

Analysis and methodology for measuring company-level alignment for Climate Action 100+

To help investors drive engagement with companies that bolsters climate action, the Rocky Mountain Institute (RMI) uses the PACTA methodology ¹ and data provided by Asset Resolution to provide analysis on companies in the utility, automotive, aviation, cement and steel sectors that form part of the Climate Action 100+ focus list. Climate Action 100+ is an investor initiative to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change. The companies include 100 “systemically important emitters” alongside over 60 others with significant opportunities to drive the clean energy transition. As part of the initiative’s Technical Advisory Group, RMI uses the PACTA portfolio alignment methodology to create alignment profiles of individual companies in the aforementioned sectors.

1. Scope

The scope of the alignment measurements carried out encompasses the electric utility, automotive, aviation, cement and steel sectors. Our coverage of each sector for Climate Action 100+ is as follows:

- **Electric utilities:** 32 companies that generate electricity. Combined, these companies have more than 1.1 Terawatts in power capacity, representing around 14% of global power capacity.
- **Automotive:** 14 of the largest international automotive manufacturers. Combined, the companies are estimated to have produced around 54 million passenger vehicles in 2020 alone.
- **Aviation:** 5 commercial passenger airlines. In 2020 they operated routes and services reporting in total over 500.000 million revenue passenger kilometres².
- **Cement:** 11 companies. Combined they are estimated to produce over 700 million tonnes of cement, representing around 17% of global cement production.
- **Steel:** 7 companies. Combined they are estimated to produce 200 million tonnes of steel, representing around 11% of global steel production.

2. Alignment assessments

The PACTA methodology runs on data provided by Asset Resolution and analyses companies planned capital expenditures (CAPEX) and production output for the coming 5 years relative to a range of climate change scenarios in order to give investors additional insights on the relative alignment of company economic activities with the Paris Agreement goals. These analyses correspond with and provide additional quantitative information in support of Indicator Six (Capital Alignment) of the Disclosure Framework in the Climate Action 100+ Net Zero Company Benchmark.

2.1 Electric utility and automotive sectors

RMI provides two assessments each for the electric utility and the automotive sector.

2.1.1 Assessment of the company's Q2 2022 technology mix vs. the sector average

This assessment evaluates the technology mix of a company in Q2 2022 compared to the sector average in 2022. The analysis is conducted on the technology level, meaning RMI compares the technology share of each company with the technology share of the sector average. The sector average is calculated for all the companies in the global data universe for the sector in question. So, for example, if the market's technology mix consists of 10% electric vehicles, while a company's technology mix consists of 17% electric vehicles, then the company

¹ The PACTA methodology was developed by the 2 Degrees Investing Initiative and the stewardship of PACTA was passed to RMI in June 2022.

² Based on data published by the International Air Transport Association (2021)

is 'ahead' of the sector average. Similarly, if the market's technology mix consists of 15% renewable power, and a company's technology mix consists of 10% renewable power, then it's 'behind' the sector average.

The technologies assessed are, in the electric utilities sector - coal, natural gas, oil, nuclear, hydroelectric and other renewables (solar, wind and biomass) – and in the automotive sector – Internal Combustion Engine (including mild hybrid technology), hybrid (plug-in technology) and electric. The two main forms of hybrid engine technology – mild and plug-in - have been recategorized since the 2021 Benchmark release so that mild hybrid technology³ is now placed within the Internal Combustion Engine category. The assessment is based on whether the company technology mix is ahead of the market, either in terms of:

- a decrease in fossil fuel-based electricity generating capacity (coal, oil and gas) or Internal Combustion Engine (ICE) vehicle production, or
- an increase in low carbon electricity generation (nuclear, hydro and renewables) or an increase in hybrid and Electric Vehicle (EV) production.

The assessment calculates the percentage deviation of each individual company technology share from the sector average technology share. Possible assessment outcomes reported are as follows:

- Behind (>15% negative deviation)
- Slightly Behind (>5-15% negative deviation)
- Aligned (+ or - 5%)
- Slightly Ahead (>5-15% positive deviation)
- Ahead (>15% positive deviation)

2.1.2 Comparison of production plans to International Energy Agency (IEA) scenarios

The companies' forecast production capacity per technology is compared to technological pathways to achieve climate goals developed by the International Energy Agency (IEA). Alignment comparisons are made to scenarios which have the goal of stabilising average global temperature rise at varying levels by 2100, in comparison to pre-industrial levels.

