

ESG RATINGS AND CLIMATE TRANSITION

An assessment of the alignment
of E pillar scores and metrics

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Environmental, social, and governance (ESG) products are increasingly being used as a tool to assess the alignment of company targets and objectives with actions to support an orderly low-carbon transition. Building on existing OECD research on ESG ratings, and particularly the environmental ‘E’ pillar, this report seeks to understand the underlying data and metrics developed by ESG rating providers and their alignment with lower carbon emissions as well as with climate frameworks and initiatives.

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Foreword

The accelerating threat of climate change raises the urgency of the global commitment to climate transition, including the important role of financial markets in aligning investment with net zero objectives. As a result, this has attracted the attention of investors, policy makers, and civil society stakeholders, and has been a factor in the growth of sustainable finance and tailored financial products.

In particular, ESG investing, which generally refers to the process of incorporating environmental, social and governance (ESG) factors into asset allocation and risk decisions, so as to generate sustainable, long-term financial returns, has become a leading form of sustainable finance due to its perceived potential to deliver financial returns, align with societal values, and contribute to sustainability and climate-related objectives.

As market participants show greater awareness and concern of the physical and climate transition risks that may affect financial stability and market efficiency, ESG rating providers and investment funds are increasingly integrating metrics aligned with environmental impact, climate risk mitigation, and strategies toward greater use of renewable energy, innovations and products in their business activities.

For this reason, the environmental 'E' pillar score of ESG rating has become an important component of ESG investing, as the 'E' pillar is being increasingly used as a proxy for asset selection aligned with a low-carbon transition. It is therefore critical to understand the extent to which the environmental 'E' pillar of ESG ratings reflects carbon emission reduction, efficient resource use and investment to support renewables, allowing market participants to make informed decisions relating to supporting an orderly transition to low-carbon economies.

There is growing recognition that better quality data and reporting will be needed to provide globally consistent and verifiable information by which to assess the progress of companies' transitions, and to incorporate results into capital allocation processes. Forward-looking metrics such as climate related corporate policies and targets will be integral to the transition, however the inclusion of such metrics in E pillar scores is currently hampered by a lack of verification.

Building on existing OECD research on ESG rating and investing, this report assesses the extent to which the climate-related information and metrics used to compile E pillar scores aligns with actions to lower greenhouse gas emission and emission intensity to support the transition of activities and operations to renewable and low-carbon alternatives.

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Executive summary

In recent years, governments, international organisations and the private sector have acknowledged the need to prioritise tackling the climate crisis. Frameworks and initiatives have been set up to analyse climate-related risks and opportunities with respect to a transition to low-carbon economies, and their impact on the global financial system.

Market products and measurement tools have emerged as a possible answer, which could allow investors to better align portfolios with specific climate-related objectives and strategies. Among these, ESG investing has become a leading form of sustainable finance, and has progressed from early-stage development to mainstream finance in a number of OECD and emerging countries. Moreover, ESG ratings the Environmental Pillar scores and underlying metrics are increasingly being used by central banks and financial authorities in their assessments of climate transition risks and progress in the financial system (NGFS, 2022^[1]).

While important progress has been made to develop ESG rating and investing approaches, particularly with respect to the Environmental pillar of ESG ratings, methodologies will need to move from rewarding disclosure to rewarding alignment of issuer activities with climate objectives and progress toward sustainability goals. Currently, ESG rating providers appear to be giving a higher weight to the existence of climate related corporate policies, targets and objectives rather than forward-looking climate metrics and transition frameworks aligned metrics, such as reduction in greenhouse gas emissions and emission intensity over time combined with increased investment in climate mitigation, adaption and renewable energy.

This report highlights areas for improvement to strengthen the alignment of E pillar scores to low-carbon transition objectives, and support international efforts, such as those undertaken by the G20, to improve the consistency, comparability and quality of core ESG metrics. In particular, the report highlights the importance of having effective tracking and verification processes to ensure that market participants can verify and assess progress in line with a low-carbon transition.

Section 1 provides an introduction and specifies the scope of the work conducted by the OECD, highlighting the range of ESG rating providers assessed, the diverse range of categories, sub-categories and metrics used to compute E pillar scores as well as shortcoming of the analysis with respect to data availabilities.

Section 2 assesses the selection of E pillar metrics that would be expected to align with a low-carbon transition (using globally recognised frameworks as a benchmark) and analyses the extent to which these are captured in, and influence the outcomes of, high E pillar scores. Findings suggest that, to the extent that the sample set found in this report is broadly reflective of ESG approaches in financial markets, high E pillar scores are not correlated with factors such as reduced greenhouse gas emissions and emission intensity over time or increased use of and investment in renewable energy. In turn, this makes the E pillar not a useful tool to assess or indicate a company's current level of short-term reduction in greenhouse gas emissions and emission intensity or investment in environmental R&D and renewable energy, which could limit market participants' use of it.

Section 3 assesses the factors that might be driving high E pillar scores. From an initial assessment, higher E-scoring companies perform more favourably on metrics that assess a company's disclosure of key decarbonisation goals, policies and commitments. This means that metrics on disclosure often only measure the existence of company policies rather than quality of targets and objectives in line with the latest climate science or GHG reduction scenarios consistent with the Paris Agreement temperature goal. Findings suggest that ESG rating providers' E pillar scores tend to be correlated with factors not directly related to climate transition actions such as market capitalisation and the resources dedicated to disclosure, suggesting that these factors play a greater role than current or forward-looking climate-related metrics in contributing to high E pillar scores of ESG ratings. While disclosure and implementation of decarbonisation policies and targets is essential in addressing climate concerns, metrics on disclosure often only measure the existence of company policies and disclosure of emissions reduction plans rather than the quality of targets and objectives in line with the latest climate science and science-based targets to meet a 2 or 1.5 degree scenario.

Section 4 turns to the growing use of climate transition frameworks for companies and financial institutions to establish and assess transition targets, pathways, and progress against such targets. It explores if and how reporting and assessment frameworks are reflected in the E pillar score, by analysing how frameworks' core metrics and E scores metrics compare. Moreover, the section highlights common objectives, metrics, targets and methodologies of frameworks and initiatives to understand how differences can be captured in ESG ratings. Results indicate a correlation between E pillar metrics and aspects of frameworks driven by disclosure, policies and objectives, rather than forward-looking metrics reflecting greenhouse gas emissions and emission intensity change, reflecting findings from Section 2, and implying that companies' disclosure can be a driving force in high E ratings.

Section 5 considers the policy implications of these findings, to clarify what tools are being used for assessing and transitioning to low-carbon economies and to question whether they are sufficient for investors and market participants that wish to take action to better align their portfolio with decarbonisation objectives. Policies should be considered by central banks, supervisors and market regulators to strengthen the metrics' quality and verification of targets and objectives associated with transition plans, to make sure the current use of products and instruments does not lead to market inefficiencies and to allow for a meaningful comparison across companies, industries and markets. The integration of better quality E pillar metrics may also be needed to help monitor emission reduction and decarbonisation over time so that investors who wish to align their portfolios may be able to reward companies making progress in line with a low-carbon transition. In addition, it will be important to build on the 2021 Task Force on Climate-related Financial Disclosures (TCFD) guidance to further strengthen TCFD disclosure practices and improve granularity, reliability and consistency of metrics with respect to climate metrics, targets, and transition plans.

The report concludes that the 'E' pillar of ESG ratings has the potential to be an important tool to address challenges related to information on sustainability risk and opportunities and to ensure that capital is allocated to investments that support the low-carbon transition and sustainable growth, yet shortcomings will need to be addressed by policies and good practices.

1 Introduction and scope of the analysis

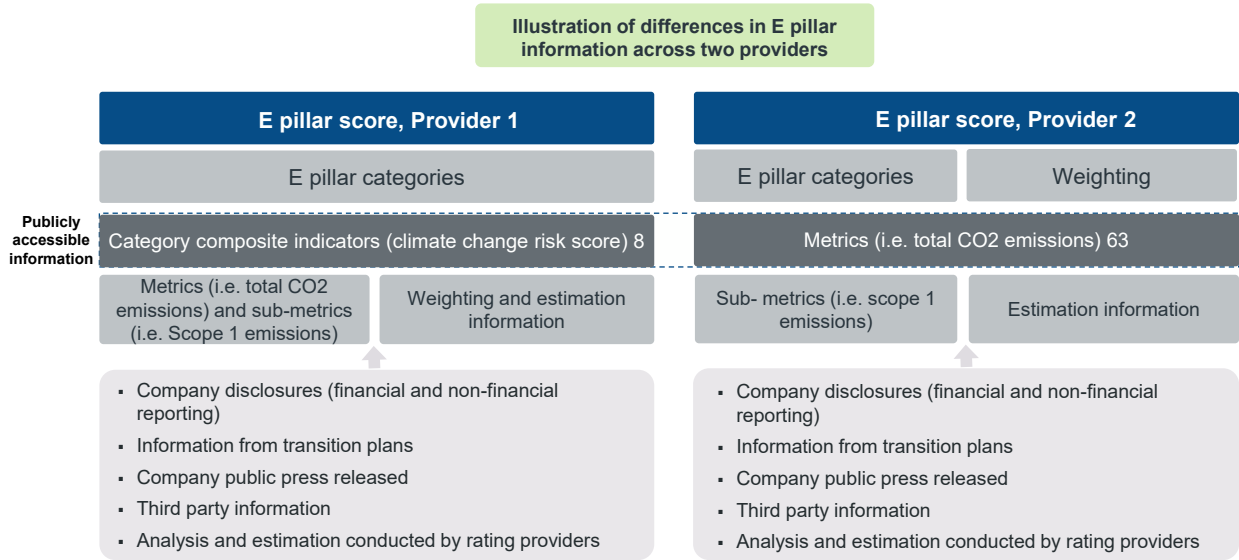
More emphasis has been put on ESG ratings and the net-zero commitments amid the ambition of COP26, and the emphasis on transition frameworks in this year's G20 SFWG. A range of market participants have started incorporating ESG approaches in their investing and risk management practices and environmental 'E' pillar scores are also being used by some as a tool to better align portfolios with the low-carbon transition. Similarly, central banks are using, or planning to use, ESG factors and climate transition metrics, ranging from TCFD disclosure metrics, climate transition frameworks, and in-house developed methodologies as a means of improving returns and managing risks, and better align portfolios with sustainability considerations (NGFS, 2022^[1]).

Therefore, an assessment of scores and underlying metrics of both the Environmental pillar of ESG ratings and climate transition frameworks is warranted. This report builds on the main findings from recent OECD research on ESG rating and investing and policy considerations to strengthen ESG practices to foster global consistency and comparability to delve deeper and encourage greater alignment of environmental metrics with a low-carbon transition. While not suggesting that all market activity will be aligned with net zero, to what extent can market participants use existing and emerging tools, metrics and frameworks to help them align their investments to a low carbon transition?

The ESG rating providers assessed in this note use a diverse range of categories, sub-categories and metrics to compute environmental pillar scores (Boffo and Patalano, 2020^[2]) (Boffo, Marshall and Patalano, 2020^[3]). While there are some commonalities in the metrics used, such as greenhouse gas emissions and emission intensity, these can vary in terms of the methodology used to calculate such metrics (including estimations when rating providers cannot source sufficient information from company disclosures) and the unit of measurement used (e.g. CO₂e tonnes, percentage revenue). In addition, rating providers make different levels of information available to subscribers and the public that can in turn be used for analysis such as in this report. Currently, the OECD has access to four sets of E pillar scores across four rating providers (Refinitiv, MSCI, Bloomberg and RobecoSAM), which are covered in this note. With regard to the input metrics used to compute such scores, the OECD only has access to input metrics for one provider and metric category scores for a second provider. For the first provider, the OECD has access to 63 metrics used to compute the E pillar score from one provider, whereas for the second, the OECD only has access to eight category based composite indicators¹ available (i.e. climate change risk score and environmental opportunities score). While the data used for the analysis was updated to 2021, data from MSCI is from 2019.

However, the OECD assessment of underlying data finds numerous discrepancies of metrics used (for example, CO₂ emissions data) which raises caution over the quality of data and its effects on quantitative results. Low quality data shows large fluctuations which may be due to shifts in reporting from companies, estimates by data providers or actual data errors are present.

Figure 1. E pillar information differences



OECD staff analysis has endeavoured to conduct a comparison and high-level categorisation of information using the E pillar scores of four rating providers (Refinitiv, MSCI, Bloomberg and RobecoSAM). However, in light of the issues outlined above, and in order to provide analysis, this report will compare where possible input metrics with metric category scores across two rating providers. In most cases the figures that display four rating providers will use the E pillar scores from all providers yet metrics such as CO2 emissions from only one provider to ensure consistency across companies in a like for like comparison. Importantly, stark differences in the metrics and methodologies used to compute E pillar scores by ESG rating providers, and level of data availability, raises the importance of and need for consistent and comparable ESG and E pillar metrics and approaches. Therefore, market participants and other stakeholders need accurate and comparable information on companies’ environmental and climate-related performance and activities in order to assess to what extent this fits with investment objectives that include sustainability, and climate objectives in particular.

2 Alignment of climate-relevant E pillar metrics with high E pillar scores

In principle, E pillar scores within ESG ratings have the potential to provide valuable forward-looking information on company exposure and management of risks and opportunities to support a low-carbon transition. In practice, a number of challenges undermine their use for this purpose. Market participants, possibly for lack of better widely available metrics and scores, have used ESG and E pillar ratings as a proxy for climate transition alignment (NGFS, 2022^[1]).²

However, the scores differ substantially in their calculation across various rating providers, not only in terms of the underlying data on which scores are based, but also in terms of how these data are used, weighted and extrapolated in the calculation of the overall rating (OECD, 2020^[4]). Several aspects of the E pillar within ESG rating methodologies can be difficult to interpret due to the multitude of diverse metrics on environmental factors and by an attempt to serve different stakeholders' interests without sufficiently clarifying its purpose. Currently, metrics used by rating providers include a core set of categories, including on: emissions and carbon footprint; resource use; energy output and management; water output and management; and renewable energy management. Despite commonalities on five categories of metrics, the underlying metrics used, methodology for measurement, and weight used differ materially across ESG rating providers (Boffo, Marshall and Patalano, 2020^[3]).

Taking into consideration such diversity of metrics, this section will assess the extent to which E pillar scores align with factors that align with climate transition, such as reduced greenhouse gas emissions and emission intensity over time or increased use of and investment in renewable energy. Previous work on ESG ratings and investing acknowledges that methodologies and scores are influenced by both financial materiality and sustainability goals (Boffo and Patalano, 2020^[2]).

This analysis is non-judgmental with respect to forms of financial, dynamic and double materiality that may be explicitly or implicitly associated with any given metric in the report. As one or more ESG rating providers indicate that their methodologies and ratings incorporate long-term enterprise value and risk management, it is plausible that the lack of relationship between E pillar scores and climate transition impact may reflect providers' perceptions that they do not affect financial materiality, relative to other metrics that may be driving E pillar scores.

