FinanceMap Banking Methodology

Analyzing banks on governance, financing, and policy engagement through a climate lens

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Introduction

While there are efforts underway to codify climate-related issues into financial regulation, climate change action within finance is currently largely focused on voluntary, non-binding initiatives. As a result, there is a need from a range of stakeholders for an independent assessment of how the world's leading financial institutions are performing on climate change.

FinanceMap provides research that looks at the financial sector through a climate lens with a primary focus on asset managers and banks, comparing their top-lines commitments and targets to their actual climate-relevant business activities. The objectives of this research are to (i) provide key stakeholders with insights into how the financial sector is performing on climate change, (ii) drive improvement within the sector itself by providing benchmarking information, and (iii) increase the accountability of financial institutions for their climate-related commitments and statements.

This document summarizes FinanceMap's methodology for assessing the performance of banks on climate change. This assessment is largely divided into three streams: (i) assessment of climate governance, strategy, and policies, (ii) financing portfolio analysis, and (iii) policy engagement scoring, each with its own metrics and methods. The following sections expand upon each of these methodologies in depth.
Climate Governance, Strategy, and Policies

Benchmarks

The TCFD Recommendations

The TCFD was established by the Financial Stability Board in 2015 to develop recommendations for more effective climate-related disclosures. The TCFD’s Final Recommendations Report (2017) introduced 11 recommendations across four areas – Governance, Strategy, Risk Management, and Metrics and Targets. For each recommendation, the TCFD included guidance for all sectors, and specific guidance and disclosure recommendations for banking, asset owners, insurers, and asset managers.

The recommendations and guidance statements are used as a benchmark to assess the financial institutions’ climate governance approaches using InfluenceMap’s matrix assessment approach (see section 3.1). For each recommendation, the corresponding guidance statements were used to create a numerical five-point scale ranging from +2 to -2 which quantifies the financial institutions’ disclosure alignment with each TCFD recommendation. This allows FinanceMap to assess the alignment of the financial institutions’ disclosures with the TCFD guidance statements in depth.

In June 2021, the TCFD launched a public consultation on proposed changes to its guidance on Climate-related Metrics, Targets, and Transition Plans, recognizing that data, methodology, and disclosure standards have evolved since 2017. The vast majority of the proposed changes were formally integrated into the TCFD in October 2021. Notably, the 2017 guidelines recommend companies “disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks” 1. However, the TCFD has determined that data and methodologies have matured sufficiently such that Scope 3 disclosure is appropriate for all financial and non-financial sectors 2 and recommends financial institutions disclose financed emissions in line with the Partnership for Carbon Accounting Financials (PCAF), or a comparable methodology 3.

Given the significance of financed emissions to the carbon footprint of a financial institution, FinanceMap has chosen to adopt the updated metrics and emissions disclosure elements (TCFD recommendations 9 and 10) into the benchmark to ensure this assessment is in line with evolving industry standards.

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1 TCFD, Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans, June 2021, Pg 59
2 TCFD, Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans, June 2021, Pg 34
3 TCFD, Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans, June 2021, Pg 65
The October 2021 TCFD guidance update also included recommendations for financial institutions to incorporate transition plan disclosures into their disclosure around scenario analysis (TCFD recommendation 5). FinanceMap has not implemented this element of the new guidance into the scoring in order to allow FIs time to update their reporting in line with these new reporting objectives. However, this will be integrated in future iterations of this research. FinanceMap determined that many financial institutions discuss transition plans when reporting on climate targets, which is assessed under TCFD recommendation 11.

Following the wave of net-zero announcements from financial institutions in 2020-2021, additional benchmarks have been introduced to strengthen the ambition of the scoring criteria for the climate-target. This analysis is supplemented with Net-Zero Banking Alliance Guidelines for target setting (TCFD recommendation 11) to respond to this increased ambition in the sector. IPCC-aligned SBP benchmarks are used to ensure that the financial institutions' technology positions are aligned with the science on climate change. Technology positions and exclusion criteria does not clearly fit into an existing TCFD recommendation, therefore additional technology-specific queries were added to the assessment. This is fully described in section 3.3.

