

TPI's Methodology Report: Management Quality and Carbon Performance

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1. Introduction

This is the fifth edition (v.5.0) of the Management Quality and Carbon Performance Methodology by the Transition Pathway Initiative Centre (TPI Centre) at the London School of Economics and Political Science. It provides the technical background to the TPI Centre's assessments of Management Quality and Carbon Performance, with a particular focus on what is contained in the new Management Quality methodology, currently displayed on the [TPI online tool](#) in 'Beta' format. For information on the previous v.4.0 Management Quality framework, which was published in November 2021 and is displayed as 'Current' on the online tool, please [click here](#). Further details on the TPI Centre's Carbon Performance assessments can be found within our published sectoral Methodology Notes, since the details of these assessments vary between sectors.

The report contains:

The design principles underpinning the TPI Centre's company assessments and assessment process (Section 2)

A comparison and justification for developing the Management Quality and Carbon Performance methodologies (Section 3)

The v.5.0 Management Quality framework, including explanations of the indicators used and how companies are placed on the levels (Section 4)

A broad outline of how the TPI Centre assesses Carbon Performance (Section 5)

Quality assurance provisions and how company feedback is handled (Section 6)

Background

The Transition Pathway Initiative (TPI) was established in January 2017. It is a global initiative led by asset owners and supported by asset managers. As of September 2023, 143 investors globally, representing around US\$60 trillion combined Assets Under Management and Advice, had pledged support for TPI.

The Transition Pathway Initiative Centre was established on 1 June 2022 at the London School of Economics and Political Science and is part of the Grantham Research Institute on Climate Change and the Environment, which has been the academic partner of TPI since its inception. The TPI Centre is an independent, authoritative source of research and data on the progress of the financial and corporate world in transitioning to a low-carbon economy.

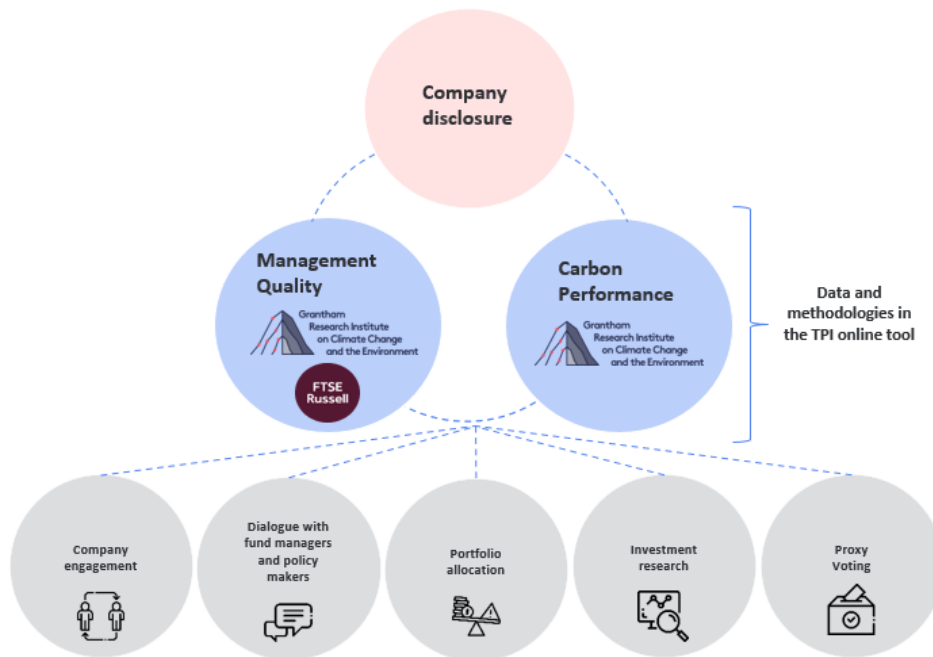
To support investors, the TPI Centre evaluates what the transition to a low-carbon economy looks like for companies that have a high impact on climate change, such as electricity utilities and oil and gas producers. It also assesses the progress these companies are making on the low-carbon transition.

The TPI Centre analyses companies in two ways:

1. **Management Quality:** the TPI Centre evaluates and tracks the quality of companies' governance/management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition.

2. **Carbon Performance:** the TPI Centre also evaluates companies' carbon emissions against different climate scenarios consistent with the UN Paris Agreement. It does this by comparing companies in high-emitting sectors against each other and against sector-specific benchmarks, which establish the performance of an average company that is aligned with the goals of the Paris Agreement.

Figure 1. The TPI Centre's assessment process



We encourage investors to use TPI's data, indicators and online tool to inform their investment research, decision making, engagement with companies, proxy voting and dialogue with fund managers and policymakers, bearing in mind the Disclaimer that can be found on p22 of this report.

Further details of how investors can use the TPI Centre's assessments can be found on our [website](#).

