

SECTOR METHODOLOGY DETAIL

OIL & GAS

For the Oil & Gas sector, we measure emissions intensity as a function of emissions, measured as grams of carbon dioxide equivalent, and megajoules of embedded energy produced by the company.

$$\text{Oil Gas Client Intensity} = \frac{\text{Scope 1 + Scope 2 + Scope 3 End Use Emissions} - \text{Carbon Offsets (gCO2e)}}{\text{Embedded Energy Produced (MJ)}}$$

MEASURING EMISSIONS AND PRODUCTION

We have included Scope 1–3 emissions to capture emissions related to fossil fuel extraction and its end-use combustion as fuel for other sectors across the economy. Emissions are reported in carbon dioxide equivalent, and include impacts from methane and flaring, to provide a more comprehensive view on related emissions from the sector instead of a siloed focus on carbon dioxide. While we recognize that end-use Scope 3 emissions are not directly controlled by Oil & Gas companies, they contribute the majority of emissions within this sector. For many clients the reduction in Scope 3 emissions intensity will need to be aided by significant developments in policy, technology, and downstream consumption.

Production is measured as the embedded energy produced across companies within the sector. We include the embedded energy in Oil & Gas produced as well as in power generated. Some clients in the Oil & Gas sector will look to diversify their operations away from Oil & Gas and into renewable power generation, and invest in new technologies to decarbonize their activities. Our methodology reflects and incentivizes this strategy.

ACTIVITIES IN SCOPE

Our evaluation of the Oil & Gas sector includes specialized upstream producers and downstream refiners, as well as integrated companies operating across the value chain. The primary driver of emissions for the Oil & Gas sector is end-use fuel combustion. By focusing our performance metrics on companies with upstream extraction and/or downstream refining operations, we are able to hone in on and incentivize changes to the type (and level) of crude product being extracted as well as refined products being produced.

In the current iteration of our targets, Oil Services and Midstream companies are excluded from scope. Firstly, these sectors are not conducive to an intensity metric (i.e., these companies play a supporting role in the sector but do not individually own the extracted Oil & Gas or the refined products). Secondly, as part of our data gathering process we also measured absolute emissions for our client base. For those clients where emission data was available, their emissions do not contribute as significantly to our overall portfolio emissions. We will continue to monitor absolute emissions internally for these sub-sectors and may reassess our target-setting methodology over time if these drivers change.

DATA SOURCES

In addition to leveraging data disclosed by our clients in their own company reporting, we have leveraged emissions and production data from Wood Mackenzie, Asset Resolution, S&P TruCost, and Bloomberg to calculate our clients' intensities. There is a small subset of clients for which emissions and production data is not readily available. To bridge this gap, we use an averaging approach that is based on companies with similar operations as a proxy.

Our 1.5°C target is based on the sectoral pathways published in Goldman Sachs' Carbonomics research, and these pathways include emissions from methane and flaring as well as carbon dioxide. This has significant real world implications at a sector level. For example, the scenario assumes a rapid increase in the scale of carbon capture technology, the electrification of end-use sectors such as transport, and a significant shift toward production of petrochemicals and renewable fuels as opposed to refined Oil & Gas for consumption in the industrial, transport and power sectors.

This is a significant shift from today and existing policy. A reduction in oil demand post 2025 is also observed in the Goldman Sachs Carbonomics <2°C scenario, which is consistent with global net zero by 2060 (a decade later) and the ambitions laid out in the Paris Agreement.

AUTO MANUFACTURING

For the Auto Manufacturing sector, we measure emissions intensity as a function of emissions, measured as grams of carbon dioxide equivalent, and expected life-time kilometers travelled for new vehicles manufactured by the company. Our target is specifically focused on light duty vehicle auto manufacturing, including both cars and light trucks for passenger and commercial uses.

$$\text{Auto Manufacturing Client Intensity} = \frac{\text{Scope 1 + Scope 2 + Scope 3 TTW Emissions} - \text{Carbon Offsets (gCO}_2\text{e)}}{\text{Vehicle Lifetime (km)}}$$

MEASURING EMISSIONS AND PRODUCTION

We have included Scope 1 and 2 and Scope 3 tank-to-wheel (TTW) emissions in our intensity metric. TTW emissions, also known as tailpipe emissions, captures the emissions from fuel that are generated while driving. The primary lever for decarbonizing the light transport sector is a widespread shift from Internal Combustion Engines (ICE) vehicles to electric and hybrid alternatives. The inclusion of TTW emissions into the way we measure our clients emissions intensity is consistent with this decarbonization strategy. For the Auto Manufacturing sector, TTW emissions are considered Scope 3 but are directly controlled by the type of vehicles produced.

We account for all light duty vehicles produced by a manufacturer in our analysis, including both cars and light trucks for commercial or passenger use. Heavy duty truck production is not included in scope.

ACTIVITIES IN SCOPE

Our evaluation of the Auto Manufacturing sector, at this time, is specific to light duty vehicle manufacturers. As noted above, heavy duty vehicle production is excluded from this metric at this time. Our priority focus on auto manufacturers is consistent with the global need to shift vehicle fleets away from ICE and toward electric and hybrid alternatives. A ramp up in production and availability of these low-intensity alternatives, and reduced ICE stock, should also have a knock-on effect to other parts of the automotive value chain (e.g., consumer auto loans are more likely to be for an electric vehicle, fleets for car rental companies will shift to include more electric and hybrid models, etc.).

At this time we do not currently include emissions from automotive parts producers in our metric (by excluding Scope 3 upstream emissions) or as a standalone sector due to lagging data quality and transparency on upstream supply chains for our manufacturing clients. We will continue to monitor the data landscape in this space and calibrate our methodology accordingly.

DATA SOURCES

In addition to leveraging data disclosed by our clients in their own company reporting, we have leveraged emissions and production data from S&P TruCost, Asset Resolution, and IHS Markit. We also leverage data from the Transition Pathway Initiative and the International Council on Clean Transportation. There is a small subset of clients for which emissions and production data is not readily available. To bridge these gaps, we use an averaging approach that is based on companies with similar operations as a proxy.

The Auto Manufacturing sector, specifically light duty vehicles, is contingent on a shift away from ICE vehicles to electric and hybrid alternatives. The GS 1.5°C net zero Carbonomics model estimates new energy light duty vehicle sales to be 69% of total light duty vehicle sales in 2030 under a net zero scenario. In addition to changes in customer behavior, critical investments in infrastructure (e.g., EV charging) are needed.

Our 1.5°C target is based on the Goldman Sachs Carbonomics 2021 pathway for light duty vehicle production in the auto manufacturing sector. An important consideration for our methodology is that it is based on new vehicles produced and sold by manufacturers, as opposed to legacy stock still in circulation.