Celsius, above pre-industrial levels. However, the world is currently not on track to meet these goals.

JPMorgan Chase committed to and achieved carbon neutrality in our own operations in 2020, expanding on our original pledge to source renewable energy for 100% of our firm's global power needs. Beyond our operational carbon footprint, we know we have an important role to play in advancing the low-carbon transition through our financing. As a global financial services firm, we do business with companies operating in nearly every sector of the economy. We want to use our position to make an impact and help drive climate solutions, as do a wide array of our stakeholders – including many of our clients who have announced action plans of their own. We believe that doing more to help them and the economy transition from traditional energy sources and develop cleaner alternatives is the right thing to do. It isn't just good for the planet, it's good for business and makes us more attractive to key constituents such as investors, customers and current and prospective employees.

This is why, in October 2020, we announced our commitment to align our financing portfolio with the goals of the Paris Agreement. This means we are measuring the GHG emissions of our clients in key sectors of our financing portfolio (our 'financed emissions') and are setting Paris-aligned emissions reduction targets for these sector portfolios. We refer to the methodology we have designed for this commitment as Carbon Compass[SM].

Going forward, we intend to use our capital and expertise to encourage and help our clients to transition to a low-carbon future. In doing so, we will increasingly support new and existing clients that are helping advance the goals of the Paris Agreement and leverage our global scale and reach to try to make a meaningful contribution to this effort.

To start, we have developed intermediate Paris-aligned targets to reduce the carbon intensity in our Oil & Gas, Electric Power and Auto Manufacturing portfolios by 2030. This document sets out our approach for doing so, defining the activities and emissions we focus on, the metrics we use and how we track alignment with the Paris Agreement. Our commitment to Paris-alignment is an important step toward accelerating the low-carbon energy transition and encouraging near-term actions that will set a path for achieving net-zero emissions by 2050.

Many groups have developed frameworks to help financial institutions align their financing with the Paris Agreement. Our methodology was developed by learning from and building on these existing approaches, and we are committed to continuously evolving our approach. In establishing our own methodology, we enlisted the support of ERM, a global pure-play sustainability consultancy with deep sectoral, technical and business expertise in the low-carbon energy transition, to challenge and enhance our efforts. We believe the approach we have co-developed is practical and future ready, and reflects leading thinking on Paris alignment. We are making the details of our methodology public to help advance efforts across our industry and to bring our clients along on our journey to help meet the goals of the Paris Agreement.

1.1. Key Elements of Our Approach

Our Carbon Compass methodology incorporates, but also expands upon, existing approaches to define robust, decision-useful metrics and science-based targets on a sector-by-sector basis. The following highlights several key choices and considerations in how we designed our approach.

- **Science-based:** To align our selected portfolios with the goals of the Paris Agreement, JPMorgan Chase has adopted the International Energy Agency's (IEA) World Energy Outlook (WEO) Sustainable Development Scenario (SDS) as of October 2020 (IEA SDS), which limits warming to 1.65°C with a 50% probability, as a primary reference. The targets we have set build on the transition pathways outlined in the IEA SDS, along with a wide range of public resources, including additional climate scenarios, decarbonization research and other frameworks for assessing Paris alignment.
- **Sector-specific:** One of our central choices was to develop metrics and targets tailored to individual sectors, recognizing that each sector faces unique challenges. Within a given sector we have focused on specific activities with material emissions and credible transition pathways. By incorporating these factors into our approach, we are able to gain more useful insight and better support our clients in developing and implementing their strategies. For details on why we are focusing on Oil & Gas, Electric Power and Auto Manufacturing, see section 1.2 below.
- **Decision-useful metrics:** For each sector, we define one or more core metrics that capture essential facts about companies' performance and progress towards decarbonization, and that are compatible with the benchmark trajectories we use to evaluate Paris alignment. This enables measurable tracking and comparison of performance on an ongoing basis. That, in turn, will inform how we engage clients and make financing decisions at the company and portfolio level. For more information on how we developed metrics for each sector, see section 1.5 below.
- **Best available data:** Our metrics are designed to make use of consistent, well-reported and standardized data. However, more and better data is still needed. In particular, improved company- and activity-level emissions data will enhance the ability to measure results, track progress and drive accountability in a concerted way, enabling financial markets to make more informed decisions about climate risk. Where gaps in the data exist today, we have established a detailed process for using the best available alternative data. We are actively supporting improved measurement and better disclosure of data, and plan to update our methodology to reflect improvements over time.

To evaluate Paris alignment of JPMorgan Chase's global financing portfolio in each of the included sectors, we compute a portfolio-weighted average of emissions performance for all our clients in the sector portfolio. Weights are determined based on our cumulative financing to each client as a share of our total financing to the sector. We include both financing that we directly provide (such as through revolving credit facilities) as well as our share of facilitated financing (such as through our underwriting in debt and equity capital markets). The vast majority of this activity occurs in our Corporate and Investment Bank and Commercial Banking lines of business. In the case of revolving credit facilities, financing amounts reflect the total limit of available credit outstanding, not just the drawn amount. We also include our tax-oriented investments, which are largely concentrated in the Electric Power sector.

$$\text{JPMC Sector Portfolio Emissions Metric} = \sum \left(\text{Client Weight in JPMC Sector Portfolio (\%)} \times \text{Client Emissions Metric} \right)$$

WHY WE CHOSE TO USE CARBON INTENSITY METRICS

For the three selected sectors currently included in our Carbon Compass methodology – Oil & Gas, Electric Power and Auto Manufacturing – we have chosen carbon intensity as our primary metric, which measures emissions relative to a given unit of output (e.g., kilogram CO_2 per megawatt hour of electricity generation).

Carbon intensity metrics will most effectively enable us to evaluate performance at the sector and the company level, inform our engagement with our clients and make capital allocation decisions. Evaluating changes in performance is crucial in an economy that needs to meet the Paris objectives while still generating energy for the world's growing needs.

More specifically, carbon intensity is decision-useful and impact-oriented because it:

- Allows us to set informative targets that are aligned with science-based scenarios, which require constraining total emissions on a pathway that ultimately achieves net-zero
- Enables us to meaningfully engage with new and existing clients and provide the capital necessary to help finance their transition, while reducing the carbon intensity of our portfolio

> It is estimated that
> **$100–150 trillion**
> will be needed globally over the next 30 years to achieve the Paris Agreement's goals[1]

- Enables us to evaluate both individual companies' and whole sectors' performance against decarbonization trajectories that must be achieved to align with the Paris Agreement
- More effectively reflects the progress that high-emitting companies and sectors are making in transitioning to lower-carbon production and products
- Allows for easier comparison across a portfolio of companies within a sector and between companies of different sizes
- Is less affected than absolute emissions by year-to-year emissions volatility, such as changes in companies' production

1.2. Sector Focus

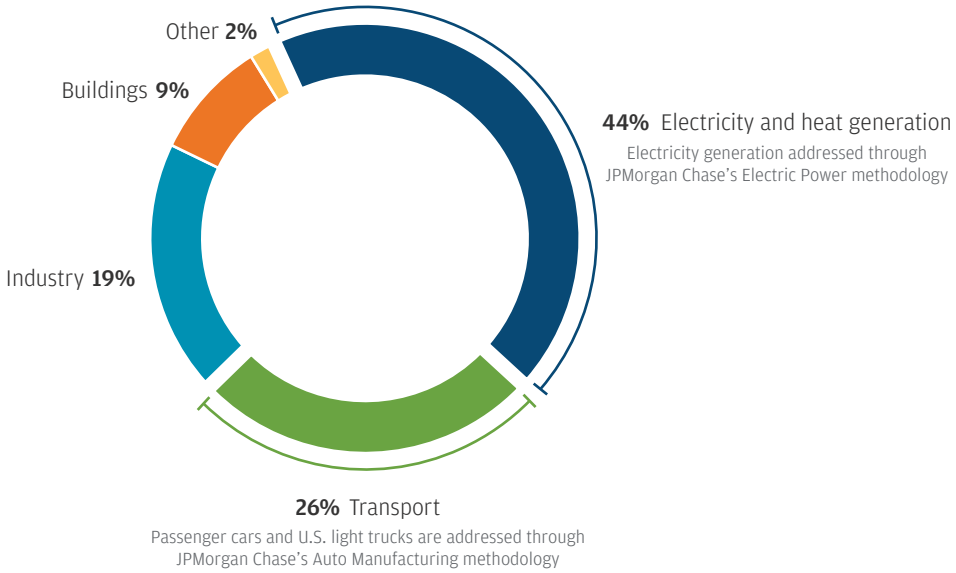
To start, JPMorgan Chase has developed targets to reduce the carbon intensity of our global Oil & Gas, Electric Power and Auto Manufacturing portfolios. We chose these sectors for several reasons. First, each represents a significant share of global GHG emissions. Second, viable transition pathways exist and are already being pursued by many companies in these sectors. Third, although improvements are still needed, there is sufficient data emerging for estimating each of these sectors' emissions performance and comparing it to a suitable Paris-aligned emissions reduction trajectory.