In 2023, it was announced that the International Sustainability Standards Board (ISSB) would take over the monitoring of the progress of TCFD. In June 2023, ISSB issued inaugural standards IFRS S1 and IFRS S2 which provides requirements for sustainability-related financial information disclosures and climate-related disclosures. The requirements in IFRS S2 are consistent with the four core pillars and recommendations published by the TCFD and is effective for annual reporting periods beginning on or after 1 January 2024. FinanceMap will apply the additional requirements outlined in IFRS S2 to scoring benchmarks in 2024.

**Net-Zero Alliances**

The UN-convened Net-Zero Banking Alliance was launched in April 2021 with 43 founding banks, as the banking arm of the UN Race to Zero campaign element of the Glasgow Financial Alliance for Net-Zero (GFANZ). Other branches of this initiative relevant to this study include the UN-convened Net-Zero Asset Owner Alliance, the Net Zero Asset Manager Initiative, and the UN-convened Net-Zero Insurance Alliance.

The Net-Zero Banking Alliance provides an internationally coherent framework and guidelines for which the transition plans and the net-zero targets of banks can be benchmarked against. Signatory banks have committed to aligning their lending and investment portfolios with net-zero emissions by 2050 or sooner pathways, and will set 2030 interim targets within 18 months that align with the UNEP Finance Initiative’s Guidelines for Climate Target Setting for Banks.

Targets are assessed using a five-point scale for scoring which is described in section 3.4. In future iterations of this research, financial institutions’ climate targets will be assessed in detail in comparison to the targets and reporting criteria outlined by the Net-Zero Banking Alliance or equivalent GFANZ guidelines. This may continue to be updated and strengthened in line with the most ambitious standards applicable to the industry.
Science-Based Policy (SBP) Benchmarks

The 2018 IPCC *Special Report* on Global Warming of 1.5 °C advises on the need for “stringent and integrated policy interventions” in order to achieve 1.5 °C mitigation pathways. The report provides detailed information on various issues such as the energy mix, a price on carbon, required uptake of renewable energy and electric vehicles, and the viability of negative emission technologies such as carbon capture and storage.

In May 2021, the International Energy Agency (IEA) published its first Net Zero Emissions by 2050 aligned scenario (*NZE scenario*), providing a clear roadmap to guide the energy sector, investor, and governments towards limiting warming to 1.5 °C. Notably, *it concluded* that in order to achieve net zero emissions by 2050, there can be no investment in new fossil fuel supply projects. In October 2021, the IEA released its annual World Energy Outlook (WEO), which featured the NZE scenario as the normative scenario, further solidifying the need for FI’s to tighten fossil fuel policies in order to have credible transition plans.

Technology specific benchmarks derived from these reports for coal, oil, gas, nuclear and renewables are used in this assessment of FI’s Climate Governance, Strategy, and Policies to ensure that the financial institutions’ technology positions are aligned with the science on climate change. The application of these benchmarks focuses on: (1) The financial institutions’ internal policies on technologies relevant to the energy mix and energy transition. (2) The financial institutions’ engagement with broader climate and energy policy issues such as advocacy on the role and importance of different energy types in the future energy mix. InfluenceMap considers this form of corporate influencing to be systemically important in the broader process of setting government policy priorities on climate and energy. Similarly, these benchmarks are applied to a five-point scoring scale in the matrix assessment.

InfluenceMap recognizes that alongside calls to transition the energy mix, the IPCC 1.5 °C Special Report highlights the transitions in agriculture, forestry, and other land use required to meet 1.5 °C warming pathways. InfluenceMap is expanding the SBP benchmarks to include these areas in future work.