To reflect the best available ESG information, the analysis is conducted using a sample of more than 2 500 middle and large capitalised companies across 50 jurisdictions. Findings from the initial analysis suggest that high E pillar scores do not systematically correlate with factors indicating decarbonisation, and therefore raise concerns over the usefulness of high E pillar scores as an effective measure of a company's management of climate related risks and opportunities, and commitment to effectively implement a decarbonisation pathway.

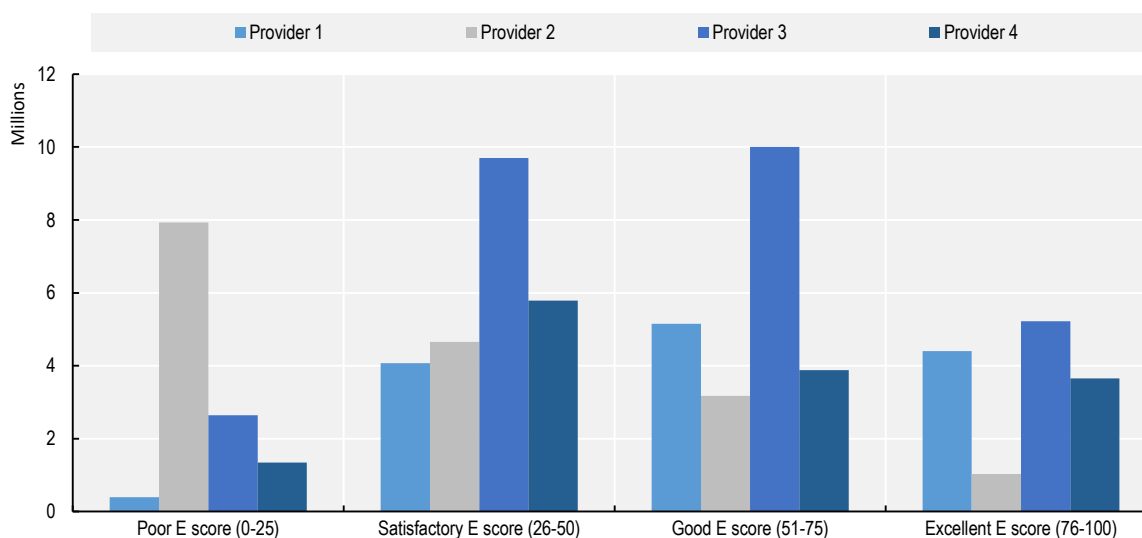
Limited correlation between greenhouse gas emissions, carbon emission intensity and high E pillar scores confirms that investing in high E scoring or high ESG scoring portfolios does not necessarily mean that

such tilting favours low-emitting companies (Figure 2). In some cases, high E pillar scores positively correlate with high greenhouse gas emissions and emission intensity.

E pillar scores appear at least somewhat correlated with factors that are not related directly to environmental issues. For example, market capitalisation and environmental pillar scores show greater correlation, and indicating that ESG ratings are not primarily driven by climate related metrics, but by the company size and level of disclosure capacity, as well as implementation of policies, commitments and targets (Figure 3).

Figure 2. Higher environmental pillar scores do not correspond with lower CO2 emissions

Average CO2 emissions in tonnes by environmental pillar score category

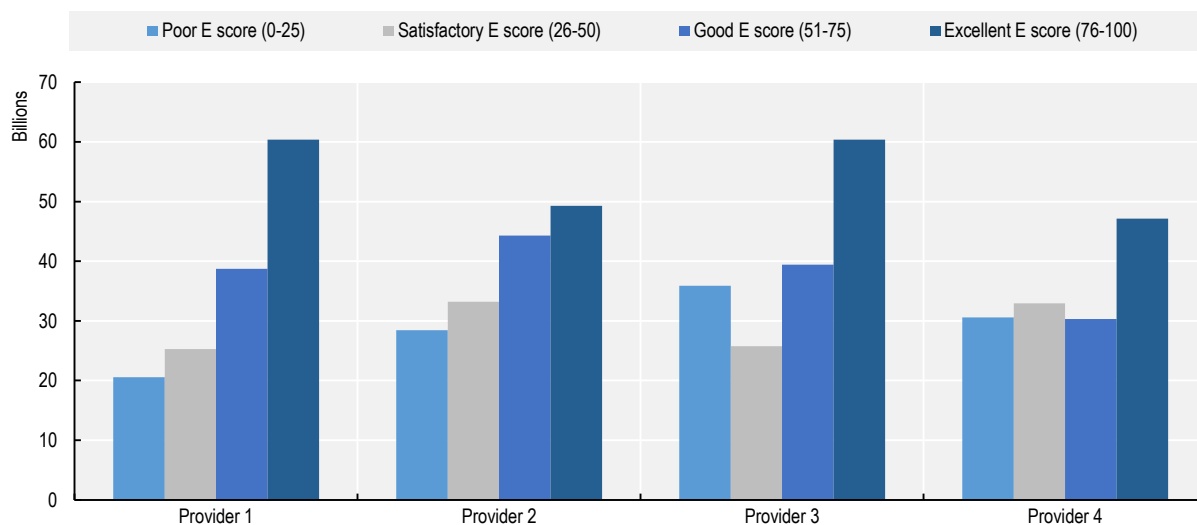


Note: Estimated total CO2 emissions, identified as total carbon dioxide (CO2) and CO2 equivalents emission in tonnes, including direct (scope 1) + indirect (scope 2).

Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

Figure 3. Higher environmental scores are associated with higher market capitalisation

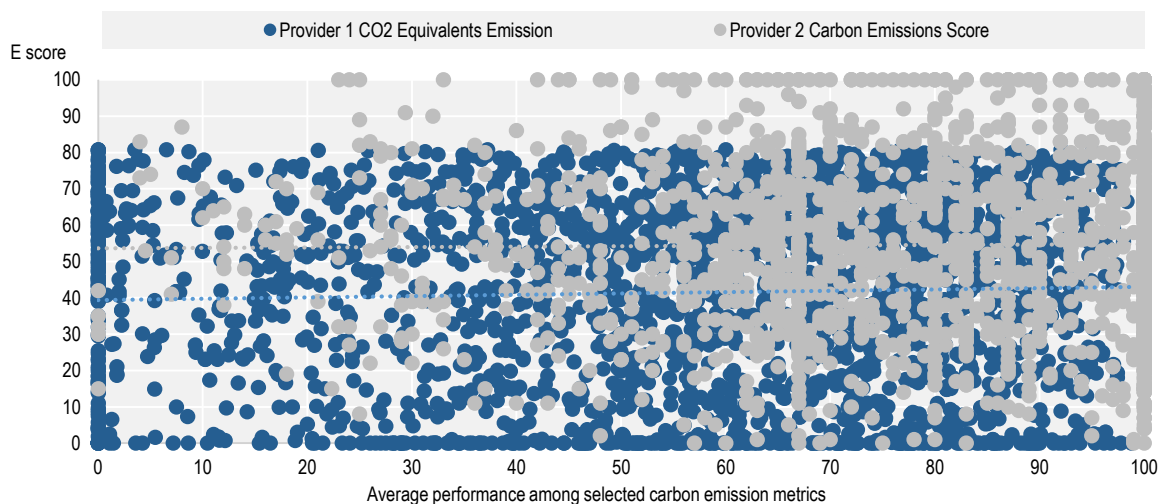
Average market capitalisation in USD billions by environmental pillar score category



Note: Market capitalisation of companies in the quartiles as of 31 December 2021.
 Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

Figure 4. Key carbon emission metrics are not correlated with E pillar scores

Comparison of carbon emission metrics across two providers by environmental pillar score (0-100 score)



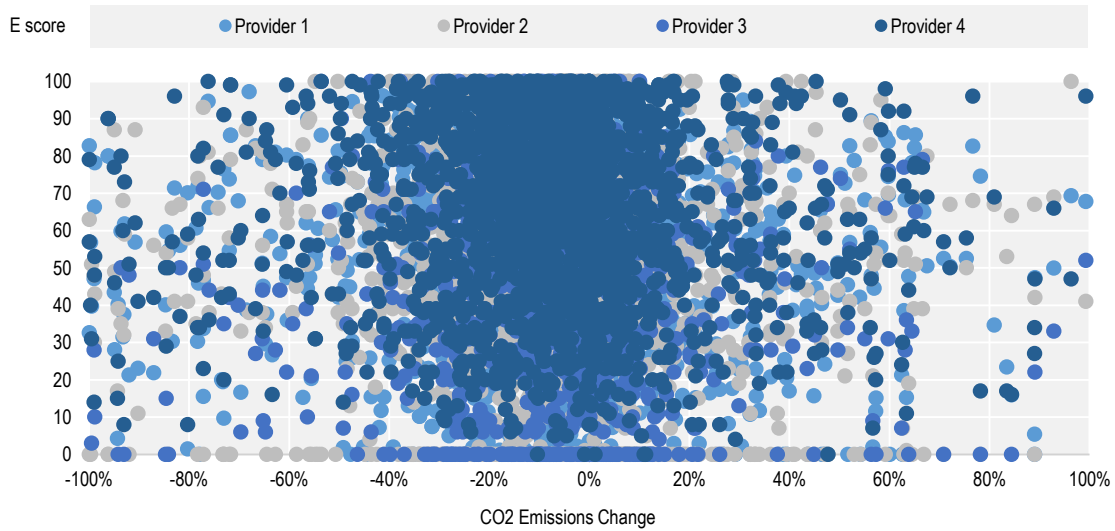
Note: Comparison of metrics for Greenhouse gas emissions for two different providers. The data has been standardised between 0 and 100.
 Source: MSCI, Refinitiv, OECD calculations

Amid an increasing number of companies setting decarbonisation targets, there appears to be little relationship between E scores and greenhouse gas emissions and intensity for the majority of companies analysed. The lack of alignment between outright greenhouse gas emissions and emission intensity could suggest that firms’ disclosure of plans to reduce emissions play a significant (and positive) role in determining their E pillar scores, rather than their current level of emissions. However, when assessing the three-year change in greenhouse gas emissions (Figure 5) and emission intensity (Figure 6) there is also

no alignment between firms that show a high reduction in greenhouse gas emissions, emission intensity and high E pillar scores. This suggests that past efforts to reduce carbon footprint and intensity are not factored into the assessment of firms' ability to deliver on forward-looking commitments.

Figure 5. Companies reducing their greenhouse gas emissions over time do not receive higher environmental pillar scores

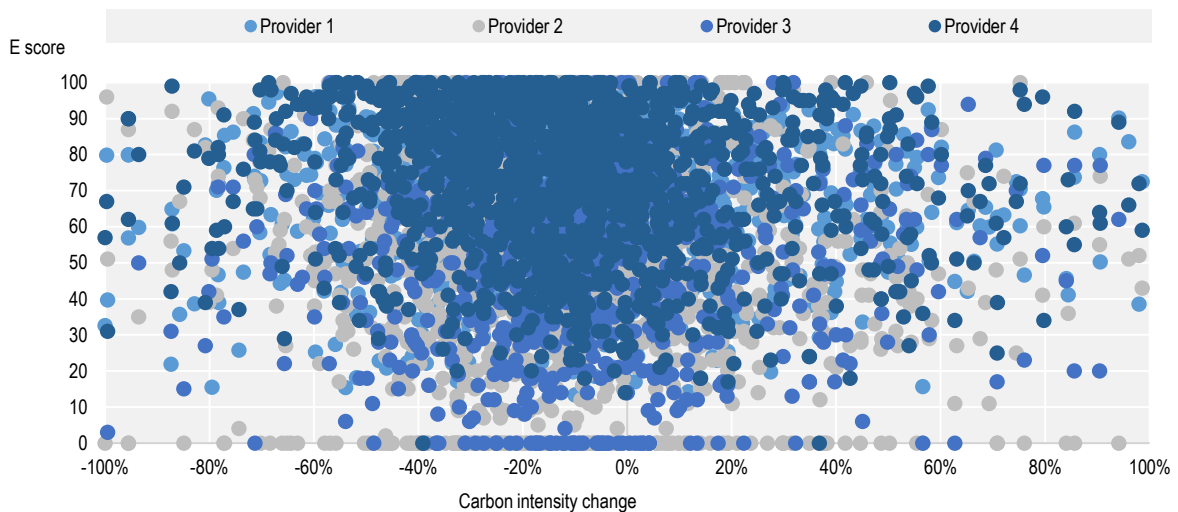
3-year change (%) in CO2 emissions by environmental pillar score



Note: CO2 Emissions identified as Total Carbon dioxide (CO2) and CO2 equivalents emission in tonnes, including direct (scope1) + indirect (scope 2).
 Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

Figure 6. Similarly, the reduction of emission intensity does not align with high environmental scores

3-year change (%) in emission intensity (CO2e in tonnes over revenues) by environmental pillar score

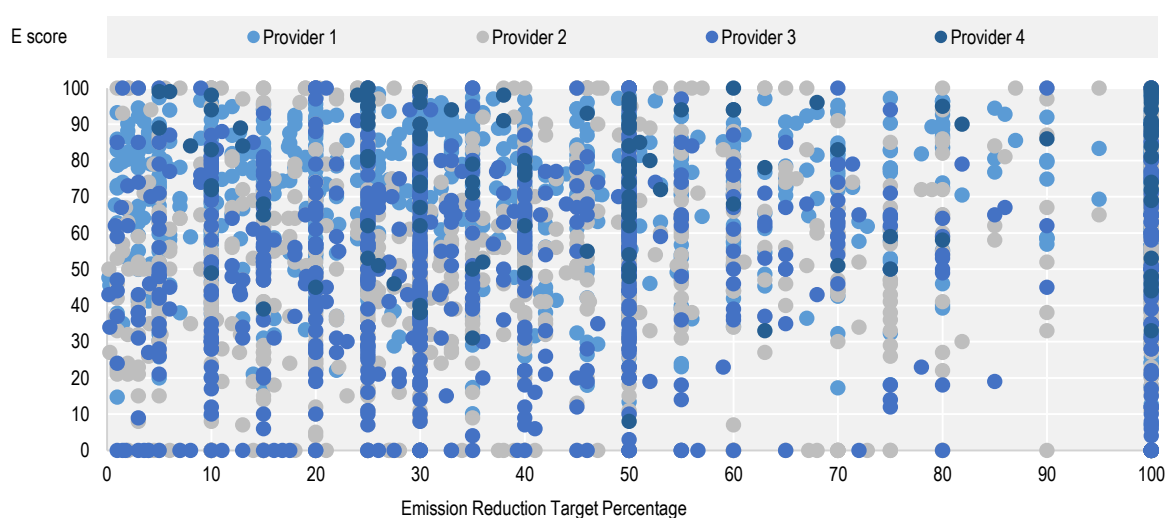


Note: Emission intensity measured as total CO2 and CO2 equivalents emission in tonnes divided by net sales or revenue in US dollars in million.
 Source: Bloomberg, MSCI, Refinitiv, OECD calculations

Similarly, as more companies are specifying their emission reduction targets for the future, the expectation is that these forward-looking targets would be reflected in the environmental pillar score. Nonetheless, Figure 7 shows a current lack of correlation between the two. The metric represents the target disclosed by each company suggesting how much they are planning to reduce their greenhouse gas emissions in a given time period (i.e. 50% by 2030). This raises concerns over how core targets in transition plans are incorporated into the pillar score, since companies setting clear transition strategies do not appear to be rewarded for providing better quality information or more ambitious targets to meet their decarbonisation plan.