Additionally, these three sectors are key elements of the primary, secondary and end use segments of the energy value chain, and interactions among them are important to overall decarbonization. In primary energy, the world needs to reduce reliance on fossil fuels including oil and natural gas. Secondary energy providers (electric power companies) need to shift to renewable and low-carbon alternatives, and end use sectors such as Auto Manufacturing need to transition from developing products that rely on hydrocarbon-based primary energy sources to cleaner secondary energy sources, including electricity. According to IEA's most recent analyses, based on 2018 data, electricity and heat production account for approximately 44% of global CO_2 emissions from fuel combustion, the vast majority of which is attributable to power generation.[2] Similarly, transportation is responsible for 26% of direct CO_2 emissions from fuel combustion, nearly three quarters of which is from road vehicles.[3]

By initially focusing on the Oil & Gas, Electric Power and Auto Manufacturing sectors, our methodology recognizes key dependencies that will be crucial to meeting the goals of the Paris Agreement.

1 Climate Finance Markets and the Real Economy (SIFMA)
2 IEA (2018), IEA, Global CO_2 emissions by sector, 2018, IEA, Paris
3 Ibid

Global CO_2 Emissions from Fuel Combustion by End Use Sectors, 2018



Source: IEA

1.2.1 SECTOR-SPECIFIC ACTIVITIES AND EMISSIONS INCLUDED

The following highlights key aspects of the methodology for each of the three initial sectors we are focusing on:

- **Oil & Gas** – We have established distinct metrics and targets for Operational emissions from production and refining (Scopes 1 and 2) and End Use emissions from the combustion of oil and natural gas (Scope 3). This approach acknowledges that both Operational and End Use emissions are important to the sector's climate impact, and that there is a particular need to address operational methane emissions in the near term. Unburned methane that is leaked or vented has over twenty-five times the global warming potential of CO_2. In addition, methane is natural gas, itself a saleable, productive energy product, making its loss through leaks, venting or flaring a negative business and environmental impact.
- **Electric Power** – We focus on direct CO_2 emissions from power generation (Scope 1), which account for the vast majority of the sector's climate impact. The methodology is designed to track the fuel mix of power generation activities as it shifts from being predominantly fossil-based to more reliant on renewables, in a bid to rapidly decarbonize electricity grids globally.
- **Auto Manufacturing** – We measure direct emissions from auto manufacturing (Scopes 1 and 2) as well as "tank-to-wheel" emissions from vehicle end use (Scope 3). In addition to global passenger car sales, our methodology also includes U.S. sales of light trucks (SUVs, vans and pickups), as these are primarily sold as passenger vehicles and can account for as much as 30% of global sales for some portfolio companies.

Over time, we intend to expand Carbon Compass to address additional sectors, and we aim to extend and improve its application in accordance with best practices and improved data availability. For more information on the next steps associated with this commitment, see p. 23.

1.3. Our 2030 Global Portfolio Emissions Reduction Targets

The table below summarizes the current portfolio-weighted average carbon intensity of JPMorgan Chase's in-scope clients and the interim targets we have defined for 2030 for each sector, which are aligned to the goals of the Paris Agreement. For more information on each sector's target, including the scenario and methods used, the emissions included and other details, see descriptions of the sector-specific methodologies beginning on p. 10.

Sector		2019 Portfolio Baseline	2030 Portfolio Targets
Oil & Gas	**Operational** (Scopes 1 and 2)	6.1 g CO_2e/MJ	**-35%** reduction from 2019 baseline
	End Use (Scope 3)	66.5 g CO_2/MJ	**-15%** reduction from 2019 baseline
Electric Power (Scope 1)		375.6 kg CO_2/MWh	**115.4 kg CO_2/MWh** -69% reduction from 2019 baseline
Auto Manufacturing (Scopes 1, 2 and 3)		157.8 g CO_2e/km	**92.3 g CO_2e/km** -41% reduction from 2019 baseline

The values above are based on available data and scenario projections as of April 2021. Future updates to the IEA SDS scenario and/or other inputs – for example, to reflect changes in global emissions, available technologies or economic conditions – may result in changes to the required Paris-aligned trajectories, and therefore our targets for these sectors. Improving visibility, quality and availability of data may also necessitate a restatement of our 2019 baseline for one or more of the included sectors. We will regularly monitor these changes and assess the appropriateness of recalibrating our metrics and targets.

1.4. How We Will Use Our Targets

Going forward, we intend to align our lending and underwriting decisions in our chosen sectors to work towards achieving our portfolio targets. That means we will increasingly support those companies that are helping to advance the goals of the Paris Agreement, such as by expanding their investment in low- and zero-carbon energy sources and technologies and reducing their GHG emissions.

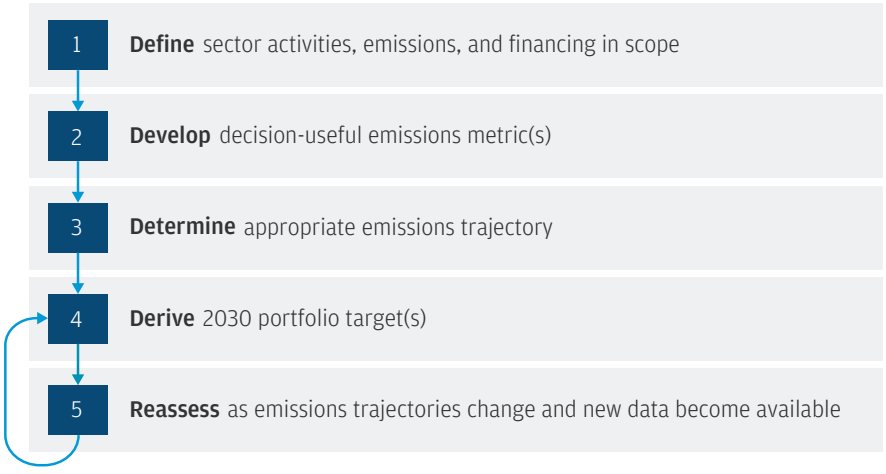
Significant amounts of capital and strategic advice will be needed to support companies in their low-carbon transition efforts, including help to decarbonize their operations and products and develop new technologies and solutions to address the critical challenges climate change presents. As a global financial services company, and one of the largest financiers to many sectors that will be significantly impacted by climate change and the energy transition, we are well-positioned to use our capital and expertise to encourage and help our clients to make the transition.

With our sector-specific and global portfolio-level commitment design, we are positioned to understand the unique challenges that each sector — and each company — faces in the low-carbon transition and to provide targeted support. We will continually look for opportunities to engage with new clients and to bank new sectors and technologies that focus on sustainability and low-carbon transition. We also recognize that — for both our clients and our own portfolios — the pathway of forward-looking targets is unlikely to be linear, as the trajectory of transition for most companies will be driven by factors such as major technological breakthroughs.

We will also take into account emissions performance metrics and stated targets in how we evaluate and make decisions about financing clients in our chosen sectors. This includes evaluating several key factors, including our clients' own forward-looking transition-related commitments, business strategies and capital planning. We believe our biggest impact comes from engaging with clients in these industries to inform their strategic and financial decisions. Our preference will always be to help companies transition; however, if needed, we will also consider reallocating capital so that our global sector portfolios in our chosen sectors are aligned with the goals of the Paris Agreement.

1.5. How We Designed Our Methodology for Each Sector

Carbon Compass incorporates what we believe are the most relevant, impactful, credible and decision-useful data and metrics to drive progress. As noted above, one of the essential features of our approach is the use of a tailored methodology for each included sector. The following summarizes the process we use, including key considerations at each step, and outlines the general framework for the sector-specific methodologies described in the remainder of this document.