2. Design principles

The following high-level principles have guided our approach to designing the TPI corporate assessment methodology:

- 1. Company assessments should be based solely on publicly available information.** There are two reasons for this. The first is that encouraging companies to provide a better account of how they manage climate change is a core objective of TPI. The second is to ensure that companies are assessed consistently, thereby avoiding any suggestion that individual companies are in any way favoured by the assessment methodology.
- 2. Indicators should be objectively assessable.** That is, the users of TPI's data and other stakeholders (including the companies themselves) should be able to understand why a company has met, or not met, a particular Management Quality indicator, and how a company's emissions performance has been quantified.
- 3. Indicators of Management Quality should be relevant to all companies in all sectors covered by TPI.** This is because investors want to be able to compare sectors and, when communicating with stakeholders, to demonstrate the overall outcomes of their engagement.
- 4. Carbon Performance benchmarks should be sector-specific.** This is because different sectors of the economy (e.g. oil and gas production, electricity generation and automobile manufacturing) face different challenges arising from the low-carbon transition, including where emissions are concentrated in the value chain, and how costly it is to reduce emissions.
- 5. The TPI Centre's outputs should be useful to asset owners as they engage with companies and with asset managers.** Of particular importance is ensuring that the TPI Centre's assessments are relevant and useful to asset owners that have relatively little capacity or expertise on climate change.
- 6. Indicators should link to, or build on, existing initiatives and disclosure frameworks (e.g. [The Net Zero Investment Framework](#) or NZIF) as far as possible.** That is, unless there is a compelling reason to do otherwise, the data used by the TPI Centre should be those already reported by companies or that are commonly requested by investors.
- 7. Indicators should be pitched at a high level of aggregation and apply to the corporation as a whole.** It is acknowledged that investors may wish to dig deeper into specific aspects of practice or performance (e.g. to understand risk and opportunity on a country-by-country basis). For these investors, TPI's data can be used in conjunction with other measures, such as those relating to financial performance (e.g. sales, turnover) and those that provide a more granular assessment of corporate climate action.

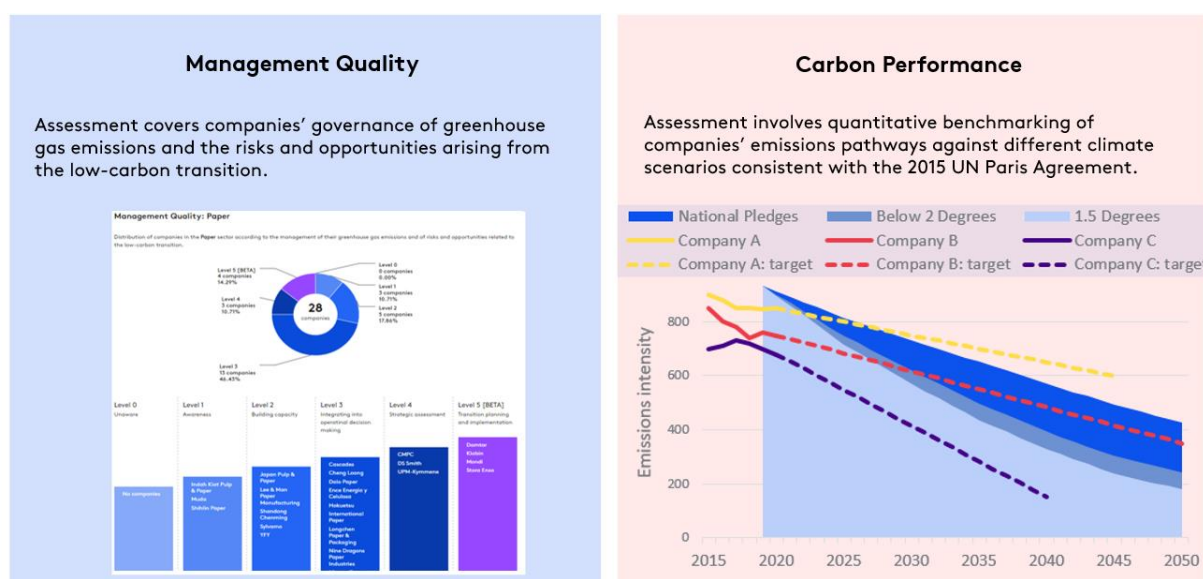
3. Management Quality versus Carbon Performance

Our assessment of companies' progress on the low-carbon transition is divided into two parts: (1) Management Quality and (2) Carbon Performance.

Management Quality describes companies' carbon management practices and **governance**, in other words their governance of greenhouse gas emissions and the risks and opportunities arising from the low-carbon transition. For example, Management Quality indicators include whether a company has a climate-change policy in place, to what extent it discloses its emissions, and whether the company has allocated board responsibility for climate change.

Carbon Performance compares a company's emissions pathway against different climate scenarios consistent with the UN Paris Agreement, for example the aim to limit global warming to 1.5°C above the pre-industrial level.

Figure 2. TPI's methodologies



One of the reasons why we assess Management Quality and Carbon Performance separately is that research shows the relationship between them is by no means clear-cut. [1]–[5] The ideal scenario is that companies with robust, well-developed carbon management systems and processes adopt business strategies that are aligned with the low-carbon transition and increase their rate of emissions reduction, and there is some research that suggests this is the case. [6] Conversely, companies with weaknesses in their carbon management systems and processes might be less likely to set challenging emissions targets.