For each scenario, the IEA has forecast the speed at which each technology must grow or decline for the world to meet different climate goals. For the automotive sector, the three technologies assessed are internal combustion engines (including mild hybrid technology), hybrid (plug-in technology) and electric power trains. For the power sector, the technologies are coal, oil, gas, nuclear, hydro and renewables (solar, wind and biomass). The baseline for the analysis is June 2022, but the start year is treated as 2021. The alignment results are presented for each technology as well as for a weighted aggregate alignment across all technologies, with the weighting based on a combination of:

1. The company's technology mix if it were to be aligned with the scenario in 2026 (i.e., the relative importance of the technology to the company) and,
2. The proportional change in production capacity per technology required for the company to be aligned with the scenario in 2026 (i.e., the relative change in capacity per technology required of the company)

A company's decarbonization responsibilities under these scenarios are calculated based on a market-share approach. This means that the decarbonisation efforts are equally distributed amongst all companies in the sector. So, whilst each companies' targets for their technology market share are calculated individually based

³ Mild hybrid technology has a very limited range in electric mode (typically a few kilometers), is recharged by a regenerative braking system and cannot be plugged into a mains electricity to recharge the battery.

on their starting point in 2021, the same required rate of change and proportional contribution to the increase in the sectors capacity or production is used, which is based on the trajectory in the scenario.

Using the PACTA methodology, all companies are required to contribute to the increase in low carbon technologies, so even if a company has no renewable power capacity or no electric vehicle production in the period Q3 2021 to Q2 2022 a company-specific target will be generated in 2026 for the purpose of alignment measurement. Given the geographical and political specificities of investment in hydro and nuclear power generating capacity, companies that do not have capacity in these technologies in 2022 are not assigned targets to increase their capacity by 2027 in line with scenarios.

Electric utilities

For electric utilities the alignment comparisons are made using the IEA's Net Zero by 2050 (NZE), Sustainable Development (SDS) and the Stated Policies (STEPS) scenarios according to the following grading, with the climate change temperature goals based on a 67% probability of achievement:

- Aligned with or below the Net Zero by 2050 scenario (NZE <1.5°C)
- Below the Sustainable Development Scenario (SDS 1.5°C-1.7°C)
- Above the Sustainable Development Scenario (SDS >1.7°C)
- Significantly above the Sustainable Development Scenario (SDS >2.8°C)

Automotive

For the automotive sector the alignment comparisons are made using the Net Zero by 2050 (NZE) scenario (NZE ≤1.5°C) according to the following grading:

- Below or significantly below the scenario (>5% or >15% positive deviation)
- Aligned with the scenario (+ or – 5% deviation)
- Above or significantly above the scenario (>5% or >15% negative deviation)

Aggregate technology alignment

For companies in each of these two sectors an aggregate scenario alignment is calculated based on the IEA's Net Zero by 2050 (NZE) scenario. The aggregate is calculated based on a weighted average alignment deviation across all technologies. The weighting is based on a combination of:

- (i) the company's target capacity per technology in 2026 (i.e., reflecting the relative importance of each technology to the company); and
- (ii) the proportional change in capacity or production per technology calculated based on the scenario between 2022 and 2026 (i.e., reflecting the relative importance of each technology in the scenario).

The weighting therefore takes into account the relative importance of each technology, both from the perspective of the company, with its specific technology mix, and the sectoral decarbonisation pathway. The resulting grading for each company is as follows:

- **Green**—The company is 'Ahead' or 'Slightly Ahead' based on the weighted aggregate of the NZE technology alignments for the sector.
- **Amber**—The company is 'Aligned' based on the weighted aggregate of the NZE technology alignments for the sector.
- **Red**—The company is 'Behind' or 'Slightly Behind' based on the weighted aggregate of the NZE technology alignments for the sector.

2.1. Aviation, cement and steel sectors

RMI provides two assessments each for the aviation, cement and steel sectors.