Define sector activities, emissions and financing in scope. To be effective, our metrics and targets are based on the activities that generate the most GHG emissions for each sector and that are most important for each company's transition pathway. Therefore, our approach to each sector begins with careful consideration of key business activities and emissions drivers, available transition pathways, industry trends, regulatory context, key dependencies and our portfolio. This approach results in an initial definition of the activities, emissions and financing we want to track, which are key inputs for developing metrics and determining how to align them to the goals of the Paris Agreement. For example, for the Power sector, we decided to focus on direct emissions from power generation as it most closely aligns with the decarbonization trajectory of the sector.

Develop decision-useful emissions metric(s). Once key activities and emissions are defined, we work to develop one or more metrics for measuring and tracking emissions performance of our client companies and our portfolio as a whole. We begin by assessing available tools and approaches, including commonly used metrics, as well as available data sources and potential tradeoffs between different approaches. While our goal is to use standardized data and metrics where possible, in some cases we have chosen to combine multiple approaches and/or datasets in order to create a more robust, decision-useful metric. For example, for the Oil & Gas sector, we decided to track both Operational and End Use emissions performance, which then led to a decision to develop two distinct metrics.

Determine appropriate emissions trajectory. After metrics are chosen, we then determine how to align them to a Paris-aligned emissions reduction scenario. This process involves selecting a scenario for which appropriate, sector-specific projections are provided or can be reasonably extrapolated. In some cases, it is necessary to make strategic choices or adjustments to account for additional emissions included in our metrics. For example, for our Auto Manufacturing sector methodology, it was necessary to adopt an alternative scenario, which for this sector, is similar to the IEA SDS, and adjust for the inclusion of U.S. light trucks in addition to global passenger cars. After a scenario is selected and applied, the output is a Paris-aligned benchmark emissions trajectory for the chosen sector and performance metric.

Derive 2030 portfolio target(s). Using the benchmark emissions trajectory, we then derive where our global sector portfolio needs to be in 2030 in order to be considered Paris-aligned. Depending on the granularity of available scenario projections, the target may be expressed as a specific carbon intensity value or it may be a percentage reduction from a specified baseline. We have adopted targets from existing global scenarios that are Paris-aligned.

Reassess as emissions trajectories change and new data becomes available. Emissions scenarios, like those in IEA's World Energy Outlook, are usually updated on an annual basis, to reflect both relevant changes in the energy picture (e.g., available technologies, anticipated costs, new public policies) and current global energy and emissions trends. Subsequent updates may therefore lead to changes in the required trajectories aligned with the Paris Agreement, which may then necessitate updating our portfolio targets. At the same time, new or better data may become available for some sectors, which may create opportunities to incorporate additional emissions and/or improve the rigor of our chosen metrics. Therefore, a key step for each sector methodology is to periodically reassess key inputs and assumptions, and to recalibrate our targets as needed.

2 Oil & Gas

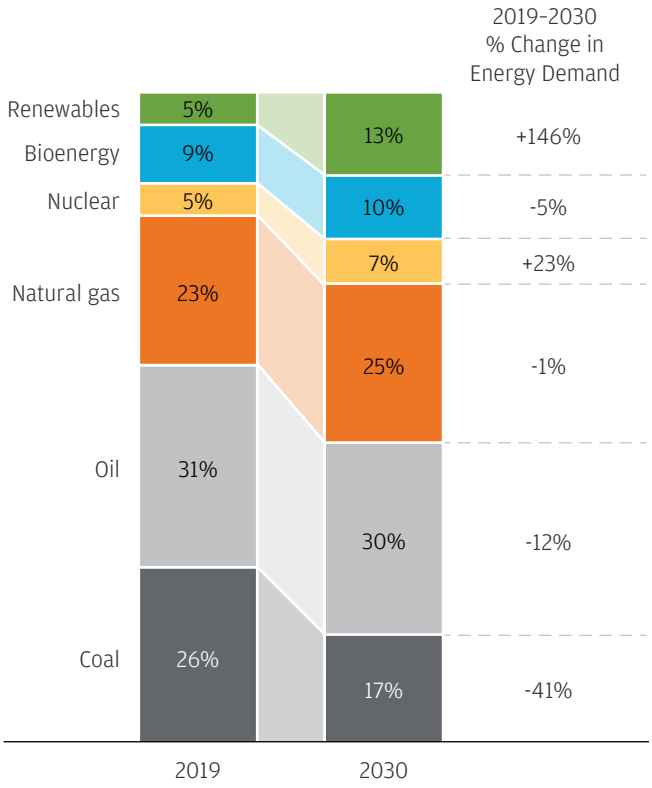
Combustion of fossil fuels is the primary driver of human-induced greenhouse gas emissions and resulting climate change. Energy use – most of which is currently fossil fuel-based – is estimated to account for approximately 78% of global man-made greenhouse gas emissions.[4] Thus, as society accelerates efforts to decarbonize, it will need to reduce its reliance on fossil-based energy resources. To be a part of a low-carbon future, the Oil & Gas sector will need to transform and innovate, which will require substantial capital and strategic support. This is a key reason why JPMorgan Chase's Carbon Compass includes the sector.

Most emissions reduction scenarios, including the IEA SDS, assume a role for oil and natural gas well into the transition required to meet the goals of the Paris Agreement (see adjoining figure). However, as governments, communities, investors and other industries pursue energy transition, there is growing pressure for the Oil & Gas sector to adapt to declining demand for its core products and shift its focus to supporting and capitalizing on development of a low-carbon energy system.

At the same time, there are concerns about the sector's direct emissions from the production of oil and natural gas that will still occur on the path to net-zero emissions. These include emissions associated with extraction, refining and transport and, in particular, the release of methane. While the scope and scale of these emissions vary by source and production method, they are significant. IEA's analysis, completed as part of the 2018 World Energy Outlook, showed Operational emissions represent between 10% and 30% of total lifecycle carbon intensity for oil and between 15% and 40% for natural gas.[5]

These challenges set the context and define two key objectives for decarbonization of the Oil & Gas sector: (1) reducing Operational CO_2 and methane emissions from oil and natural gas operations; and (2) reducing End Use carbon emissions by transitioning to renewables and other forms of low-carbon energy. Strategic options will vary depending on a given company's position in the value chain, progress already made in confronting the challenge and viability of available pathways. For example, to reduce Operational emissions, companies involved in upstream production and processing segments can

Energy Demand in the IEA SDS



Source: IEA World Energy Outlook 2020
Note: Percentages may not total 100 due to rounding

4 World Resources Institute, Climate Analysis Indicators Tool (CAIT), 2018
5 IEA Methane Tracker 2020 , IEA, Paris

invest to reduce venting and flaring of methane and switch to lower-carbon energy sources for production equipment. Companies with refining operations can work to reduce process-related CO_2 emissions. Companies can also reduce Operational carbon emissions by investing in carbon removal strategies such as carbon capture and storage, direct air capture or nature-based solutions and retaining ownership of or retiring carbon reduction credits.

To reduce End Use emissions, companies can produce energy with lower- or zero carbon content (e.g., renewables, biofuels, hydrogen) and reduce production of energy products with higher carbon content, which both responds to and supports other sectors' shift toward lower-carbon energy sources. Companies can also reduce End Use emissions by investing in removal strategies and transferring credits to customers or retiring credits on behalf of customers.

2.1. Key Decisions

To assess the alignment of JPMorgan Chase's Oil & Gas portfolio with the Paris Agreement, we evaluate both Operational (Scope 1 and 2) and End Use (combustion-related Scope 3) emissions performance of production and/or refining activities. Emissions performance is measured on an intensity basis and benchmarked to targets derived from the energy pathways published as part of the IEA SDS. By tracking both of these values, our approach is consistent with the strategies that oil and gas companies are using to decarbonize their businesses, and it provides a framework for engaging with them on their commitments and targets.

A key element of our approach to Operational emissions is recognition of the need for a rapid decline in fugitive and vented methane emissions and CO_2 from flaring. IEA analysis consistent with SDS suggests the need for a 75% reduction in methane emissions, a 90% reduction in CO_2 emissions from flaring and a 15% reduction in CO_2 emissions from all other activities and processes between 2019 and 2030. This framework is applied to our portfolio to derive our 2030 reduction target of 35% for Operational carbon intensity from a 2019 baseline.