However, at any particular moment one can find examples of companies with good carbon management systems that nonetheless have high emissions, and *vice versa*. This might be because the highest-emitting companies are forced to place the highest priority on reducing those emissions.

There is some evidence to suggest that, while good carbon management appears unrelated to current emissions, it leads to lower *future* emissions, because companies with

good carbon management are more likely to set and deliver on stretching emissions targets. [7] Nonetheless, some companies with good carbon management have not set ambitious emissions targets. [8] There are several possible explanations for this. Some are external, such as weaknesses in the signals being sent to business by national/local policymakers. Some are internal, such as management scepticism about the business case for climate action, or limited capacity to make the changes necessary to transition to a low-carbon economy. There are also cases where the converse applies, i.e. companies have set ambitious targets but lack the knowledge, management systems or capacity to implement them.

Ultimately, Management Quality assessment focuses on processes, while Carbon Performance focuses on decarbonisation ambition/commitment. Together they are intended to provide a holistic view of companies' progress on the low-carbon transition.

4. Management Quality assessment

4.1 Overview of additions and changes in v.5.0 of the Management Quality methodology

In November 2023, the TPI Centre launched v.5.0 of its Management Quality methodology in 'Beta' format. The new framework aims to set a higher standard for companies to meet, and to provide greater differentiation of high-performing companies. This reflects the reality that previously stretching indicators have become more standard practice, driven by, for example, greater investor interest in environmental, social and governance (ESG) investment strategies, and a proliferation of corporate net-zero target setting.

Central to the update of the Management Quality methodology from v.4.0 to v.5.0 is the creation of a new Management Quality level: Level 5: Transition Planning and Implementation. This level consists of five new indicators, four of which are completely new and one of which has been moved up from Level 4 in the v.4.0 methodology. These indicators aim to elucidate two key aspects of corporate climate governance and management. Firstly, they evaluate the degree to which companies have clearly defined and quantified the necessary steps within their transition plans to achieve decarbonisation objectives. Secondly, they assess the alignment between companies' business operations, capital investments and lobbying activities, and their declared decarbonisation goals.

In addition to a new Level 5, there are also two further changes to Level 4 and one update to Level 3. On Level 4, one indicator that focussed on climate lobbying has been removed due to reservations about how it can be practically assessed given the need for an exhaustive list of accepted climate-focused organisations in order to do so. A new indicator has been added instead (MQ19), which focuses on emissions reduction targets, and as such lays the groundwork for Management Quality Level 5.

On Level 3, MQ12, which focuses on the disclosure of materially important Scope 3 emissions, has been expanded to cover a greater number of the sectors that the TPI Centre assesses and more Scope 3 categories, given that for a few new sectors the bulk of lifecycle emissions are concentrated in Scope 3 categories other than the use of sold products.

To enable orderly adoption of the new methodology, v.5.0 has been launched as an additional data service, rather than as a replacement, and consequently data for both the 'Current' and 'Beta' methodologies will continue to be displayed on the TPI Centre website until at least 2025.

A list of all indicators in the v.5.0 methodology and explanatory notes regarding their implementation can be found in section 4.4.

4.2 Research design process

TPI's Management Quality methodology has been developed through an iterative process of research, testing and review. The main elements of this work have been:

- **Literature review.** It has been desirable to align our work with other existing initiatives and disclosure frameworks, including the indicators requested by CDP,

the Climate Disclosure Standards Board and the Global Reporting Initiative, the Climate Action 100+ Initiative, and the recommendations of the Taskforce on Climate-related Financial Disclosures ([TCFD](#)). We have also drawn inspiration from the way investors articulate their expectations of companies on other sustainability-related issues, such as the Access to Medicines Index, the Access to Nutrition Index and the Business Benchmark on Farm Animal Welfare.

- **Testing the indicators.** TPI's original Management Quality framework, and every revision since, including v.5.0, has been extensively piloted on samples of FTSE Russell data. For the 2023 revision, we tested the impact on company scores for more than 500 companies in order to answer a number of questions:
 - Are the necessary data available to generate the indicators and, if not, are there alternative data that could provide the same insights?
 - Do the indicators and the framework generate meaningful results, for example do they effectively differentiate between companies?
 - How do the results compare with other measures of corporate climate-change performance (e.g. from CDP)?
 - Can the indicators be assessed objectively and consistently?
- **Peer review.** Drafts of the Beta Management Quality framework have been shared with TPI's steering advisory council, and a consultation paper on the proposed framework was circulated to all TPI supporters with a request for feedback on its suitability.

4.3 Management Quality staircase with six levels

Companies tend to implement their carbon management systems and processes in a relatively staged and structured manner. They often start by publicly acknowledging the relevance of climate change to their business and developing a high-level policy or statement. They then tend to set some relatively short-term, process-oriented targets, before progressively extending the duration and stringency of their targets, and defining these in a more precise, quantitative way. A similar phenomenon is often seen in reporting: companies tend to start by reporting on the operational (or Scope 1 and 2) carbon emissions from part of their business, and then progressively extend this reporting to apply to more of the business and, in time, to cover some of the emissions from their supply chains and from the use of their products (Scope 3 emissions).