Figure 7. Companies setting emission reduction targets do not consistently receive higher environmental pillar scores

Emission reduction target set (%) by environmental pillar score



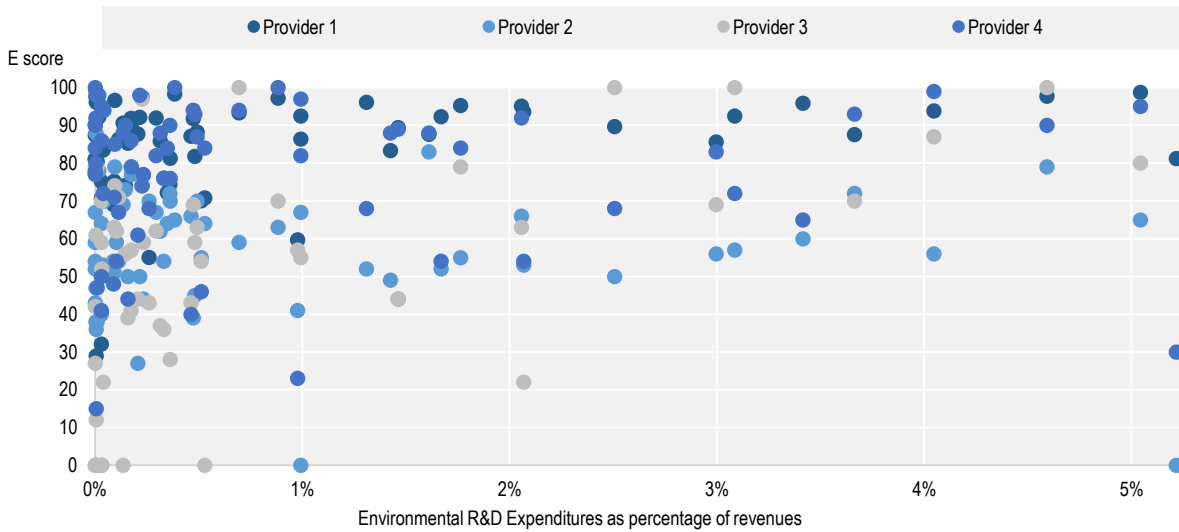
Note: Percentage of emission reduction target set by the company as reported by Refinitiv.

Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

Companies' climate transition strategies include the environmental Research and Development (R&D) expenditures and environmental expenditures. While only a smaller set of companies report on these metrics, there is no alignment between higher investments and a higher E pillar score (Figure 8 and Figure 9). Environmental R&D focuses on investments made for the development of products and services to improve environmental impact reduction and innovation, while the environmental expenditures refer to protection or prevention, reduction and control of environmental aspects, impacts, and hazards.

Figure 8. Higher spending in environmental R&D does not always align with higher E pillar scores

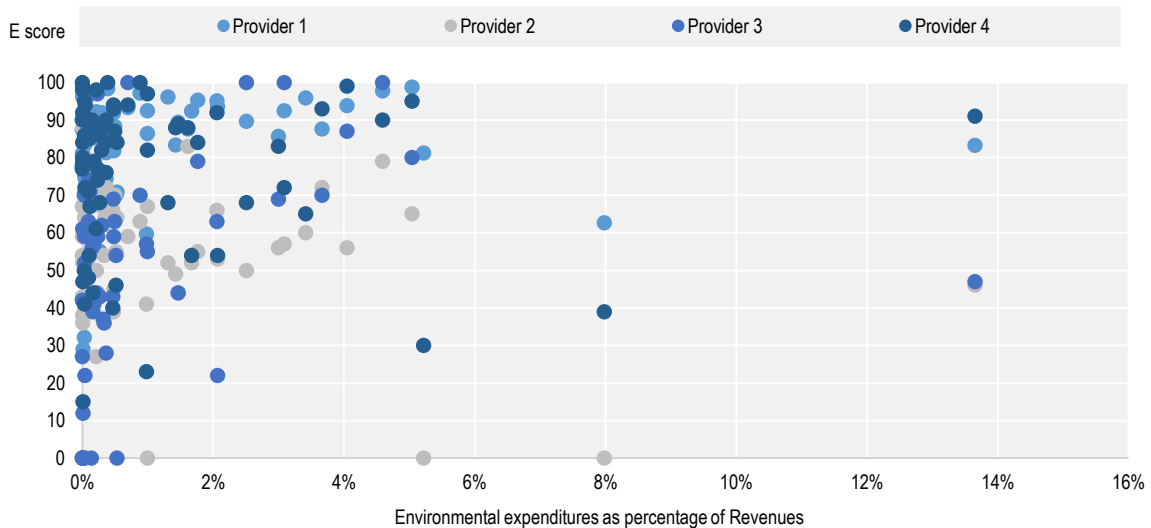
Environmental R&D expenditure (% of total revenues) by environmental pillar score



Note: Environmental R&D expenditures calculated as total amount of environmental R&D costs is US dollars (without clean up and remediation costs), including data on research & development costs for development of products and services focusing on improving the environmental impact reduction and innovation.
 Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

Figure 9. Higher environmental expenditures are not correlated with higher E pillar scores

Environmental expenditure (% of total revenues) by environmental pillar score

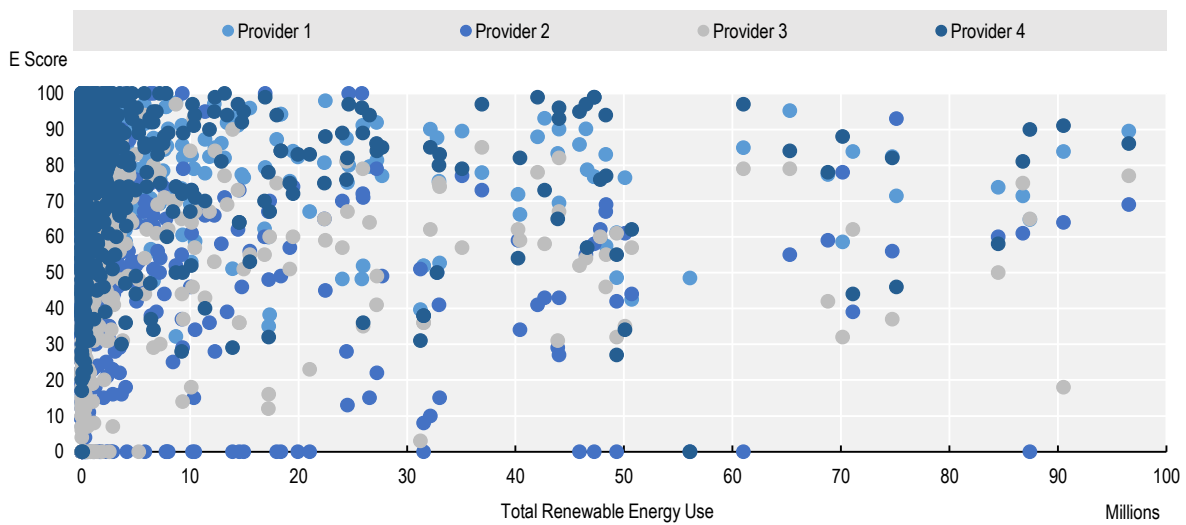


Note: Total amount of environmental expenditures in US dollars, including all environmental investment & expenditures for environmental protection or to prevent, reduce, control environmental aspects, impacts, and hazards. It also includes disposal, treatment, sanitation, and clean-up expenditure.
 Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

While renewable energy represents an important element of climate risk management, the alignment of renewable energy use and investment does not clearly align with high environmental pillar scores. The analysis of different metrics, including total renewable energy used, total renewable energy over revenues and renewable energy as percentage of total energy used do not show alignment between E pillar scores and the metrics chosen. The finding raises further questions as to the extent to which the E pillar score captures strategic initiatives that should help issuers achieve their intended transitions.

Figure 10. Higher use of renewable energy in absolute terms does not imply higher E pillar scores

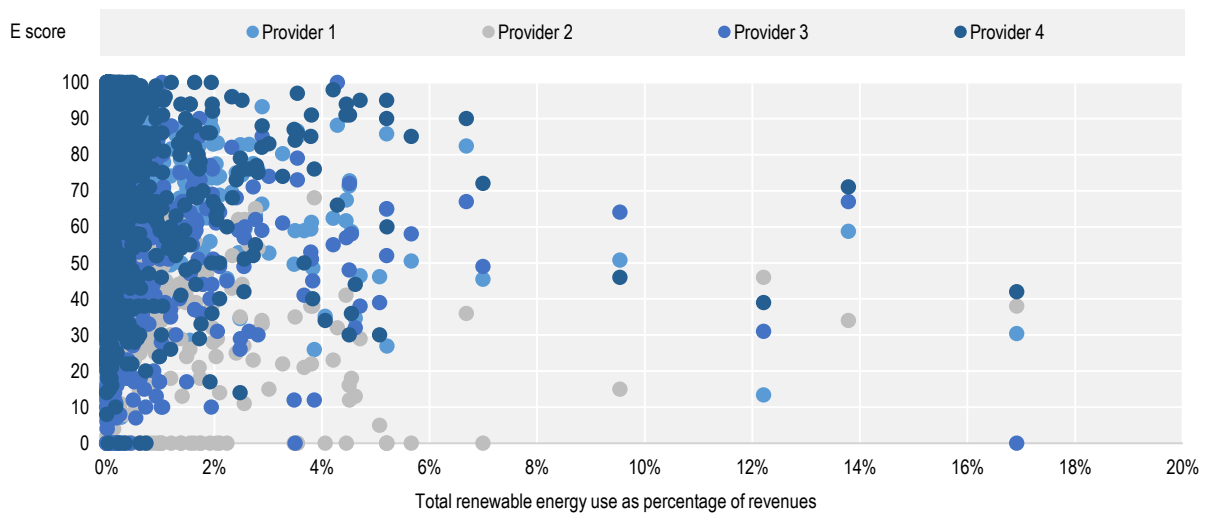
Total renewable energy use (gigajoules, millions) by environmental pillar score



Note: Total primary renewable energy purchased and produced in gigajoules.
Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

Figure 11. Higher use of renewable energy as percentage of revenues is not correlated with higher E pillar scores

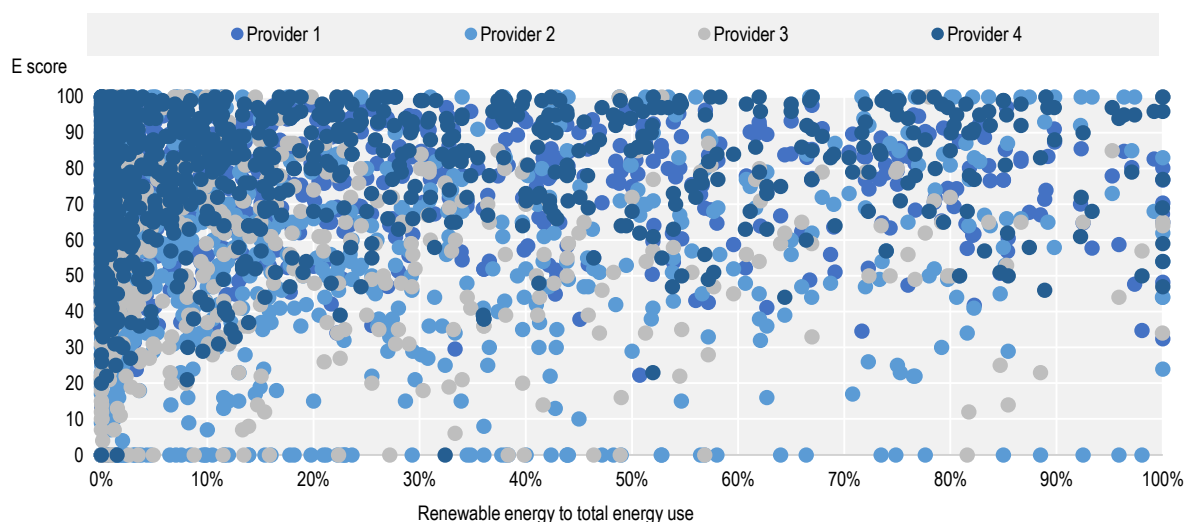
Total renewable energy use (% of revenues) by environmental pillar score



Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

Figure 12. Higher use of renewable energy as a percentage of total energy used does not imply higher E pillar scores

Total renewable energy use (% of total energy use) by environmental pillar score



Note: Total energy generated from primary renewable energy sources divided by total energy.

Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

The analysis highlights the lack of alignment between selected climate metrics and high environmental pillar scores. High E pillar scores do not systematically align with relevant decarbonisation factors and metrics such as greenhouse gas emissions, intensity or more forward looking considerations such as carbon reduction targets and environmental R&D investments. For certain providers, the ESG information available shows that the use of E pillar scores could lead to investment decisions that are misaligned with the climate transition.

Yet, climate transition metrics are only a portion of the various metrics that contribute to the measurement of environmental pillar scores. Factors include a wide range of metrics, ranging from emissions levels to innovation and environmental impact, as well as disclosure metrics on environmental controversies, biodiversity, and transition policies. Therefore, E pillar scores may not necessarily be suitable for investors seeking to better align their portfolios with low carbon economies, suggesting that the E score is shown to be a poor guide for selecting investments aligned with climate transition.

As market participants seek to understand their exposure to potential risks, the E score itself does not prioritise carbon footprint or intensity within the range of metrics that comprise the E score, so may be of limited value in protecting portfolios from climate transition. These findings therefore call for closer scrutiny as to what could be driving high E pillar scores (beyond an alignment with issuers' market capitalisation), and in particular an assessment of forward looking and disclosure metrics.

3

Assessment of metrics and information that may be driving high E pillar scores

As highlighted in Section 2 while E pillar scores within ESG ratings have the potential to provide valuable forward-looking information on company exposure and management of risks and opportunities to support a low-carbon transition, a number of challenges undermine their use for this purpose. ESG scores differ substantially in their calculation across various rating providers, not only in terms of the underlying data on which scores are based, but in terms of how these data are used, weighted and extrapolated in the calculation of the overall rating. High E pillar scores do not systematically correlate with factors indicating decarbonisation, and therefore raise concerns over the usefulness of high E pillar scores as an effective measure of a company's management of climate related risks and opportunities, and commitment to effectively implement a decarbonisation pathway.

Taking into consideration such challenges, Section 3 will further assess the gaps identified in Section 2 to understand the factors that might be driving high E pillar scores and to provide an assessment of forward looking and disclosure metrics.