Our 2030 target for End Use carbon intensity is a 15% reduction, measured from a 2019 baseline, which reflects a decline in oil and gas demand and associated emissions under the IEA SDS by 2030, as well as rising demand for renewable energy. Through 2030, the IEA SDS includes a 13% decrease in CO_2 emissions from oil and natural gas use as a result of shifts away from oil and toward natural gas, as well as a nearly 8% drop in global oil and gas demand. Over the same period, demand for bioenergy and non-hydro renewable energy under the IEA SDS increases by 50%. These analyses reflect the need for companies in the Oil & Gas sector to transition from production of high-carbon fuels to low- and zero-carbon sources of energy.

Our approach is also adaptable to the different business models within the sector. Depending on the nature of a given company – e.g., whether it is integrated, with operations across the value chain, or focused on specific segments such as production or refining – the emissions sources and range of available and appropriate decarbonization strategies vary significantly. Yet, even as we support unique strategies at the company level, our metrics and targets will help us maintain a holistic view of the industry and how each company's approach fits within that picture.

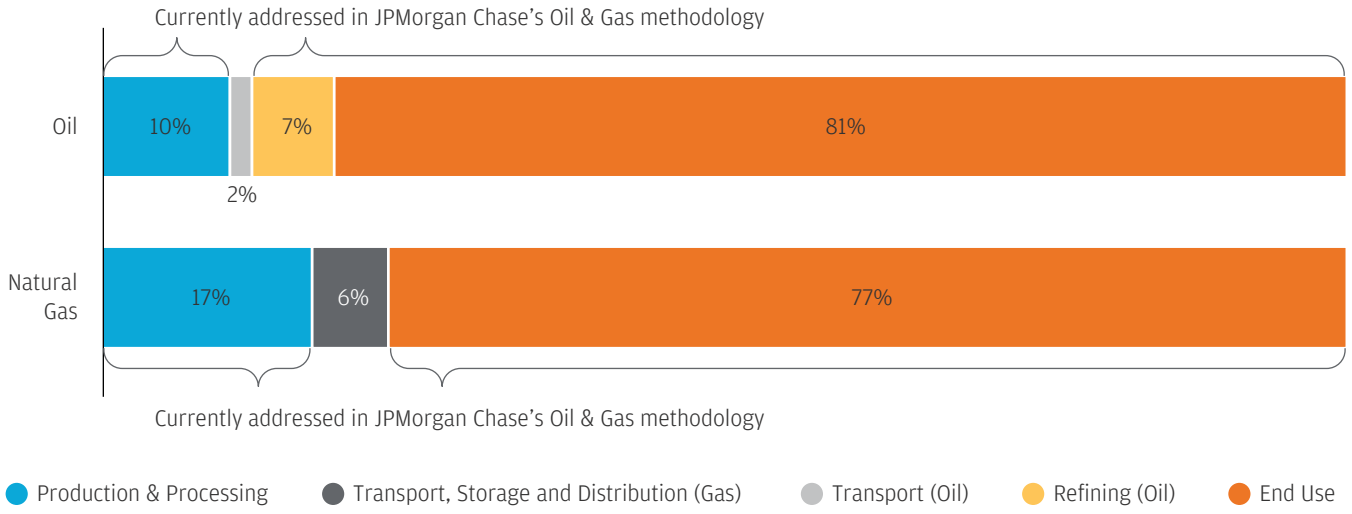
JPMORGAN CHASE PARIS COMMITMENT – OIL & GAS

Activity Focus	Production and refining of oil and natural gas for end use combustion; production of low-carbon fuels; renewable energy generation by in-scope Oil & Gas companies
Scope	Scope 1 and 2 CO_2 and methane emissions from production and refining of oil, natural gas, bioenergy and other energy products Scope 3 End Use CO_2 emissions from combustion of oil and natural gas
Metric	Operational carbon intensity: g CO_2e/MJ End Use carbon intensity: g CO_2/MJ
Scenario	Operational: IEA SDS with methane added based on supplemental IEA data consistent with SDS End Use: IEA SDS with adjustments for non-energy oil and natural gas demand
2030 Target	Operational: 35% intensity reduction from 2019 baseline End Use: 15% intensity reduction from 2019 baseline
Data Sources	IEA World Energy Outlook, Wood Mackenzie, S&P Global SNL Financial, company disclosures

2.2. Boundaries

JPMorgan Chase's Paris commitment for the Oil & Gas sector is initially focused on all portfolio companies that are involved in production and/or refining activities. This includes both pure-play exploration and production (E&P) and refining companies, integrated majors, nationally-owned oil companies, as well as diversified companies with oil and gas activities. Production of low-carbon fuels, such as biofuels or hydrogen, and generation of renewable electricity by oil and gas companies are also included. As more data becomes available, we also plan to extend the commitment to include oil and natural gas transportation.

Oil & Gas Sector Value Chains and Emission Sources



Source: IEA, JPMorgan Chase;
Note: Represents lifecycle emissions of Oil & Gas value chains based on analysis of IEA data

For evaluation of Operational emissions performance, the methodology captures all Scope 1 and 2 emissions, including methane, associated with the production and refining of oil, natural gas liquids, natural gas, biofuels and other low-carbon fuels such as hydrogen.

For End Use, the methodology captures Scope 3 CO_2 emissions from the combustion of energy produced by oil and gas companies. Depending on a company's operations, energy products may include natural gas, unrefined liquids products (e.g., crude oil) and refined liquids (e.g., gasoline, diesel). The methodology assumes no End Use emissions from the use of bioenergy, hydrogen or renewable electricity. Scope 3 supply chain emissions are not included as these are negligible and do not contribute to the focus on products combusted for energy use.

As noted above, the methodology does not currently include transportation of oil and natural gas products, as data quality is a particular challenge for this segment of the industry. We plan to work with companies with transportation operations, industry trade groups and data providers to incorporate the segment into the methodology in the future.

The methodology currently allows all types of company-implemented carbon removals – including carbon capture, use and storage (CCS/CCUS), direct air capture and nature-based solutions – to be credited against company emissions, provided that they are properly attributed according to standard GHG accounting protocols. The methodology also allows crediting of reductions associated with company-implemented or third-party carbon removal projects that have been validated and registered on an eligible platform. Additionally, the methodology allows renewable energy credits (RECs) to be credited against Scope 2 emissions from purchased electricity. At this time, the methodology does not give credit for other company-implemented or third-party reduction projects, such as for avoided emissions. We recognize that this is an evolving space and remain committed to considering other crediting mechanisms as technology and protocols evolve.

2.3. Metrics

JPMorgan Chase's Oil & Gas sector methodology includes two calculated carbon intensity values to assess Paris alignment and provide a clear line of sight to the climate-related priorities of our clients:

1. **Operational carbon intensity** – expressed as grams CO_2e per megajoule (g CO_2e/MJ) of embedded energy – to track reduction in methane and CO_2 emissions from operations
2. **End Use carbon intensity** – expressed as grams CO_2 per megajoule (g CO_2/MJ) of embedded energy – to track the transition to low- and zero-carbon energy, such as bioenergy and renewables

The Operational carbon intensity metric is calculated as CO_2 and methane emissions divided by energy embedded in natural gas, oil and bioenergy that is produced. For oil refineries, refinery throughput is used in the denominator. The End Use carbon intensity metric is calculated as the emissions resulting from combustion of natural gas, oil and refined products divided by the energy embedded in these products, as well as advanced low-carbon fuels (e.g., biofuels, hydrogen) and renewable electricity that oil and gas companies have started to develop.