2.2.1 Assessment of a company's Q2 2022 current emissions intensity

This first assessment evaluates the CO₂ emissions of each company in Q2 2022 per unit of service (in the case of aviation) or production (in the case of cement and steel). The overall methodology is based on the Sectoral Decarbonisation Approach (SDA) that was developed by the Science Based Targets Initiative (SBTi).

Aviation

The aviation emissions intensity is calculated for passenger air travel. Asset-based company-level data on the fuel consumption performance and the annual flight distances (based on real flight data) for individual aircraft are used. This data is used to calculate the emissions for each aircraft in an operator's fleet, normalised to the passenger kilometres travelled and taking into account seat occupation⁴. The weighted average results for all the operational aircraft in a company's fleet are then calculated, with the weighting based on the annual passenger kilometres of each aircraft. Results are calculated for both 2019 and Q2 2022, in order to provide a pre-Covid 19 pandemic baseline for passenger airline activity. The 2019 data is taken from the March 2022 Climate Action 100+ Net Zero Company Benchmark release and was provided by the 2 Degrees Investing Initiative.

Cement and steel

The cement and steel emissions intensities are calculated per tonne of cement and crude steel production. Crude steel production excludes rolling and casting steps.

Asset-based company level data for the steel and cement sector is used to derive production values for each physical plant. As there is no technology shift or roadmap as such in current given climate scenarios, it follows that production values must be used to derive an emission intensity per unit of production. Calculation of CO₂ emissions encompasses the following scopes:

- **Cement:** scope 1 (direct emissions from calcining and from heating kilns) and 2 (electricity use for processing) for integrated plants that process cement from raw materials to final product.
- **Steel:** scope 1 (direct emissions from iron and steel furnaces) and 2 (electric arc furnaces) for production of both iron and steel.

The company-level emissions intensity is calculated as the weighted average of its production plant, with the weighting based on production capacity of each plant.

2.2.2 Comparison of current production to International Energy Agency (IEA) 10-year scenario targets

In the second metric for each sector, investors are encouraged to engage with companies on convergence with target emission intensities taken from climate scenarios. For each sector the percentage improvement required to achieve convergence with the sectoral emissions intensity in 2030 is calculated. The greater the distance between the company's current emissions intensity and the target for 2030, the greater the challenge for the company to align itself with the goals of the Paris Agreement. For aviation the Beyond 2 Degrees (B2DS) scenario is used and for steel and cement the Net Zero by 2050 (NZE) scenario is used.

⁴ A global average load factor (passenger occupation of seats on an aircraft) of 82% is used.

For all three sectors a longer 10-year timeframe to 2030 has been selected in order to better reflect the investment cycles and timing on which the first major plant upgrades and technology replacements identified in IEA scenarios will need to be planned.

The possible assessment outcomes reported are presented in table 1. The thresholds are calibrated to the reduction in the emissions intensity required for each sector.

Table 1. 2030 scenario alignment assessment outcomes for steel, cement and aviation

Sector	Significant distance to alignment with the scenario (% reduction required)	Moderate distance to alignment with the scenario (% reduction required)	Aligned or close to being aligned with the scenario (% reduction required)
Aviation	>30%	15-30%	< 15%
Cement	>20%	5-20%	< 5%
Steel	>36%	15-36%	< 15%

3. About the PACTA methodology

The PACTA methodology measures the alignment of investments in 7 economic sectors. The methodology is based on comparing what needs to happen in these sectors in terms of decarbonization to what the companies in investor portfolios are planning to do in the coming 5 years. The methodology consolidates and aggregates global forward-looking asset-based company level data (i.e., what are the production plans of a specific manufacturing plant or power plant over the coming five years), based on third-party business intelligence providers up to the level of an ultimate parent company. The asset-based company level data is prepared by Asset Resolution using the data from these providers.

For investors, the approach adopted by PACTA allows them to assess the overall alignment of their portfolios with climate scenarios and the Paris Agreement. In 2019, as part of technical support provided to the Climate Action 100+ initiative, 2° Investing Initiative (2DII) started developing company-level assessments, allowing financial institutions and other investors to assess the alignment of individual companies within their portfolios with climate scenarios. With the passing of stewardship of PACTA from 2DII to RMI, this task is now carried out by the PACTA team working under RMI's Climate Finance programme. More about the PACTA methodology can be found at transitionmonitor.com.