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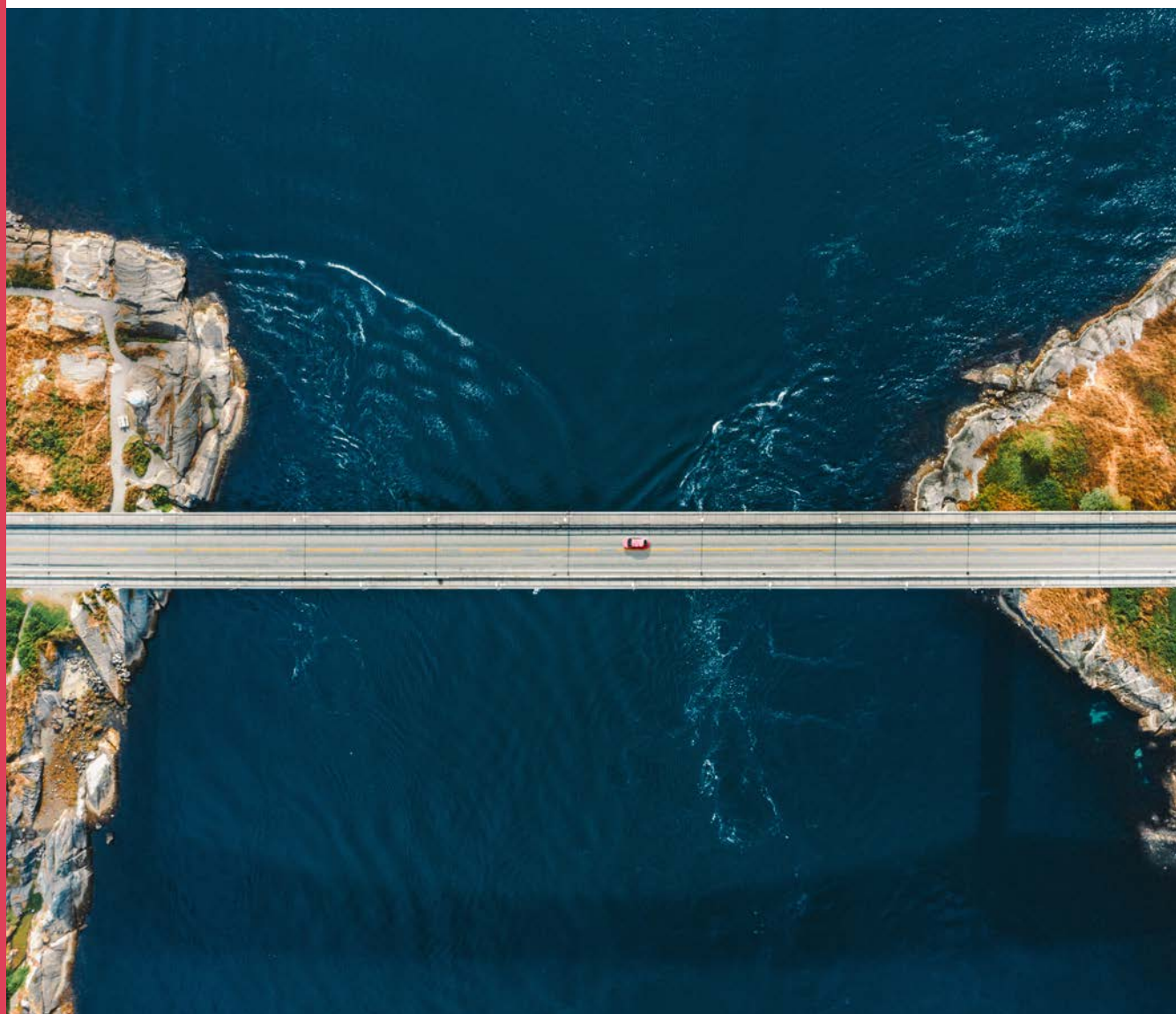
Sector Transition Plans:
A bridge between national ambition and company transition plans

A discussion paper by the ITPN and the TPI Global Climate Transition Centre at LSE

TPI Global Climate Transition Centre
Research and Data at **LSE**



ITPN International Transition Plan Network

About the ITPN

The International Transition Plan Network (ITPN) was launched at COP29 to support the development of global norms for private sector climate transition plans and drive climate policies that leverage the full potential of these plans.

As a growing network, ITPN brings together leaders from over 40 public sector organisations including finance ministries, central banks, and regulators from across Africa, Asia-Pacific, Europe, North America, and Latin America. It is bolstered by a wider global community of practice that includes a wide range of stakeholders.

The network supports global consistency in approaches to polices and regulations on transition plans. It is a platform for coordination, thought leadership, and capacity building.

The ITPN is hosted by E3G. E3G is an independent think tank working to deliver a safe climate for all.

About the TPI Global Climate Transition Centre at LSE

The TPI Global Climate Transition Centre (TPI Centre) is an independent, authoritative source of research and data on the progress of corporate and sovereign entities in transitioning to a low-carbon economy. It is part of the Global School of Sustainability at the London School of Economics and Political Science (LSE). The TPI Centre is the academic partner of the Transition Pathway Initiative (TPI), a global initiative led by asset owners and supported by asset managers, aimed at helping investors and other stakeholders assess company, bank, and sovereign preparedness for the transition to a low-carbon economy and supporting efforts to address climate change. As of October 2025, more than 155 investors globally, representing approximately US$87 trillion combined Assets Under Management and Advice, have pledged support for TPI.[1] The TPI Centre is also the academic research expert of Assessing Sovereign Climate-related Opportunities and Risks (ASCOR).

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1) This figure is subject to market-price and foreign-exchange fluctuations and, as the sum of self-reported data by TPI supporters, may double-count some assets.

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Executive Summary

Companies across the world are preparing and implementing climate transition plans, a key tool to navigate the shift to a net zero, climate-resilient economy. However, companies cannot implement transition plans in isolation. They operate with dependencies on policy, technology, suppliers, customers, the availability of finance, and more.

This discussion paper explores the opportunity for national policymakers to create jurisdiction-specific Sector Transition Plans (STPs) to address some of these challenges. We focus on three main contributions that STPs can make. First, STPs provide policy direction, supporting investment by companies and financial institutions. Second, STPs help companies navigate complex dependencies and identify appropriate transition levers in their transition plans. Third, STPs can support more nuanced transition plan assessments, improving financial institutions' ability to allocate capital to transitioning companies. Four case studies of STPs in different jurisdictions illustrate these contributions.

The paper concludes by identifying four steps that governments, companies, financial institutions, and others can take to develop and use STPs:

1. Governments could benefit from co-creating STPs with corporates, financial institutions, civil society, trade unions, Indigenous peoples, and local communities.
2. The private sector can use STPs to identify, disclose, and act on external dependencies, including by taking a proactive and pro-climate stance in their policy advocacy.
3. Financial institutions and data providers can use STPs to bring more local nuance to transition plan assessments, which may support flows of transition finance to emerging markets.
4. Policymakers and regulators can use information from companies' transition plans to support the achievement of their climate goals.

Introduction

Companies across the world are beginning to prepare climate transition plans, which can be key tools to navigate the shift to a net-zero, climate-resilient economy. A transition plan is part of a company's overall strategy, setting out targets, actions, and resources for its transition.[2] The process to develop a transition plan involves grappling with significant uncertainty around technologies, policy, and the future of business models in a net-zero economy. There is increasing recognition that for transition plans to be both feasible and ambitious in mitigating and adapting to climate change, they should be grounded in geographical and sectoral context.[3]

Jurisdiction-specific Sector Transition Plans (STPs) are emerging as a useful way to help companies account for diverging starting points in the transition, infrastructure-related constraints, and regulatory headwinds or tailwinds. The definition and key components of STPs are set out in the box below. Currently, there are a limited number of detailed STPs to draw lessons from, but initial evidence suggests that developing STPs can support a coordinated transition and associated investment opportunities.

Successful implementation of transition plans requires an understanding of external dependencies, such as infrastructure availability and regulatory environments. These dependencies are often geographically specific. Companies are also grappling with how to plan for the physical risks associated with climate change, which inherently require granular localised analysis. Exposure to hazards, such as flash floods or drought, will depend on local geographic conditions, while vulnerability to those hazards may look drastically different for companies in advanced and developing countries.

Transition planning at the sector level can also support financial institutions and the deployment of transition finance. Integrating greater geographical nuance into transition plan assessments can reflect the differing speed at which companies can decarbonise in different regions.[4] Accounting for these geographically-specific risks and dependencies can enable investors to allocate transition finance more confidently to companies in hard-to-abate sectors, and this is particularly relevant for activities in emerging markets. Financial institutions that better account for national circumstances may also uncover new investment opportunities, such as emerging technologies suited to a particular geography or policy environment.[5]

This discussion paper explores the role of STPs in supporting corporate transition planning and investors' decision-making around transition finance. Each section explores a key contribution that STPs can make in supporting the transition to a low-emissions, climate-resilient economy, addressing the perspectives of three key actors in turn: policymakers, companies, and financial institutions. Four case studies of STPs provide insights from Australia, France, Hebei province in China, and Japan. The conclusion sets out next steps to use STPs and related mechanisms to deliver a positive feedback loop between national policy and company transition plans.

2) See ISSB, IFRS S2 Climate-related Disclosures, 2023.
3) See: Pickard Garcia et al., Credible company transition plans for climate change mitigation: a geographical dependency assessment, 2024; ATP-COL, Assessing the credibility of a company's transition plan: framework and guidance, 2024
4) RMI, Regionalizing Transition Intelligence, 2025
5) ASEAN Capital Markets Forum, ASEAN Transition Finance Guidance, 2024.

What are Sector Transition Plans?

Guidance for governments on how to undertake sectoral planning adopts a variety of terms including 'sector transition plans', 'long-term strategies', 'roadmaps' and 'pathways'. The UN Development Programme's guidance on long-term low-emissions development strategies (LT-LEDS) advises sectoral planning to consider trade-offs and synergies across technologies.[6] Guidance has also been developed by ADEME,[7] the European Standards Organisation,[8] the Institutional Investors Group on Climate Change (IIGCC),[9] and the UK's Net Zero Council.[10] The UK's Transition Finance Council has provided detailed guidance on developing the finance component of STPs.[11] For simplicity, this discussion paper uses the general term 'Sector Transition Plans' or STPs, except in reference to case studies where the original language is used.

In brief, a STP sets out a sector's forward-looking ambition and strategy for its transition towards a lower-carbon and climate-resilient future, including interim and long-term targets, a range of technological and process-related transition levers, associated financing needs, and policy support.[12] From existing examples and guidance, common components of a STP can be identified, some of which may be more challenging to develop than others. These components are highlighted below as a non-exhaustive exploration.