By tracking these values both at the company and portfolio level, we will gain added insight and a means to align our financing with the industry-wide strategic imperatives created by the energy transition.

$$\textbf{Operational carbon intensity} = \frac{\text{(Scope 1 + 2 Emissions - Credits (g } CO_2e\text{))}}{\text{(Embedded Energy in Oil + Gas + Bioenergy (MJ))}}$$

$$\textbf{End Use carbon intensity} = \frac{\text{(Scope 3 Emissions - Credits (g } CO_2\text{))}}{\text{(Embedded Energy in Oil + Gas + Bioenergy + Other Renewables (MJ))}}$$

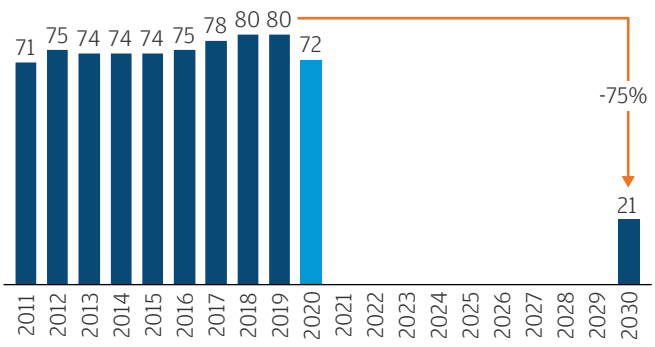
2.4. Scenario and Target

JPMorgan Chase uses the assumptions and data associated with the IEA SDS to define a benchmark trajectory and 2030 targets for our Oil & Gas sector portfolio. We selected this scenario because it is aligned with the goals of the Paris Agreement, it is updated on a regular basis and it is associated with detailed emissions and energy demand projections for oil and natural gas as a share of the overall energy mix. Using this benchmark, and the composition of our portfolio, we calculate IEA SDS-aligned rates of change and resulting g CO_2e/MJ and g CO_2/MJ targets for the Operational and End Use carbon intensities, respectively.

The Operational carbon intensity benchmark is calculated by applying the following framework to our portfolio baseline in 2019:

- 75% reduction in methane emissions, as indicated by IEA's Methane Tracker 2021
- 90% reduction in carbon dioxide emissions from flaring, as referenced in IEA's 2020 report on gas flaring[6]
- 15% reduction in carbon dioxide emissions associated with other energy use (e.g., engines used to power compressors, drilling rigs and other equipment)

Oil & Gas Sector Methane Emissions in $MtCH_4$



Source: IEA Methane Tracker 2021

6 IEA (2020), Putting gas flaring in the spotlight, IEA, Paris

This results in a 2030 portfolio rate of change target of 35%, which is a slightly lower percentage than the overall carbon intensity reduction published by the IEA. The difference is driven by our analysis that the companies in our portfolio have lower average operating emissions than the global average. However, we recognize the importance of a focused effort to reduce methane emissions and reduce flaring and venting in the oil and natural gas industry, which is why we have set a target that is appropriately challenging for ourselves and for our clients. This rate of reduction target will be applied to JPMorgan Chase's 2019 global portfolio Operational carbon intensity of 6.1 g CO_2e/MJ.

The End Use carbon intensity benchmark and target are calculated using carbon dioxide emissions and embedded energy from the IEA SDS for 2019 and 2030. As of April 2021, this results in a rate of change of 15%, which is then applied to JPMorgan Chase's 2019 global portfolio End Use carbon intensity of 66.5 g CO_2/MJ.

We intend to review the IEA's World Energy Outlook projections each year and assess the appropriateness of recalibrating our adopted benchmark targets.

We recognize that the use of target rates of change applied to carbon intensity metrics could, in theory, become quickly disconnected from necessary reductions in absolute emissions – for example, if overall oil and natural gas demand remains higher than assumed when the targets were calculated. We remain open to recalibrating our targets if subsequent updates to IEA SDS result in a more stringent reduction pathway.

2.5. Data Sources and Considerations

JPMorgan Chase has decided to use upstream oil and natural gas and refining data collected and maintained by the energy and resources consultancy Wood Mackenzie (WoodMac) to compute our clients' carbon intensity. Production and refining data from WoodMac uses the net working interest method of aggregating asset-level (field- or refinery-level) data up to the parent. Additional sources including direct company disclosures and syndicated databases are also used to collect and verify specific data points for our model. For companies not adequately covered by these sources, we use proxy values equivalent to the 75th percentile of the available data for other portfolio companies, based on the type of operations.

Data quality and reliability is a well-known challenge for the Oil & Gas sector. This arises from inconsistencies in measurement, management and reporting of data across the industry, as well as the lack of reliable and standardized techniques for measurement in areas such as methane. Although the situation is gradually improving, it remains a key concern of industry groups, NGOs and other stakeholders engaged in efforts to decarbonize the sector, and it was an important consideration in how our Oil & Gas sector methodology was formulated.

Currently, reported methane emissions data often relies on inference methods. JPMorgan Chase is committed to working with industry partners and NGOs to help make direct measurement technologies the preferred method of tracking and reporting methane emissions. This should materially improve the quality of data available. We will continue to incorporate best available methane emissions data, given its environmental importance and the industry's focus on the issue.

Having identified that the production of biofuels and the use of carbon credits are key elements of the sector's overall decarbonization strategy, we have incorporated them in the methodology despite the unavailability of consistent data today.

We will continue to engage with our Oil & Gas portfolio companies and work with other industry stakeholders to improve data availability and reliability. Over time, we expect that increased consistency in approaches to measure and report emissions will lead to advances that we can incorporate into our Carbon Compass methodology.

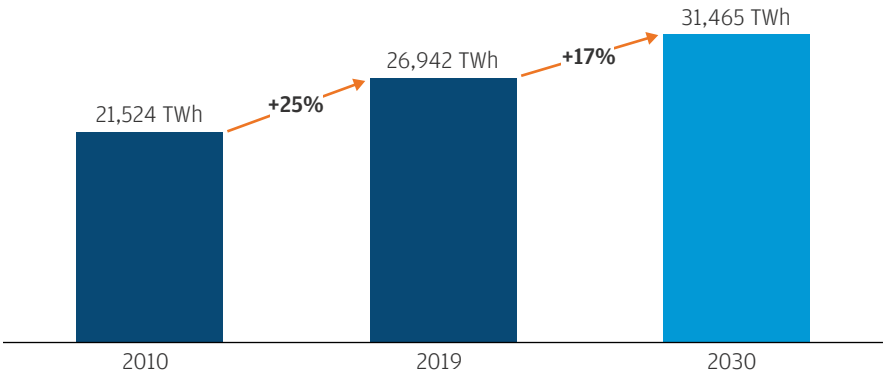
3 Electric Power

Electric power generation is an important focus of our efforts to address climate change. Globally, power generation is the single largest use for fossil fuels and thus a central source of climate-altering emissions. Moreover, electrification is a key part of strategies for decarbonizing other sectors responsible for significant emissions, including transportation, industry and buildings. As a result, demand for electricity is already growing faster than that for other forms of energy, and electricity is expected to meet an increased share of global energy needs through 2030 and beyond (see figure below). Decarbonizing the sector is important – because, if overall demand grows and decarbonization proceeds too slowly, then the sector's emissions could continue to increase.

Today, the Electric Power sector produces significant emissions due to continued reliance on fossil fuels, especially coal. Decarbonization therefore hinges on accelerating deployment of renewable and other low-carbon generating capacity, both to meet new demand and ultimately displace legacy fossil-fired sources. Over time, technologies such as energy storage, smart grids and carbon capture are also likely to play an important role in improving the sector's performance.

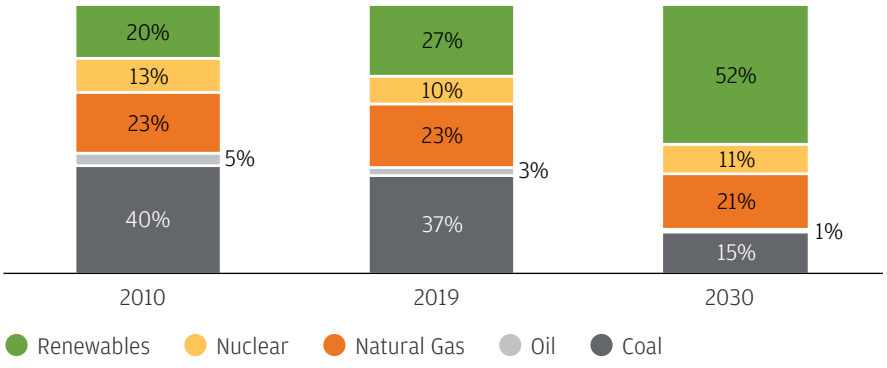
Navigating this transition will require significant investment and innovative financing solutions to support new infrastructure, drive development and commercialization of new technologies, manage risk and improve cost-effectiveness.

Global Electricity Generation in the IEA SDS



Source: IEA World Energy Outlook 2020

Global Electricity Generation Fuel Mix In the IEA SDS



Source: IEA World Energy Outlook 2020
Note: Percentages may not total 100 due to rounding

3.1. Key Decisions

To assess Paris alignment of JPMorgan Chase's Electric Power portfolio, we evaluate direct Scope 1 CO_2 emissions for companies generating electricity. This enables us to focus directly on the sector's core business activity and the primary driver of its GHG emissions.