*EU Sustainable Taxonomy TEG Guidance*

The European Commission appointed a technical expert group on sustainable finance (*TEG*) to assist it in developing the EU Sustainable Finance Action Plan. The EU Sustainable Taxonomy, a classification system to determine whether an economic activity is environmentally sustainable as defined by the Paris Agreement, is a key component of the Action Plan.

In March 2020, the TEG published a *technical annex* on the EU taxonomy outlining the financing guidelines and screening criteria required for financing the transition of economies towards net-zero by 2050. The guidelines outlined in the technical report are used alongside the IPCC SBP benchmarks to interpret FIs’ policies on the use of gas and carbon capture and storage in electricity production. Discussions surrounding nuclear energy is assessed using the Taxonomy’s ‘*Do No Significant Harm*’ criteria.
Assessment Matrix

The Climate Governance, Strategy, and Policies matrix scoring criteria is adapted from TCFD recommendations and guidelines, Net-Zero Banking Alliance reporting, and IPCC and IEA technology statements. This assessment is made up of sixteen queries, illustrated in Table 4. The weighting for each query was determined based on engagement with TCFD experts and by weighting the relative importance placed on each technology in the IPCC 1.5 °C Special Report.

<table>
<thead>
<tr>
<th>TCFD Section</th>
<th>TCFD Recommendation</th>
<th>Matrix Query</th>
<th>Query Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>R1: Describe the board’s oversight of climate-related risks and opportunities.</td>
<td>Q1: Does the board and/or board committees consider climate-related risks and opportunities in corporate strategy and business planning?</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>R2: Describe management’s role in assessing and managing climate-related risks and opportunities.</td>
<td>Q2: Does the organization's management play a role in managing climate-related risks and opportunities?</td>
<td>4%</td>
</tr>
<tr>
<td>Strategy</td>
<td>R3: Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.</td>
<td>Q3: Does the organization consider climate-related risks and opportunities over the different time horizons?</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>R4: Describe the impact of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning.</td>
<td>Q4: Does the organization consider climate-related risks and opportunities in business, strategy, and financial planning?</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>R5: Describe the resilience of the organization’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</td>
<td>Q5: Does the organization test the resilience of its business strategy using different climate-related scenarios?</td>
<td>5%</td>
</tr>
<tr>
<td>Risk Management</td>
<td>R6: Describe the organization’s processes for identifying and assessing climate-related risks.</td>
<td>Q6: Does the organization have processes for identifying and assessing climate-related risks?</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>R7: Describe the organization’s processes for managing climate-related risks.</td>
<td>Q7: Does the organization have processes for managing climate-related risks?</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>R8: Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization’s overall risk management.</td>
<td>Q8: Does the organization integrate its processes for identifying, assessing, and managing climate-related risks into their overall risk management?</td>
<td>4%</td>
</tr>
</tbody>
</table>
### Metrics and Targets

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Description</th>
<th>Queries</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>R9</td>
<td>Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.</td>
<td>Q9: Does the organization disclose the metrics used to assess climate-related risks and opportunities in its strategy and risk management process?</td>
<td>5%</td>
</tr>
<tr>
<td>R10</td>
<td>Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.</td>
<td>Q10: Does the organization disclose absolute Scope 1, Scope 2, and relevant Scope 3 greenhouse gas (GHG) emissions, including financed emissions data?</td>
<td>10%</td>
</tr>
<tr>
<td>R11</td>
<td>Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.</td>
<td>Q11: Do the organization’s climate-related targets and associated actions align with leading practice standards?</td>
<td>15%</td>
</tr>
</tbody>
</table>