- A **vision** of how the sector expects to evolve, such as changes to goods or services being delivered, and the technologies required:
    - This should include an **emissions reduction pathway** for the sector, including a long-term goal such as net zero, as well as intermediate milestones. These pathways may be illustrative scenarios contextualising potential rates of decarbonisation given a jurisdiction's unique characteristics. For example, France has a target to reduce emissions from industry by 81% by 2050 and the French Agency for Ecology Transition (ADEME) modelled multiple pathways showing how 8 industrial sub-sectors could cumulatively meet this target (see Case Study 1).
    - This may include **goals to build resilience** to physicals risks, as exposure and vulnerability to floods, heat stress, or water stress vary across sectors and geographies. Some countries will already have sector-specific resilience goals outlined in national adaptation plans or similar that could be drawn on.[13]

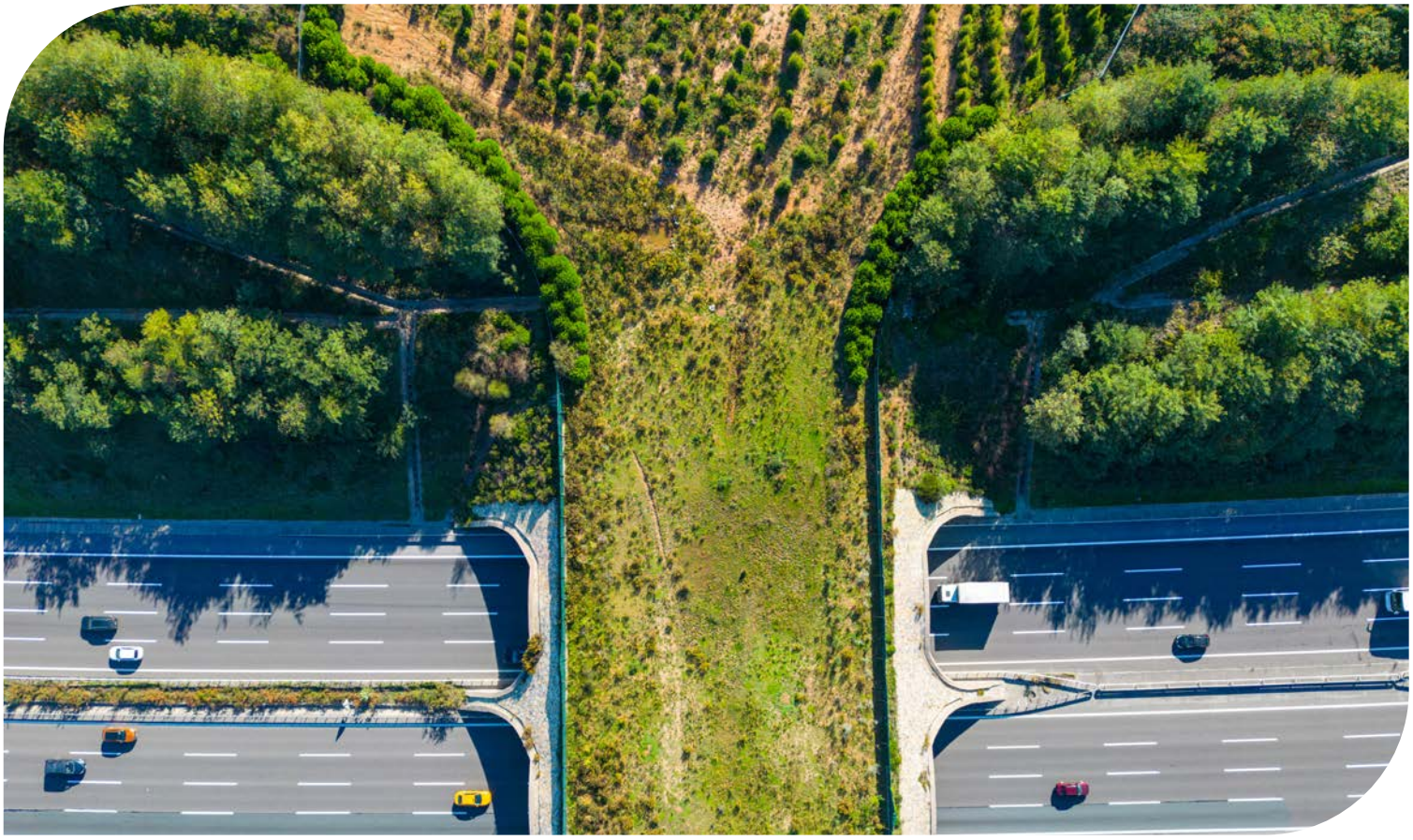
6) See Section 3.4: UNDP, Planning for a net-zero future: Gudiance on how to develop a Long-Term Low Emission Development Strategy, 2024
7) ADEME, Methodological guide to drafting a sectoral transition plan for the decarbonisation of industry, 2024
8) European Committee for Standardization, EN 18074 Industrial decarbonization – Requirements and guidelines for sectoral transition plans, 2025 (Forthcoming)
9) IIGCC, Principles for developing sector decarbonisation roadmaps – the investor perspective for policymakers, 2025
10) Net Zero Council, Sector Transition Plan Guidance, 2025
11) See Transition Finance Council, Sector Transition Plans: The Finance Playbook, 2025; Net Zero Council, Sector Transition Plan Guidance, 2025
12) See Transition Finance Council, Sector Transition Plans: The Finance Playbook, 2025; Net Zero Council, Sector Transition Plan Guidance, 2025
13) AIGCC, An assessment of the region's adaptation plans against investors' expectations, 2025

- A **delivery plan** outlining the main actions to deliver the vision, emissions reduction pathway and any resilience goals. This may include the following:
    - A **technology roadmap** sets out how to accelerate the deployment and commercialisation of a specific transition-enabling technology or suite of technologies, such as offshore wind or heat pumps. For example, Japan's Ministry of Economy, Trade and Industry (METI) has published Technology Roadmaps for transition finance in 8 sectors (see Case Study 4). Roadmaps should be flexible to avoid excessive technological determinism, allowing for innovation in technology adoption.
    - A **policy plan** sets out the strategic direction for a sector and the policy levers a government intends to deploy, such as incentives, carbon pricing, and the planned phaseout of emissions-intensive activities such as coal-fired power generation. The Australian government has developed policy plans to cover all sectors (see Case Study 2).
    - **Risk management** which addresses how physical and transition risks will be managed during the sector's transition. Some countries have produced standalone sectoral adaptation plans, including Chile, while others have integrated them alongside mitigation plans.[14]
- A **finance plan** identifies investment needed at each stage of technology development, available capital types (e.g. venture capital for early development), and the policy interventions that will support commercial viability. The US Department of Energy published 'Pathways to Commercial Liftoff' in 2023 and 2024 that outline cost curves, bottlenecks, and investment needs, though at the technology rather than sector level.[15]

14) Ministerio del Medio Ambiente, National Climate Change Adaptation Plan and Sectoral Plans, webpage as of October 2025
15) See U.S. Department of Energy, Pathways to Commercial Liftoff, webpage as of October 2025

Figure 1: Sector Transition Plans contributions explored in this paper

CONTRIBUTIONS OF STPs	FURTHER DETAIL	READ MORE
Contribution 1: STPs help policymakers communicate the direction of the transition	STPs provide clear signals about the direction of the transition, helping companies and financial institutions to make decisions about where to allocate capital. Co-creating STPs with business, financial institutions and others will increase stakeholder buy-in and generate insights to inform policymaking.	Pages 10 - 14
Contribution 2: STPs help companies navigate external dependencies	STPs provide the information companies need in order to better understand the geographically-specific dependencies and feasible transition levers in a jurisdiction.	Pages 15 - 22
Contribution 3: STPs can facilitate transition finance and localise transition plan assessments	STPs can enable more nuanced corporate transition plan assessments by providing localised benchmarks and context on geographically-specific dependencies. This will support transition finance issuance and climate-related stewardship and engagement.	Pages 23 - 31



1. Contribution One: STPs help policymakers communicate the direction of the transition

1.1 How can national climate ambition be translated into granular STPs?

Economy-wide emissions reduction targets, often communicated in Nationally Determined Contributions (NDCs) under the Paris Agreement, provide a key reference for jurisdictions' climate and development goals. National Adaptation Plans (NAPs) set the groundwork of how countries will address and manage physical risks. As noted by the 2025 G20 Presidency and Sustainable Finance Working Group Co-chair report: "government policies, plans (NDCs, NAPs), and regulatory frameworks form the foundation for effective private sector engagement in transition planning".[16] However, there have been increasing calls to make these climate ambitions 'investable' by underpinning headline goals with detailed national transition plans and more granular STPs.[17]

National transition planning is a process to deliver the goals set out in NDCs and NAPs by detailing concrete costed actions, helping to communicate and coordinate action with the private sector.[18] This process identifies policy actions to drive the transition such as carbon pricing, fiscal reforms, green procurement rules, financial regulation, or skills development. Economy-wide planning must be complemented with granular detail at the sectoral level.

Robust STPs with strong government ownership provide a credible signal of what the transition will look like in key sectors, helping companies and financial institutions manage and identify climate-related risks and opportunities. Given the long-term nature of infrastructure investments, without a clear direction for the transition there is a risk that firms will either withhold investment or lock in high-carbon infrastructure. Developing STPs may also help focus policymakers on policy or permitting decisions that are likely to affect investment, particularly related to national infrastructure with significant up-front costs and long lead times.[19]

Importantly, STPs should consider industrial ecology, as demand for low-carbon products and supply chain constraints will be key for many sectors.[20] For example, the construction sector's demand for low-carbon materials may affect the rate of decarbonisation in the steel and cement sectors. Case Study 3 on Hebei's Guidelines for Transition Finance in the Iron and Steel Industry shows how consideration of downstream sectors like construction can stimulate demand for low-carbon products. Encouraging downstream demand for low-carbon products can enhance the risk/return profile for upstream transition investments.

16) G20 South Africa 2025, 2025 G20 Presidency and SFWG Co-chairs Sustainable Finance Report, 2025
17) See for example: WRI, Next-Generation Climate Targets: A 5-point plan for NDCs, 2024; C2ES, What are "Investable NDCs", 2024; IIGCC, Making NDCs investable – the investor perspective, 2025; AIGCC, Financing Asia's National Adaptation Plans, 2025
18) Manning et al., Taking the lead on climate action and sustainable development, Recommendations for strategic national transition planning at the centre of a whole-of-system climate response, 2024
19) Transition Finance Market Review, 2024
20) Transition Finance Council, Sector Transition Plans: The Finance Playbook, 2025

1.2 What are the key considerations in developing STPs?

One common theme across relevant guidance is that STPs should be co-created by government, business, finance, civil society, labour unions, Indigenous peoples, and local communities. Ensuring that companies operating in the sector are involved can help generate buy-in and provide insights on practical barriers and enablers. Financial sector expertise can help identify gaps to commercial financing of transition solutions. For example, the involvement of insurers will help understand the "insurability" of assets affected by climate hazards and of newer technologies like carbon capture and storage.[21] Indigenous peoples' involvement will be key in certain geographies, given they have distinct sovereignty-based rights to their territories.

ADEME note from their experience developing STPs in France that one of the major benefits lies in the process of consultation and bringing together all the players to construct a coherent and robust roadmap.[22] To help design a successful co-creation process with different stakeholders, the UK Transition Finance Council has identified nine key design features that organisations can refer to.[23]

Government's role in owning the sectoral planning process is critical to provide the policy direction needed to unlock transition finance. However, there is significant variations in the ownership of existing STPs, with some owned by industry or civil society groups. In such cases, the plan can risk being disconnected from wider national planning.[24] Policymaker leadership is crucial to provide a credible signal on the direction of the sector's transition and clarity on how the current and future policy mix will support it. Sub-national governments may play a role in producing STPs, for instance in large countries with well-developed subnational governance structures. Independent climate councils that advise governments (for example, the Climate Change Authority in Australia or the UK's Climate Change Committee) may also play a key role in ensuring STPs are science-based and long-term.

Many countries have begun some form of sectoral planning for climate change that they can build on when developing tailored STPs. Half of the countries evaluated using the Assessing Sovereign Climate-related Opportunities and Risks (ASCOR) tool in 2025 have multi-sector climate strategies, which include both emissions targets and associated policy measures across key high-emitting sectors. Appendix 1 presents an exhaustive list of 35 multi-sector strategies identified from the sample of 71 countries assessed. The electricity sector is most commonly included in such strategies, while the largest gaps remain in developing sectoral targets and policies for industry.[25]

Policymakers may wish to prioritise developing STPs for key high-emitting sectors whose transitions are particularly dependent on local policy and infrastructure. Concerning the development of localised decarbonisation pathways, a common component of STPs, sectors with significant Scope 1 emissions can be prioritised. The country-level emissions of companies in these sectors are most likely to match those of national sectoral pathways, which is necessary for appropriate benchmarking (see Section 3.3).

