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Enhancing Comparability and Credibility of Transition Plans and Transition Risk Assessment with Standardized Net Zero Scenarios

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At a glance

- Transition plans by non-financial and financial corporates can fulfill two central purposes: they can facilitate strategic planning towards net zero 2050 while also helping detect transition risks in the short- and long term.
- For transition plans to be effective, several challenges must be overcome. These include the lack of standards and comparability, the lack of ambition, and the mismatch in time horizons.
- So far, neither regulatory nor voluntary initiatives require disclosure of scenarios used or define suitable science-based scenarios for transition plans.
- The comparability of transition plans can be improved by enhancing the availability of science-based net zero scenarios, including more granular sectoral and regional scenarios and the use of transition indicators.
- An accelerated transition scenario with a shorter time horizon can address the level of ambition and the mismatch of time horizons, improving transition risk assessments.
- Harmonization between prudential and non-prudential transition plans is important to avoid potential discrepancies.

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Introduction

Widespread reporting on climate targets is already underway, especially among companies required to report under the EU's Corporate Sustainability Reporting Directive (CSRD) or similar legislation in other countries. However, reporting more comprehensive climate transition plans is a new phenomenon. A climate transition plan (TP) is defined as a part of a company's strategy that lays out its targets and actions for its transition towards climate neutrality (European Commission, 2023b). Current regulatory and market initiatives are summarized in Infobox 1 and a more detailed overview of transition plans in the current EU legislation can be found in a recent report by Hüttel et al. (2023). (Bingler et al., 2023) provide an overview of private sector initiatives and how they target financial and non-financial firms.

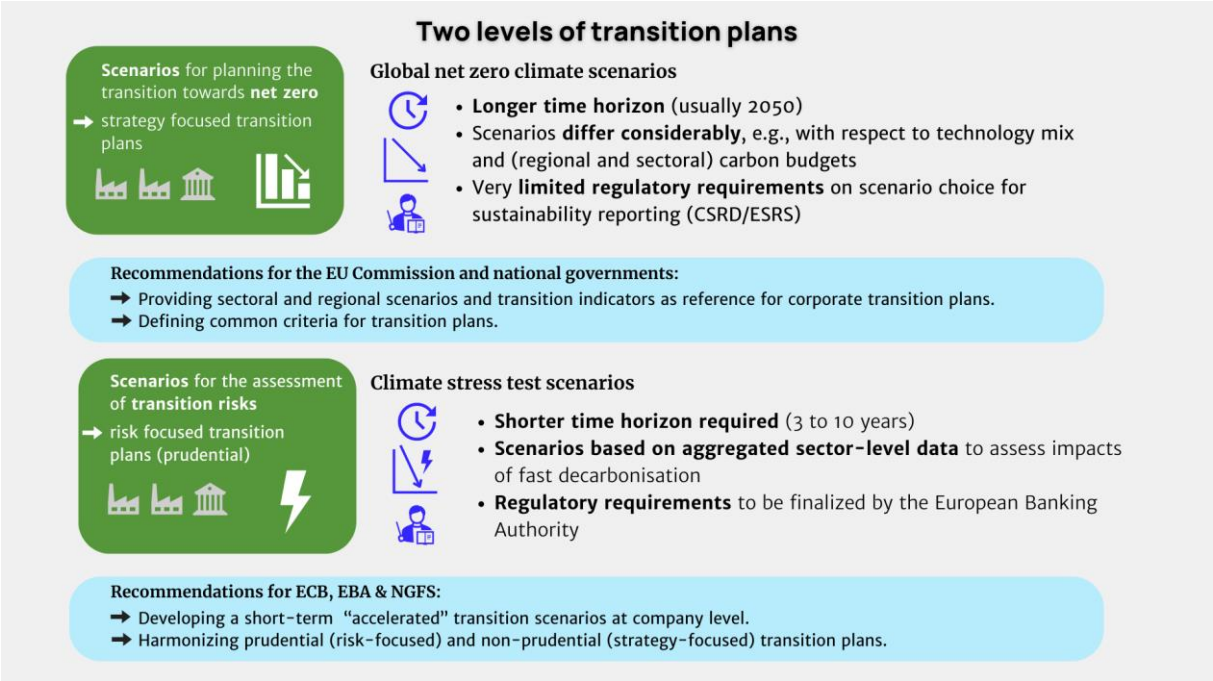
Infobox 1: *Policy and practical relevance of transition plans*

