

International Platform on Sustainable Finance



**Transition Finance Report
November 2022**

Acknowledgements and disclaimer

This report is coordinated by the European Commission together with the IPSF Swiss and Japanese members, with substantial contributions received from IPSF members and observers and the Climate Bonds Initiative.

The transition finance principles proposed are voluntary and build on existing public and private initiatives.

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1. Introduction

Purpose of the report

This report focuses on the transition from today's high GHG emissions to levels commensurate with meeting the temperature goals of the Paris Agreement – i.e., a '**climate mitigation transition**'. Other transitions must simultaneously be made to deliver a fully sustainable, equitable economy alongside a climate mitigation transition, but achieving those other goals is not the main focus of this report.

Transition finance can be encouraged at different levels of the economy: I) at the economic activity level (including capital and other investment in individual measures that will drive the decarbonisation of the activity, as well as investment in the activity as a whole), II) at the entity (company) level, and III) at the financial portfolio level. That is, achieving the transition requires companies (commercial and public) to decarbonise their activities, or potentially re-orientate them where activities cannot be decarbonised. It requires financial market participants¹ to direct their capital towards activities and companies delivering this transition which, in turn, requires them to consider both equity and debt. It requires policy makers to establish policy frameworks, regulatory regimes and incentives to enable and support these transitions. It also requires that the tools to assess the transition are applicable to different types of financing.

There is huge interest on the part of many stakeholders to understand how to set robust transition targets and strategies, and to evaluate those set by others. Transition-related disclosure is increasing in markets. Transition-related products and opportunities are multiplying in financial markets. As a result, there is a growing array of transition related guidance and protocols aiming to define and direct this space. Connected to that, a number of concrete tools to operationalize these guidance/protocols are emerging, including sustainable finance alignment approaches such as taxonomies, labels and portfolio alignment metrics, as well as corporate strategy and disclosure.

This report proposes a set of voluntary '**Transition Finance Principles**', with more tangible sub-principles underpinning them. These are based on a landscape analysis of how existing frameworks and tools have incorporated transition perspectives (see Section 5 and the Annex). The Principles are intended to stimulate thinking on useful common approaches within transition finance frameworks and tools – to help markets plan and communicate about the transition, seek financing for it, provide appropriate financing, and eventually encourage a more vigorous transition. The IPSF Transition Finance principles were also presented to the G20 SFWG as input for the development of the G20 SFWG Transition Finance Framework.

The primary audience for this paper is policy makers looking to support and incentivise the transition. However, by focusing on the granular level at which the transition needs to happen – in economic activities, in companies and in investment portfolios, it can also contribute to building and spreading awareness on transition finance among corporate entities and financial market participants and be of interest for real-economy companies and financial institutions setting transition strategies and raising finance for the transition, their investors, and any public or commercial stakeholder facilitating or being part of that transition.

¹ Financial market participants in this report mainly refer to the supplier of the capital, providing capital in the form of investments or lending, which include but not limited to financial institutions such as lenders and insurers as well as both institutional and retail investors.

How this report fits into the G20 Sustainable Finance Working Group's (G20 SFWG) priority areas

Transition finance is a core part of the G20 SFWG's work plan for 2022 with the first of three workstreams focusing on "Developing a framework for transition finance and improving the credibility of financial institution commitments". From the SFWG's perspective, the framework for transition finance could include developing voluntary principles and/or provide menus of options across five main elements:

1. Identification of transition activities
2. Corporate- and project-level reporting
3. Transition-relevant financial instruments
4. Potential policy incentives
5. Identifying and mitigating social and economic impacts

Elements 1-2 and 5 of the G20 Transition Finance Framework are central to this report and are covered in a number of sections. While elements 3 and 4 are not directly covered by this report as they are more focused on the operationalisation of transition plans from the financial and policy perspective, the report can serve as a starting point to inform the decision-making process when designing transition-relevant financial instruments or potential policy incentives.

Identification of transition activities

- a. The presented transition finance framework structures its recommendations using a principle-based approach (cf. chapter 3 and chapter 4).
- b. Principles cover the target setting process, highlighting the role of credible technical pathways at the sectoral level in the process of defining a net-zero aligned decarbonisation process and suitable transition activities.
- c. The framework goes a step further by also defining principles to ensure credible delivery of transition targets and implementation of transition activities.

Corporate- and project-level reporting

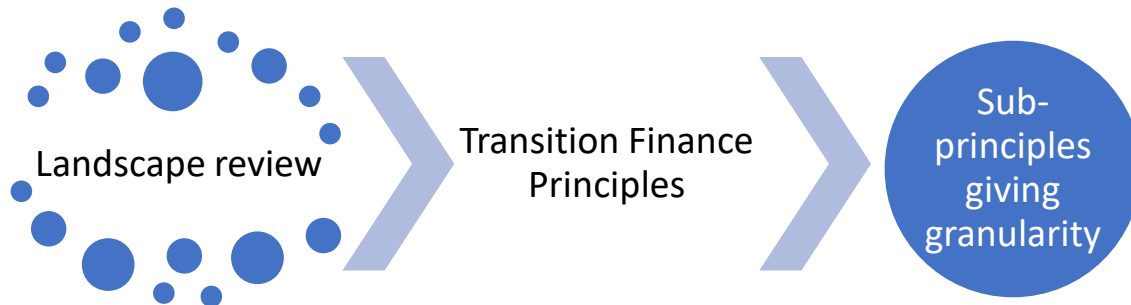
- d. Reporting has been embedded as an inherent part of the credible implementation and accountability of the transition process.
- e. Principle 8 and Principle 5.1 focus on corporate and project level reporting. Project level reporting has been incorporated into the requirements for transition plans to provide information both on transition targets and the implementation strategy. Principles focused on corporate reporting not only aim at ensuring transparency, but also credibility through verification and enhanced sharing of best practices.