Emissions performance is measured on a carbon intensity basis – kilograms (kg) CO_2 per megawatt-hour (MWh) of electricity generated – and benchmarked to the sector-specific energy and emissions pathways published as part of IEA SDS. Using currently available data and assumptions, this results in a 2030 portfolio target of 115.4 kg CO_2/MWh, which represents a 69% reduction from our 2019 portfolio baseline of 375.6 kg CO_2/MWh.

As with our approach to other sectors, our target is pegged to what the IEA SDS scenario defines as necessary to align with the goals of the Paris Agreement, and we will continually evaluate and recalibrate the target as the scenario is updated and/or new data becomes available, generally on an annual basis.

Furthermore, our 2030 target is derived from the IEA SDS pathway for OECD countries, which implies more stringent (i.e., lower) carbon intensities than the non-OECD or overall World pathways. We chose this both because the current geographic distribution of our Power sector portfolio is largely comprised of companies in OECD countries and because we believe it is important to set a high bar for overall performance between now and 2030.

JPMORGAN CHASE PARIS COMMITMENT – ELECTRIC POWER

Activity Focus	Power generation
Scope	Scope 1 CO_2 emissions from fuel combustion for power generation
Metric	kg CO_2/MWh
Benchmark Scenario	IEA SDS OECD
2030 Target	115.4 kg CO_2/MWh
Data Sources	IEA World Energy Outlook, S&P Global Trucost, S&P Global SNL Financial, company disclosures

3.2. Boundaries

For the purposes of our Carbon Compass methodology, the Electric Power sector consists of all portfolio companies that are engaged in electricity generation. This includes both public and investor-owned utility companies, independent power producers, electric cooperatives, as well as diversified companies with power generation activities.

To evaluate the sector's performance, we measure companies' direct Scope 1 carbon emissions from power generation. This allows us to concentrate on the part of the value chain responsible for the overwhelming majority of the sector's emissions and thus where the greatest amount of strategic focus and investment are required. In comparison, Scope 2 and Scope 3 emissions for companies that generate electricity are generally relatively minor and/or do not relate directly to power generation. Focusing on direct Scope 1 emissions is also consistent with the modeling approach in IEA's World Energy Outlook projections, which allows for direct comparison of our portfolio with IEA benchmark scenario data.

3.3. Metric

We use a carbon intensity metric – kilograms (kg) CO_2 per megawatt-hour (MWh) of electricity generated – to evaluate the alignment of our Electric Power portfolio with the Paris Agreement.

$$\frac{\Sigma \text{ kg } CO_2 \text{ (from power generation)}}{\Sigma \text{ MWh of electricity}}$$

An intensity-based metric is particularly well suited to the Electric Power sector because it captures a wide range of fuel mixes and technology solutions and their impact on emissions performance over time. An intensity-based metric also allows for more consistent tracking and comparison between companies without the need for complex methods to allocate shares of absolute emissions or adjust for market volatility or other changes unrelated to emissions performance.

3.4. Scenario and Target

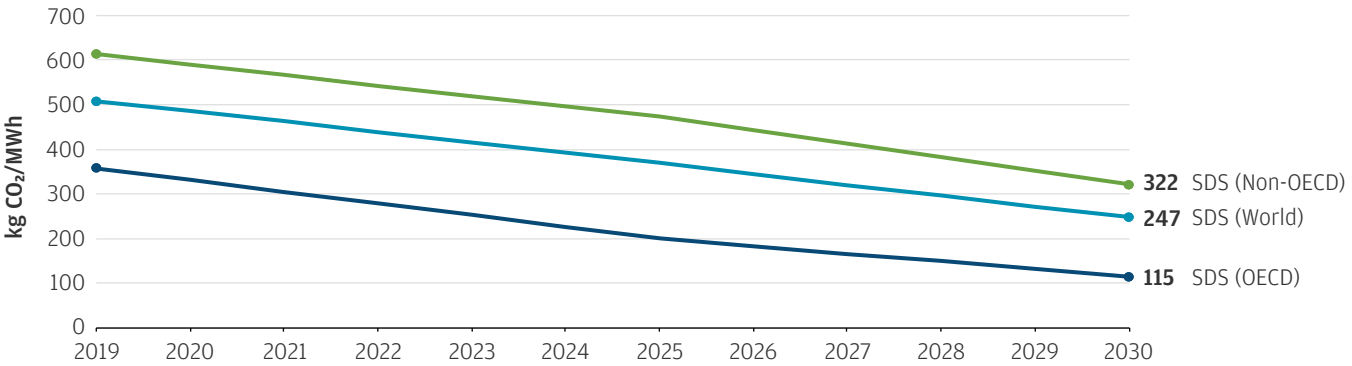
Our Carbon Compass methodology uses the IEA SDS to set benchmark targets for JPMorgan Chase's Electric Power portfolio. This scenario was selected for several reasons. First, it is aligned to the goals of the Paris Agreement, meaning that it assumes an appropriate transition of the global energy system in order to limit the increase in global average temperature to well below 2°C above pre-industrial levels. Second, it is updated on a regular basis, ensuring that it keeps pace with available data, emissions trends and scientific understanding of the climate challenge. Third, it corresponds to detailed World Energy Outlook projections for electricity generation by geography, technology and fuel type, thereby enabling us to calculate average carbon intensities corresponding to a Paris-aligned benchmark trajectory for the sector.

Under the SDS scenario, IEA projects electricity generation levels for future years on a country and regional basis. This includes decarbonization pathways for three broad regions: OECD, Non-OECD and World. Projections for the OECD region imply substantially more stringent (i.e., lower) carbon intensities than those for non-OECD countries, reflecting the expectation that OECD countries will transition more aggressively in the near term.

Considering the current geographic distribution of companies in JPMorgan Chase's Electric Power sector portfolio, we have chosen to use a single benchmark aligned to the OECD trajectory. This effectively sets a higher standard of performance than if we used a blended benchmark. Using this trajectory, we then derive a Paris-aligned portfolio intensity target for 2030. Based on IEA's current projections for the OECD region, this target is 115.4 kg CO_2/MWh.

We intend to review the IEA's World Energy Outlook projections each year and assess the appropriateness of recalibrating our adopted benchmark targets.

Electric Power Decarbonization Trajectories for World, OECD and Non-OECD Regions in the IEA SDS



Source: IEA, World Energy Outlook 2020;
Note: Reduction trajectory has been linearly interpolated for visual purposes and not representative of specific annual targets along the way

3.5. Data Sources and Considerations

To calculate the carbon intensity of companies in JPMorgan Chase's Electric Power sector portfolio, we use generation data sourced from S&P Trucost and apply emissions factors based on fuel type and region that are derived from IEA World Energy Outlook data. If generation data is unavailable, we use installed capacity from S&P SNL Financial and estimated carbon intensity by applying average utilization rates, based on fuel type and region, and the aforementioned emissions factors. As part of our review process, we intend to reassess the emissions factors' continued appropriateness when applied at the individual company level.

For a very small proportion of companies in our portfolio for which no data is available, a default carbon intensity based on a relatively conservative fuel mix that is equal parts coal and natural gas will be assigned, unless the company's NAICS codes indicate it to be a zero-emitting power producer, in which case it is assigned a carbon intensity of zero.

We acknowledge that such proxy methods are subject to limitations in the assumptions and data used to apply them and therefore that companies' actual performance may differ from our estimates. JPMorgan Chase will continue to work with companies and other stakeholders to improve overall quality and availability of data. We will also continually review and assess the need to update and/or strengthen our approach to estimation, both when new World Energy Outlook projections are released and as general data availability improves.