Currently, concrete proposals for climate TPs (for financial and non-financial firms) are gaining momentum. The UK has introduced one of the first disclosure frameworks on TPs, developed by the transition plan taskforce (TPT, 2023) building on the international disclosure requirements outlined in the sustainability and climate-related disclosure standards S1 and especially S2 by the International Financial Reporting Standard (IFRS). Within the EU, the Corporate Sustainability Reporting Directive (CSRD), specifically the European Sustainability Reporting Standard (ESRS E1) contains TPs as part of the revised sustainability reporting requirements (European Commission, 2023a). Moreover, Hong Kong and Australia are in the development of TP disclosures (Australian Treasury, 2023; Hong Kong Stock Exchange, 2023) and Japan and Singapore will also soon implement IFRS / ISSB-aligned (International Sustainability Standards Board) climate-related disclosure (Japan Financial Services Agency, 2022; Monetary Authority of Singapore, 2023). Additionally, several initiatives have developed guidance regarding TPs for financial and non-financial firms. The Glasgow Financial Alliance for Net Zero (GFANZ, 2022) provides recommendations and guidance for financial institutions' net zero TPs, including sectoral pathways and expectations for real-economy TPs. Furthermore, the Institutional Investors Group on Climate Change (IIGCC, 2023) has

published a report defining investor expectations for corporate TPs. The data provider CDP has developed disclosure requirements for credible TPs for financial and non-financial firms (CDP, 2023b). For Germany, the Pathways to Paris project (PTP, 2022a) has developed scenarios and guidelines for transition planning for several emission-intensive sectors in Germany.

TPs can have diverse objectives. For example, for companies, a TP can serve as a strategic planning tool , a communication tool, and it can also be used to help assess a company's climate-related resilience. Financial institutions can use firm-level data to get a better estimate of the net zero alignment of their portfolios as well as the transition risks of their portfolio (Dikau et al., 2022; Kempa et al., 2021; NGFS, 2023b). This policy brief considers two main use cases for TPs, as illustrated in Figure 1: first, the strategic planning of the net zero transition (for companies and financial institutions) and second, the assessment of transition risks in the short term (for financial institutions and financial regulators). In this context, we discuss three main challenges of TPs and provide suggestions for how they can be addressed.

Figure 1: Two main use cases of transition plans



Current challenges

a) Lack of standards and comparability

TPs have emerged in the last two to three years. In 2022, 22% of companies reporting to CDP have indicated that they have a climate TP in line with the 1.5°C target. Furthermore, around 35% of companies have indicated that they will develop such a plan within the next two years (CDP, 2023a). Similarly, in the case of Germany, the results of the latest Sustainability Transformation Monitor 2023 show that 10.7% of companies claim to have a TP in line with international and science-based targets (38.6% among companies with more than 10.000 employees), 25% have a TP which is not based on international scenarios, and 22.3% are currently working on a TP (STM, 2024).

However, such data can hardly be used by financial institutions to assess transition risks of companies on aggregate portfolio level given the lack of availability and comparability of such data. Hence, analysts often refer to sector-level data which might result in discrimination of progressive companies in carbon-intensive sectors, that can decarbonize their business (Marchewitz et al., 2022; Neuhoff et al., 2021).

To address this challenge, several financial market initiatives and international organizations have developed criteria or assessments for TPs (see Infobox 1). Usually, they contain the following criteria:

i) the underlying *metrics and emission targets*,
ii) an accompanying *roadmap/strategy* (including *financial planning*)
iii) accompanying *governance* aspects
iv) an accompanying *engagement strategy*.

Disclosure frameworks such as the European Sustainability Reporting Standard (ESRS) contain similar TP elements: the compatibility of a company's *emission targets* with 1.5°C, implemented and planned measures (*strategy*) and investments that support the implementation (*financial planning*), as well as additional *metrics* and *governance* aspects. Similarly, the disclosure framework in the UK (TPT) is based on three principles (*ambition, action, and accountability*) which are divided into five disclosure elements: *foundation, implementation, engagement, metrics and targets, and governance*.