### SBP Benchmark Technology Positions

<table>
<thead>
<tr>
<th>SBP Technology</th>
<th>Matrix Query</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1: Coal</td>
<td>Q12: Does the organization’s position on the role for coal in the energy mix align with IPCC guidance?</td>
<td>13%</td>
</tr>
<tr>
<td>T2: Natural Gas</td>
<td>Q13: Does the organization’s position on the role for natural gas in the energy mix align with IPCC guidance?</td>
<td>10%</td>
</tr>
<tr>
<td>T3: Oil</td>
<td>Q14: Does the organization’s position on the role for oil in the energy mix align with IPCC guidance?</td>
<td>10%</td>
</tr>
<tr>
<td>T4: Nuclear</td>
<td>Q15: Does the organization’s position on the role for nuclear in the energy mix align with IPCC guidance?</td>
<td>1%</td>
</tr>
<tr>
<td>T5: Renewables</td>
<td>Q16: Does the organization’s position on the role for renewables in the energy mix align with IPCC guidance?</td>
<td>4%</td>
</tr>
</tbody>
</table>

Table 2. The Climate Governance, Strategy and Policies matrix queries.

### Scoring

The TCFD provide detailed guidance statements for each of the eleven recommendations which are broken down into the four TCFD areas – **Governance**, **Strategy**, **Risk Management**, and **Metrics and Targets**. The guidance statements for all sectors and specific guidance for the financial sector were used to create a numerical five-point scale ranging from +2 to -2 for each recommendation. As referenced in section 3.2, the guidance for recommendation 11 around climate-related targets has been supplemented with the Net-Zero Banking Alliance commitment and guidelines.

Table 5 illustrates how the five-point scoring system is derived from the TCFD guidance as a benchmark, with this example showing the scoring criteria for query one.
**Recommendation:** Describe the board’s oversight of climate-related risks and opportunities.

**Guidance for All Sectors:** In describing the board’s oversight of climate-related issues, organizations should consider including a discussion of the following:

- Processes and frequency by which the board and/or board committees (e.g., audit, risk, or other committees) are informed about climate-related issues,
- Whether the board and/or board committees consider climate-related issues when reviewing and guiding strategy, major plans of action, risk management policies, annual budgets, and business plans as well as setting the organization’s performance objectives, monitoring implementation and performance, and overseeing major capital expenditures, acquisitions, and divestitures, and
- How the board monitors and oversees progress against goals and targets for addressing climate-related issues.

*(TCFD Knowledge Hub, Accessed October 2021).*

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Score</th>
<th>Scoring Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>+2</strong></td>
<td>The organization has clearly described how the board and/or board committees incorporate climate-related issues into corporate strategy, decisions on major transactions, and its risk management processes and policies.</td>
<td></td>
</tr>
<tr>
<td><strong>+2</strong></td>
<td>The organization has clearly described how the board and/or board committees determine whether appropriate skills and competencies are available or will be developed to oversee strategies designed to respond to climate-related risks and opportunities.</td>
<td></td>
</tr>
<tr>
<td><strong>+2</strong></td>
<td>The organization has clearly described how the board and/or board committees directly oversee the setting of climate-related goals and targets and the progress made against them.</td>
<td></td>
</tr>
<tr>
<td><strong>+2</strong></td>
<td>The organization clearly communicates the processes and the frequency by which the board and/or board committees are informed about climate-related risks and opportunities and how this is integrated into wider corporate strategy responses.</td>
<td></td>
</tr>
<tr>
<td><strong>+1</strong></td>
<td>The board and/or board committees incorporate climate-related issues in guiding corporate strategy, decisions on major transactions, and its risk management processes and policies. However, details on how it incorporates climate into strategy and policies lack granularity.</td>
<td></td>
</tr>
<tr>
<td><strong>+1</strong></td>
<td>The board and/or board committees directly oversee the setting of climate-related goals and targets and the progress made against them, however, details on how it sets and monitors these goals and targets lack granularity.</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>The board appears to monitor and/or consider climate-related issues to some extent but has not assigned clear climate-related responsibilities to the board and/or board committees.</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>The board and/or board committees appear to consider climate-related issues in an ad hoc manner, for example, evidence is anecdotal and considerations appear to lack structure or processes.</td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td>The board and/or board committees do not appear to consider climate-related issues in guiding corporate strategy, business planning, or annual budgets.</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. The TCFD benchmark and scoring criteria for The Climate Governance, Strategy and Policies matrix query 1.
Financing Portfolios

FinanceMap’s assessment seeks to analyze the climate impact of financing flows facilitated by a given bank. The activities analyzed under this research are corporate lending, and bond and equity underwriting (or, securities underwriting). Data on the deals facilitated by a bank in these financing categories is accessed through Bloomberg. The Bloomberg Terminal LEAG function is used to generate the full global deal portfolios for each of these categories for each financial institution analyzed. The LEAG tables contain data on publicly disclosed loan, bond, and equity deals, as well as on deals for which data was disclosed directly to Bloomberg.