Accordingly, the new TPI Management Quality framework tracks the progress of companies through the following six levels:

- **Level 0 – Unaware of (or not Acknowledging) Climate Change as a Business Issue.**
- **Level 1 – Acknowledging Climate Change as a Business Issue:** the company acknowledges that climate change presents business risks and/or opportunities, and that the company has a responsibility to manage its greenhouse gas emissions. This is often the point where companies adopt a climate change policy.
- **Level 2 – Building Capacity:** the company develops its basic capacity, its management systems and processes, and starts to report on practice and performance.
- **Level 3 – Integrating into Operational Decision-Making:** the company improves its operational practices, assigns senior management or board responsibility for climate change and provides comprehensive disclosures on its carbon practices and performance.

- **Level 4 – Strategic Assessment:** the company develops a more strategic and holistic understanding of risks and opportunities related to the low-carbon transition and integrates this into its business strategy.
- **Level 5 – Transition Planning and Implementation:** The company uses its strategic understanding of climate and transition risk/opportunity to create a detailed and actionable transition plan which aligns business practices and capital expenditure decisions with their decarbonisation goals.

Figure 3. The Management Quality (MQ) staircase



Some companies are still at an early stage of establishing carbon management and reporting processes, whereas others have assessed the resilience of their businesses and business models to a range of future low-carbon scenarios, quantified the actions they will take to meet emission reduction targets, and detailed how they will align their future capital expenditure with their commitments.

Up to 23 specific Management Quality indicators/questions are used to map companies on to these six levels. These are set out in detail below. The data underpinning the indicators are provided by FTSE Russell.

With the exception of Level 0, companies need to be assessed as 'Yes' on all of the questions pertaining to a level before they can advance to the next level. We also recognise companies that meet all the TPI indicators – i.e. that return a perfect Management Quality score – as 'Five star' companies.

Companies can move in both directions on the Management Quality staircase and movement can come about either because companies' management practices change, or because the set of indicators used to sort companies on to different levels evolves.

4.4 Indicators

Table 1 lists the indicators in v.5.0 of TPI's Management Quality framework and provides explanatory notes.

Table 1. TPI's Management Quality framework, including indicators

LEVEL 0: UNAWARE OF (OR NOT ACKNOWLEDGING) CLIMATE CHANGE AS A BUSINESS ISSUE	
Question 1	<p>Does the company acknowledge climate change as a significant issue for the business?</p> <p>[If the company does not acknowledge climate change as a significant issue for the business, it is placed on Level 0]</p>
Notes	<p>Companies are assessed as Yes if they:</p> <ul style="list-style-type: none"> • Recognise climate change as a relevant risk and/or opportunity for the business (Q2); or • Have a policy or an equivalent statement committing them to take action on climate change (Q3); or • Have set greenhouse gas emission reduction targets (Q4); or • Have published information on their operational greenhouse gas emissions (Q5).
LEVEL 1: ACKNOWLEDGING CLIMATE CHANGE AS A BUSINESS ISSUE	
Question 2	<p>Does the company recognise climate change as a relevant risk and/or opportunity for the business?</p>
Notes	<p>Companies are assessed as Yes if they demonstrate recognition of climate change as a relevant risk and/or opportunity to the business, or if they have incorporated at least two of the following, more advanced management practices, namely they:</p> <ul style="list-style-type: none"> • Have a process to manage climate-related risks (Q11); • Have set long-term quantitative targets for reducing their greenhouse gas emissions (Q13); • Incorporate climate change performance into remuneration for senior executives (Q14); • Incorporate climate change risks and opportunities in their strategy (Q15); • Undertake climate scenario planning (Q16); • Disclose an internal price of carbon (Q17); • Ensure consistency between their climate change policies and the positions taken by trade associations of which they are members (Q23).
Question 3	<p>Does the company have a policy (or equivalent) commitment to action on climate change?</p>
Notes	<p>Companies are assessed as Yes if they have a published policy or commitment statement on climate change that commits them to addressing the issue, or to reducing or avoiding their impact on climate change (e.g. to reduce emissions or improve their energy efficiency).</p>
LEVEL 2: BUILDING CAPACITY	
Question 4	<p>Has the company set greenhouse gas emission reduction targets?</p>
Notes	<p>Companies are assessed as Yes if they have greenhouse gas emissions reduction targets. These targets may cover Scopes 1, 2 and/or 3, and they may be quantified or unquantified.</p>