The analysis assesses a range of metrics by ESG rating providers, such as climate change risks and opportunities including if and how these are aligned with high E pillar scores, for around 2 500 companies around the world in an effort to be comprehensive given the existing data limitations. Where data analysis is more complex, such as in the case of Box 1, the analysis is limited to the largest companies in sectors that can be more affected by the climate transition, notably oil and gas, automotive and energy utilities.

From an initial assessment, higher E-scoring companies perform more favourably on those metrics that assess a company's disclosure of key decarbonisation goals, policies and commitments. This means that metrics on disclosure often only measure the existence of company policies rather than quality of targets and objectives in line with the latest climate science or GHG reduction scenarios consistent with the Paris Agreement temperature goal.

Findings suggest that ESG rating providers' E pillar scores appear to place less weight on negative environmental impacts while placing greater weight on the existence of climate related corporate policies and targets and tend to be correlated with factors not directly related to climate transition actions such as market capitalisation and level of disclosure capacity, suggesting that these factors play a greater role than current or forward-looking climate-related metrics in contributing to high E pillar scores and ESG ratings.

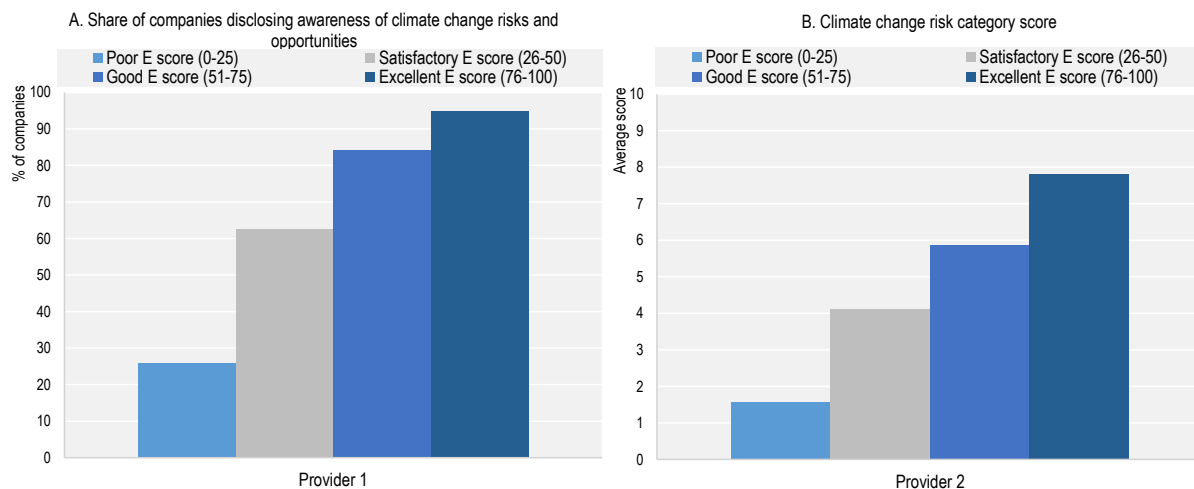
While disclosure and implementation of decarbonisation policies and targets is essential in addressing climate concerns, metrics on disclosure often only measure the existence of company policies and disclosure of emissions reduction plans rather than the quality of targets and objectives in line with the latest climate science and science-based targets³ to meet a 2 or 1.5 degree scenario.

The analysis of different providers' metrics measuring a company's awareness and management of climate change risks and opportunities appear to show a positive correlation with high E pillar scores. While such metrics could be expected to align with high E pillar scores, not all rating providers assess the quality of

underlying information, or provide assessments of the extent to which companies' are addressing such risks and opportunities. In Figure 13, Panel A, the metric from provider 1 measures if a company has disclosed awareness that climate change can represent commercial risks and/or opportunities while Panel B represents a composite indicator developed by provider 2 that may include metrics on both disclosure of company policies and company performance in areas relevant to the management of climate change risks, including possible engagement with companies.⁴

Figure 13. Metrics that measure a company's awareness and management of climate change risks and opportunities appear to align with high E pillar scores

Share of companies disclosing recognition of climate change risks and opportunities metric (provider 1) and climate change risk category score (provider 2)



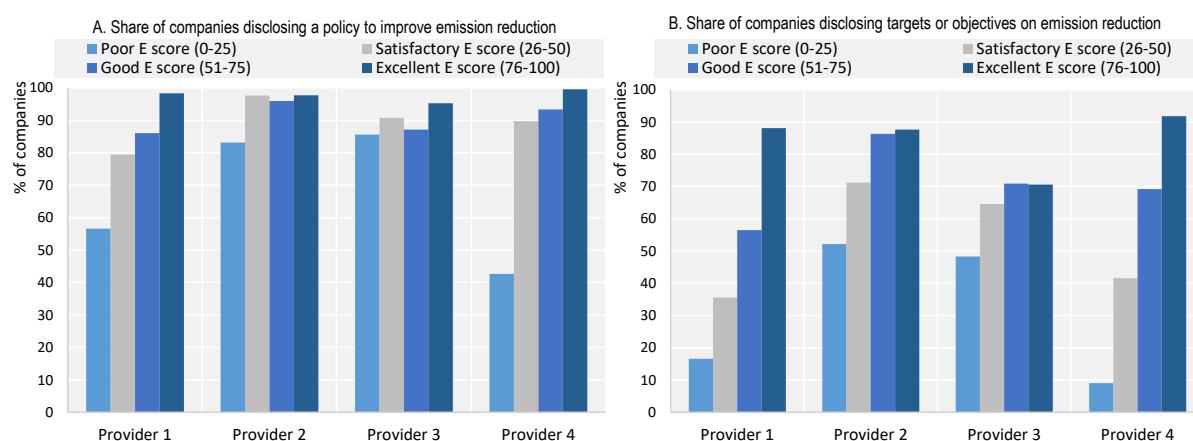
Note: Metrics on disclosure of policies are binary (1=true (company discloses awareness); 2=false (company does not disclose awareness), as provided by ESG rating providers. Information provided for 2 870 companies. Classification is based on Refinitiv ESG scores' quartiles [Poor: E pillar score between 0 and 25; Satisfactory: 26-50; Good: 51 -75; Excellent: 76 to 100].

Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

The majority of companies with a high E pillar score disclose company policies to improve emission reduction, and a majority share disclose targets and objectives to implement such policies (Figure 14). In contrast, low E pillar scoring companies tend to have a much lower rate of disclosure for both company policies and targets and objectives on emissions reduction. While disclosure is an important first step, company targets and objectives to implement emission reduction policies should be based on a credible decarbonisation approach and should be supported by the latest climate science deemed necessary to meet the goals of the Paris Agreement of limiting global warming to well-below 2 degrees above pre industrial levels and pursuing efforts to limit warming to 1.5 degrees. Current disclosures vary and do not always meet guidance set out by TCFD Framework (TCFD, 2017^[5]; 2021^[6]) and ICMA Handbook (ICMA, 2020^[7]). Box 1 highlights that while TCFD framework and ICMA handbook have helped improve the scope of information covered in issuer transition plans, large companies in sectors relevant to the transition (oil and gas, automobile, and energy/ utilities) are still not providing complete and verifiable information needed to implement a low-carbon transition.

Figure 14. High E pillar scoring companies are more likely to disclose company policies and targets on emission reduction

Share of companies disclosing a policy to improve emission reduction and targets or objectives to implement such policies



Note: Metrics on disclosure of policies are binary (1=true (company policy disclosed); 2=false (company policy not disclosed)). Information provided for 2 870 companies. Classification is based on Refinitiv ESG scores' quartiles [Poor: E pillar score between 0 and 25; Satisfactory: 26-50; Good: 51 -75; Excellent: 76 to 100].

Source: Bloomberg, MSCI, Refinitiv, OECD calculations

Box 1. Assessment of climate transition plans of 30 major companies in line with the TCFD framework and ICMA handbook

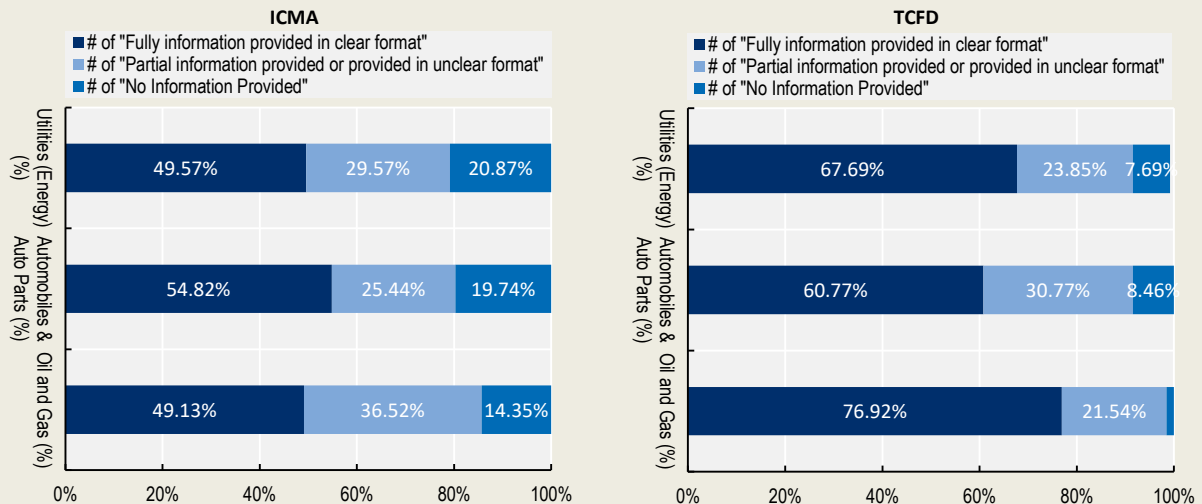
TCFD framework and ICMA handbook have supported better information included in issuer transition plans. Further progress of implementation practices is needed to improve the quality and verifiability of information

With the aim to provide clear guidance and common expectations to capital markets participants on the practices, actions and climate-transition relevant disclosures, the Task Force on Climate-related Financial Disclosures (TCFD) released a framework to assess climate related risks and opportunities in 2017 (TCFD, 2017^[5]) and proposed guidance on climate-related metrics and targets for transition plans in 2021 (TCFD, 2021^[6]). In addition, the International Capital Market Association (ICMA) released in 2020 guidance for transition finance issuers (ICMA, 2020^[7]). Such frameworks and guidance have been valuable in spurring progress on the disclosure of information by which to measure and manage climate-related risks and opportunities.

Such guidance is warranted, as many published transition plans do not provide data in a clear, precise or comparable format.⁵ The OECD has assessed the information outlined in the TCFD framework and ICMA handbook to analyse climate-transition metrics, using these to measure the extent to which a selection of 30 large companies across three industries (oil and gas, automobile, and energy/ utilities) report such metrics in a clear, precise and comparable format. While on average companies provide around 68% information in a complete and clear format in line with the ICMA guidance, this is only around 45% for the TCFD framework (Figure 15). There is also little variation in the quality of information across E pillar scores, with both high and low E scoring companies providing on average around 50% of information in a clear and precise format. In some cases, when low E pillar scoring companies provide no information (i.e. 0 classification), high E pillar scoring companies appear to provide this in a partial or

unclear format (i.e. 1 classification), which may be sufficient to compile E pillar disclosure-based metrics, but does not meet the guidance set out in the TCFD framework or ICMA handbook.

Figure 15. While progress has been made on disclosure in transition plans, companies on average only provide 51% of ICMA handbook and 68% of TCFD framework information in a clear and precise format



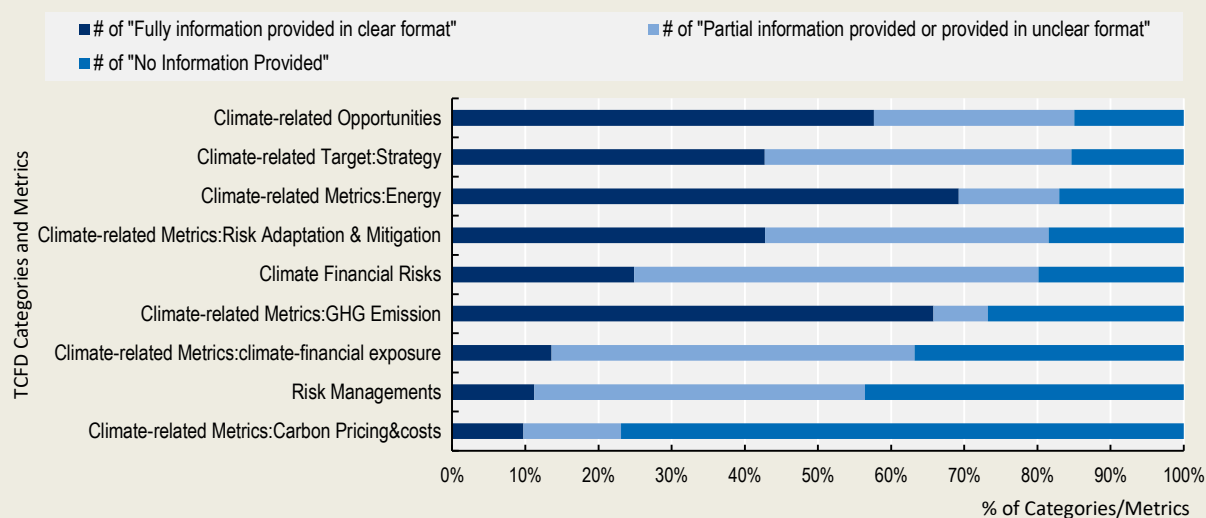
Note: OECD analysis evaluates the extent and accuracy of the data provided in relation to the TCFD and ICMA categories according to this evaluation method: 0 = no information provided; 1 = partial information provided or provided in unclear format; 2 = full information provided in clear format. (See Annex A).

Source: ICMA, TCFD, OECD calculations.

The area with the highest level of incomplete information is in the area of identifying and managing climate related risks (Annex A). On climate financial risks and risk management in the TCFD framework, on average companies either provide no information or information in an incomplete or unclear format for more than 70% of metrics in both categories (Figure 16). This means that market participants, and rating providers will find it difficult to extract and quantify such information into metrics that can be consistently compared across companies. In addition, of the 30 companies assessed, in no category (including GHG emissions) do companies disclose on average more than 70% of metrics in a clear, precise, and comparable format. In most cases this is around 30-40% of metrics on average per category.

When partial information is provided or is provided in an unclear format, such as in the case of decarbonisation strategies, this is because the body of text outlining the company policy does not express clear targets or objectives, and does not contain references to the scientific method or scenario used. Often companies will note that they intend to decarbonise their operations, but do not state interim periods (i.e. 50% by 2030), or describe how this will be implemented throughout the operations of the company. The 2021 TCFD guidance on metrics provides additional granularity to help improve disclosures in the future. International co-operation is warranted to ensure that a baseline of quality metrics is defined to measure progress in line with a low carbon transition, and that targets and objectives within transition plans are disclosed in a quantifiable format to allow for comparison across companies, industries and markets.