Jurisdictions deciding where to prioritise the development of STPs can also consider their economic competitiveness through the transition. In Japan, the Ministry of Economy, Trade and Industry (METI) produced a technology roadmap for the automobile sector with the aim of maintaining the competitiveness of an industry that accounts for approximately 10% of employment and 20% of exports.[26] STPs may help jurisdictions and companies to navigate economic dislocation created by technological change during the transition, and to identify growth opportunities in new low-carbon markets.

21) Transition Finance Council, Sector Transition Plans: The Finance Playbook, 2025
22) ADEME, Methodological guide to drafting a sectoral transition plan for the decarbonisation of industry, 2024,
23) Transition Finance Council, Sector Transition Plans: The Finance Playbook, 2025
24) IIGCC, Principles for developing sector decarbonisation roadmaps – the investor perspective for policymakers, 2025
25) Hizliok et al., Forthcoming, State of the Sovereign Transition, 2025
26) METI, Technology Roadmap for "Transition Finance" in Automobile Sector, 2023

The evolving guidance on STPs is largely focused on mitigation, but sectoral planning for climate adaptation is also key. The Glasgow Financial Alliance for Net Zero (GFANZ) notes that sectoral adaptation plans could include policy measures for embedding adaptation in key sectors like real estate and identify priority adaptation projects for the private sector to finance or co-finance.[27] STPs can also be developed for nature, with the Green Finance Institute and WWF-UK developing nature-positive transition pathways for the UK in partnership with business and financial institutions.[28]

1.3 How can a feedback loop back into policymaking be created?

The process of co-creating STPs can generate valuable insights that can help inform policymaking. For example, STPs can inform the design of effective incentives and regulations, help track progress within a sector, and set priorities for public finance institutions. In the French case study, analysis from STPs helped inform revisions to the country's National Low-Carbon Strategy and to industrial subsidies provided in calls for projects.

The Transition Finance Council suggests that governments should focus on four priorities in ensuring implementation of STPs.[29] Firstly, the structured engagement process of co-creating an STP should be used to identify barriers and enablers to finance flows, project pipelines, and technology deployment. Secondly, progress towards the STPs should be monitored using KPIs related to transition finance flows, technology deployment, or emissions reductions. Thirdly, where a sector's progress is not on track, governments should adjust policies, regulations and use of public finance. Finally, STPs should be regularly updated as conditions evolve.

Aggregated data from company transition plans could help monitor progress towards STPs and national transition plans. As discussed in section 2, company transition plans should include disclosures on the external dependencies companies face and the transition levers they are adopting. These datapoints may be useful to policymakers assessing company action, and identifying the supporting infrastructure or policy that might be needed to enable company action. However, companies' transition plan data is largely not being used by governments in a systematic manner.

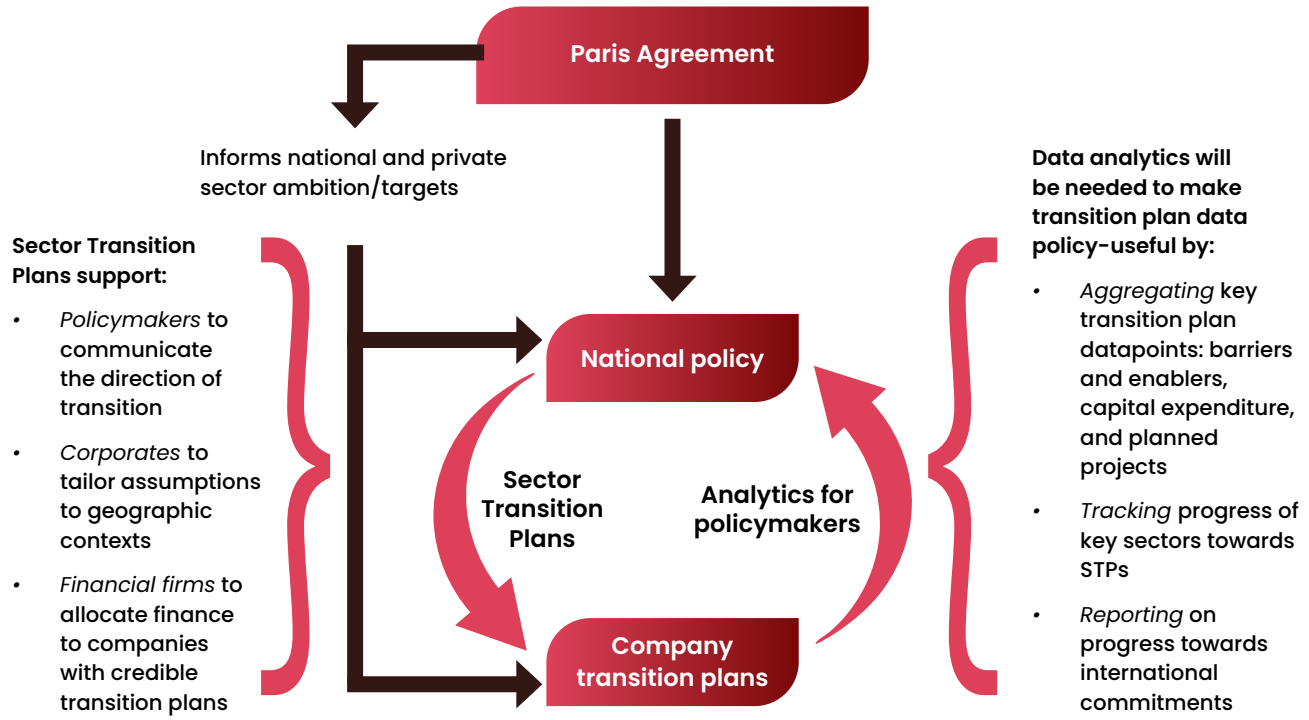
One solution could be to develop transition plan data analytics that are tailored for policymakers. Extensive work has been done to create analytics for financial institutions using transition plans, and analytics for policymakers are now emerging.[30] For example, Brazil's Ministry of Science, Technology and Innovation are using corporate climate data from CDP to support tracking and reporting towards its NDC.[31] In the EU context, an E3G-ECCO paper identifies that key datapoints from company transition plans that can inform national strategies.[32] Further work needs to identify how transition plan datapoints could be useful to different policy processes and to explore how these can be aggregated and communicated to policymakers across government departments.

Regulators may also benefit from transition plan analytics. For securities regulators, the International Organization of Securities Commissions (IOSCO) has noted that poor-quality and incomparable transition plans may damage market integrity and create greenwashing risks for market participants.[33] Additionally, the Financial Stability Board has noted that transition plans could be used by financial authorities for macro-monitoring of transition and physical risks both in the financial system and the real economy.[34]

27) Glasgow Financial Alliance for Net Zero (GFANZ), G20 SFWG Input Paper ~ Priority 2: Scaling up financing for adaptation, 2025
28) Green Finance Institute and WWF UK, Nature-positive transition pathways for the UK economy, 2025
29) Transition Finance Council, Sector Transition Plans: The Finance Playbook, 2025
30) CDP, Data as the Catalyst: Powering National Transition Planning Across Climate and Nature Goals, 2025 (forthcoming)
31) CDP, MCTI and CDP Sign Technical Cooperation Agreement to Boost Climate Transparency, 2025
32) E3G and ECCO, Making investable transition strategies in the EU, 2025
33) IOSCO, IOSCO Report on transition plans, 2024
34) FSB, The Relevance of Transition Plans for Financial Stability, 2025

A positive feedback loop between climate policymaking and company transition plans is therefore possible, with the two key drivers being STPs and transition plan data analytics for policymakers. Policy direction on the transition communicated through STPs will help guide company and financial institution action. Data analytics to make transition plan data policy-useful would support improved understanding of private sector action by policymakers and regulators, and inform adjustments to policy and regulation.

Figure 2: Key elements to establish a positive feedback loop between national policy and private sector transition planning



CASE STUDY 1:

France's Sectoral Transition Plans

What is the scope?

The French Agency for Ecological Transition (ADEME) developed STPs for energy-intensive sectors between 2021 and 2025: steel, aluminum, cement, glass, pulp and paper, ammonia, chlorine and ethylene, and sugar.[35] ADEME has also developed a "methodological guide" for producing STPs, which includes its own methodology and reflections on the process.[36]

What do they include?

Each STP models two or more scenarios to meet an 81% reduction in emissions by 2050, a target that was set for industrial sectors in France's National Low-Carbon Strategy. These scenarios cover the penetration rate of different decarbonisation levers over time, the capital expenditure and operational expenditure associated with these levers, and the effects of each lever on energy consumption, GHG emissions, and production costs. Production levels are determined in each scenario based on various economic factors (consumption, imports and exports, international competition, regulations) and socio-economic analysis. The exploration of different decarbonisation scenarios helps identify the processes and transformations required to deliver the 81% reduction target. The STPs conclude with action sheets identifying the key decarbonisation levers for each sector, the relevant stakeholders, effects on decarbonisation, and the current and proposed policy actions.

How can they be used?

The STPs are primarily intended for use by corporates and financial institutions, but are also being used by policymakers in France. The detailed modelling underpinning the plans is informing the updating of France's National Low-Carbon Strategy, the design of public policies, and calls for projects to receive financial support for decarbonisation. Further work is underway to use these STPs at the regional level, gathering companies in industrial zones to design pilot studies for decarbonisation and look for synergies in infrastructure or energy supply.

The detailed modelling underpinning the plans is informing the updating of France's National Low-Carbon Strategy, the design of public policies, and calls for projects to receive financial support for decarbonisation.

35) See ADEME, La Librairie, website as of 2025
36) ADEME, Methodological guide to drafting a sectoral transition plan for the decarbonisation of industry, 2024

2. Contribution Two: STPs help companies navigate external dependencies

2.1 What are transition plan dependencies and how do they relate to policy?

Company transition plans are not standalone strategies. Their success depends on how effectively they interact with—and are supported by—the broader systems in which they are embedded.[37] These systems are deeply entrenched, sustained by established technologies, institutions, infrastructures, cultural norms, and vested interests.[38] Resilient decarbonisation often hinges on the development of critical networks such as electricity grids, carbon capture and storage infrastructure, or transport systems, which require coordinated action across multiple actors and levels of governance.

Overcoming these coordination challenges is essential, as no single company can address such systemic changes alone. These coordination challenges cannot be overcome through incremental change or market signals alone. Addressing them requires a coherent policy mix that simultaneously drives innovation and investment, stimulates demand for low-carbon solutions, and provides clear, predictable signals to all actors about the direction and pace of transition.