	This question is less demanding than Questions 7 and 14, which require companies to have set quantified targets and for those quantified targets to be long-term, respectively. Companies that are assessed as Yes on Question 7, or Yes on Questions 7 and 13, are automatically assessed as Yes on Question 4.
Question 5	Has the company published information on its operational (Scope 1 and 2) greenhouse gas emissions?
Notes	Companies are assessed as Yes if they report on their Scope 1 and 2, or their Scope 1, 2 and 3 emissions. Companies that only report Scope 1 emissions are assessed as No.
LEVEL 3: INTEGRATING INTO OPERATIONAL DECISION-MAKING	
Question 6	Has the company nominated a board member or board committee with explicit responsibility for oversight of the climate change policy?
Notes	Companies are assessed as Yes if they provide evidence of clear board or board committee oversight of climate change, or if they have a named individual/position responsible for climate change at board level.
Question 7	Has the company set quantitative targets for reducing its greenhouse gas emissions?
Notes	Companies are assessed as Yes if they have set quantified targets to reduce greenhouse emissions in relative or absolute terms (Scopes 1, 2 and/or 3). This question is more demanding than Question 4, as companies must have set quantitative targets to reduce emissions. This question differs from Question 13, which asks whether companies have set quantified targets for reducing greenhouse gases over the long term (i.e. targets that are more than 5 years in duration). Companies that are assessed as Yes on Question 13 are automatically assessed as Yes on this question.
Question 8	Does the company report on Scope 3 emissions?
Notes	Companies are assessed as Yes if they report on Scope 3 emissions separately, either in total or in one or more categories, or if they provide a total for Scope 1, 2 and 3 emissions.
Question 9	Has the company had its operational (Scope 1 and/or 2) greenhouse gas emissions data verified?
Notes	Companies are assessed as Yes if their operational greenhouse gas emissions have been independently verified by a third party, or if they state the international assurance standard they have used and the level of assurance.
Question 10	Does the company support domestic and international efforts to mitigate climate change?
Notes	Companies are assessed as Yes if they demonstrate support for mitigating climate change through membership of business associations that are supportive, and if they have a clear company position on public policy and regulation.
Question 11	Does the company have a process to manage climate-related risks?
Notes	Companies are assessed as Yes if they have integrated climate change into multi-disciplinary company-wide risk management, or if they have a specific climate-related risk management process.
Question 12 (applicable to some sectors only)	Does the company disclose materially important Scope 3 emissions?

Notes	<p>Scope 3 emissions are diverse and many companies only disclose in a sub-set of categories. In some sectors, particular categories of Scope 3 emissions are materially important, in the sense of being a large share of lifecycle emissions. In these sectors, we require companies to specifically disclose emissions in the relevant category or categories:</p> <p>For automobile manufacturing, coal mining, oil and gas production, and oil and gas distribution companies we require disclosure of Scope 3 emissions from use of sold products.</p> <p>For food producers we require disclosure of Scope 3 emissions from purchased goods and services.</p> <p>For diversified miners we require disclosure of Scope 3 emissions from the processing of sold products.</p> <p>For chemicals companies we require disclosure of Scope 3 emissions from purchased goods and services and the use of sold products.</p>
LEVEL 4: STRATEGIC ASSESSMENT	
Question 13	Has the company set long-term quantitative targets for reducing its greenhouse gas emissions?
Notes	<p>Companies are assessed as Yes if they have set quantified, long-term targets (i.e. more than 5 Years in duration) to reduce greenhouse emissions in relative or absolute terms (Scopes 1, 2 and/or 3).</p> <p>This question is more demanding than Question 7, as the targets must not only be quantitative, they must also be long-term.</p>
Question 14	Does the company's remuneration for senior executives incorporate climate change performance?
Notes	Companies are assessed as Yes if executive remuneration incorporates climate change performance.
Question 15	Does the company incorporate climate change risks and opportunities in their strategy?
Notes	Companies are assessed as Yes if they detail how they incorporate climate change risks and opportunities in their strategy (mitigation, new products, R&D, etc.), and if they disclose the impact of climate change risks and opportunities on financial planning (OpEx, CapEx, M&A, debt).
Question 16	Does the company undertake climate scenario planning?
Notes	Companies are assessed as Yes if they mention the 2 degrees scenario in relation to business planning or confirm they have conducted climate related scenario analysis, and if they describe the business impact of one or more climate scenario analysis.
Question 17	Does the company disclose an internal price of carbon?
Notes	Companies are assessed as Yes if they have and disclose their internal carbon price.
Question 18	Does the company disclose the actions planned to meet its emissions reduction targets?
Notes	Companies are assessed as Yes if they disclose the set of actions they intend to take to achieve their GHG reduction targets, including Scope 3 emissions where applicable.

LEVEL 5: TRANSITION PLANNING AND IMPLEMENTATION	
Question 19	Does the company quantify the key elements of its emissions reduction strategy and the proportional impact of each action in achieving its targets?
Notes	Companies are assessed as Yes if they quantify key elements of their emission reduction strategy, including Scope 3 emissions where applicable, and if they disclose the quantified contribution of each action in terms of the approximate proportion of the overall GHG target that the action will account for.
Question 20	Does the company's transition plan clarify the role that will be played by offsets and/or negative emissions technologies?
Notes	Companies are assessed as Yes if they clarify the role and type of offsets/negative emission technologies used in their transition plans to meet medium- and long-term targets.
Question 21	Does the company commit to phasing out capital expenditure in carbon intensive assets or products?
Notes	Companies are assessed as Yes if they explicitly commit to a time-bound phase-out of investments in carbon intensive assets or products (as opposed to a commitment which only covers the draw-down of existing assets).
Question 22	Does the company align future capital expenditures with its long-term decarbonisation goals and disclose how the alignment is determined?
Notes	Companies are assessed as Yes if they commit to align all future capital expenditures with their long-term GHG targets or with the Paris Agreement's objective of limiting global warming to 1.5° Celsius. The company must also disclose the methodology used to align its future CapEx with its decarbonisation goals.
Question 23	Does the company ensure consistency between its climate change policy and the positions taken by trade associations of which it is a member?
Notes	Companies are assessed as Yes if they have a stated policy or commitment to ensure consistency between their climate change policy and the position taken by the trade associations of which they are members, and for responding appropriately in those instances where the trade association positions is significantly weaker than or contradicts that of the company.