Additionally, several TP assessments and initiatives are underway. CDP first issued a set of credibility parameters in 2022 and revised them in 2023. In its 2022 report, less than 1% of all companies have met the CDP criteria for a credible TP (CDP, 2023a). A recent paper develops the *climate transition integrity score*, to evaluate current reporting practices of climate TPs, applying it to the aviation sector (Reséndiz & Shrimali, 2023). Moreover, Bingler et al. (2023) have suggested a framework for assessing the credibility of TPs and to identify greenwashing and developed an Artificial intelligence-based tool to assess the completeness of transition plan disclosures (Colesanti Senni et al., 2024).

Despite these initiatives, the key challenge for TPs remains ensuring credibility and comparability (Caldecott & Shrimali, 2023; CBI, 2023; Dikau et al., 2022; ECB, 2023; ICMA, 2022; OECD, 2022; Transition Plan Taskforce, 2022). An essential element of TPs is the use of science-based transition scenarios as a benchmark (Huiskamp et al., 2022; TCFD, 2020, 2021). So far, neither regulatory nor voluntary initiatives require disclosing scenarios used or defining suitable scenarios.

b) Choice of scenarios: Net zero 2050 is not always aligned with 1.5°

When reporting within current EU regulation (CSRD for large European companies) and voluntary frameworks, companies usually base their transition plans on reaching net zero emissions by 2050, to limit global warming to 1.5°C with no overshoot. Such net zero scenarios can serve as a reference for the alignment of TPs as they are more stringent than current policy scenarios. To assess and evaluate such targets, Climate Action 100+ has developed *net zero company benchmarks* (starting in March 2021) and has assessed 170 companies so far.[1] Similarly, the *corporate climate responsibility monitor* of the New Climate Institute provides an assessment of the transparency and integrity of a company's climate pledges.[2]

However, even within net zero scenarios, a wide range of scenarios and methodological divergence persists. Net zero scenarios could potentially satisfy global ambition level (staying within the remaining carbon budget), but not all net

[1] https://www.climateaction100.org/net-zero-company-benchmark/

[2] https://newclimate.org/resources/publications/corporate-climate-responsibility-monitor-2023

zero 2050 scenarios are in line with the international 1.5°C target as put forward by the Paris Agreement. Some scenarios assume higher cumulative emissions than required for a 1.5° target, meaning that the temperature goal will be exceeded for a certain time before carbon dioxide removal is expected to bring down temperatures again later. Additionally, a regional and sectoral breakdown of such scenarios is key to meeting the ambition level. Recent evidence showcases that scenario choice highly matters for the outcome of climate risk analyses (Bingler et al., 2022) and climate stress tests (even with similar ambition levels) and that even Network for Greening the Financial System (NGFS) scenarios lack comparability (Buller et al., 2023).

As a result, a wide range of climate scenarios can be applied, which creates challenges regarding the comparability and usability of TPs. The diversity of scenarios is highlighted with the example of the steel sector in Infobox 2. This example emphasizes how, in general, scenarios have different scopes in terms of geography (national or international), sector resolution (granularity of sectoral decarbonization pathways), time horizon, ambition level, and policy reference. The fact that the most used scenarios are those of the IPCC, IEA, and NGFS with an international scope implies challenges with regards to the ambition of TPs. For example, the IEA "net zero by 2050 scenario" does not differentiate across countries based on fair allocation of carbon budgets, nor does it take into account historical emissions. In addition, Bjørn et al. (2021) show that the mere focus on emissions pathways using the absolute contraction approach (ACA)[3] for setting science-based company targets may exceed carbon budgets. Here, a sectoral decarbonization approach (SDA)[4] could help as they are more precise and take individual sectoral framework conditions into account (Caldecott & Shrimali, 2023; Schweitzer et al., 2023). However, sectoral scenarios should also take regional differences into account and vice versa – if not "any further

[3] The ACA technique is the most straightforward approach to translate a decarbonization pathway to firm level; it calls for each company to reduce its emissions at the same annual rate necessary globally to achieve a set temperature goal.

[4] The SDA methodology offers a precise GHG budget per sector, considering variations like mitigation potential and activity growth. Companies in each sector can set science-based emission reduction targets based on their contribution to sector activity and their intensity compared to the sector's baseline, see SBTi (2015).

measures derived for individual companies [...] would inherit these limitations" (Shrimali, 2023). Overall, scenario diversity and the corresponding lack of stringent geographical and sectoral granularity pose a challenge for assessing credibility, ambition, and comparability.