Companies face numerous external dependencies: they are dependent on the availability of proven technologies, the rollout of enabling infrastructure, consumer demand, and clear policy signals from government. Dealing with uncertainty and complexity is nothing new for businesses, but the levels of uncertainty and complexity relating to the climate transition are particularly high.[39]

Using common typologies to categorise these dependencies provides a shared language that improves comparability and supports more coordinated action across the system. This paper uses the typology jointly developed by Rose, Shrimali and Halttunen, and Pickard Garcia et al. which is being increasingly adopted across transition plan guidance (see Table 1).[40]

By integrating analysis of dependencies into the transition planning process, companies can better articulate how they envision their own role in the transition and how they will engage with policymakers, suppliers, customers, and others to deliver the necessary systems transformation. Clear oversight on dependencies can also help companies identify decarbonisation and resilience opportunities and strengthen the credibility and feasibility of their plans.[41]

Recognising and disclosing dependencies is increasingly a regulatory expectation. Leading corporate reporting standards, including the EU Corporate Sustainability Reporting Directive (CSRD)

37) Assessing Transition Plan Collective (ATP-CoI). Assessing the credibility of a company's transition plan: framework and guidance. 2024.
38) Geels, The multi-level perspective on sustainability transitions: Responses to seven criticisms, 2011
39) WBCSD and Oxford Sustainable Finance Group, A practical guide on transition plan dependencies, 2025
40) See: Rose, Shrimali and Halttunen, A framework for assessing and managing dependencies in corporate transition plans, 2025; Pickard Garcia et al., Credible company transition plans for climate change mitigation: a geographical dependency assessment, 2024; Assessing Transition Plan Collective (ATP-CoI). Assessing the credibility of a company's transition plan: framework and guidance. 2024.
41) WBCSD and Oxford Sustainable Finance Group, A practical guide on transition plan dependencies, 2025

and the International Financial Reporting Standards (IFRS) S1 and IFRS S2, require firms to identify, assess, and disclose key dependencies and assumptions underpinning their transition plans.[42]

Stakeholders interested in the quality of company transition plans also increasingly consider how dependencies are addressed.[43] Structured disclosure of dependencies and actions to address them could encourage improved dialogue between companies, investors, and policymakers on the transition. For example, Ball Corporation's transition plan identifies aluminium can recycling rates as key to its decarbonisation and outlines that it therefore advocates for extended producer responsibility policies and deposit return schemes in key jurisdictions.[44] Policymakers could begin analysing disclosure on dependencies to identify policy barriers to corporate action, as discussed in Section 1.3.

Across two recent studies, companies consistently identified policy strategy, regulatory frameworks, and policy instruments as the most critical external dependencies that shape their ability to design and successfully deliver transition plans.[45] One reason these dependency types are so important is that they influence almost all other dependencies: policies can create an enabling environment—or, conversely, a constraining one—that determines how easily dependencies can be overcome.

Further research from Pickard Garcia et al. analyses which external dependencies are most geographically-specific for energy-intensive industries and how they affect the implementation of different decarbonisation levers.[46] It finds that the categories of policy strategy, regulatory framework, market and economics, infrastructure availability and logistics, resource availability and environmental impacts, and ecosystem services should be analysed from a geographical perspective. As transition plan disclosure becomes more widespread, further research could explore differences in dependencies across sectors and geographies.

Being headquartered in a jurisdiction with more developed national climate policy is associated not only with more comprehensive corporate transition plans, but also with more ambitious corporate emissions targets.[47] Evidence from the electricity sector shows that more ambitious net zero legislation drives increased investment in low-carbon power plants, and that firms with stronger transition plan disclosures respond more readily to net zero legislation signals.[48] In the absence of credible policy signals or a supportive enabling environment, companies and investors may hesitate to allocate capital to decarbonisation—delaying or scaling back ambition as a result.

Evidence from the electricity sector shows that more ambitious net zero legislation drives increased investment in low-carbon power plants, and that firms with stronger transition plan disclosures respond more readily to net zero legislation signals.

42) See paragraph 14(a)(iv) IFRS S2, Climate-related Disclosures, 2023
43) Assessing Transition Plan Collective (ATP-Col), Assessing the credibility of a company's transition plan: framework and guidance, 2024
44) Ball Corporation, Climate Transition Plan, 2023
45) Rose, Shrimali, and Halttunen. A framework for assessing and managing dependencies in corporate transition plans, 2025. Valenzuela et al., Credibility Beyond Control: Corporate Climate Transition Plans and Dependencies, 2025
46) Pickard Garcia et al., Company transition plans for climate change mitigation: identifying external factors to analyse geographical dependencies in energy-intensive industries, Publications Office of the European Union, 2025
47) Dietz et al., TPI State of Transition Report 2024, 2024.
48) Zhou et al., National Net-Zero Legislation and Corporate Asset Allocations, 2025

Table 1: Typology of dependencies that can influence a company's transition plan[49]

CATEGORY	EXTERNAL DEPENDENCY	DEPENDENCY TYPE(S)
1. Non-Physical	1.1 Policy strategy	-National decarbonisation strategy -Geopolitical environment (e.g. threats to energy security, trade of critical resources)
	1.2 Regulatory framework and policy instruments	-Real economy regulation (e.g. permitting process) -Carbon pricing mechanisms and subsidies -Financial regulation -Legal framework (e.g. ESG litigation risks)
	1.3 Market and economics	-Capital availability and cost -Energy and commodity prices
	1.4 Public acceptance	-Concerns about local effects e.g. ("Not in my backyard") -Just transition (e.g. local impact on employment)
	1.5 Consumer and client behaviour	-Willingness to reduce demand and/or adapt behaviours -Willingness to pay a green premium
2. Physical	2.1. Infrastructure and logistics	-Availability of infrastructure and logistics for transport, distribution, and storage
	2.2 Technology	-Technology readiness levels and innovation -Efficiency improvement -Technology lock-in
	2.3 Resource availability	-Availability of land, raw materials, and other inputs
	2.4 Environmental impacts and ecosystem services	-Climate change impact (e.g. decreased water availability for power generation)
	2.5 Labor availability	-Availability of skilled workers

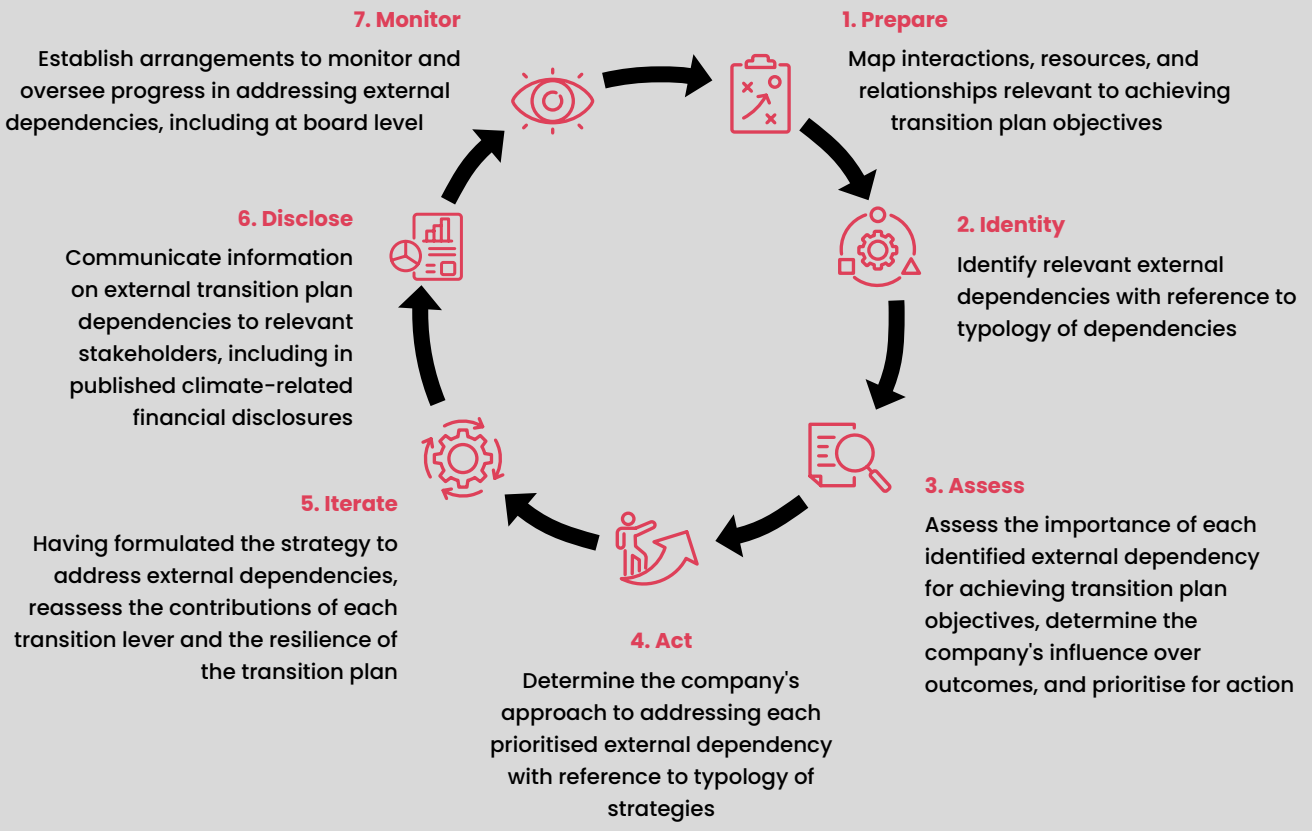
49) Rose, Shrimali and Halttunen, A framework for assessing and managing dependencies in corporate transition plans, 2025; Pickard Garcia et al., Credible company transition plans for climate change mitigation: a geographical dependency assessment, 2024;

2.2 How can companies address transition plan dependencies?

Currently, companies often acknowledge dependencies, but they rarely outline concrete actions taken to address them. The World Business Council for Sustainable Development (WBCSD) has developed a guide setting out seven practical steps that firms can take, as shown in Figure 3.[50] This can help companies move from a passive stance—treating dependencies as constraints—to an active one, where dependencies are seen as channels through which companies can shape enabling conditions.

Companies can address dependencies through a mix of internal and external strategies. These include measures within their own operations, such as investing in innovation, and engagement across the value chain to secure access to critical resources or boost the uptake of low-carbon products. They also involve working with policymakers to shape the enabling environment, for example around the rollout of infrastructure. Following the WBCSD guide, companies can prioritise actions by assessing the importance of each dependency to achieving the transition plan and the company's influence over it.

Figure 3: Seven practical steps to address external dependencies. Reproduced from WBCSD and Oxford Sustainable Finance Group[51]



50) WBCSD and Oxford Sustainable Finance Group, A practical guide on transition plan dependencies, 2025
51 WBCSD and Oxford Sustainable Finance Group, A practical guide on transition plan dependencies, 2025

Companies have long recognised their role not just as recipients of policy, but also as co-creators of enabling environments. The lobbying activities of companies and trade associations wield a powerful influence on climate policymaking, from the energy sector to the financial sector to auto manufacturers.[52] Many companies, directly or through their industry associations, resist regulatory measures that would accelerate the transition.[53] Across a global sample of over 2,000 companies, only 27% unambiguously support domestic climate mitigation policies and only 10% convincingly manage inconsistencies between their organisational positions on climate issues and those of their trade associations.[54] While companies are progressing on implementing transition plans within their own operations, more could align their policy advocacy with their climate ambitions.

Transition plans and dependency disclosure offer an opportunity for companies to structure more constructive lobbying activities. By aligning advocacy with their transition goals, companies can help governments identify where policy support is needed to implement transition strategies. This can help policymakers identify priority areas, close gaps between national targets and enabling measures, and design more effective policies. WBCSD provides a playbook for companies who want to ensure that their industry association engagement is amplifying rather than undermining their direct advocacy.[55]

In turn, clearer and more predictable policy signals can give companies greater confidence to invest and act, creating a mutually reinforcing dynamic between corporate planning and national policy development. Unilever has published examples of how actions from its transition plan are supporting the achievement of NDCs in Brazil, Indonesia, and India.[56]

52) See for example: InfluenceMap, The Global Campaign Against Building Electrification, 2025; Influence Map, Transport Bulletin, 2025
53) Lobbymap, an InfluenceMap platform, Fossil Fuel Bulletin, 2025
54) Amin et al., State of the Corporate Transition, 2025
55) WBCSD, Trade Associations as a Force for Good: A Playbook for Companies, 2025
56) Unilever, Bold Plans, Real Impact How ambitious climate transition action plans and Nationally Determined Contributions reinforce each other – and why action on both fronts is essential, 2025

2.3 How can Sector Transition Plans help companies navigate dependencies?

A key part of the transition planning process is identifying appropriate transition levers.[57] Transition levers refer to the specific actions, technologies, or operational changes a company intends to deploy to reduce its emissions in line with its climate targets. This can include developing new low-carbon products, improving process efficiency, and switching fuels. Based on current disclosure from a sample of the world's largest high-emitting companies, disclosed transition levers often depend on technologies that are at an early stage of development, highlighting potential delivery risk.[58] Transition levers for adaptation are also key and may include measures to manage vulnerability and exposure to physical risks, as well as to invest in adaptation-related opportunities.[59] National policies and geographical context will shape what transition levers are available, where, and with what level of financial and operational risk.