4.5 Mapping to other disclosure frameworks

The NZIF has made recommendations on the five key components companies need to produce credible corporate transition plans:

1. Comprehensive, net zero aligned emissions targets
2. A credible strategy to deliver those targets
3. Demonstrable engagement to support the achievement of targets
4. The contribution to 'climate solutions'
5. Supporting emissions and accounting disclosure.

By aligning with NZIF (Appendix 1), the TPI indicators that are included in the Management Quality framework also automatically align with the [Climate Action 100+](#) framework, the [Transition Plan Taskforce](#) guidance and the latest updates to the TCFD guidance, all of which have placed great emphasis on disclosures regarding how companies are planning to achieve their greenhouse gas (GHG) emissions reduction targets. (Appendix 1 shows how the TPI indicators map on to the NZIF framework.)

5. Carbon Performance assessment

The TPI Centre's Carbon Performance assessments to date have predominantly been based on the Sectoral Decarbonisation Approach (SDA).¹ [8] The SDA translates greenhouse gas emissions targets made at the international level (e.g. under the 2015 UN Paris Agreement) into benchmarks against which the performance of individual companies can be compared.

The SDA is built on the principle of recognising that different sectors of the economy (e.g. oil and gas production, electricity generation and automobile manufacturing) face different challenges arising from the low-carbon transition, including where emissions are concentrated in the value chain, and how costly it is to reduce them.

Therefore, the SDA takes a sector-by-sector approach, comparing companies within the same sector against each other and against sector-specific benchmarks, which establishes the performance of an average company that is aligned with international emissions targets.

The SDA can be applied by taking the following steps:

- A global carbon budget is established, which is consistent with international emissions targets, for example keeping global warming below 2°C. To do this rigorously, some input from a climate model is required.
- The global carbon budget is allocated across time and to different regions and industrial sectors. This typically requires an Integrated Assessment Model (IAM), and these models usually allocate emissions reductions by region and by sector according to where it is cheapest to reduce emissions and when. Cost-effectiveness is, however, subject to some constraints, such as political and public preferences, and the availability of capital. This step is therefore driven primarily by economic and engineering considerations, but with some awareness of political and social factors.
- To compare companies of different sizes, sectoral emissions are normalised by a relevant measure of sectoral activity (e.g. physical production, economic activity). This results in a benchmark path for emissions intensity in each sector:

$$\text{Emissions intensity} = \frac{\text{Emissions}}{\text{Activity}}$$

- Assumptions about sectoral activity need to be consistent with the emissions modelled and therefore should be taken from the same economy-energy modelling where possible.
- Companies' recent and current emissions intensity is calculated, and their future emissions intensity is based on emissions targets they have set (this assumes




¹ The Sectoral Decarbonisation Approach (SDA) was created by CDP, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) in 2015. See Science-Based Targets Initiative [SBTi]: <https://sciencebasedtargets.org/resources/files/Sectoral-Decarbonization-Approach-Report.pdf>

companies exactly meet their targets).² Together these establish emissions intensity paths for companies.

- Companies' emissions intensity paths are compared with each other and with the relevant sectoral benchmark pathway.