FinanceMap uses two primary types of metrics to analyze each of the aforementioned financing streams: (i) exposure metrics, and (ii) portfolio Paris alignment scores.

Exposure Metrics

FinanceMap analyzes the exposure of portfolios to (i) fossil fuel value chain companies, and (ii) companies which are primarily active in transitional activities, or “green” companies. Exposure metrics are calculated both in absolute value and as a percentage of the portfolio’s total value. The following sections explain how FinanceMap identifies fossil fuel and green companies respectively.

Fossil Fuel Exposure

FinanceMap calculates a portfolio’s fossil fuel exposure by flagging all companies in a portfolio which are primarily active in fossil fuel production value chains based on their BICS, GICS, and NAICS sector classifications. The fossil fuel production value chain is defined as the universe of companies of which the primary sector of operations is in or uniquely related to the up-, mid-, and/or downstream segments of oil and gas production or the coal mining sector. This includes companies of which the primary operations are services specific to these sectors (e.g. exploration, surveying, pipeline infrastructure, etc.).

Green Exposure

FinanceMap defines green companies on the basis of the EU taxonomy for sustainable activities (abbr. “EU taxonomy”). Specifically, all companies with over 75% of revenue deriving from activities which demonstrate substantial contribution to climate change mitigation under the EU taxonomy are considered “green” under this methodology.

FinanceMap gathers data on companies’ percentage of revenue contributing to climate mitigation from Bloomberg. Specifically, Bloomberg Terminal provides data for the “estimated revenue demonstrating substantial contribution to climate change mitigation” under the EU taxonomy. FinanceMap supplements this with Bloomberg data on companies’ revenue in BICS sectors which are classified as having substantial contribution to climate mitigation with no criteria (e.g. solar or wind power generation, production of zero-
emissions vehicles, power storage, etc.) All companies with over 75% revenue in either the former or the sum of the latter are considered “green”.

**Portfolio Paris Alignment**

The other primary metric FinanceMap uses to analyze portfolios is the Portfolio Paris Alignment (PA) Score. This metric uses the industry-standard *Paris Agreement Capital Transition Assessment (PACTA)* tool, an open-source methodology managed by RMI and expanded upon by FinanceMap, to measure the alignment of a portfolio of companies with the IEA Net Zero Emissions by 2050 Scenario (NZE). For an in-depth elaboration of the PACTA methodology, please refer to RMI’s *PACTA documentation*. A condensed explanation is given below, followed by the full methodology behind FinanceMap’s use of the PACTA outputs to calculate the Portfolio Paris Alignment Score.

**PACTA**

PACTA is an open-source portfolio alignment methodology developed by 2DII, which calculates the forward-looking alignment of a portfolio of companies with science-based climate scenarios. To do so, PACTA uses physical asset-based data, created by *Asset Impact*, to estimate the total future production of real-economy companies in climate-relevant sectors. The dataset used contains forward-looking production data for approximately 35,000 publicly and privately owned real-economy organizations across climate-relevant sectors. Comparison of this real-economy production data against prescriptions by Paris-aligned climate scenarios allows for the calculation of the Paris Alignment of companies and portfolios. FinanceMap uses the *IEA Net Zero Emissions by 2050 Scenario (NZE)* in its application of PACTA.