STPs can support companies' transition planning by providing clarity on the direction and pace of change in a sector, as well as outlining the main measures and technologies through which sectoral goals are expected to be achieved.

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STPs help companies identify appropriate transition levers and reduce uncertainty around external dependencies such as technology readiness or infrastructure availability. Table 2 takes the typology of dependencies from Table 1 and provides examples of how existing STPs can help reduce uncertainty around different dependency types. For example, the Australian government has published six sector plans setting out how the technology mix and emissions profile is expected to change in each sector, as well as the supporting policy framework.

In addition, STPs may support corporates by providing granular information to inform risk identification and scenario analysis.[60] For example, Chile has published six sector-specific adaptation plans that identify climate hazards, exposure and sensitivity by sector and region.[61] STPs, alongside national climate risks assessments, can contribute to reducing information asymmetries on physical risks from climate change, particularly for smaller companies and those in emerging markets and developing economies (EMDEs), which may have less sophisticated climate modelling capabilities.

57) WBCSD and Oxford Sustainable Finance Group, A practical guide on transition plan dependencies, 2025. TPT, The Transition Planning Cycle, 2024
58) Amin et al., State of the Corporate Transition 2025, 2025
59) NGFS, Integrating adaptation and resilience into transition plans, 2025
60) NGFS, Note on the interactions between climate scenario analysis and transition plans, 2025
61) Ministerio del Medio Ambiente, National Climate Change Adaptation Plan and Sectoral Plans, 2025"

Table 2: Categories of dependencies (from Rose, Shrimali and Halttunen, and Pickard Garcia et al.) mapped against examples of STPs

CATEGORY	EXTERNAL DEPENDENCY	EXAMPLE STPs WHICH HELP COMPANIES NAVIGATE EACH TYPE OF DEPENDENCY
1. Non-Physical	1.1 Policy strategy	Australia's Net Zero Plan sets out government priorities, policies, and measures to reduce emissions. This is supported by six sector plans with dedicated policy frameworks and details of existing and new policies to deliver emissions reductions in each sector.[62]
	1.2 Regulatory framework and policy instruments	
	1.3 Market and economics	The National Business Initiative in South Africa has developed climate and just transition pathways for South Africa. The mining pathway examines how value pools from thermal coal and platinum group metals expect to decline due to the transition, and the geographical impact on employment. It then identifies four strategies for the mining sector in South Africa to adapt to this changing demand and maintain public acceptance by reducing negative impacts on employment.[63]
	1.4 Public acceptance	
	1.5 Consumer and client behaviour	Hebei Province, China developed Guidelines for Transition Finance in the Iron & Steel sector which sets out the technologies that qualify for transition finance. The guidelines stimulate downstream sectors' (e.g. automotive) demand for low-emissions steel by enabling them to qualify for transition finance if they purchase low-carbon steel.[64]
2. Physical	2.1. Infrastructure and logistics	ADEME's sector plans model two or more scenarios for industrial sectors, and consider infrastructure, technological readiness, and resource availability for key decarbonisation levers. Analysis of the technology readiness of decarbonisation solutions for the sugar industry helped conclude that it is possible to decarbonise using proven technologies.[65]
	2.2 Technology	
	2.3 Resource availability	
	2.4 Environmental impacts and ecosystem services	Chile has published eight sector-specific adaptation plans and an easily accessible climate risk assement. This provides firms with a resource that characterises climate hazards, exposure, and sensitivity by sector.[66]
	2.5 Labor availability	See South Africa example above.

62) Department of Climate Change, Energy, the Environment and Water, Net Zero, webpage as of 2025
63) National Business Initiative, Decarbonising the South African Mining Sector, 2023
64) Hebei province, Guidelines for Transition Finance in the Iron and Steel Industry, 2023
65) ADEME, Sectoral transition plan for the French sugar industry, 2025
66) Ministerio del Medio Ambiente, National Climate Change Adaptation Plan and Sectoral Plans, Atlas de Riesgos Climáticos, webpages as of 2025.

CASE STUDY 2:

Australia's Sector Plans and National Adaptation Plan

What is the scope?

The Australian government has published six sector plans to support its whole of economy Net Zero Plan, covering: electricity and energy; transport and infrastructure; industry; agriculture and land; resources; and the built environment.[67] Each plan has a responsible Minister and Department, and has been informed by consultation with investors, industry, unions, and First Nations peoples. Crucially, the sector plans are also informed by independent advice from the Climate Change Authority (CCA) to ensure they are based on the best available information, in the form of a Sector Pathways Review.[68] Alongside the Net Zero Plan and corresponding sector plans, Australia has published its National Adaptation Plan, organised by seven key systems (e.g. infrastructure and built environment) rather than sectors.[69]

What do they include?

The sector plans contain decarbonisation pathways for each sector to 2050, broken down by emissions source. These pathways use a Baseline Scenario produced by the Australian Treasury, which has also modelled a Renewable Exports Upside Scenario and a Disorderly Transition Scenario. These scenarios are largely focused on reducing territorial Scope 1 and 2 emissions, rather than Scope 3 emissions that take place outside Australia. Each sector plan also provides a policy framework, identifying the key existing or planned policy actions to deliver the decarbonisation pathway. The plans do not contain sector targets. Separately, the National Adaptation Plan identifies priorities and actions across the seven key systems.

How can they be used?

The sector plans were released in September 2025 and while it will take time to see their impact, investors have welcomed the additional detail they provide.[70] Use of the sector plans to inform company preparation of transition plans is also being encouraged. The Treasury recently consulted on draft guidance on transition planning that sets out expectations that organisations should consider the sector plans when setting their mitigation ambition and developing their implementation strategy.[71] Similarly, the draft guidance also encourages organisations to consider the National Climate Risk Assessment and National Adaptation Plan when identifying relevant risks and adaptation actions.

67) See each sector plan at: Australian Government, Net Zero (webpage);
68) Climate Change Authority, Sector Pathways Review, 2024
69) Australian Government, National Adaptation Plan, 2025
70) IGCC, 2035 Target and Plans: Investors Call for Ambition Beyond Achievable, 2025
71) Australian Government, Climate-related transition planning guidance consultation paper, 2024

3. Contribution Three: STPs can facilitate transition finance and localise transition plan assessments

3.1 How can STPs deliver insights to financial institutions?

STPs are intended to set a clear vision for a sector's transition and translate this into a coordinated, costed, and time-bound programme of investments and financing milestones.[72] As identified by the Transition Finance Council in the box below, there are several use cases of STPs for financial institutions. Across these use cases, STPs offer analytical tools and policy signals that facilitate the evaluation of transition plans and the identification of transition investment risks and opportunities.

Use cases of STPs for financial institutions from the UK Transition Finance Council[73]

- Develop and execute a robust transition plan - setting sector targets and investment policies.
- Collaborate across stakeholders – addressing dependencies, strengthening the ecosystem, helping to originate financeable projects that align with future demand, and actively engaging with investee companies to encourage credible strategies in line with the sector plan.
- Inform financing decisions – integrating transition risk and opportunity considerations into capital allocation and insurance capacity decisions.
- Inform scenario modelling and climate and nature-related risk and opportunity analysis, which are mandatory for many financial institutions.
- Benchmark for activity and entity-level transition assessment, portfolio alignment, progress measurement, and stewardship approaches.
- Assess businesses' transition plans and associated capital expenditure, and benefit from more robust entity-level transition planning made possible by sector transition plans.
- Inform transition finance classification and labelling.

72) UK Transition Finance Council, Sector Transition Plans: The Finance Playbook, 2025
73) UK Transition Finance Council, Sector Transition Plans: The Finance Playbook, 2025

STPS can help investors assess the feasibility of corporate transition plans by providing context on technology direction, available infrastructure, demand forecasts and technological maturity. Financial institutions are increasingly interested in how companies are managing these dependencies: capital providers must be satisfied that fundraisers have identified and are addressing them. Assessment of dependencies is a key feature of emerging transition finance frameworks, including the Guide to Transition Loans issued by three loan market associations and the draft Transition Finance Guidelines by the UK's Transition Finance Council.[74]

Ambitious national STPs may serve to inform transition finance classification and labelling. For example, a company may seek a second party opinion or transition plan assessment as part of issuing transition and sustainability-linked bonds and loans. Entity-level credibility and coherence with policy context is especially important for sustainability-linked instruments, which involve companies meeting overarching performance targets rather than allocating the use of proceeds to specified activities (i.e. at the asset or project level). As such, STPs can help inform and lend credibility to transition and sustainability-linked instruments intended for general corporate financing. This means STPs may complement sustainable taxonomies which primarily support the issuance of use of proceeds bonds for eligible green or transition activities. As the case studies from Japan and Hebei demonstrate, high-emitting industries have successfully raised transition finance with reference to STPs.

STPs can also inform investors' climate-related stewardship and voting activities. They may reduce information asymmetries for investors navigating multiple geographies, enabling more informed dialogue between companies and investors on what is possible within a national context, and enable proxy voting advice to be locally tailored. STPs can also inform investors' stewardship activities across asset classes, improving coherence between sovereign engagement with governments and shareholder engagement with companies.

STPs can communicate policy direction and set national decarbonisation pathways, which can be used to assess corporate transition plans with a geography-specific lens. Country-specific decarbonisation pathways account for local constraints and provide a reference point for companies to show their transition plans are consistent with their policy context. Japan's Ministry of Economy, Trade and Industry (METI) has published several examples of how its pathways have been used in this way.[75]

The following sub-sections focus on how financial institutions can use insights from STPs to bring greater local nuance into their assessments of corporate transition plans. Company transition plans can be assessed both by financial institutions and by a variety of data providers to evaluate their ambition, feasibility and comprehensiveness. Financial institutions can use these assessments to evaluate climate-related risks and opportunities and to inform financing decisions, company engagement and voting.

The following sub-sections focus on how financial institutions can use insights from STPs to bring greater local nuance into their assessments of corporate transition plans.