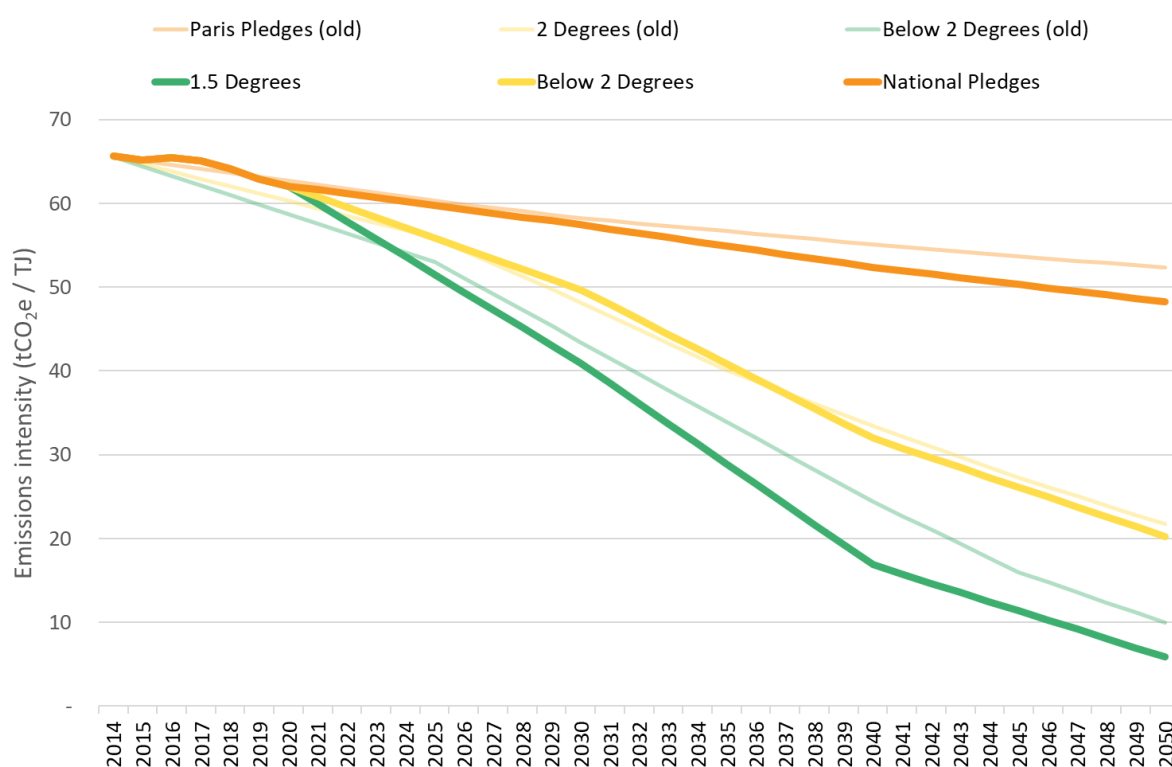
TPI benchmarks

In the majority of sectors, the TPI Centre uses the following sectoral benchmark pathways/scenarios:

-  **A 1.5 Degrees scenario**, which is consistent with the overall aim of the Paris Agreement to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels”. [9] This scenario is consistent with a carbon budget that limits the global mean temperature rise to 1.5°C with a 50% probability. [10]
-  **A Below 2 Degrees scenario**, which is also consistent with the overall aim of the Paris Agreement to limit warming, albeit at the middle of the range of ambition. This scenario is consistent with a carbon budget that limits the global mean temperature rise to 1.65°C with a 50% probability. [11]
-  **A National Pledges scenario** built on the 2020 Stated Policies Scenario of the International Energy Agency (IEA), which takes into account policies that were in place or under development up to at least mid-2020, depending on the sector. According to the IEA, this aggregate is currently insufficient to put the world on a path to limit warming to 2°C, even if it will constitute a departure from a business-as-usual trend. This scenario is consistent with a carbon budget that limits the global mean temperature rise to 2.6°C by 2100 with a 50% probability. [11]

² Alternatively, future emissions intensity could be calculated based on other data companies provide on their business strategy and capital expenditure plans.

Figure 4. TPI's benchmarks in oil and gas sector



Source of data for scenarios

The main source of data for these scenarios is the IEA's modelling, via its biennial *Energy Technology Perspectives* reports, [11]–[12] *World Economic Outlook* reports, [13]–[15] and *Net Zero Emissions by 2050* report. [10]

Sectors assessed on different benchmarks

There are a few sectors that the TPI Centre assesses using different benchmark concepts and/or data:

- In **airlines** and **shipping**, we use an *International Pledges* benchmark instead of *National Pledges*, because the pledges in these sectors are primarily set out by international bodies, the International Civil Aviation Organisation (ICAO) and the International Maritime Organisation (IMO), respectively, rather than by national commitments.
- In the **paper** sector, we use *Below 2 Degrees*, *2 Degrees* and *Paris Pledges* benchmarks, which are based on the IEA's 2017 scenarios due to the limited sectoral coverage of IEA's recent scenarios. [12]

Source of company data

In line with TPI's philosophy, companies' emissions intensity paths are derived from public disclosures (including responses to the annual CDP questionnaire, as well as companies' own reports, e.g. sustainability reports) as far as possible. In particular, only company disclosures are used to estimate recent and current emissions intensity, and company disclosures are also the source of information on targets for future emissions.

Further details of how the Carbon Performance methodology is applied in specific sectors can be found in TPI's sectoral Methodology Notes on the [TPI Centre website](#).

6. Company assessment process and quality assurance

The TPI Centre's Management Quality assessments are based on data provided by FTSE Russell, specifically the data and indicators it uses to develop its ESG ratings.³ These data go through a four-stage quality assurance process before being provided to the TPI Centre:

1. **Initial assessment and analyst quality control.** A FTSE Russell analyst conducts the initial company assessment, including a review of the previous year's assessment to assess if a change in data from the previous year is justified. This is followed by a second analyst carrying out a check on the company analysis and by a separate, more experienced, analyst reviewing company assessments to ensure accuracy and consistency. Once FTSE completes its data quality control, the TPI Centre's analysts carry out an additional quality check in coordination with FTSE.
2. **Company review.** FTSE Russell contacts the company, providing it with the opportunity to review the data collected. FTSE Russell's research process only allows publicly available information to be used.
3. **Trend quality control.** Senior FTSE Russell analysts conduct trend analysis to look for inconsistent data and data outliers. They also conduct focused quality control on particular indicators, based on their understanding of indicators that are more vulnerable to errors.
4. **Quality management.** FTSE Russell staff carry out a series of quality-monitoring checks, focusing on both quantitative data consistency (e.g. units, gaps, outliers) and qualitative data (e.g. checking interpretation and criteria guidance). The results of these checks are shared with analysts so they may implement changes and enhance their quality control processes. The process held by FTSE Russell is complemented by the quality checks performed by the TPI Centre's analysts.