Figure 16. In most cases, for TCFD categories, the majority of metrics provided by companies are either not covered or provided in an unclear or incomplete format in transition plans that limits comparability across companies



Note: OECD analysis evaluates the extent and accuracy of the data provided in relation to the TCFD and ICMA categories according to this evaluation method: 0 = no information provided; 1 = partial information provided or provided in unclear format; 2 = full information provided in clear format. (See Annex A).

Source: OECD assessment based on TCFD framework and ICMA handbook.

Review of TCFD consultation

The Task Force on Climate-related Financial Disclosures (TCFD) conducted a public consultation in 2021, between June and July, in order to receive feedback on TCFD climate-related metrics, targets, and transition plans (TCFD, 2021^[8]). In total, 203 respondents completed the TCFD consultation survey, while 42 organisations submitted comments outside of the survey. The survey was conducted by asking for questions and suggestions about the four key areas for the Task-Force: Climate-Related Metrics, Disclosures by Financial Sector, Climate-Related Targets and Climate-Related Transition Plans. In general, both respondents and commenters support TCFD approach and guidelines on transition plans, metrics and targets.

Regarding the Climate-Related Metrics area, four key takeaway were identified. First, the majority of respondents (75%) reported that the proposed metrics would improve comparability, pointing out the need to describe metrics more broadly as categories to allow flexibility in the development and disclosure of metrics most relevant to specific organisations, industries, or jurisdictions. Second, although at least half of the respondents are currently disclosing the proposed metrics there is agreement about issues in disclosing the suggested metrics, particularly related to data and methodologies. Third, almost all users (86%) agreed that using and disclosing the TCFD metrics would be economically advantageous, as it would improve the financial decision-making process. Fourthly, 70% of respondents believed that it is essential to report the level of GHG emissions of Scope 1 and Scope 2 regardless of materiality. Problems arise about metrics related to carbon price, physical and transition risks and climate-related opportunities. While respondents agree that these metrics are useful, the majority of respondents (75%) currently do not disclose and have no plans to disclose these metrics.

Climate-Related Targets and their disclosure in quantitative terms based on cross-industry metrics are seen as useful by the majority of actors involved in the TCFD survey. However, while considered

important, *only a limited number of entities currently plan to provide such targets and related metrics*. In particular, as regards the targets relating to carbon price, physical and transition risk, and climate-related opportunities, although they are considered very useful by almost all of the responders, the relative targets have not been set (this applies, on average, to 70% of TCFD survey participants).

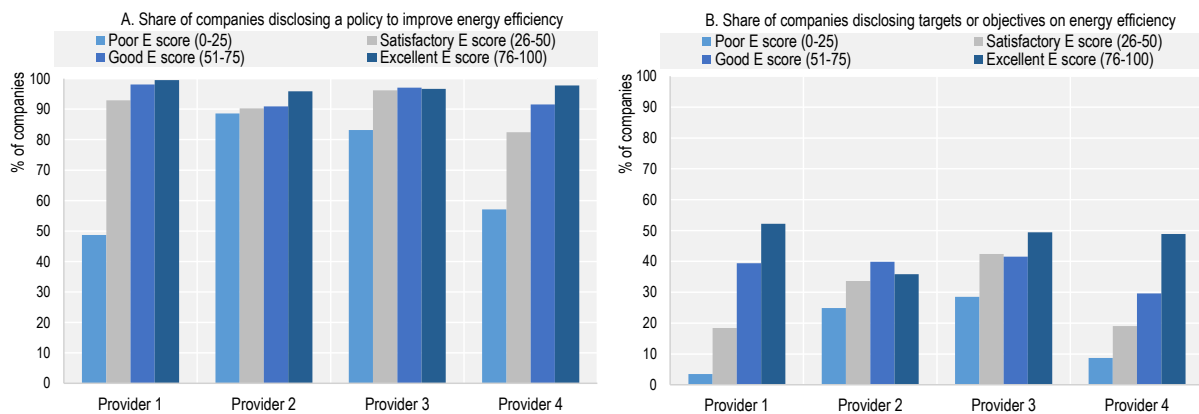
The analysis of responses concerning the Climate-Related Transition plans highlighted three key points. The majority of users agreed on the usefulness of the disclosure of climate transition plans. Then, almost the 66% of preparers have already established a transition plan or plan to do so within 2022. Third, more than 80% of respondents believe organisations should disclose a transition plan and reporting climate-related metrics is useful for tracking progress made within transition plans over time.

Following this consultation, TCFD has decided to make changes to its guidelines and metrics. In summary, among other things, TCFD (i) added a section where there are the key guidelines to be able to use the guidance; (ii) re-proposed cross-industry climate-related metrics as categories to ensure flexibility (iii) clarified the need for disclose internal carbon price rather than external; (iv) acknowledged that not all organisations may have the resources to use or create suitable methodologies or data to provide quantitative measurements (v) included examples of disclosures related to transition plan information.

Source: ICMA, TCFD. OECD analysis

Figure 17. High E pillar scoring companies are more likely to disclose policies to improve energy efficiency, and to disclose targets or objective, than low scoring companies

Share of companies disclosing a policy to improve energy efficiency and targets or objectives to meet such energy efficiency



Note: Metrics on disclosure of policies are binary (1=true (company policy disclosed); 2=false (company policy not disclosed). Information provided for 2 870 companies. Classification is based on Refinitiv ESG scores' quartiles [Poor: E pillar score between 0 and 25; Satisfactory: 26-50; Good: 51 -75; Excellent: 76 to 100].

Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

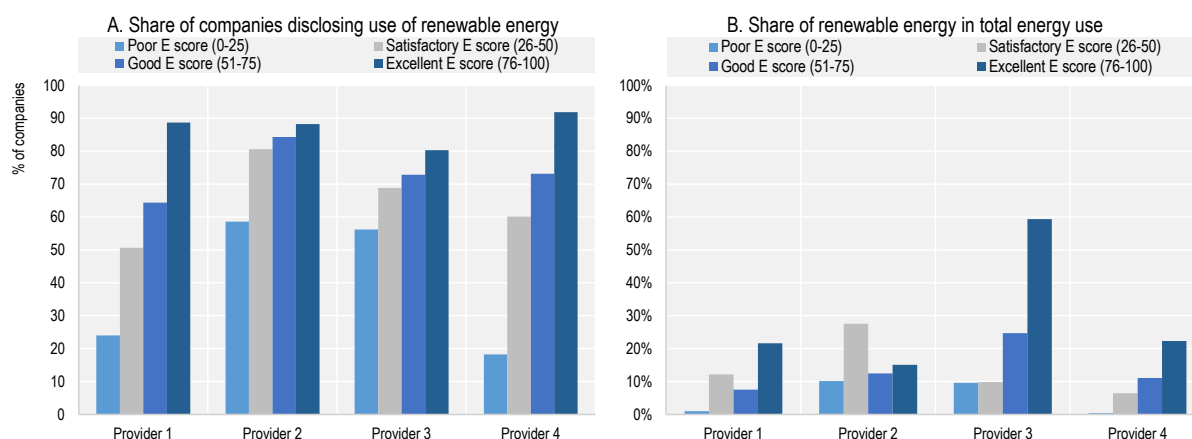
While high E scoring companies may not demonstrate improved energy efficiency over the past several years, they generally disclose policies to improve energy efficiency. Energy efficiency improvements can both reduce emissions and save money for companies through reductions in energy use, input costs and even improved efficiency of production and distribution processes in the medium term, (once up-front capital costs and operating expenditures are taken into consideration) (Seto and Dhakal, 2014^[9]). Largely companies appear to recognise this, and rating agencies may be rewarding companies for the disclosure

of intentions (through policies) to improve energy efficiency (Figure 17). A much lower share of companies across E pillar scoring categories disclose targets or objectives on energy efficiency, which may raise questions as to the ability of such company policies to translate into meaningful improvements in energy efficiency. Yet, it is clear that firms that do disclose targets are more likely to have higher E pillar scores.

Almost all high E pillar scoring companies disclose renewable energy use, and such firms are more likely to use a higher proportion of renewables. Yet, share of renewable energy use in total energy use remains low. It is reasonable to expect that renewable energy use will take time, and significant investment, to scale up and become a large share of total energy use, however limited alignment between high E pillar scores and a high share of renewable energy use (Figure 18) could suggest that rating providers are giving greater weight to the disclosure of renewable energy use rather than the extent to which companies are delivering on this through a higher share of renewable energy use or increasing renewable energy use over time.

Figure 18. High E pillar scoring companies disclose renewable energy use, and are generally more likely to use more renewables as a percentage of total energy

Share of companies disclosing use of renewable energy and share of renewable energy in total energy use



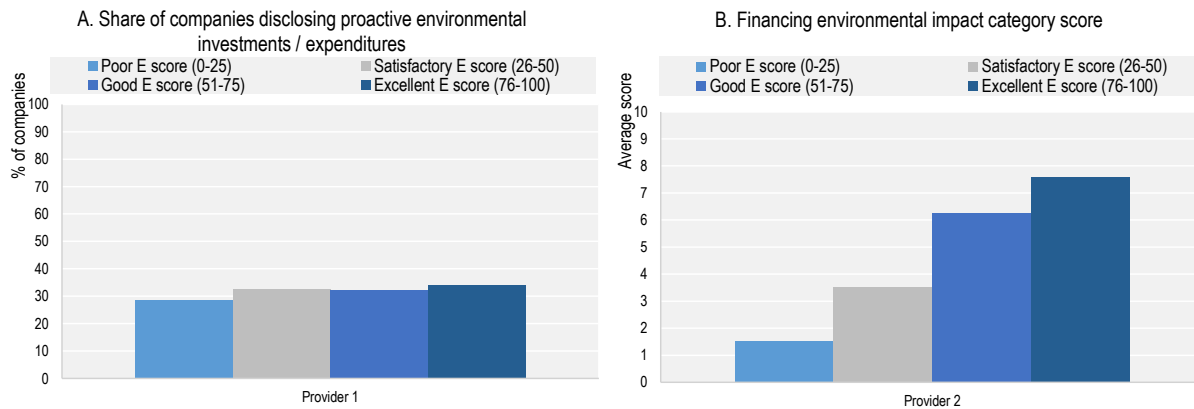
Note: The metric on Panel A represents disclosure of renewable energy use. Metrics on disclosure of policies are binary (1=true (company policy disclosed); 2=false (company policy not disclosed)). The metric of Panel B represents total energy generated from primary renewable energy sources divided by total energy. Information provided for 2 870 companies. Classification is based on Refinitiv ESG scores' quartiles [Poor: E pillar score between 0 and 25; Satisfactory: 26-50; Good: 51 -75; Excellent: 76 to 100].

Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

For most providers, higher E pillar scoring companies disclose making environmental investments and expenditures to manage climate risks and opportunities (Figure 19), yet the value of current environmental R&D and environmental expenditures do not appear to align with higher E pillar scores (refer back to Figure 7 and 8). Increasing the level of capital investment into energy efficient processes could also bring increased value of fixed assets due to greater resilience, and less exposure to fossil fuel price increases. Companies are taking steps to achieve this, in part by disclosing environmental investments and dedicated expenditures to manage climate risks and opportunities. However, to effectively implement a transition to low-carbon activities, companies will need to move beyond disclosing such investments and expenditures to ensure that they are sufficiently able to allocate capital expenditure to climate-related risk mitigation and adaptation.

Figure 19. For most providers, higher E pillar scoring companies disclose making environmental investments and dedicating expenditures to manage climate risks and opportunities

Share of companies disclosing proactive environmental investments / expenditures to manage climate risks and opportunities (provider 1) and financing environmental impact category score (provider 2)



Note: Metrics on disclosure of policies are binary (1=true (company policy disclosed); 2=false (company policy not disclosed)). Information provided for 2 870 companies. Classification is based on Refinitiv ESG scores' quartiles [Poor: E pillar score between 0 and 25; Satisfactory: 26-50; Good: 51 -75; Excellent: 76 to 100].

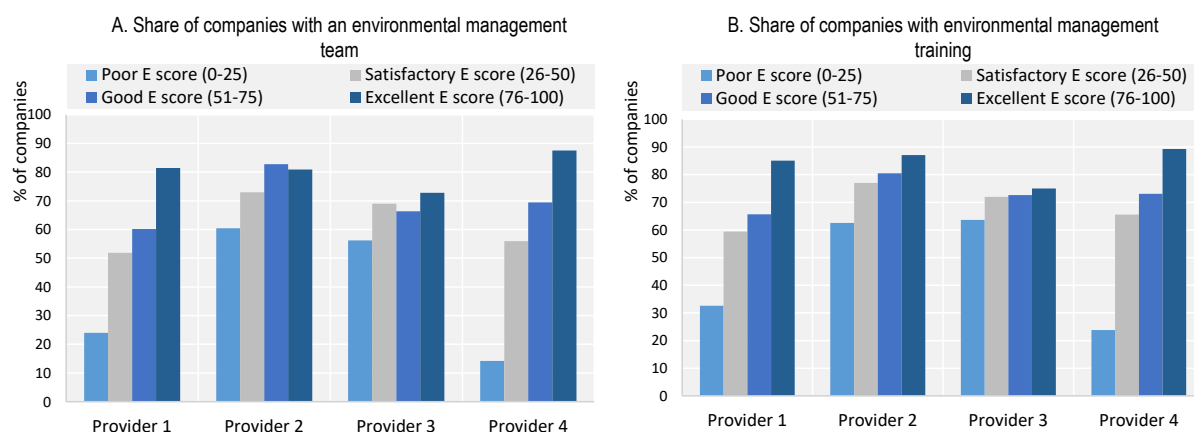
Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

High E pillar scoring companies show higher disclosure of the establishment of an environmental management team and environmental management training for employees (Figure 20). Establishing an environmental management team and providing environmental management training for employees will be important to ensure that transition plans can be implemented throughout every level of a company's operations. Looking ahead, for the disclosure of such elements to translate into the ability of a company to implement a low-carbon transition and meet decarbonisation targets, a greater assessment may be needed as to the credentials of individuals on the environmental management team and level of environmental management responsibilities assigned to teams within the business.

High E pillar scoring companies are somewhat more likely to implement an internal carbon price, yet this implementation remains quite low, and the price varies considerably across companies (Figure 21). Given the importance of carbon pricing as a means of reducing greenhouse gas emissions over time, some companies are choosing to apply an internal carbon price without waiting for carbon price adoption at the international or national level, given that volatility and uncertainty has financial implications.⁶ Figure 21 Panel B suggests that some companies are setting a higher carbon price to manage climate-related risks, yet these companies are not being rewarded for this through higher E pillar scores and the majority of companies set a carbon price at or below the current estimate of around EUR 60 (estimated USD 72) per tonne.