74) See UK Transition Finance Council, Transition Finance Guidelines: Consultation on entity-level Transition Finance Guidelines, 2025; Asia Pacific Loan Market Association, Loan Market Association, Loan Syndications and Tradings Association, Guide to Transition Loans, 2025
75) See METI, Transition Finance Model Cases (webpage)

3.2 Why is local context important when assessing corporate transition plans?

Corporate climate assessment tools are usually composed of a mix of qualitative and quantitative evaluations of different elements of a company's transition plan, including its emissions targets. Corporate targets can be evaluated for their alignment with the Paris Agreement using global climate-energy models and the sectoral decarbonisation approach (see Appendix 2).[76]

Assessing corporate targets against global sector benchmarks can obscure unique regulatory, historical and economic circumstances in different countries. This is relevant for EMDEs, which typically have low cumulative historical emissions but may have more emissions-intensive assets today relative to many developed countries. Indeed, EMDEs have the highest transition finance requirements: based on the IEA's Net Zero Scenario, annual spending on clean energy will need to double from 2023 levels in advanced economies by 2035, while it will have to grow six-fold in developing economies.[77]

Policy, infrastructure, and geography can create dependencies that may either constrain or enable the implementation of corporate transition plans. Many EMDEs also face the challenge of higher costs of capital, higher population growth and competing funding needs for economic development. The need to recognise national differences when evaluating climate action is enshrined in the UN Framework Convention on Climate Change, which states that climate action should be undertaken in accordance with countries' common but differentiated responsibilities and respective capabilities. Investors are increasingly recognising the unique transition challenges facing companies in emerging markets and many are calling for more regional approaches to evaluating the climate performance of companies.[78]

While EMDEs can take advantage of many low-cost climate mitigation opportunities, the high emissions intensity of some sectors means that they may need more time to meet global Paris-aligned timelines for net zero. Equity and cost-efficiency considerations can therefore cause significant regional differences in decarbonisation trajectories. Without regional nuance in corporate climate assessments, investors may decide to withdraw from high-emitting EMDEs to decarbonise their investment portfolios thereby constraining much-needed flows of transition finance.

76) Krabbe, et al. Aligning corporate greenhouse-gas emissions targets with climate goals, 2015
77) IEA, World Energy Outlook, 2024.
78) See, for example, Lazard, The Challenges of Emerging Markets Net Zero Investing, 2022; Amundi, Climate investing is an opportunity for Emerging Markets, 2024

3.3 How can local context be integrated into transition plan assessments?

The assessment of transition plans could be contextualised by local policy analysis, reflecting the importance of external dependencies. An integrated country-corporate analytical approach would help investors better understand how companies are performing in relation to local policy conditions described in the country's STP. For example, the absence of corporate emissions disclosure would be more concerning from a regulatory transition risk perspective if the company is headquartered in a jurisdiction that mandates such disclosure. More detailed assessments, including consideration of country context and dependencies, will produce transition plan analysis that can better inform activities such as credit risk assessment and shareholder engagement.[79]

An example illustrating the approach of analysing both corporate and national policy data together is the European Commission's Joint Research Centre's pilot toolkit to evaluate geographical dependencies in transition plans.[80] It proposes a methodology that first maps a company's assets and the transition levers stated in its transition plan. It then assesses whether those transition levers are feasible based on available infrastructure and the policy environment. For example, carbon capture's viability as a transition lever will depend on the proximity of transport and storage infrastructure.

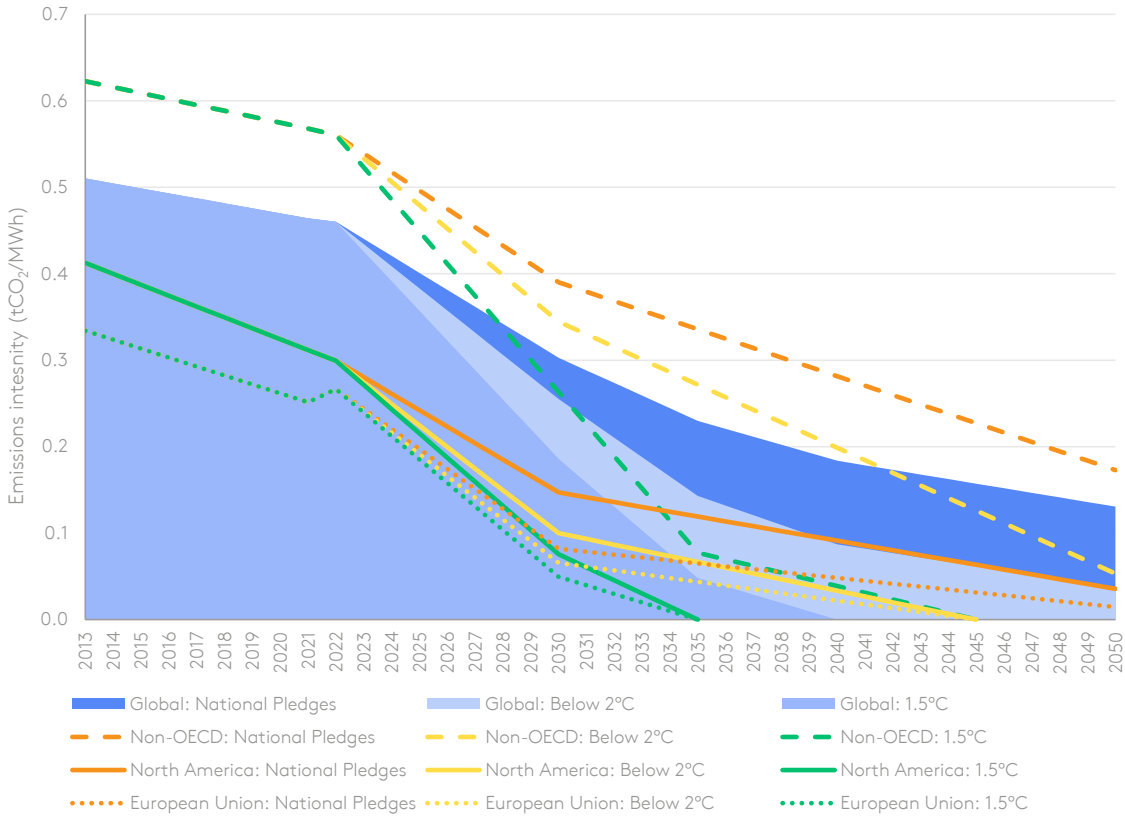
Local context could also be integrated into transition plan assessments through the selective use of grace periods or weighting adjustments. Assessments of companies that operate entirely or primarily in EMDEs might underweight the importance of some of the most challenging climate governance criteria. This approach must be used with caution to avoid delaying the global low-carbon transition. Selecting which requirements to relax or deprioritise could draw on current performance data. For example, companies headquartered in middle-income countries were found to struggle most relative to those in high-income countries on specific climate governance indicators in the TPI Centre's Management Quality framework: (a) disclosing Scope 3 emissions, (b) establishing a process to manage climate-related risks and (c) undertaking climate scenario planning.[81]

One of the primary ways to integrate local context into transition plan assessments is to benchmark the ambition of corporate targets using regionalised emissions pathways. Corporate assessments, like those of the TPI Centre, Science Based Targets initiative (SBTi), and World Benchmarking Alliance, usually use global sector-specific emissions intensity benchmarks to score companies' emissions targets. While such benchmarks are useful in enabling consistent comparisons between all companies in a sector, these benchmarks can also be modelled at the regional or national level, for example within STPs. This increased granularity recognises the emissions intensity starting point of companies in different regions.

The TPI Centre's electricity sector assessments include regional benchmarks that expect utilities operating in wealthier industrialised regions to have lower emissions intensities and to reach net zero sooner (see Figure 4). In the online TPI tool, a toggle allows users to see the analysis of electricity utilities' climate targets against global benchmarks and also against appropriate regional benchmarks. The assessment of RWE for instance displays different alignment results depending on whether global or European benchmarks are used.[82]

79) RMI, Creating Transition Intelligence, 2025
80) Pickard Garcia et al., Credible company transition plans for climate change mitigation: a geographical dependency assessment, 2024
81) Dietz et al., TPI State of Transition Report 2024, 2024.
82) TPI Centre, RWE assessment, 2024

Figure 4: Emissions intensity benchmarks for the electricity sector, including 1.5°C, Below 2C and National Pledges[83] at the global and regional level. Reproduced from the TPI Centre[84]



Regional benchmarks can recognise the additional challenges EMDEs face but may miss further differences between countries within regional groups. At a higher degree of granularity, benchmarks at the country level were used to assess corporate targets in the **ACT-DPP** project for Mexico and Brazil and in the Climateworks Centre's **Net Zero Momentum Tracker** for Australia.[85]

Localised benchmarks may have limited applicability for the assessment of large multi-national corporations that have production activities spanning across jurisdictions. In such cases, while STPs in individual countries form part of the enabling environment, multinational firms must consider how to align with a combination of government plans that correspond to their business and operating models.

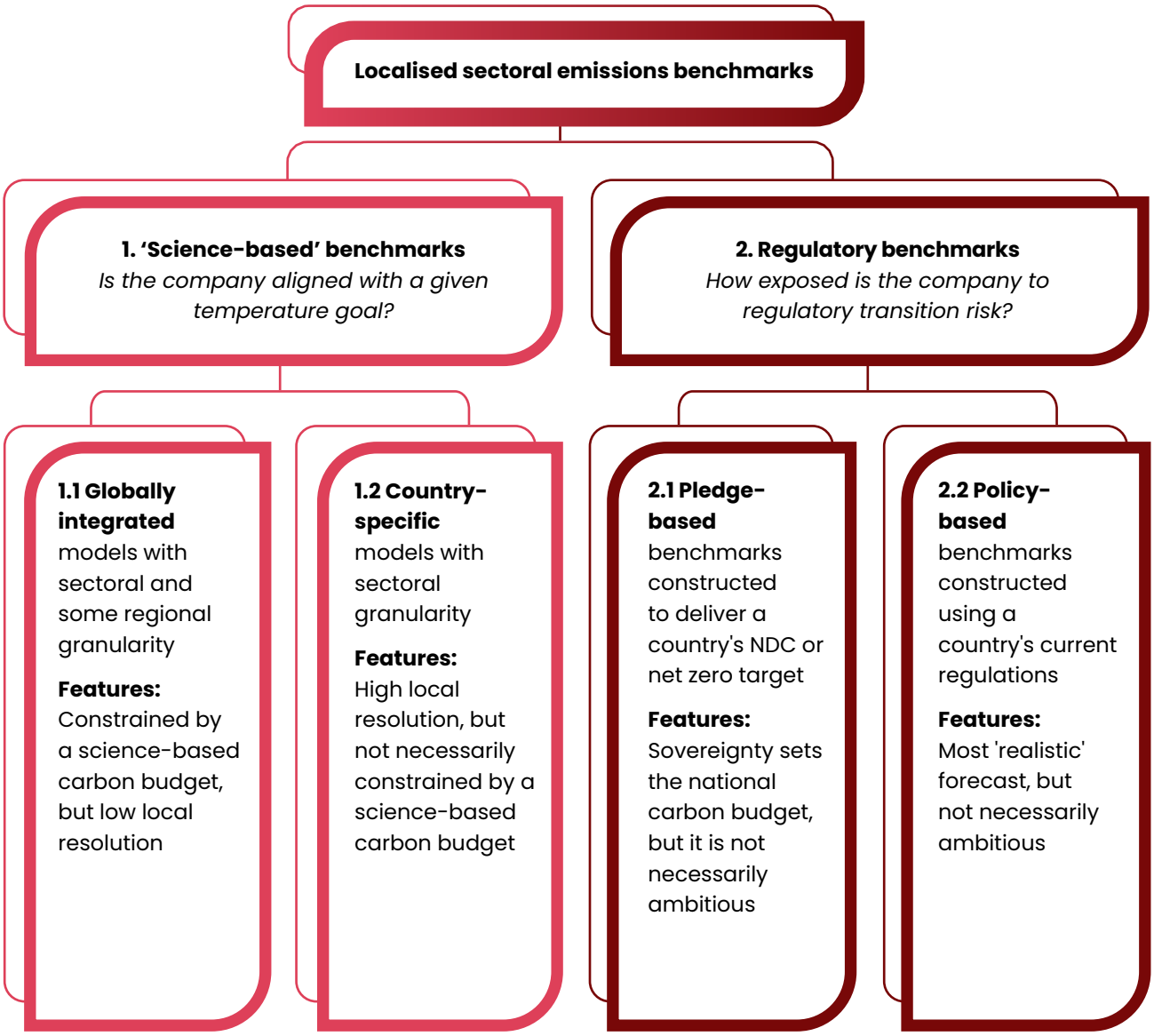
As a key component in many emerging STPs, localised decarbonisation pathways offer financial institutions new insights on climate risk and alignment, but different types of localised benchmarks should not be conflated. There are several ways to create regionally granular emissions benchmarks, and they can be used to answer distinct questions. Guidance from RMI sets out an expansive classification of predictive, exploratory, normative and policy-based pathways.[86] Focusing on the latter two, emissions pathways can be used to answer two specific questions commonly of interest to investors and lenders:

83) The Below 2°C and 1.5°C benchmarks reflect pathways to limit global warming to specified temperatures above pre-industrial levels. They correspond to the range of ambition in the overall goal of the Paris Agreement. The National Pledges benchmark reflects the global aggregate of countries' emissions reduction pledges, which currently are not yet sufficient to add up to the Paris Agreement goal.
84) See TPI Centre, Carbon Performance methodology note for electricity, 2024
85) See ACT, The Assessing Low-Carbon Transition Deep Decarbonisation Pathways Project, website as of October 2025; Climateworks Centre, Net Zero Momentum Tracker, website as of October 2025
86) RMI, Leveraging Transition Pathways, 2025.