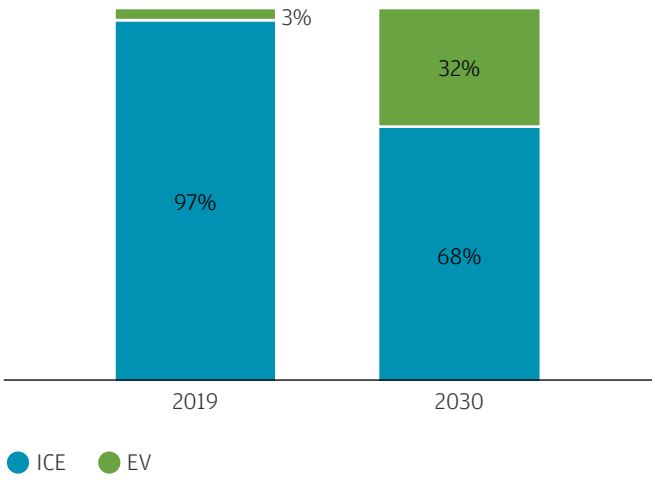
4 Auto Manufacturing

According to 2018 IEA data, transportation is responsible for 26% of direct CO_2 emissions from fuel combustion, nearly three quarters of which is from road vehicles.[7] Although automotive efficiency is improving, global vehicle sales continue to grow and buyers in many markets continue to shift toward larger, heavier vehicles such as SUVs – trends that can slow or limit gains in overall emissions performance.[8] Continued decarbonization of the sector is therefore a significant global priority and a key part of the energy transition necessary to limit climate change.

Transition strategies for the automotive sector generally call for: (1) increased efficiency of internal combustion engine (ICE) vehicles; (2) conversion of a significant portion of the fleet to electric vehicles (EVs); (3) further decarbonization of the electric grid; and (4) increased utilization and/or reduced per capita vehicle miles traveled through strategies including demand management and modal shift (e.g., from private to public transport).

Auto manufacturers contribute most directly to the first two strategies above. Namely, as companies' sales of more efficient ICE vehicles and EVs increase, the average carbon intensity of their fleets decline, indicating progress toward Paris alignment in terms of technology deployment. This is precisely the pathway for the Auto Manufacturing sector that many emissions-reduction scenarios envision, as they assume increasing electrification to 2030 and beyond.

Global Share of New Vehicle Sales in the SDS



Source: IEA, World Energy Outlook 2020

In recent years, some leading auto manufacturers have embraced the goal of either partial or total electrification and announced increasingly ambitious plans to shift their product portfolios accordingly. This approach has been driven by numerous factors including regulation, technological advances and competition. Yet, even as these forces strengthen, shifting the course of the entire global auto industry will be a huge undertaking. New and further investments in technology, manufacturing, infrastructure and services will be required, and these changes will have to coincide with equally massive transitions in other parts of the economy – including the Electric Power and Oil & Gas sectors. This is one reason why Auto Manufacturing is one of the first three sectors included in Carbon Compass, and why we are working to support clients in all three sectors as they develop and implement their transition strategies.

7 IEA (2018), Global CO_2 emissions by sector, 2018, IEA, Paris
8 IEA (2020), Tracking Transport 2020, IEA, Paris

4.1. Key Decisions

To assess the Paris alignment of JPMorgan Chase's Auto Manufacturing portfolio, we evaluate carbon intensity of global sales of new passenger cars and U.S. sales of light trucks (e.g., SUVs, vans, pickups). Both manufacturing emissions (Scopes 1 and 2) and emissions from the end use of vehicles (Scope 3) are included. The inclusion of U.S. light truck sales is a key decision, as most of these vehicles are used as passenger vehicles and they can account for up to 30% of global sales for some portfolio companies.

The Auto Manufacturing sector methodology uses an intensity-based metric of sales-weighted average grams of carbon dioxide equivalent (CO_2e) emissions per kilometer for new vehicles sold – g CO_2e/km – which provides a clear indication of decarbonization performance over time.

To benchmark alignment with the Paris Agreement, our methodology uses the IEA Energy Technology Perspectives (ETP) Beyond 2°C scenario (B2DS) as adapted by the Science-Based Targets initiative's (SBTi) guidance for the Transport sector. Using this trajectory, we have established a 2030 Auto Manufacturing sector portfolio intensity target of 92.3 g CO_2e/km, representing a 41% reduction from our 2019 baseline of 157.8 g CO_2e/km.

JPMORGAN CHASE PARIS COMMITMENT – AUTO MANUFACTURING

Activity Focus	Manufacturing of global passenger cars and U.S. light trucks
Emissions Scope	Scope 1 and 2 GHG emissions from manufacturing Scope 3 end use "tank-to-wheel" emissions from fuel combustion, based on New European Driving Cycle (NEDC)
Metric	g CO_2e/km
Scenario	SBTi interpretation of IEA ETP B2DS
2030 Target	92.3 g CO_2e/km
Data Sources	Transition Pathway Initiative (TPI), National Highway Transportation Safety Administration (NHTSA), IHS Markit, S&P Global Trucost

4.2. Boundaries

For purposes of the Carbon Compass methodology, JPMorgan Chase's Auto Manufacturing sector portfolio includes companies that sell passenger vehicles anywhere in the world.

To evaluate companies' performance, we focus on emissions associated with global sales of new passenger cars and U.S. sales of light trucks (SUVs, vans, pickups). We include U.S. light trucks both because they account for a significant share (approximately 50%[9]) of total U.S. passenger vehicle sales and because of differences in how they are regulated in the U.S. versus other global markets (i.e., as passenger versus commercial vehicles).

Given significantly greater market and regulatory complexity, and limitations on available data, we currently do not evaluate portfolio companies that exclusively sell medium- and heavy-duty commercial vehicles, nor do we include any companies' sales of commercial vehicles. We will continue to evaluate how we might include these companies and/or vehicle types in the future.

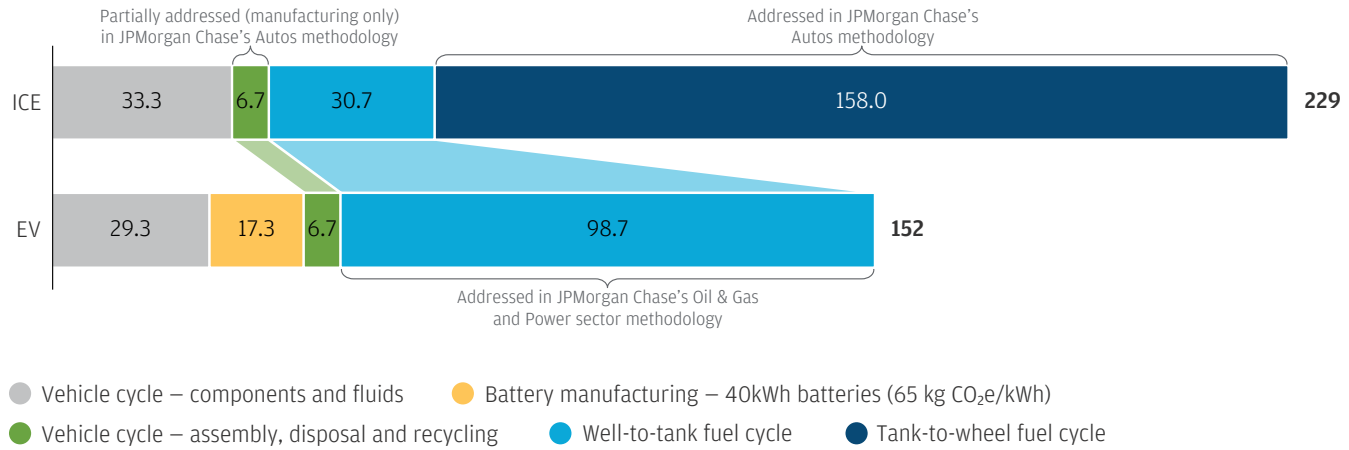
For passenger vehicles included, we evaluate "tank-to-wheel" (i.e., tailpipe) emissions from vehicle use (Scope 3 – end use) and emissions from manufacturing (Scopes 1 and 2). The focus on end use emissions from companies' new passenger vehicle sales reflects that these represent the largest share of the sector's overall emissions. We do not currently include emissions from the production and delivery of the energy used by vehicles (Scope 3 – fuel production). This omission keeps the Auto Manufacturing sector metric focused on the vehicles that they are producing, while also reflecting that JPMorgan Chase's Carbon Compass already covers the Oil & Gas and Electric Power sectors, which provide fuel for ICEs and EVs, respectively.