Figure 20. High E pillar scoring companies show higher disclosure of the establishment of an environmental management team and environmental management training for employees

Share of companies disclosing the establishment of an environmental management team and environmental management training for employees

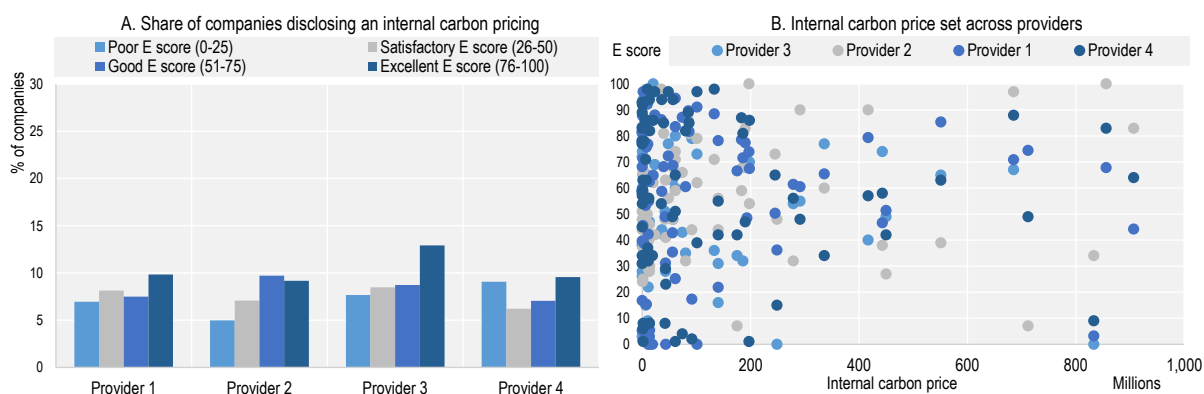


Note: Metrics on disclosure of policies are binary (1=true (company policy disclosed); 2=false (company policy not disclosed)). Information provided for 2 870 companies. Classification is based on Refinitiv ESG scores' quartiles [Poor: E pillar score between 0 and 25; Satisfactory: 26-50; Good: 51 -75; Excellent: 76 to 100].

Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

Figure 21. High E pillar scoring companies are more likely to implement an internal carbon price, yet the set price ranges from USD 2 to USD 100 across companies

Share of companies disclosing an internal carbon price and price per CO2e tonnes of the internal carbon price



Note: Metrics on disclosure of policies are binary (1=true (company policy disclosed); 2=false (company policy not disclosed)). Information provided for 2 870 companies. Classification is based on Refinitiv ESG scores' quartiles [Poor: E pillar score between 0 and 25; Satisfactory: 26-50; Good: 51 -75; Excellent: 76 to 100]. The internal price on carbon per tonne of CO2 equivalent emissions in the reporting currency, and converted into USD.

Source: Bloomberg, MSCI, Refinitiv, OECD calculations.

4 Alignment of international transition pathway commitments and initiatives

International climate transition commitments and initiatives have expanded in recent years to provide a structured approach to assess climate transition plans and pathways towards net zero. An accurate and objective assessment of climate transition frameworks and their alignment, including an evaluation of the underlying climate metrics with the environmental pillar of ESG, can help policy makers and market participants determine the extent to which the various initiatives are individually and collectively effective in measuring progress and ambition, and aligning commitments with credible global decarbonisation over time.

This section introduces a selection of main frameworks and initiatives, highlighting commonalities and differences with respect to objectives, metrics, targets and methodologies. As well, it compares core metrics and scoring, where they exist, with the Environmental Pillar Score of ESG. The selection of framework approaches is meant to offer instructive assessments of their use, and is not meant to be exhaustive.

4.1. Commonalities and differences among initiatives and frameworks

The selected frameworks share a common aim focused on accelerating and improving the effectiveness of the climate transition. For example, initiatives such as the Transition Pathways Initiative (TPI), World Benchmarking Alliance (WBA) and Paris Agreement Capital Transition Assessment (PACTA) aim to assess the climate and environmental performance of companies, while Science Based Targets initiative (SBTi), Climate Action 100+ (CA100+), World Economic Forum (WEF) and Glasgow Financial Alliance for Net Zero (GFANZ) aim to provide guidelines, tools and metrics to facilitate a more homogeneous and effective transition.

While to some extent, there is convergence and alignment between frameworks for key elements included in objectives and targets, differences in the metrics and methodologies used, as well as the data underpinning these metrics, could prove an obstacle to their full implementation.

A shared feature of the initiatives analysed regards the reliance on a top-down, evidence-based approach aligned with the 2 degrees scenario, in a way consistent with the overall 2050 goal of the Paris Agreement. These initiatives have common intermediate objectives (e.g. intermediate targets of 5-10 years), which are considered important to achieve the long-term net zero target (2050). Moreover, the further development of climate-specific metrics in TCFD reporting guidance and other key frameworks, suggests a core set of metrics and targets are beginning to be mainstreamed by a number of larger institutional investors and companies.

Methodologies for the climate alignment scenarios are based on a benchmarking approach, as 2 degrees scenarios are built on the idea that each sector could achieve alignment with a 2 degrees trajectory through

technological improvements, allowing companies to reduce scope 1, 2 and 3 emissions (e.g. in the automotive sector, electrification of new vehicles is expected to reduce emissions).

In addition, methodologies provide sector-specific insights into high emissions with specific calculation principles. This relates to the Net-Zero 2050 Target and to the definition of intermediate 5-10 year targets, which are necessary to achieve the Net-Zero target in the long term.

Finally, the setting of targets on capital investment expenditures are now included in several initiatives and almost all initiatives now put light on the coverage of Scope 1, 2 and Scope 3 emissions, which is an important component of the disclosure of climate transition targets and plans.

However, it is worth noting that the heterogeneity of approaches in these initiatives could make more difficult the speeding up of a uniform climate transition process. For instance, often the methodologies that such initiatives provide are not specified or particularly precise and there are frequent references to other programmes and initiatives, without adequate elaboration. In particular, among these initiatives GFANZ mainly provides rules of engagement and generic methods for developing rules of conduct on how to reduce environmental impact, considering them as methodologies, but without reference to technical details, making it more difficult to implement these frameworks in practice.

While there is more homogeneity in the definition of science-based targets for most initiatives, which define a methodology to be adopted for the formulation and the assessment of science-based targets, the measurement of emission metrics are characterised by differences among initiatives. For example, while TPI analyses both qualitative management metrics using mainly surveys and carbon performance using individual metrics for each sector, CA 100+ focuses more on defining and evaluating benchmark indicators to assess the progress of these companies, in terms of setting targets and managing quality.

While the diversity of approaches adopted by different initiatives, also in terms of scope, may be welcome in order to cover all key elements for climate transition, at present such a high variety of programmes and structures may limit comparability of key elements (targets, metrics, methodologies, monitoring) and constrain a more widespread use.

Box 2. Climate transition frameworks and Initiatives

The Transition Pathways Initiative (TPI) assessment process is based on two dimensions, built on publicly available information. The Management Quality dimension aims to evaluate and keep track of the quality of companies' management of GHG emissions including how they quantify and assess risks and opportunities related to the low-carbon transition. The Carbon Performance dimension analyses climate transition plans, focusing on the targets set by the companies, on the alignment that these targets have with the Paris agreements and on the ways in which they aim to achieve them. TPI complies with the requirements of the Task Force on Climate-related Financial Disclosures (TCFD) and with others initiative and institutions (e.g. SBTi and IEA).

The Glasgow Financial Alliance for Net Zero (GFANZ) is a global coalition currently including over 450 financial firms across 45 countries, representing 130 trillion dollars of assets. GFANZ supplies a forum for leading financial institutions to accelerate the transition to a net-zero global economy through the establishment of best practices by highlighting commonalities across existing frameworks. While it does not provide technical methodologies or metrics GFANZ provides rules of engagement, ways of conduct and a clear review of all existing initiatives.

The Climate Action 100+ (CA100+) is an investor engagement initiative that focuses on the climate transition process of 166 companies that have a high emissions impact and are therefore considered key to transitioning to net zero emissions. The CA100+ has developed a set of benchmark indicators to assess the zero transition progress of these companies, which account for more than 80% of global

industrial emissions. The CA100+ benchmark indicators are divided into two categories: the first assesses climate targets, while the second assesses climate transition management. Ten key indicators are used to assess ambition, veracity and readiness to achieve zero, short-, medium- and long-term GHG emission targets and to implement decarbonisation strategies in the first section. For the management of climate transition processes, CA100+ uses sectoral indicators concerning the adequacy of companies' climate governance structures, capital allocation plans and their relative alignment with companies' stated emission reduction targets.

The Science Based Targets initiative (SBTI) is a partnership between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF). The initiative guides companies and financial institutions emission reduction target setting to transition to a net zero economy and prevent the worst effects of climate change. The initiative provides clear criteria and a step-by-step process for companies, tailoring guidance to specific sectors. Companies' targets must aim to limit global warming to well-below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C, considering 'science-based' targets in line with scientists' expectations to meet the goals of the Paris Agreement⁷.

The World Benchmarking Alliance (WBA) represent organisations working at global, regional, and local levels related to the private sector's contributions to achieving the SDGs. The goal of the alliance is to assess companies' contribution to the climate transition by assessing their approach and alignment with the goals of the Paris Agreement. The alliance analyses companies' performances in sectors with a high environmental impact through the Climate and Energy Benchmark, developed with Carbon Disclosure Project (CDP) and the French Environment and Energy Management Agency (ADEME), by providing an assessment of high carbon emitters and their progress towards climate alignment.

Source: Transition Pathway Initiative, GFANZ, CA 100+, Science Based Targets Initiative, World Benchmarking Alliance.

4.2. ESG and climate transition initiatives alignment: E pillar score and TPI metrics

While ESG is rapidly mainstreaming as a tool to guide the composition of portfolios, these climate transition initiatives are also becoming important for the alignment of portfolios to net zero objectives. For this reason, a further assessment of climate transition frameworks and their relation to ESG may provide further insights into the obstacles currently present in aligning portfolios with climate transition goals.

In this context, section 4 compares the alignment of metrics of the environmental pillar with metrics from frameworks such as those provided by Transition Pathways Initiative (TPI). This is because TPI uses some of the same core criteria [as major ESG providers' E pillar score] and also provides a climate transition rating.

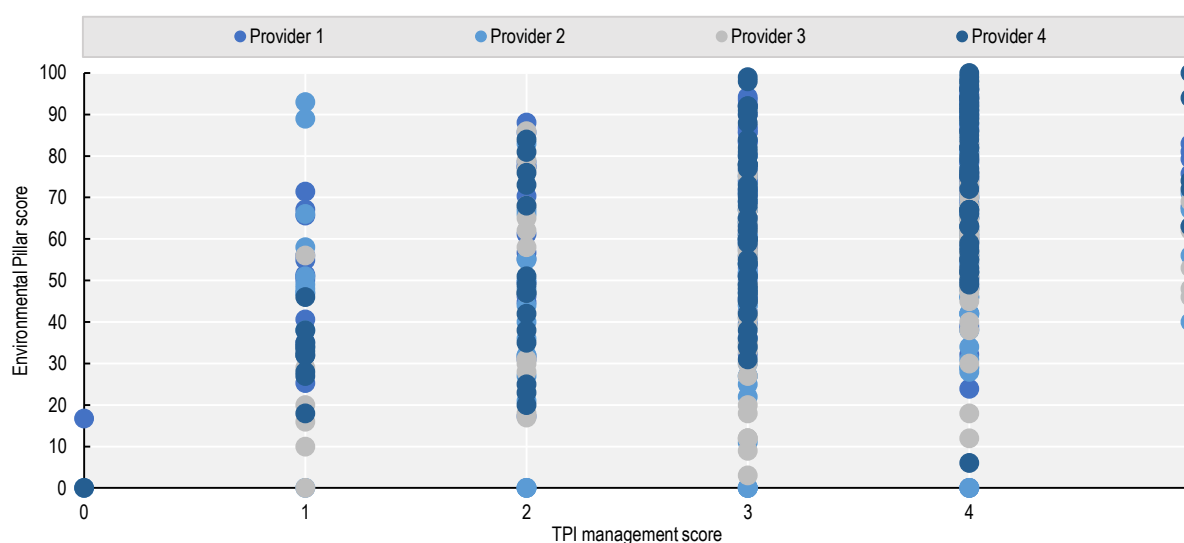
TPI's recent report assesses Management Qualities and their correlation with Carbon Performance. Findings suggest that while companies at a higher Management Quality level disclose better emissions and activity data and stronger Management Quality correlates with better Carbon Performance, no Level 4 company is aligned with a 2 degrees scenario or below. According to the TPI analysis a high Management Quality seems to predict faster emissions reductions (Transition Pathways Initiative, 2021^[10])

The OECD assessed this relationship using a different approach and by comparing the E pillar score and its metrics to the TPI Management Quality, and found relatively low correlation between high MQ and reduction in carbon intensity emissions.

The analysis hints at a positive correlation between the environmental pillar for certain providers and the frameworks analysed, in both cases driven by companies' disclosure of climate targets, supporting the findings of section 2. As show in Figure 22 and Figure 23, the E scores for individual companies and on average seems to be aligned with TPI's Management Quality ratings. This is particularly evident for providers 3 and 4, reflecting methodologies focused on evaluating the disclosure and reporting of companies. For these two providers, the R squared, showing the level of linear relationships among the E scores and the TPI MQ indicators, is about 0.13 and 0.39 in Figure 22, while it is 0.73 and 0.99 in Figure 23 respectively.

Figure 22. Alignment of the E pillar score with TPI's Management Quality indicator suggests companies' disclosure as the main driver.

Environmental pillar score to TPI management score

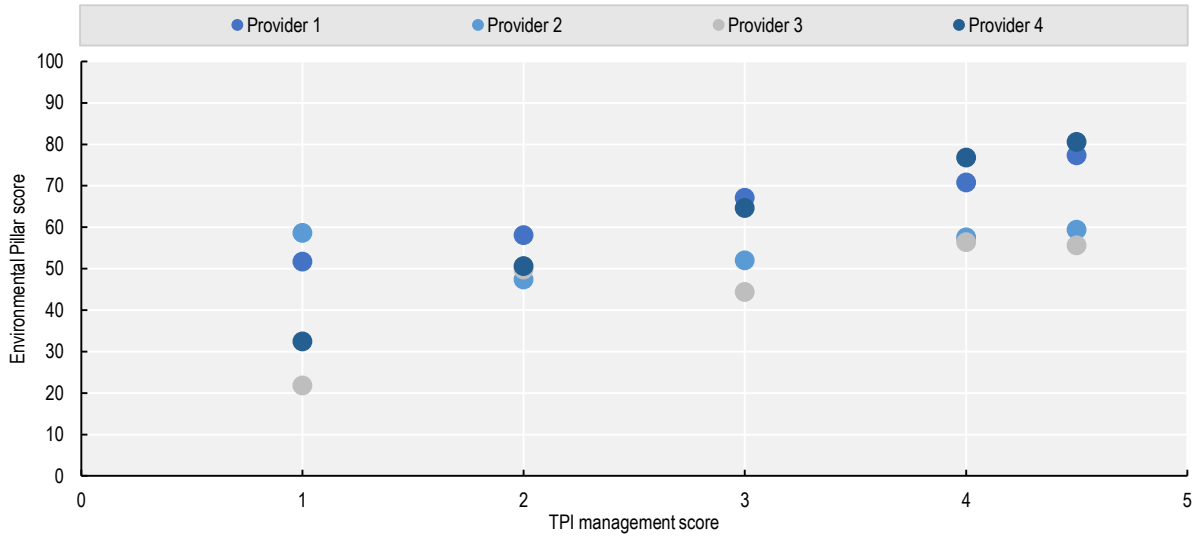


Note: The sample used consists of 144 companies, whose E scores are available for each provider and who have received a rating from TPI (Level 0= Low MQ score, Level 4.5= Excellent MQ score). On y-axis the Environmental Pillar Scores level from 0 (low level) to 100 (Excellent level); on x-axis the 5 levels of TPI's MQ indicator, from 0 (low level) to 4 (Excellent level).

Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations

Figure 23. Average E pillar score alignment with TPI's Management Quality indicator reinforces suggestions that companies' disclosure is the main driver of scores

Average environmental pillar score to TPI management score



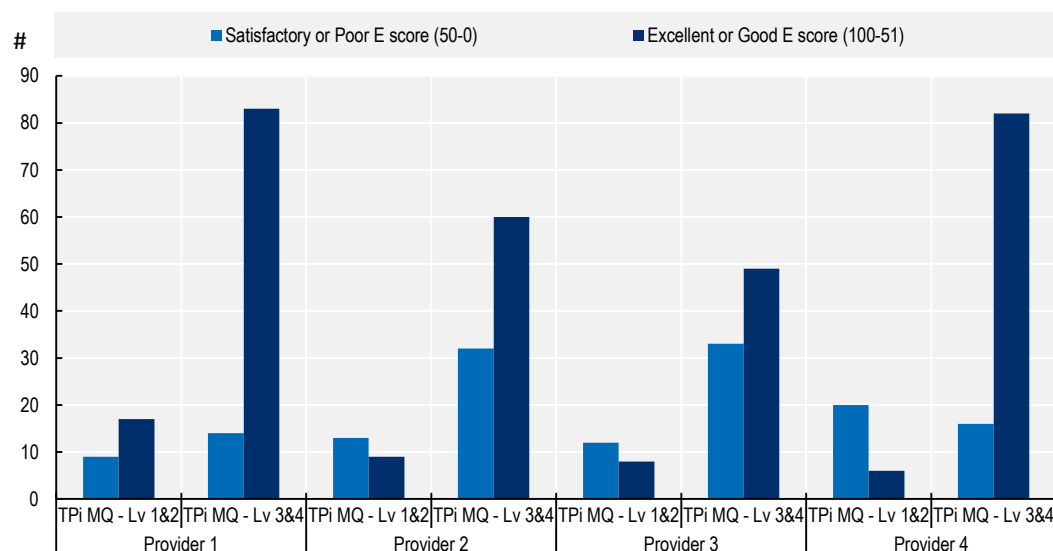
Note: The sample used consists of 144 companies, whose E scores are available for each provider and who have received a rating from TPI (Level 0= Low MQ score, Level 4.5= Excellent MQ score). On y-axis the Environmental Pillar Scores level from 0 (low level) to 100 (Excellent level); on x-axis the 5 levels of TPI's MQ indicator, from 0 (low level) to 4 (Excellent level).

Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations.

Similarly, Figure 24 seems to reflect the importance of disclosure on both frameworks and ESG ratings for certain providers by showing a higher prevalence of high E scoring companies for higher levels of TPI MQ indicators.

Figure 24. Alignment of E scores with TPI indicators, reflecting the level of management and disclosure of greenhouse gas emissions

Number of companies within TPI management score buckets



Note: The sample used consists of 144 companies, whose E scores are available for each provider and who have received a rating from TPI (Level 0= Low MQ score, Level 4.5= Excellent MQ score). On y-axis the Environmental Pillar Scores level from 0 (low level) to 100 (Excellent level); on x-axis the 5 levels of TPI's MQ indicator, from 0 (low level) to 4 (Excellent level).

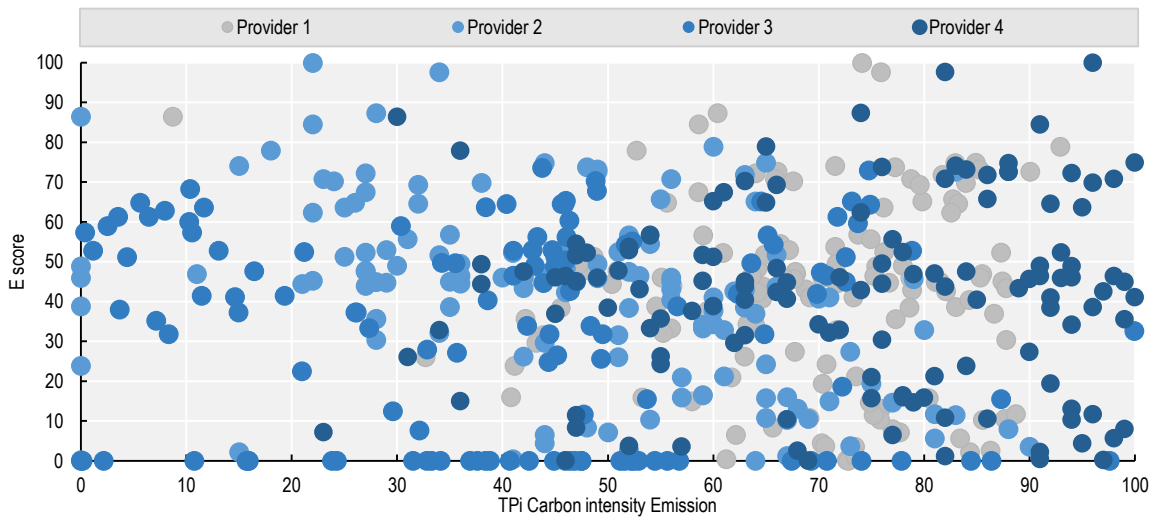
Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations.

The analysis of E scores' alignment with the quantitative assessments of TPI shows no correlation with forward-looking climate relevant metrics. Alignment with metrics such as emission intensity and emission intensity change provided by TPI shows similar results as with Section 1. Similarly, also forward-looking metrics, such as the estimation of emission intensity in 2050, show no alignment with E scores. As shown in Figure 25 there is no linear relationship between each provider's E score and the latest 2021 emission intensity metric from TPI. In a similar way, Figure 26 compares the environmental pillar scores with the variations in emission intensity over the last three years, showing similar results.

Emission intensity as provided by TPI's is based on the Sectoral Decarbonization Approach, which provides an assessment of greenhouse gas emission targets through sectoral benchmarks against which the performance of individual companies can be compared. This approach is based on a sector-by-sector assessment, comparing companies within sectors against each other and against sector-specific benchmarks, therefore establishing how a company is performing compared with international emissions targets. In order to compare companies of different sizes, sectoral emissions are normalised by a relevant measure of sectoral activity (e.g. emissions from new vehicles produced for the automotive sector).

Figure 25. E pillar scores do not seem to align with TPI carbon intensity emission

Environmental pillar score to TPI carbon intensity emission

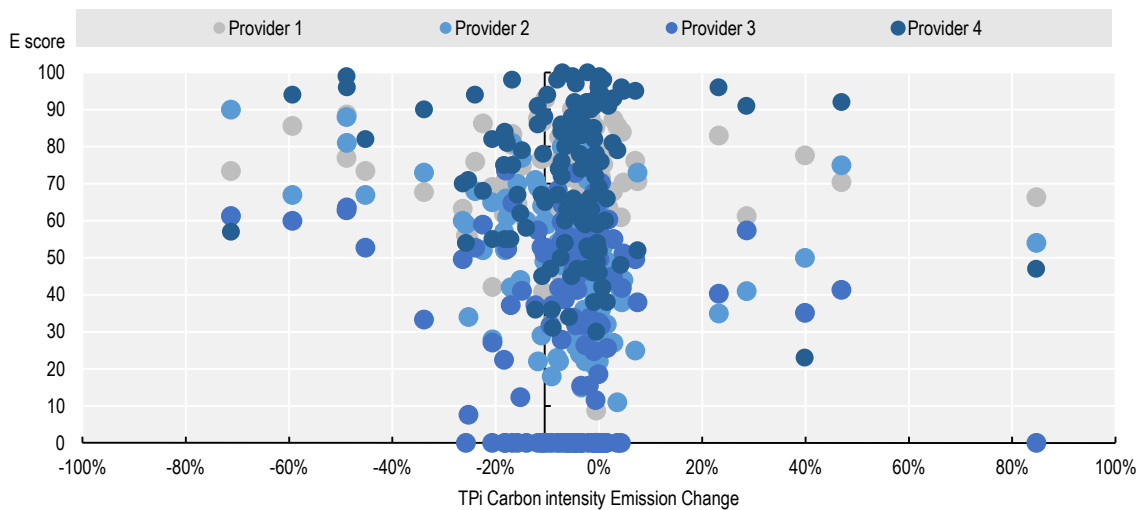


Note: Environmental Pillar Score vs TPI carbon intensity emission for the selected companies of three sectors: Oil and Gas, Automobiles and Electric Utility companies. TPI carbon intensity emission is normalised within a range that goes from 0 to 100. The sample consists of 131 companies.

Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations.

Figure 26. Similarly, E pillar scores do not seem to align with TPI carbon intensity change

Environmental pillar score to TPI carbon intensity change – 2018-21



Note: Environmental Pillar Score vs TPI emission intensity changes. Emission changes are calculated comparing the actual emission of 2021 with the expected emission for 2050. Companies are selected from three different sectors: Oil and Gas, Automobiles and Electric Utility companies. TPI carbon intensity emission is normalised within a range that goes from 0 to 100. The sample consists of 136 companies.

Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations.

In line with previous results, Figure 27 reflects the lack of forward-looking metrics in the Environmental pillar scores. Moreover, expected greenhouse gas emissions in 2050 provided by TPI are not correlated with E scores, with the only exception of providers 2, which shows a slightly positive correlation. High E

pillar scoring companies would be expected to show diminishing carbon emission in the future. Companies could benefit in the long term by setting and implementing carbon reduction targets, particularly if plans start to be better reflected in ESG scores. However, a greater assessment and tracking of decarbonisation plans may be needed to help ensure implementation against targets.

Figure 27. Forward-looking metrics are generally not reflected by E pillar scores

Environmental pillar score to TPI carbon intensity change – 2021-50



Note: Environmental Pillar Score compared to TPI emission intensity changes (2021 to 2050). Emission changes are calculated comparing the actual emission of 2021 with the expected emission for 2050. Companies are selected from three different sectors: Oil and Gas, Automobiles and Electric Utility companies. TPI carbon intensity emission is normalised within a range that goes from 0 to 100. The sample consists of 131 companies.

Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations.

4.3. Industry specific alignment of the E pillar score with TPI metrics

Further analysis is aimed at analysing if and how carbon sensible sector companies (Oil and Gas, Automotive, Utilities and Renewable Energy) align with benchmark pathways. Building on previous OECD analysis (OECD, 2021^[11]), the section focuses on sectors that could be most affected by the climate transition, such as coal, oil and gas, utilities, renewable energy companies and sectors that are closely linked to carbon intensive activities, such as the automotive industry to understand their alignment with benchmark pathways.

The carbon performances metrics used as part of the analysis describe the emissions path a company is currently following and how it compares to international targets and national commitments under the Paris Agreement. Recent and current carbon emission intensity of selected companies is provided by TPI, including the estimation of their future greenhouse gas emissions intensity, based on emissions targets set by the companies covered.

4.3.1. Oil and Gas sector

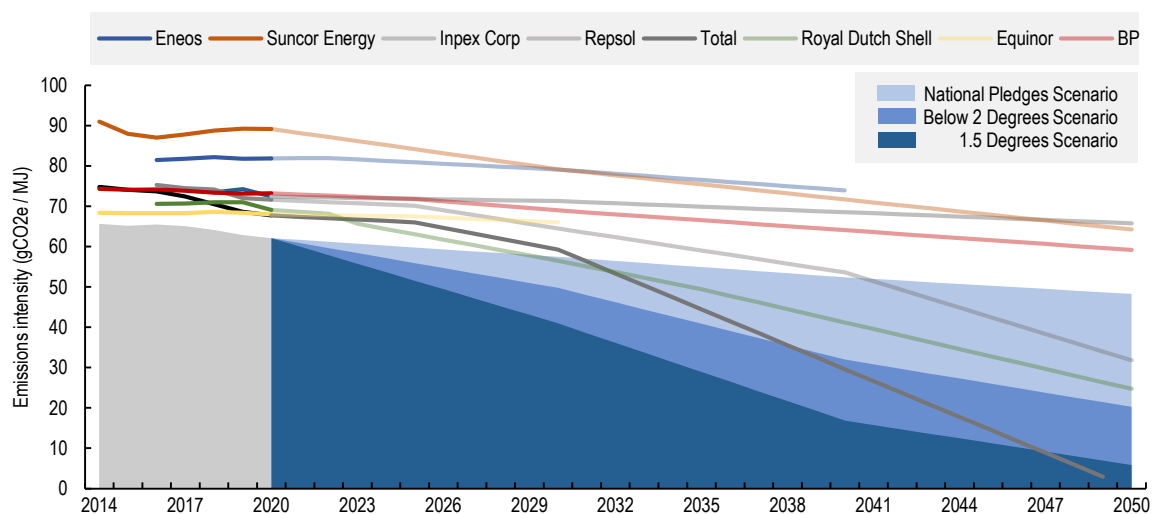
Oil and gas companies have recently been under pressure to shift toward more sustainable business models, as investors are increasingly preferring to reduce their exposure to climate change, which increases the risks of stranded assets.

For the purpose of illustration, the analysis of eight high E scoring companies shows none has emissions in line with scenarios in the medium term (2030). Similarly, only one company shows a carbon performance in line with the 1.5-degree scenario by 2050. Though a small sample set, these results are consistent with previous findings showing disclosure and target setting as being the main driver of high E scores. While some oil companies are setting long-term targets for decarbonisation and investing in R&D and renewable energy assets this seems not to be captured by greenhouse gas emissions reduction expectations.

These results would seem to be in line with the current valuations of oil and gas companies, which remain closely correlated with oil prices and have little relationship with the level of emission intensity. This could generate rising questions as to whether or not financial markets are already incorporating ESG indicators or TPI scores into their assessments of transition plans, for example those adopted by some oil companies that plan to invest more in alternative energy sources.

Figure 28. Transition pathways of high E scoring oil companies

Oil and Gas companies with Excellent E score (>75) and an Excellent TPI Management Quality level (4 or above)



Note: The grey area represents past and actual values. The three coloured areas represent the scenario forecasts. Emissions intensity is calculated as grammes of carbon dioxide equivalent per megajoule of energy produced.

Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations.

4.3.2. Automotive sector

The automotive sector provides a sharp contrast to the oil and gas example in terms of climate transition strategies and their implementation, for several reasons.