1. **Is the company aligned with a given temperature goal?** Investors with institutional goals to align with the Paris Agreement require an understanding of the temperature alignment of investee entities. The global target enshrined in the Paris Agreement is to limit warming to well below 2°C and pursue efforts to limit this to 1.5°C. To answer this alignment question, investors can use normative **'science-based' benchmarks**, generally developed by international or academic institutions. These benchmarks can be developed at the global, regional or national level, although availability of the regional and national data required for more granular benchmarks is often limited.

2. **How exposed is the company to regulatory transition risk?** Investors taking into account climate-related financial risks require an understanding of whether companies are preparing for a changing regulatory environment. Companies that fail to decarbonise at a sufficient rate will fall behind and risk being uncompetitive if government policies favour low-carbon business models. To answer this risk question, investors can use **regulatory benchmarks based on country pledges or policies**. Information to develop such benchmarks would generally be found in government planning documents, such as NDCs and STPs.

Figure 5: Exploring the types of localised sectoral emissions benchmarks



The decarbonisation pathways that are included in some STPs can contribute to the development of localised benchmarks. Emissions pathways developed by governments are likely to be pledge-based or policy-based since they focus on how emissions in a given sector are likely to evolve based on the country's ambitions and planning. National ambition may or may not be aligned with well below 2°C or 1.5°C: determining the alignment of NDCs requires further analysis and can draw on tools such as ASCOR and Climate Action Tracker.[87] It is important to also note that many countries' current policies are not yet adequate to deliver their pledged NDCs. A robust national transition plan, including sectoral planning, will aim to create a policy environment that delivers the country's targets: in such cases pledge-based and policy-based benchmarks would converge.

Investors can draw on this range of pathways to localise their transition plan assessments, but should take care when interpreting alignment. A company that aligns with a national pledge-based decarbonisation benchmark should not necessarily be considered aligned with 1.5°C or below 2°C. Localised data required to develop such benchmarks are also limited, constraining how much this can be integrated into systematic assessment processes. While regional granularity can deliver useful insights, methodological flexibility on the types of regional benchmarks used should be balanced against robustness (for example through a carbon budget constraint) to ensure corporate accountability to the Paris Agreement goals.[88] Appendix 2 provides further explanations and examples for each of the four benchmark types.

Integration of national or regional insights into transition plan assessments remains nascent. Current practice varies between different financial institutions: interviews with investors in the ASEAN region reveal a continuum of approaches.[89] Some investors use a globally consistent approach to all entities, while others use bespoke approaches, assessing individual nuances in recognition that real-economy companies face different headwinds and tailwinds depending on their operating context. Advancements in the tools and methods available to investors can support increased uptake of more nuanced regional approaches and facilitate transition finance.

87) TPI Centre, ASCOR country assessment results, website as of September 2025; Climate Action Tracker, Countries, website as of September 2025.
88) Rekker et al., Balancing simplicity and complexity through corporate emissions benchmarking
89) ASEAN Capital Markets Forum, ASEAN Transition Finance Guidance, 2024.

CASE STUDY 3:

Hebei's Guidelines for Transition Finance in the Iron and Steel Industry

What is the scope?

China's steel sector is responsible for 15% of the country's overall carbon emissions. Hebei province, China's largest steel producing region, published Guidelines for Transition Finance in the Iron and Steel Industry.[80] This forms part of broader efforts by subnational governments including Huzhou, Chongqing, Tianjin, Shanghai and Hebei, to roll out transition finance policy guidance and catalogues since 2022.

What do they include?

The guidelines provide a framework to accelerate the transition of the steel sector. They include a list of 176 technologies eligible for transition finance support and encourage companies to develop detailed transition plans. Clear timeframes are set for emissions reductions, with targets for 2025, 2030 and 2060. Additionally, the guidelines extend to downstream industry (e.g. the automotive sector) to stimulate demand for low-carbon steel.[91]

How can they be used?

The market responded quickly to the launch of the Guidelines. In 2024, Hebei's steel transition loans surpassed USD 2.8 billion and Chinese issuers also launched 12 steel related labelled bonds totalling USD 3 billion. Transition finance, enabled by transition plans and STPs, is already helping to meet the finance needed for steel decarbonisation in China, estimated by Climate Bonds and Transition Asia to be at least USD 18 billion until 2030.[92]

The market responded quickly to the launch of the Guidelines. In 2024, Hebei's steel transition loans surpassed USD 2.8 billion and Chinese issuers also launched 12 steel related labelled bonds totalling USD 3 billion.

90) Hebei province, Guidelines for Transition Finance in the Iron and Steel Industry, 2023
91) Climate Bonds, Financing the Decarbonisation of China's Steel Sector, Insights from the Transition Finance Pilot and Market Progress, 2023
92) Climate Bonds, Financing the Decarbonisation of China's Steel Sector, Insights from the Transition Finance Pilot and Market Progress, 2023

CASE STUDY 4:

Japan's Technology Roadmaps for Transition Finance

What is the scope?

Japan's Ministry of Economy Trade and Industry (METI) produced roadmaps for 8 sectors to serve as a reference point for companies in developing their transition plans (referred to as transition strategies) and to help financial institutions assess the companies' eligibility for transition finance when they raise funds.[93] Each sector roadmap had input from a committee with representatives from financial institutions, industry associations and academics.

What do they include?

METI's roadmaps outline key technologies and deployment timeframes aligned with Nationally Determined Contributions under the Paris Agreement and long term strategy to achieve carbon neutrality by 2050. METI is currently revising the roadmaps to reflect the latest Green Transformation (GX) policies and other developments, including Japan's 2040 NDC.[94]

How can they be used?

The roadmaps are expected to be used by companies raising transition finance in line with Japan's Basic Guidelines on Climate Transition Finance.[95] METI has published case studies from corporate fundraisers of transition finance, who reference the roadmaps, as well as second party opinions that certify that the fundraisers' transition strategies are aligned with the roadmaps. The market size of private, labelled transition finance in Japan exceeded USD 17 billion in June 2025 and continued growth will be essential to meet Japan's GX strategy, which aims to mobilise JPY 150 trillion in 10 years from public and private sources. Guidance for investors on follow-up engagement with corporates on transition progress highlights the importance of dialogue between capital providers and recipients. Investors, especially in hard-to-abate sectors, are encouraged to refer to the technology roadmaps to support this dialogue.[96]

The roadmaps are expected to be used by companies raising transition finance in line with Japan's Basic Guidelines on Climate Transition Finance.

93) METI: Transition Finance (webpage);
94) METI, Transition Finance Environment Improvement Study Group (webpage)
95) METI, Financial Services Agency (FSA) and Ministry of Environment, Basic Guidelines on Climate Transition Finance, 2021;
96) METI, Financial Services Agency (FSA) and Ministry of Environment, Transition Finance Follow-up Guidelines, 2023.

Conclusion: Next steps to deliver a positive feedback loop on transition planning

In this discussion paper, we have identified that STPs provide policy direction, help companies navigate dependencies in transition planning, and support more nuanced transition plan assessments. In these three ways, STPs can help bridge national transition planning with company transition plans. To conclude, we identify four next steps that governments, the private sector and other stakeholders can take to harness the potential of STPs.

1 Governments could benefit from co-creating STPs with corporate, financial institutions, civil society, trade unions, Indigenous peoples and local communities.

Robust national transition planning is needed to underpin NDCs and NAPs. As part of this process, countries have begun developing sectoral plans, often starting with the electricity sector. Other sectors, such as industry, usually lack dedicated plans.[97] This may limit transition finance for hard-to-abate sectors, as market participants need clarity on policy and technology direction to support investment and avoid carbon lock-in risks.

Co-creating STPs brings together different stakeholders in a sector to develop a common strategy for the transition. Government's role in owning this co-creation process is crucial to give sector plans the authority needed to credibly inform corporate planning and investment decisions. Co-creation of STPs establishes the communication channels and accountability mechanisms to foster coordination between government, financial institutions, corporations and other actors.

2 The private sector can use STPs to identify, disclose and act on external dependencies, including by taking a more proactive and pro-climate stance in their policy advocacy.

Private sector transition plans are not developed or implemented in isolation from the wider low-carbon transition. Companies face increasing expectations under corporate reporting standards to identify and disclose these dependencies as part of their transition plans. Consideration of dependencies offers an opportunity for companies to move from a passive stance of treating dependencies as constraints to an active stance, working with other stakeholders to achieve shared transition goals. Aligning public policy advocacy with climate ambitions will be a critical part of managing these dependencies, because policy and regulatory frameworks are identified as common barriers to the successful implementation of transition plans.

Companies can use STPs where available to navigate external dependencies and identify which transition levers are appropriate in a local context. STPs can provide policy clarity around the direction of the transition, as well as address information asymmetries by providing all market actors with detailed scenario analysis grounded in national context and clear policy frameworks.

97) Hizliok et al., Forthcoming, State of the Sovereign Transition, 2025

3 Financial institutions and data providers can use STPs to bring more local nuance to transition plan assessments, which may support flows of transition finance to emerging markets.

Financial institutions can use STPs to assess the feasibility of transition plans in the local policy and technology context. STPs can provide investors with a national snapshot of relevant sources of regulatory transition risk, such as carbon pricing, as well as opportunities, such as growing market demand for electric vehicles, that a company faces. This context may be helpful to guide stewardship and voting activities by investors operating across multiple jurisdictions.

Financial institutions and data providers can improve their integration of local context into transition plan assessments by assessing emissions targets against benchmarks at the regional or national level. A mixed approach may be ideal, with global benchmarks used to enable comparisons between global peers, and regional or country-specific benchmarks used to reflect differing regional trajectories. Integrating a regional lens can help avoid perverse outcomes where transition plan assessments disincentivise investment in emerging markets.

4 Policymakers and regulators can use information from companies' transition plans to support the achievement of their climate goals.

Disclosure of dependencies in private sector transition plans provide insights on policy blockers and enablers, on the transition levers companies are adopting and on investment plans. Policymakers could use this information to track progress towards national goals and inform policy and regulatory adjustments. However, companies' transition plan data is largely not being used by governments in a systematic manner.

One solution could be to develop transition plan data analytics that are tailored for policymakers, as discussed in section 1.3. Further work needs to be done to define the policy use cases for this information, the relevant transition plan datapoints and develop the necessary data architecture.