Infobox 2: Example – Different net zero 2050 pathways for the steel sector

Numerous transition scenarios and pathways to net zero have been developed for the steel industry, the most carbon-intensive industry sector (IEA, 2020). Their projections are not necessarily consistent: for example, while the IEA (2020) projects that more than half of the world's steel production in 2050 will be based on conventional fossil fuel-based technologies equipped with carbon capture, utilization, and storage (CCUS) (Net Zero by 2050), studies by McKinsey & Company (2022) and the Energy Transitions Commission (2018) project much lower shares of CCUS in the steel industry (around 20-30%). Other authors explicitly consider net zero steelmaking scenarios without CCUS (e.g., van Ruijven et al. (2016)), while others point out that numerous technologies might dominate the markets in 2050 (Mission Possible Partnership, 2021). This diversity of scenarios and the different assumptions behind them (see e.g. Institute for Sustainable Futures (2020) for a comparison of industrial carbon budgets), coupled with the lack of detail on regional pathways complicate companies' transition planning. For transition planning, particularly in sectors with considerable heterogeneity such as the steel sector (OECD, 2023), incorporation of information from national and regional science-based pathways (e.g., Prognos, Öko-Institut, Wuppertal-Institut (2021) for Germany) is therefore advised. For Germany specifically, the Pathways to Paris project provides an emission pathway based on the national net zero target (2045) as well as a decarbonization pathway for the steel sector by Agora Energiewende with a net zero by 2040 target (PTP, 2022b)

c) Mismatch of time horizons: The challenge of deriving transition risks from transition plans

As demonstrated above, transition plans are a strategy tool that can also be used by financial institutions to manage transition risks. However, for financial risk

assessments, the mismatch of time horizons is an additional challenge. The long timeframe of climate scenarios (several decades) makes climate risk analysis for banks more complex than other financial risk assessments which are usually based on a much shorter time frame (Wilkens et al., 2023). While NGFS is currently developing short-term scenarios, which might become an important step in this direction (EBA, 2023; NGFS, 2023a), it also recognizes that timeframes for risk assessments must become longer to adequately consider climate-related risks (NGFS, 2023b). However, this is not long enough for most net zero targets. Hence, companies and financial institutions should also consider the possibility of more stringent climate policies and, as a result, faster decarbonization.

If companies only report against a net zero by 2050 scenario, the financial impact might materialize outside the usual timeframe of current risk assessments. However, if companies report short-term targets, based on a national (and sectoral) pathway in line with a 1.5°C scenario, transition risks can be detected much earlier. This will enable transition risks to be integrated into current risk assessment practices. To incorporate transition plans into current (climate-related) risk assessments, interim targets would be needed (Calipel & Evain, 2022). Although most voluntary transition plan frameworks mention interim targets as an important criterion, current reporting requirements for climate targets and transition plans (such as the CSRD in the EU) do not contain specific requirements for near-term or interim targets.

Assessments carried out by ClimateAction 100+ and the New Climate Institute show that companies which report their short-term (<2026) and medium-term (2026-36) targets, often do not align with a 1.5°C pathway, demonstrating that there is a mismatch between commitments and actual policies and a disincentive to report on short-term or interim targets since they risk being assessed as non-compliant, whilst others with long-term targets can always claim to be on the way. Accordingly, companies will have to increase their decarbonization activities substantially. This poses a direct financial risk for emission-intensive firms, which should be considered in climate-related financial risk assessments.

The European Banking Authority (EBA) has partially addressed this issue in its draft guidelines on the management of ESG risks (including climate-related financial

risks).[5] The guidelines include a definition of key principles for the development of (prudential transition) plans, which include:

- Materiality assessment
- Short-, medium-, and long-term horizons and milestones
- Consistency of *prudential plans* with other processes and communications
- Integration across the institution
- Review and documentation

While the guidelines offer a comprehensive view of the integration of ESG risks, there are still a few shortcomings where further specification is needed. Regarding the definition of the scenarios used, it will be important to consider the trajectories of 1.5° scenarios which assume strong emission reductions in the near term (not only net zero by 2050) and the transition risks resulting from that. Additionally, it will be important to include all relevant activities of banks and all sectors of the economy they are invested in (Evain, 2024).

Policy recommendations

This section concludes with four policy recommendations which are addressed to the respective decision-makers.

The first two points focus on the use case of transition planning of companies and financial institutions. The third recommendation focuses on the use case of transition risk assessments by financial institutions and financial regulators. The fourth recommendation concerns the interplay between the risk and strategy perspective.