The TPI Centre's research team carries out its own **Carbon Performance assessment** from beginning to end, as follows:

1. **Initial data collection and review.** An analyst collects Carbon Performance data from company disclosures and conducts a detailed review to confirm that the data are complete and consistent with those collected by FTSE Russell, where the data overlap. Any inconsistencies are discussed with FTSE Russell.
2. **Initial findings review.** Following the application of TPI's Management Quality and Carbon Performance methodologies to the data, a different analyst reviews each company's assessment in detail, and we look at overall trends across companies with a view to identifying outliers and unusual patterns.
3. **Company review.** Once we have completed the company assessments, we write to each of the companies with its draft assessment by the TPI Centre, requesting that

³ For further information see <http://www.ftse.com/products/downloads/ESG-ratings-overview.pdf?800>.

the companies review their assessments and confirm the accuracy of the underlying data.

4. **Final assessment.** We review company responses and amend their assessments if their feedback is judged to have merit. Further details of our procedures for incorporating company feedback are contained in Box 1.

Box 1. Responding to companies

Allowing companies the opportunity to review and, if necessary, correct their assessments is an integral part of the TPI Centre's quality assurance process. We send each company its draft Carbon Performance assessment and the data that underpin that assessment, while FTSE Russell sends the Management Quality assessment, offering companies the opportunity to review and comment.

If a company seeks to challenge its result/representation, our process is as follows:

- The TPI Centre reviews the information provided by the company. At this point, additional information may be requested.
- If it is concluded that the company's challenge has merit, the assessment is updated.
- If it is concluded that there are insufficient grounds to change the assessment, the TPI Centre publishes its original assessment.
- If the company requests an explanation regarding its feedback after the publication of its assessment, the TPI Centre's research team explains the decisions taken.
- If a company requests an update of its assessment based on data publicly disclosed after the research cut-off date communicated to the company, the TPI Centre can note the new disclosure on the company's profile on the TPI Centre's website.
- If a company chooses to further contest the assessment and reverts to legal means to do so, the company's assessment is withheld from the TPI Centre's website, and the company is identified as having challenged its assessment.

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Appendix 1. Mapping of TPI's Management Quality framework to NZIF recommendations

Key Component	Sub-component	Considerations for those preparing transition plans	Corresponds to:		
			NZIF	CA100+ Indicators	TPI MQ Indicators
1. Comprehensive aligned transition targets	a) Comprehensive	Cover all material emissions scopes / gasses / operations	1	1	
	b) Short, med, & long-term targets	Set short (<2026), medium (2026-2036), and long term targets (2050)	2	2 3 4	MQ7, MQ13
	c) Absolute and intensity	Conversion of intensity into absolute emissions (and vice versa)		3	
2. Credible strategy to deliver the targets	a) Quantified decarbonisation actions	Disclose quantified actions for targets. State econ/tech feasibility	5	5	MQ18, MQ19
	b) Tackling operational emissions	Set medium and long-term scope 1&2 targets and strategy			
	c) Tackling sector-specific actions	Set additional targets as appropriate for sector			
	d) Aligning capital allocation	State alignment, future fossil fuel and decarbonization spend	6	6	MQ22, MQ23
	e) Setting out neutralisation strategy	Contribution of offsets, CCUS, etc. to targets		5	MQ20
	f) Underlying historical performance	Historic emissions and any adjustments for M&A and offsets	3	11	MQ20
	g) Governance structure	Board-level responsibility for targets linked to remuneration	8	8	MQ6, MQ15
3. Demonstrable engagement commitments to support the achievement of targets	a) Value chain engagement	% of aligned suppliers, procurement \$, customers and revenue			
	b) Climate policy engagement	Align direct and indirect lobbying and annual monitoring review	7	7	MQ10, MQ23
	c) Financing and investment	Alignment of financing partners and investments			
	d) Just transition	Commitment to JT principles; report risks and mitigation strategy	9	9	
4. The contribution to Climate Solutions	a) Climate solutions definition	Definition of low carbon used in its financial reporting and KPIs			
	b) Investment in solutions	Current and planned investment in low carbon production		6	
	c) Low-carbon production	Current and planned low carbon production/revenues		5	
	d) Nature based solutions	Details of investment in offset projects		5	
5. Supporting emissions & accounting disclosure	a) Emissions/energy consumption	Verified Scope 1/2/3 emissions, NBS, TBS, energy consumption	4	10	MQ5, MQ9
	b) Impact of 1.5C on accounts	Impact of 1.5C scenario on balance sheet & assumptions	10	10	

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