Currently, FinanceMap uses PACTA analysis for four climate-relevant sectors: automotive, upstream oil and gas production, coal mining, and electric power. The Asset Impact forward-looking production data at company level is split into different ‘technologies’, i.e., types of output, within these sectors. For a specific real-economy company, the data forecasts the number of units which the company will produce in each technology in each year. The following table shows the different production technologies analyzed within each sector.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Unit of Production</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>Light-duty vehicles per year</td>
<td>Electric</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hybrid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internal Combustion Engine (ICE)</td>
</tr>
<tr>
<td>Coal Mining</td>
<td>Tonnes of coal mined per year</td>
<td>Coal</td>
</tr>
</tbody>
</table>
The IEA NZE, meanwhile, sets out a pathway with a 50% chance of limiting global warming to 1.5°C by 2100. This pathway consists of roadmaps for the different sectors, prescribing production targets for the different technologies within a sector for every year between now and 2050. PACTA translates these sector-level targets to company-specific targets, allowing the calculation of the gap between a company’s actual forecasted operations and its target under the Paris-aligned NZE.

The following section explains how PACTA calculates technology-level Paris Alignment scores for a portfolio based on the forward-looking data of its portfolio companies. Subsequently, top-line Paris Alignment scores are calculated by FinanceMap at the sector and the overall portfolio level.

**Technology Paris Alignment Scores**

To calculate the Paris Alignment of a portfolio for a certain technology within a given sector, PACTA first allocates the real-economy activities of the portfolio’s constituent companies to the overall portfolio. For banking activities, PACTA allocates the production of the company using a portfolio-weighted approach. Specifically, the portfolio weight for a company is calculated by dividing the sum of the value of deals with this company by the sum of all deals within the same sector. A company’s total production within a technology is multiplied by this portfolio weight to obtain the company’s production amount allocated to the bank. For example, if a loan to Coal Company A represents 10% of a bank’s coal loan portfolio, 10% of Coal Company A’s production is allocated to the bank’s loan portfolio.

By summing the allocated production over all the companies in a portfolio, the methodology obtains the portfolio’s allocated forward-looking production in each technology in each sector. The same allocation and summing process is applied to the companies’ NZE targets, giving a Paris-aligned target for the portfolio in
each technology. Calculating the relative difference between the portfolio’s allocated production in a
technology and the portfolio’s NZE target over a five-year timeframe gives the Paris Alignment score at
technology level. Note that the score is calculated such that overshooting the target gives a positive score for
green technologies but a negative score for polluting technologies.

Thus, for a green technology $i$,

$$A_{i}^{tech} = \frac{\sum_{t=t_1}^{t_5} P_{i,t}^{tech,portfolio}}{\sum_{t=t_1}^{t_5} P_{i,t}^{tech,NZE}} - 1$$

and for a polluting technology $j$,

$$A_{j}^{tech} = (-1) \times \left( \frac{\sum_{t=t_1}^{t_5} P_{j,t}^{tech,portfolio}}{\sum_{t=t_1}^{t_5} P_{j,t}^{tech,NZE}} - 1 \right)$$

Where $A_{i}^{tech}$ is the Technology Paris Alignment Score for technology $i$, $P_{i,t}^{tech,portfolio}$ is the portfolio’s
allocated production in the technology in year $t$, and $P_{i,t}^{tech,NZE}$ is the portfolio’s IEA NZE target for the
technology in the same year $t$. The production and corresponding NZE targets are respectively summed over
the 5-year timeframe assessed ($t_1$ to $t_5$). As of December 2023, $t_1$ is 2023 and $t_5$ is 2027.

In this scoring method, a 0% alignment score indicates that the portfolio is aligned with the NZE. In this case,
the portfolio (in allocated aggregate) owns assets which are forecast to produce an amount equal to the NZE
scenario-aligned production for those assets over the next five years. A negative score indicates that the
portfolio owns too much polluting or too little green production compared to the NZE. A positive score shows
that the portfolio owns less polluting or more green production than the NZE prescribes.