9 National Highway Transportation Safety Administration (NHTSA), 2017 model year sales data

We also do not currently include emissions "embedded" in parts and materials that manufacturers purchase from third parties (Scope 3 – supply chain). This choice results from insufficient supply chain reporting by manufacturers. However, we recognize that embedded manufacturing emissions are material to comprehensive assessment of the Auto Manufacturing sector's Paris alignment, especially as EVs – whose supply chain emissions are approximately double those for ICEs, primarily due to battery production – make up a growing share of total sales. To address this gap, when evaluating individual auto companies, we will collect and qualitatively analyze manufacturer data on supply chain plans and goals, particularly as they relate to efforts toward reducing emissions from battery manufacturing. We will also continue to evaluate how we might include supply chain emissions in the future, when the required data is available.

Both Scope 1 and Scope 2 emissions include CO_2, methane (CH4) and nitrous oxide (N2O) emissions, as reported by auto manufacturers. Scope 3 emissions include only CO_2, which dominates tailpipe emissions.

Comparative Life-Cycle Greenhouse Gas Emissions Over 10-Year Lifetime of An Average Mid-Size Car by Powertrain, 2018



Source: IEA

Note: Additional emissions with 80 kWh battery size consists of 2.6 t CO_2e in vehicle cycle – batteries (65 kg CO_2/kWh) and 1.4 t CO_2-eq in 100 kg CO_2/kWh battery manufacturing

4.3. Metric

To evaluate Auto Manufacturing companies' alignment with the Paris Agreement, we use the intensity-based metric of sales-weighted average grams of carbon dioxide equivalent (CO_2e) emissions per kilometer for new cars sold, or g CO_2e/km. As noted above, our calculation combines emissions from manufacturing (Scopes 1 and 2) with "tank-to-wheel" (TTW) emissions (Scope 3 – end use). To calculate Scopes 1 and 2 emissions per kilometer driven, vehicles are assumed to have 150,000 km of vehicle life – equivalent to approximately 11 years of driving, measured on a global average basis.

This intensity-based approach is particularly useful for evaluating companies' performance on a continuous basis and effectively incorporating end use emissions, which account for the majority of the sector's climate-related impact. The metric also provides the most flexible means of tracking progress on the sector's two key strategies for decarbonization: improving efficiency of ICE vehicles and increasing adoption of EVs.

$$\frac{\text{Scopes 1 \& 2 Emissions from Manufacturing (g } CO_2\text{e)}}{\text{Lifetime Kilometers of New Global Cars and U.S. Light Trucks (km)}} + \text{TTW Emissions of Global Cars and U.S. Light Trucks (g } CO_2\text{/km)}$$

4.4. Scenario and Target

The Paris-aligned benchmark trajectory for JPMorgan Chase's Auto Manufacturing sector portfolio is based on the IEA ETP B2DS as adapted and applied by SBTi's Sector Decarbonization Approach (SDA) Transport tool. The B2DS scenario is broadly similar to the IEA SDS scenario used for our Oil & Gas and Electric Power sector methodologies. However, we could not use the SDS directly because IEA does not publish the detailed SDS modeling results that would be needed to derive relevant portfolio targets for the Auto Manufacturing sector. In contrast, the SBTi SDA Transport tool's refinement of B2DS scenario enables us to derive the necessary targets, particularly those applicable to passenger vehicle sales.

Using relevant current projections from the SBTi SDA Transport tool and adjusting for inclusion of Scope 1 and 2 manufacturing emissions and U.S. light truck sales, JPMorgan Chase has set a 2030 target of 92.3 g CO_2e/km for our Auto Manufacturing sector portfolio, representing a 41% reduction from our 2019 baseline of 157.8 g CO_2e/km. Note that we estimate this baseline to be slightly higher than the current global average for the industry, reflecting JPMorgan Chase's greater exposure to car and light truck sales in the U.S., where fuel economies and regulations currently lag those of other major markets. This means that our target entails a steeper decline to achieve 2030 Paris alignment than if we started from a baseline more consistent with the global average.

Historically, the B2DS has been updated every three years as part of IEA's Energy Technology Perspectives report. In its most recent update (2020) IEA discontinued the B2DS scenario in favor of the SDS scenario. As with its other sector methodologies based on the SDS scenario, we will review the new IEA projections and assess the appropriateness of recalibrating its adopted benchmark targets.

4.5. Data Sources and Considerations

To estimate sales-weighted carbon intensity values for each company in JPMorgan Chase's Auto Manufacturing sector portfolio, we use the approach developed by the Transition Pathway Initiative (TPI) for deriving g CO_2/km from reported average miles per gallon (MPG), with small modifications to include U.S. light truck sales and Scope 1 and 2 manufacturing emissions.

We estimate the carbon intensity for U.S. light trucks using TPI's methodology and the company's average fuel economy for light trucks reported by the NHTSA. This is combined with the company's TPI-reported value for global cars on a sales-weighted basis. Finally, Scope 1 and 2 emissions, amortized over the expected life of manufactured vehicles, are added to Scope 3 intensity to derive the company's combined g CO_2e/km value.

For a very small proportion of companies, certain pieces of data required for the metric calculation may not be available every year. In such cases, JPMorgan Chase will seek to address any gaps using a defined data waterfall approach that may include company-disclosed figures, provided they are verified and prepared in line with the TPI methodology. Failing that, we use proxy values equivalent to the 75th percentile of the available data for other portfolio companies.

Finally, it should be noted that calculations for our Auto Manufacturing sector portfolio will generally be subject to a two to three-year data lag. This is due to a significant lag in reporting of certified model year fuel economy and sales values due to typically long sales cycles (i.e., up to 22 months spanning three calendar years) for individual model years in the U.S. This means that the last available metric based on fully verified data is as of 2017, and to calculate our 2018 portfolio value we rely on NHTSA's preliminary mid-model year report that is subject to change. The 2019 metric is an extrapolation based on past performance and will be restated, along with 2018, when NHTSA verified data is published.

As with the Oil & Gas sector described above, the methodology currently allows all types of company-implemented carbon removals – including carbon capture, use and storage (CCS/CCUS), direct air capture and nature-based solutions – to be credited against company Scope 1 and Scope 3 emissions, provided that they are properly attributed according to standard GHG accounting protocols. The methodology also allows crediting of reductions associated with third-party carbon removals projects that have been validated and registered on an eligible platform. At this time, the methodology does not give credit for other company-implemented or third-party reduction projects, such as for avoided emissions. We recognize that this is an evolving space and remain committed to considering other crediting mechanisms as technology and protocols evolves. Renewable energy credits (RECs) can be applied against Scope 2 emissions from purchased electricity used in auto production.

5 Next Steps

Our Carbon Compass methodology establishes a strong foundation for implementation of JPMorgan Chase's Paris-aligned financing commitment, including clear frameworks for how we will measure progress and engage with clients in key sectors, beginning with Oil & Gas, Electric Power and Auto Manufacturing sectors. We believe our approach reflects the ambition, thoughtfulness and rigor that our clients and other stakeholders expect from us, and which will be crucial as we work together to help accelerate the transition to a low-carbon economy. Yet, these are just the first steps of the longer journey that our Paris-aligned financing commitment represents.

We will engage with and provide annual updates to our stakeholders on the implementation of our commitment. Over time as scenarios and data improve, technology develops and we engage more with clients, we will look at what it would take to enhance our targets to bring them in line with net-zero by 2050. Additionally, we will continue to evaluate the appropriateness and technical feasibility of expanding our commitment to other sectors.

We understand the urgency and the scale of the climate challenge. Our Paris-aligned financing commitment, combined with a number of other strategic efforts across our business, is a key step forward. We look forward to building on it and doing our part to achieve the goals of the Paris Agreement.

Abbreviations

B2DS	Beyond 2°C Scenario
CCS	carbon capture and storage
CCUS	carbon capture, use and storage
CH_4	methane
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
ETP	Energy Technology Perspectives
EV	electric vehicle
g	gram
GHG	greenhouse gas
ICE	internal combustion engine
IEA	International Energy Agency
JPMC	JPMorgan Chase
kg	kilogram
km	kilometer
MJ	megajoule
MPG	miles per gallon
Mt	megaton
MWh	megawatt-hour
NAICS	North American Industry Classification System
NGO	nongovernmental organization
NHTSA	National Highway Transportation Safety Administration
OECD	Organisation for Economic Co-operation and Development
S&P	Standard & Poor's
SBTi	Science-Based Target initiative
SDA	Sectoral Decarbonization Approach
SDS	Sustainable Development Scenario
SUV	sport-utility vehicle
TPI	Transition Pathway Initiative
TTW	tank-to-wheel
U.S.	United States
WoodMac	Wood Mackenzie

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