First, while auto vehicles have been a major source of fossil fuel consumption, both in their creation and their use, a number of companies are undergoing a transformation to design products that are increasingly lowering greenhouse gas emissions, such as electric cars.

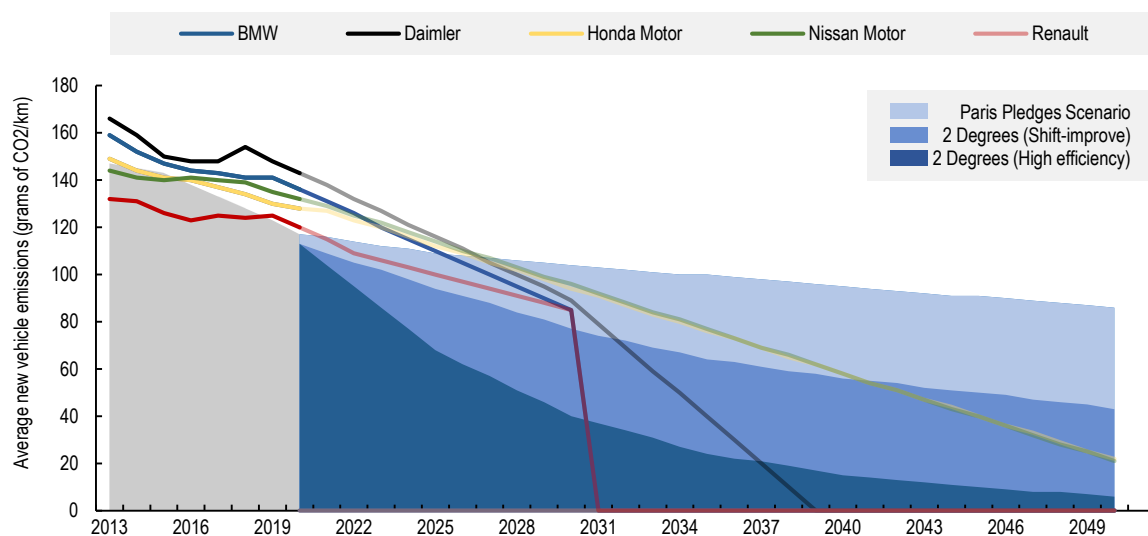
Second, government incentives and regulations are playing a key role in the transition from a largely carbon intensive industry to one that is increasingly competing on accelerating towards green efficiencies, reflecting deadlines set by many countries to achieve net zero by 2050.

Finally, automotive companies may face fewer challenges in implementing effective low-carbon transition plans due to greater flexibility in their business models. Firstly, this sector is unlikely to suffer from excessive amounts of stranded assets (e.g. existing factories can easily be used for the production of environmentally friendly vehicles without necessary adaptation). Secondly, the current capital expenditures for alternative vehicles represent an important part of their investment, making a complete transition more certain. The third element impacting the sustainability of the plans is the general increase in demand for vehicles due to the general increase in population and access to new markets (e.g. India and China). To date, almost all major carmakers have implemented policies to reduce greenhouse gas emissions and to improve transparency and disclosure of Scope 1, 2 and 3 emissions.

Results for the automotive sector differs from the oil companies, indicating that analysed companies have emission projections within the limits of the Paris pledge scenario, consistent with the global aggregate of emission reductions pledged by countries as part of the Paris Agreement. While these targets are insufficient to achieve the Net-zero by 2050, car companies analysed seem to be in the path within the 2-degrees scenario from 2030 onwards.

Figure 29. Automotive companies with high E scores would partly meet emission targets set at the international level at least for emissions from newly produced vehicles

Automobiles companies with Excellent E score (>75) and an Excellent TPI Management Quality level (4 or above).



Note: The grey area represents past and actual values. The three coloured areas represent the scenario forecasts. Emission intensity is calculated as grammes of CO₂ per kilometre travelled. In the autos sectors, slightly different benchmarks to Below 2 Degrees and 1.5 Degrees scenarios are used to reflect additional sources of uncertainty. The 2 Degrees (Shift-Improve) scenario assumes that emission reductions associated with road transportation are delivered through a mixture of measures that place relatively more emphasis on shifting to more energy-efficient modes of travel, compared with improving vehicle carbon efficiency. The 2 Degrees (High Efficiency) scenario assumes that emissions reductions are achieved mainly by improving that carbon efficiency of new vehicles that is particularly low and lower than a Below 2 Degrees (Shift-Improve) scenario.

Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations.

4.3.3. Utilities and renewable energy sector

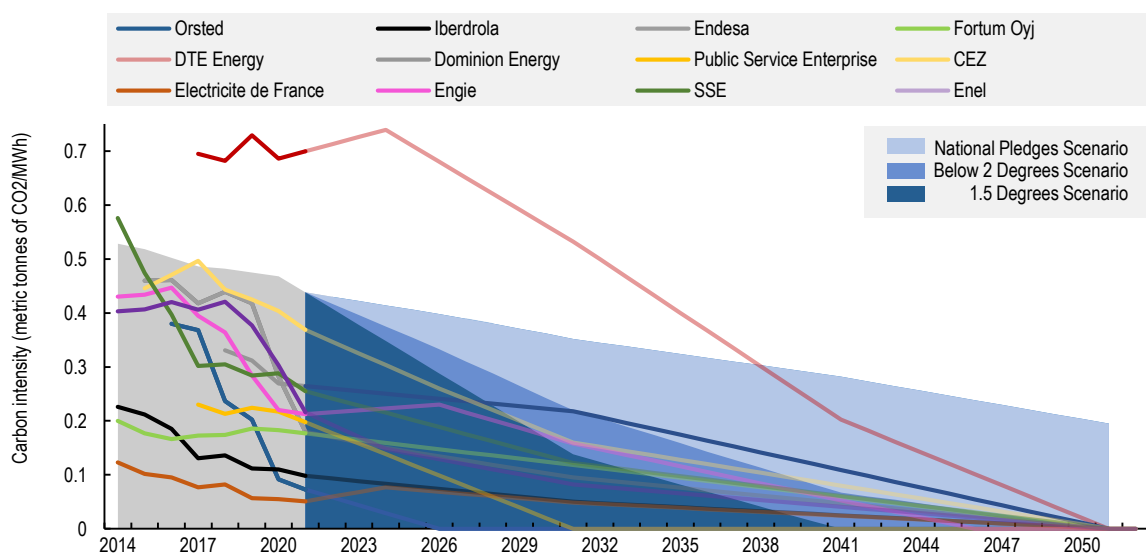
The renewable energy industry differs from the oil and gas and automotive industries analysed, as it is strongly focused on the scalability of research and development and does not suffer from legacy assets and processes that risk being decommissioned or written down, providing a competitive advantage over sectors that may need more intensive investments for transitioning.

The renewable energy sector could benefit from an early implementation of climate transition strategies and long-term investments. Among other industries that will need to reuse existing facilities or increase investments in green assets, renewable energy companies have already begun to implement radical changes in their business models, focusing on the production and distribution of green energy.

In contrast to oil and gas and automotive sectors, electric utilities and renewable energy companies seem to be aligned with the best benchmark scenarios. As shown in Figure 30, 11 out of the 12 companies that present a high score of E and at the same time a high level of TPI Management Quality indicator are in line to halve their greenhouse gas emissions, which are expected to reach zero by 2050 (Noels and Jachnik, n.d.^[12]).

Figure 30. The majority of high E scoring electric utilities would meet the emission targets made at the international level

Electric utilities companies with Excellent E score (>75) and Excellent TPI Management Quality level (4 or above).



Note: The grey area represents past and actual values. The three coloured areas represent the scenario forecasts. Emission intensity is calculated in tonnes of CO2 per MWh electricity generated.

Source: Bloomberg, MSCI, Refinitiv, TPI, OECD calculations.

The analysis supports previous findings, emphasising the misalignment among high environmental pillar scores with climate metrics from frameworks and initiative providers. While E pillar scores do not systematically align with metrics such as greenhouse gas emissions, intensity or more forward-looking elements, it reflects findings from Section 2, implying that companies' disclosure can be a driving force in high E ratings. In order to improve effectiveness of frameworks, further progress is needed to improve the verifiability and scientific reliability of data disclosed by companies and to understand its alignment with ESG ratings.

5 Policy considerations

ESG ratings have become a leading form of sustainable finance, and have progressed from early-stage development to mainstream finance in a number of OECD jurisdictions. The extent to which the environmental pillar of ESG ratings reflects carbon emission reduction, efficient resource use and investment to support renewables has become an important component of ESG investing, and is critical to enable market participants to make informed decisions relating to a low-carbon transition.

In recent years, international climate transition commitments and initiatives have expanded to provide a structured approach to assess climate transition plans and pathways towards net zero. The assessment of climate transition frameworks and their alignment with the environmental pillar of ESG ratings can improve market efficiency.

While important progress has been made to improve sustainability tools and investing approaches, including through the environmental pillar of ESG rating, methodologies will need to move from rewarding disclosure to rewarding alignment of company activities with sustainability and climate resilience.

ESG rating providers appear to be giving a higher weight to metrics on the disclosure of company policies, targets and objectives than to metrics more closely aligned with climate transition frameworks driven by disclosure, such as reduction in greenhouse gas emissions and emission intensity over time combined with increased investment in climate mitigation, adaptation and renewable energy. Addressing challenges related to information on sustainable risk and opportunities is of important to ensure that capital is allocated to investments that support the low-carbon transition and sustainable growth.

This report's findings raise questions about whether ESG scores should be better aligned with climate transition, and also how investors should make use of the growing amount of climate information and frameworks available. Despite such progress, a key question remains, which is to what extent are market participants that wish to align investments with net zero able to do so with efficiency and confidence? This report suggest that progress is being made, yet much more work is needed to ensure disclosures and ratings are actionable to align investments with low carbon economies.

Eventually, market participants need access to consistent, comparable, and verifiable information about key climate transition information, such as in TCFD reporting, which should also be incorporated and consistent with climate transition frameworks and mainstreamed sustainable finance approaches such as ESG rating and investing.

Therefore, to ensure that transition plans can translate into visible impacts on metrics related to implementation of a low carbon transition, policy measures may be warranted to better align environmental pillar scores with a low carbon transition. The consistency of initial findings leads to policy considerations that can guide central banks, supervisors and market regulators, as well as good market practices, which include:

- Strengthen disclosure-based metrics, and incentivise companies to move beyond binary metrics, which tend to focus on the act of disclosure, toward scale-based metrics that assess quality of metrics and alignment with sustainability goals and long-term value.
- Further strengthen TCFD disclosure practices to improve granularity, reliability and consistency of metrics with respect to climate metrics, targets, and climate transition plans. Building on progress

from the 2021 TCFD Proposed Guidance on Climate-related Metrics, Targets and Transition Plans (TCFD, 2021^[6]), regulatory authorities should consider mandatory climate-related financial disclosures to support greater data reliability of Scope 1, 2 and 3 emissions and emission intensity. International and national sustainability reporting. Guidance should also be developed to improve the consistency of data with respect to fuel-efficient expenditures, R&D, and development of new products and services. Greater assessment by central banks and international organisations of the impact of anticipated policy measures with respect to greenhouse gas emissions and elements of the TCFD framework are also warranted.

- Where appropriate, integrate better quality metrics into E pillar score assessments that monitor emission reduction and decarbonisation over time so that companies can be rewarded for making progress in line with a low-carbon transition. While some rating providers take into consideration emission and intensity reductions, this is not done on a systematic basis, and does not reward companies for investment and expenditure to support a low-carbon transition, when the necessary data on emission reduction can be collected. Therefore, greater co-ordination is needed between rating providers and market participants to establish a core set of baseline metrics by which to measure progress in line with a low-carbon transition for a subset of metrics within the environmental pillar of ESG. Greater transparency should also be achieved as to the extent to which these metrics are used to define E pillar scores, with clarity as to the extent to which estimates or metrics on company disclosure are relied upon to make an assessment.
- Recommend ESG ratings providers to improve transparency on sub-components of the environmental pillar of ESG rating to allow market participants to focus on elements including, but not limited to, climate risks, climate opportunities, greenhouse gas emissions and decarbonisation targets. Greater transparency should be encouraged as to the metrics that environmental pillar sub-categories measure and incorporate, such as with respect to metrics that could be used to develop climate transition or environmental impact sub scores, in order to improve the informational value of the environmental pillar score. Clear boundaries should also be defined as to which areas of the E pillar are relevant to greening the financial system, and which focus on other objectives, such as long-term financial value.
- Encourage climate transition surveillance to establish a rigorous assessment of the implementation of targets and objectives accompanying policy commitments and a proper assessment of key drivers tracking the progress made using consistent, comparable and quality metrics that measure, among others, changes in greenhouse gas emissions, emission intensity, environmental R&D, use and investment in renewable energy. Central banks (particularly supervisors), finance ministries and market regulators could provide guidance on the minimum requirements for targets and objectives, including to ensure that they cover company-wide scope 1, 2 and, if appropriate, scope 3 emissions, have relevant time periods in line with the transition plans, if present, include either intensity and absolute targets, and use the latest science-based tools.

Overall, international co-operation is needed to ensure that ESG and climate transition related practices progress in a manner that does not give rise to market fragmentation, and upholds investor confidence and market integrity. Addressing challenges related to information on sustainability-related risks and opportunities is of vital importance to ensure that capital is allocated to investments that support a low-carbon transition and sustainable growth. This report aims to highlight areas for improvement to strengthen the alignment of E pillar scores with a low-carbon transition, and support international efforts, such as those undertaken by the G20, to improve the consistency, comparability and quality of core ESG metrics in disclosure. In particular, the report highlights the importance of having effective tracking processes to ensure that G20 and OECD members can assess progress in line with a low carbon transition.

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Notes

¹ A composite indicator is created when individual metrics are combined into a single measure based on an underlying weighting methodology.

² The current report, while forthcoming, contributed to the NGFS Enhancing Market Transparency in Green and Transition Finance

³ Targets are considered 'science-based' if they are in line with what the latest climate science deems necessary to meet the goals of the Paris Climate Agreement – limiting global warming to well-below 2 degrees above pre-industrial levels and pursuing efforts to limit warming to 1.5 degrees.

⁴ Without access to proprietary information from the rating provider, the OECD is unable to assess the input metrics to the climate change risks category score from provider 2.

⁵ The assessment uses the following classification: 0 = no information provided; 1 = partial information provided or provided in unclear format; 2 = full information provided in clear format.

⁶ Estimating the true cost of carbon is a profoundly difficult exercise; with uncertainties in the estimation of the present value of the economic damage from carbon emissions, as well as the long-term cost of the associated carbon transition. Taking these difficulties into account, OECD estimates suggest that a reasonable carbon price today is around EUR 60 per tonne of CO₂ and is likely to represent around EUR 120 per tonne of CO₂ in 2030 (OECD, 2021^[13]).

⁷ Targets must be aligned to Paris Agreement, though not explicitly to the *Net Zero Target*.