Another major barrier to both regulator and policymaker use of transition plans is the lack of consistent, comparable and reliable transition plan disclosures. The broad adoption of IFRS S2 is a positive step towards creating standardised climate disclosures, and policymakers and regulators could consider building on this global baseline with further guidance or requirements on transition plans, using the TPT Disclosure Framework now adopted by the IFRS Foundation. Encouraging further uptake of transition plan disclosures through rules and incentives is likely to be a key pre-requisite to wider policymaker and regulator use of transition plan data.

Appendix 1 Emerging practice of sector transition planning

Several examples of STPs, or similar documents, are discussed in this document. They are:

1. **The French Agency for Ecological Transition's (ADEME) Sector Transition Plans for steel, aluminum, cement, glass, pulp and paper, ammonia, chlorine and ethylene, and sugar (Case Study 1)**
2. **Australia's Sector Plans for electricity and energy; transport and infrastructure; industry; agriculture and land; resources; and the built environment (Case Study 2)**
3. **Hebei's Guidelines for Transition Finance in the Iron and Steel Industry (Case Study 3)**
4. **Japan's Technology Roadmaps for Transition Finance for iron and steel; chemicals; power; gas; oil; pulp and paper; cement and automobiles (Case Study 4)**
5. **Chile's Ministerio del Medio Ambiente adaptation plans for forestry and agriculture; biodiversity; fishing and aquaculture; health sector; infrastructure services; cities.**
6. **South Africa's National Business Initiative's Climate Pathways and a Just Transition for South Africa**
7. **The U.S. Department for Energy's Pathways to Commercial Liftoff**

In addition to the above, in-depth examples of STPs or or similar official documents, many governments around the world have begun to translate their national climate ambitions to the sectoral level in broader economy-wide national transition planning documents. These are often found within submissions to the UNFCCC, including NDCs, or other executive policy documents.

The ASCOR tool, which assesses countries on their targets and policies to manage climate risks and opportunities, includes an indicator that evaluates the presence of multi-sector transition planning.[98] The indicator, methodology and key findings are presented below as a resource for policymakers and other stakeholders.

Indicator: Does the country have a multi-sector climate strategy?

Methodology: A country is assessed as 'Yes' if it has a climate strategy that sets both quantified sector-specific emissions targets or projections (either for 2030 or for net zero) and includes at least one related policy, initiative or regulation for each of the following sectors: electricity; transport; industry; LULUCF, agriculture or forestry; and a fifth sector with significant emissions in the country. See the ASCOR methodology note for further details.[99]

Results: Based on this methodology, 35 out of 71 countries assessed on this indicator in 2025 were found to have published a multi-sector climate strategy. Relevant links to these strategies (which often span across more than one document) are presented in the following table.

98) TPI Centre, ASCOR country assessment results, website as of September 2025
99) Scheer et al., ASCOR framework: methodology note Version 1.1, 2024

Table 3 Countries' multi-sector climate strategies[100]

REGION	WORLD BANK INCOME GROUP	COUNTRY	SOURCE
East Asia and Pacific	High income	Australia	UNFCCC submission, 2021
		Japan	UNFCCC submission, 2021; UNFCCC submission, 2021
		New Zealand	Ministry of Environment, 2024
		Republic of Korea	Carbon Neutral Green Growth Committee, 2023; UNFCCC submission, 2020
	Upper-middle income	Indonesia	UNFCCC submission, 2021; UNFCCC submission NDC, 2022
		Thailand	NDC Action Plan, 2021; UNFCCC submission, 2022
Europe and Central Asia	High income	Austria	UNFCCC submission, 2019; NECP, 2019
		Czechia	Ministry of Life and Environment of the Czechia, 2017; UNFCCC submission, 2017
		Denmark	UNFCCC submission, 2020
		Finland	UNFCCC submission, 2020; NECP, 2024
		France	UNFCCC submission, 2021
		Germany	UNFCCC submission, 2022
		Hungary	UNFCCC submission, 2021; NECP, 2024
		Ireland	Government of Ireland, 2025
		Latvia	NECP, 2024; NECP, 2019
		Lithuania	UNFCCC submission, 2022; NECP, 2024
		Netherlands	NECP, 2024; Climate Agreement, 2019
		Portugal	NECP, 2024; UNFCCC submission, 2019
		Romania	Government of Romania, 2023; NECP, 2024
		Slovenia	NECP, 2024; UNFCCC submission, 2021
		Spain	NECP, 2024; UNFCCC submission, 2020
		Sweden	NECP, 2024; UNFCCC submission, 2020
		Switzerland	UNFCCC submission, 2021; UNFCCC submission, 2021
		United Kingdom	UNFCCC submission, 2021
	Upper-middle income	Serbia	UNFCCC submission, 2024
Latin America and the Caribbean	High income	Chile	UNFCCC submission, 2021
		Panama	UNFCCC submission, 2024; UNFCCC submission, 2024
		Uruguay	UNFCCC submission, 2021; UNFCCC submission, 2025
	Upper-middle income	Costa Rica	UNFCCC submission, 2019; UNFCCC submission, 2020
		Ecuador	Ministry of Environment, Water and Ecological Transition, 2024; Ministry of Environment, Water and Ecological Transition, 2022
		Mexico	UNFCCC submission, 2022
Middle East and North Africa	High income	Israel	State of Israel, 2022; UNFCCC submission , 2021
		Oman	UNFCCC submission, 2023; UNFCCC submission, 2023
		United Arab Emirates	UNFCCC submission, 2024; UNFCCC submission, 2024
North America	High income	Canada	Government of Canada, 2022; UNFCCC submission, 2022

100) Hizliok et al., Forthcoming, State of the Sovereign Transition, 2025

Appendix 2. Explaining localised emissions benchmarks

Corporate emissions targets are usually evaluated against global sectoral benchmarks as part of transition plan assessments. Global sectoral benchmarks rely on modelled low-carbon scenarios, such as those in the AR6 Scenario Explorer of the Intergovernmental Panel on Climate Change (IPCC) or those developed by the International Energy Agency (IEA). Drawing on data from these scenarios, the sectoral decarbonisation approach involves creating sector-specific emissions intensity benchmarks.[101] The global carbon budget associated with a given emissions scenario can be allocated to global sectors in a cost-effective way, considering differences in the mitigation potential and costs of low-carbon technologies.

To bring a localised nuance to this target assessment process, there are several ways to create regionally granular emissions benchmarks, which can be used to answer distinct questions. Two types of pathways can be used to answer two specific questions commonly of interest to investors and lenders:

1. **Is the company aligned with a given temperature goal?** To answer this question, investors can use normative '**science-based' benchmarks**, generally developed by international and academic institutions. These benchmarks can represent global, regional or national sectoral pathways. For localised benchmarks specifically, these can be developed using **global models (see 1.1)** or **country models (see 1.2)**.

2. **How exposed is the company to regulatory transition risk?** To answer this question, investors can use **regulatory benchmarks**. Pathways to develop such benchmarks would generally be found in government planning documents, such as NDCs and STPs. These benchmarks can be **pledge-based (see 2.1)** or **policy-based (see 2.2)**.

1. Science-based localised benchmarks

For investors seeking to align their portfolios with climate goals, science-based benchmarks are normative benchmarks that can be used to determine whether a company's climate ambition is aligned with a specific global goal. The global target enshrined in the Paris Agreement is to limit warming to well below 2°C, pursuing efforts to limit this to 1.5°C. Each of these temperature thresholds can be translated to a specific global carbon 'budget' in gigatonnes of carbon dioxide (GtCO2). The climate system's relationship between global emissions and global temperature is why this approach is often called 'science-based'.

The carbon budget can be disaggregated across both sectors and regions where the allocation can be based on economic efficiency (i.e. cost-optimisation), fairness principles (e.g. GDP per capita, historical emissions) or other factors. Such disaggregation involves assumptions and normative decisions at each stage with associated uncertainties.

1.1 Science-based benchmarks from global models

Sectoral benchmarks can be based on globally integrated energy-climate models that are constrained by a temperature target and include some regional granularity. Such models, usually developed by international organisations or academia, consider total global emissions and therefore have a more robust alignment to the global temperature goal specified in the model. They often involve modelling the interactions between different nations and regions, including regional trade flows and various other country-level inputs. However, they are not as granular on local technology costs, policies and other regional factors compared to country-specific models (see 1.2). An example of this type of benchmark is the TPI Centre's 1.5°C regionalised electricity benchmarks, which are derived from the IEA's global model using the Net Zero Emissions scenario. Similarly,

101) Krabbe, et al. Aligning corporate greenhouse-gas emissions targets with climate goals, 2015

Moody's has derived differentiated emissions pathways for advanced economies and emerging markets from the same IEA scenario.[102]

1.2 Science-based benchmarks from country models

Sectoral benchmarks can be developed using country models designed to align with a given temperature goal. Rather than modelling the global economy to determine a country's specific carbon allocation, this approach begins by setting the country's carbon budget as an input. Without directly modelling the global carbon budget, the consistency of the model with a specified global temperature outcome may be less clear, although there are alternative methodologies to establish alignment such as the use of a carbon price threshold in the model.[103] On the other hand, these models have higher resolution and more detailed local assumptions on regional factors, such as cost of capital, levelised costs of energy (LCOE) for different energy types, costs of materials, etc. Examples of this type of benchmark are the Climateworks Centre's dedicated 1.5°C sectoral pathways for Australia,[104] and the sectoral pathways developed by ACT-DPP for Brazil and Mexico.[105]

2. Regulatory benchmarks

For investors seeking to understand potential financial risk, this type of benchmark can be used to understand a company's exposure to regulatory transition risk. Companies that fail to decarbonise at a sufficient rate will fall behind and risk being uncompetitive when government plans and associated policies create a regulatory environment that favours low-carbon business models.

2.1 Pledge-based benchmarks

Sectoral benchmarks could be modelled such that they are consistent with a jurisdiction's economy-wide ambition enshrined in its NDC or long-term net zero target. This ambition may or may not be aligned with 1.5°C: determining the alignment of NDCs requires further analysis and can draw on tools such as ASCOR and Climate Action Tracker.[106]

Pledge-based benchmarks can help investors to understand alignment between corporate and national ambition. Misalignment between corporate targets and NDCs could suggest lower credibility for the company's emissions targets. An example of a dataset that could be used to develop this type of benchmark is the UK Climate Change Committee's sector-specific carbon budgets, which are consistent with the country's net zero by 2050 goal. Rose et al. adopt pledge-based benchmarking by evaluating corporate climate targets against emissions benchmarks derived from national decarbonisation strategies in the power sector.[107]

2.2 Policy-based benchmarks

Finally, policy-based benchmarks offer the most 'realistic' scenario of future emissions based on known regulatory pressures, but they are not necessarily ambitious. The actual regulatory environment and real-world policies in place in a country can be used to create country-specific sectoral benchmarks. These benchmarks can be modelled using information contained in regulations, including both quantitative standards for fuel efficiency, for example, as well as qualitative policies such as the phaseout date for the sale of internal combustion engine vehicles. It is important to note that many countries' current policies are not yet adequate to deliver their pledged NDCs and net zero targets.

102) Moody's, Emerging market companies benefit from slower transition, but hurdles are still high, 2025
103) Chaichaloempreecha, A., Chunark, P., Hanaoka, T. et al. Thailand's mid-century greenhouse gas emission pathways to achieve the 2 degrees Celsius target. Energ Sustain Soc 12, 22, 2022.
104) Climateworks Centre, Climateworks Centre decarbonisation scenarios 2023: Australia can still meet the Paris Agreement, 2023.
105) ACT-DDP, Mexico, website as of September 2025.
106) TPI Centre, ASCOR country assessment results, website as of September 2025; Climate Action Tracker, Countries, website as of September 2025.
107) Rose et al., Assessing Corporate Emissions Reduction Targets Against National Transition Plans, 2024

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