Technology Paris Alignment scores are artificially capped at +100% and -100%, in order to avoid imbalance
between the possible range of positive and negative PA scores. For example, for green technologies, a
portfolio which owns zero actual production but has a non-zero scenario target would receive a score
of -100%. However, very high numbers for actual green production with very low scenario targets could
technically lead to infinitely high PA scores. The opposite is true for polluting technologies, where portfolios
could have infinite negative alignment while being limited to +100% positive alignment.

Sector Paris Alignment Scores

To arrive at the Sector-level PA score, the PA scores for each technology within a sector are combined using a
weighted average approach. The weighting used is a product of two factors:

- Portfolio technology share ($W_{i}^{TS}$): This weighting is calculated by finding the fraction of production each
technology has within its sector in the portfolio aggregate in 5 years’ time. This is used to gauge the
technologies’ relative importance in the companies held by the portfolio.
■ Technology production change in NZE ($W_{i}^{TE}$): Within a sector, each technology makes a different relative contribution to global emissions. Consequently, the use of some technologies (e.g., coal-fired power and renewable energy) is more significant than others (e.g., oil-fired power) for meeting the NZE pathway. To reflect this, polluting technologies are weighted based on their production in 2020 in the NZE, as they must scale down from this amount. Meanwhile green technologies are weighted based on their target production in 2030 in the NZE, as they must build up to this amount. The result is that in addition to weighting the individual technology alignments based on portfolio exposure, the Sector Paris Alignment Score also accurately captures the variable importance of different technologies to the global energy transition.

Thus, the Sector Paris Alignment Score $A_{k}^{sector}$ for sector $k$ is calculated as

$$A_{k}^{sector} = \frac{\sum_i W_{i}^{TS} \cdot W_{i}^{TE} \cdot A_{i}^{tech}}{\sum_j W_{j}^{TS} \cdot W_{j}^{TE}}$$

with $i$ and $j$ indices for technologies within the given sector $k$ and the other variables defined as in the aforementioned.

**Portfolio Paris Alignment Scores**

The calculation of the overall Portfolio Paris Alignment score from the Sector Paris Alignment scores closely mirrors that of the Technology to Sector Paris Alignment calculation. The Portfolio PA score is a weighted average of the Sector PA scores, with weightings reflecting portfolio value exposed to a given sector and the sector’s importance to the emissions transition. This represents a minor variation on the calculation used to aggregate to the sector level. The two factors in each weighting are:

- Financial exposure to sector ($W_{j}^{SV}$): Unlike weighting different technologies within a sector, between sectors there are entirely different production types (e.g., MW of capacity, tonnes of coal produced), which renders a weighting based on absolute production meaningless. As a proxy, the relative portfolio value exposed to that sector is used. Note that in this calculation only those companies for which the sector at hand is the company’s *primary sector of operations* are counted, to avoid double-counting, as well as to prevent highly valuable companies with negligible production in a sector from skewing the weighting (e.g., Apple and Amazon have very small holdings in power generation assets).

- Sector emissions change in NZE ($W_{j}^{SE}$): Like the explanation above for technologies, different sectors will need to make different relative contributions to global emissions or emissions reductions over the coming decades. To reflect this, each sector is weighted based on the extent to which its emissions must change between 2020 and 2030 as outlined in the NZE.

Thus, the Portfolio Paris Alignment Score $A^{portfolio}$ is calculated as
\begin{equation}
A_{\text{portfolio}} = \frac{\sum_k W_k^{SV} \cdot W_k^{SE} \cdot A_k^{\text{sector}}}{\sum_l W_l^{SV} \cdot W_l^{SE}}
\end{equation}

with \(k\) and \(l\) sector indices and the other variables defined as in the aforementioned.
Policy Engagement

To assess financial institutions’ engagement with sustainable finance policy processes, InfluenceMap applies the existing LobbyMap methodology for assessing climate policy engagement. Please refer to the *LobbyMap Methodology* for an in-depth explanation of this assessment.