Recommendation for the EU Commission and national governments:

Providing sectoral and regional scenarios and transition indicators as reference for corporate transition plans:

- Given that the sole use of global emission pathways may result in an exceedance of carbon budgets (Bjørn et al., 2021; Shrimali, 2023), climate scenarios need to comply with national carbon budgets and

[5]

should be sector-specific where possible. Governments could provide a set of scenarios with sector-regional scenarios as the preferred option. If these are not available, second-best options (e.g. IEA) should be used. Governments can strengthen "inter-agency cooperation (e.g., with environmental agencies)" (Dikau et al., 2022, p. 14) and support scientific institutions to regularly update scientific net zero studies. This would allow companies to plan and report along **country and sector-specific pathways** rather than following an aggregated global emission pathway.

- At the sector-level, different targeted **(transition) indicators** should be used to describe the decarbonization efforts of companies, such as the share of electric vehicles or the share of renewable energy produced. Such sector-specific **transition indicators** can be derived from national and sectoral scenarios. Reported transition indicators should go beyond carbon emissions and imply different levels of benchmarks (technologies, energy efficiency, resource efficiency) (Ballesteros et al., 2023).They need to be comparable but flexible enough to ensure room for technology choices and strategic choices of individual companies.

Defining common criteria as guidelines for transition plans:

- In line with efforts to advance standardization at EU level (ESRS) and at international level (ISSB), the reporting criteria and structure of transition plans need to be standardized, including metrics & targets, corporate strategy (including financial planning), governance, and engagement strategy.

- Further science-based guidance on the underlying net zero scenarios used by companies for transition plans is needed to improve comparability. **Common criteria for net zero scenarios for firms should be defined.** Important elements include interim targets with a sufficiently short timeframe (e.g. 2025, 2030), the scope of emissions covered, reference to credible science-based national and sectoral decarbonization pathways, as well as further critical assumptions and dependencies (such as offsetting via CO_2 certificates or assumptions on the availability of low-carbon infrastructure).

Recommendations for the ECB, EBA & NGFS:

An "accelerated" net zero scenario for transition risk assessment

- A **"accelerated" net zero scenario (or stress test scenario)** should be provided by regulators. An "accelerated" net zero scenario incorporates a sudden tightening of climate policy resulting in an early

achievement of net zero, e.g., by 2038 (German Sustainable Finance Advisory Committee, 2021; Marchewitz et al., 2022; Schütze et al., 2020), with a sufficiently short timeframe suitable for risk management. The EBA "guidelines on the integration of ESG risks" are an opportunity to provide further guidance on such a scenario.

- The required level of detail can be small if the transition is sufficiently rapid to limit the role of bridging technologies and the use of CCUS (Carlin & Gourri, 2021). Additionally, such a scenario should not be based on carbon offsetting via CO_2 certificates or on shifting emission-intensive activities abroad.

- The benefits of such a scenario are threefold: First, it enhances the comparability of TPs and thereby facilitates the use of individual company data for quantitative assessments by financial sector and regulators. Second, the scenario increases the robustness of companies' strategies in case of a sudden policy change. Third, it could offer incentives for companies which decarbonize faster than others in the respective sector. These companies could receive beneficial financing conditions due to their lower transition risk – leading to a "transition premium" and improve the level playing field for a fast transition.

Harmonization between prudential (risk-focused) and non-prudential (strategy-focused) transition plans

- There are many synergies between the two use cases for TPs: for strategy planning of companies and financial institutions (non-prudential TP) as well as for risk assessments of financial institutions and the financial system (prudential TP).

- Therefore, the CRD/CRR requirements for prudential TPs (EBA guidelines on the integration of ESG risks) should be in line with CSRD reporting requirements regarding TPs (as specified in the ESRS E1 Standard). It would be beneficial to use the same structure and requirements for TPs.

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About the project

The Sustainable Finance Research Platform is a joint project between five German research institutions conducting research on different aspects of Sustainable Finance, e.g. sustainable investments, sustainability risks and chances, and sustainability reporting. With their independent research, the project partners aim to support stakeholders in politics, the financial sector, and the real economy in understanding and shaping the central role of capital markets in achieving a net-zero economy. The researchers involved answer social, political, and business-related questions, provide established and new research findings, and participate in political and public debate. They also want to establish sustainable finance as a topic in the German research landscape and secure connections with international institutes and processes.

More information can be found on the project's website

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