Identifying and mitigating social and economic impacts

- The principles acknowledge that the transition process is likely to have a broader impact than just its direct effect on assets and entities and thus aims to highlight elements that would help to avoid any negative implications.
- Principle 4 focuses on positioning transition plans as a part of a broader strategy to achieve the Sustainable Development Goals, highlighting that the transition must be compatible with other environmental and social goals.
- Specific focus is also placed on Just Transition considerations through Principle 4.2.

Methodology

The foundation of this report was a stocktake or **landscape analysis** of these frameworks and tools. From this, a set of **‘Transition Finance Principles’** have been distilled.



As these frameworks and tools are varied in objective, scope and detail, the structure used to “organise” the Principles is informed by the presumption that in order for the transition to be effective and finance to be appropriately directed, any transition framework or tool needs to ensure that:

1. **The transition is robust** i.e.
 - the targets are **science-based** and sufficiently **ambitious** and **all-encompassing** to ensure that the temperature goal of the Paris Agreement will be met if those targets are reached.
 - the targets are **compatible** and do not conflict with other objectives related to the just and sustainable transition.

2. **The transition is credible** i.e. the commitments are supported by evidence of the **willingness and ability to deliver**. One of the biggest challenges for the transition is that it relies on future change. Net zero emissions are not expected overnight. For most, it will be an extended process of change, requiring action and investment on their own part and from a variety of external stakeholders. **Good planning, governance, policy, engagement** and **monitoring** will be key here. Furthermore, **transparency and comparability** on all these aspects is necessary to facilitate allocation decisions by financial market participants.

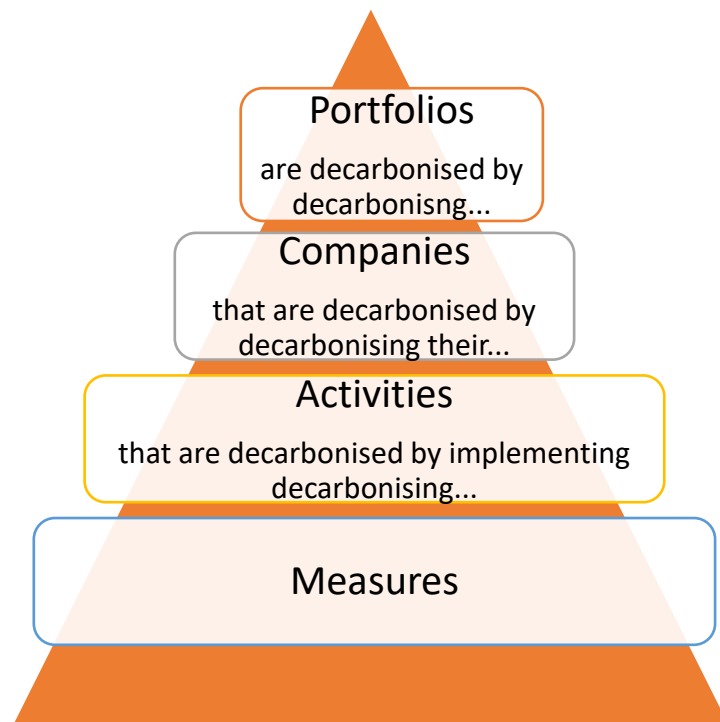
The Principles are therefore presented in two corresponding categories

1. **Principles for robust transition targets**. Fit-for-purpose targets form the backbone of current and future credible and comparable performance Key Performance Indicators (KPIs) for transitioning companies (including the activities they practice) and investment portfolios (financing those activities and/or companies).
3. **Principles to demonstrate the ability to deliver against those targets**. These would form the basis on which the credibility of the transition of activities, real-economy companies and financial market participants can be assessed.

The frameworks and tools identified either address 1) the transition of real economy activities or, in some cases, the measures needed to transition those activities 2) the transition of companies (here defined as companies providing goods and services in the real economy), 3) the transition of investor and financial institution portfolios, or a mix of these.

Companies are entities that base their business/economic performance on undertaking one or several economic activities, and investor portfolios are in general the aggregation of investments in companies and their activities. Therefore, it is important to set or assess a company’s transition based on the targets and transition plans for each of its business (economic) activities. The assessment at the aggregate level of those activities is also important. This is why activity-level, entity level and portfolio level assessments are complementary. The ‘real economy’ and ‘financial economy’ cannot always be separated neatly. Corporate activities often encompass a mix of real economy and financial activities, and companies have trading and investment portfolios of their own. Financial institutions, on the other hand, focus on financial activities and do not provide goods and services in the real economy.

For this reason, the Principles and associated sub-principles can generally be read as applicable to all of these three ‘layers’, though in certain instances tailoring may be needed to reflect nuances between the different layers and the specific roles of economic actors. This tailoring is indicated in the discussion of the Principles in the sections below.



Report structure

The report is organised as follows:

- **Section 2** gives an **overview of the landscape**, to untangle the different types and purposes of transition frameworks out there.
- **Section 3** sets out proposed ‘**Principles for Robust Transition Targets**’.
- **Section 4** sets out proposed ‘**Principles for Demonstrating the Ability to Deliver**’.

- **Section 5** presents the **commonality of the principles across the landscape** of transition finance frameworks
- **Annexes** provide additional detail on the landscape review.

2. Making sense of the landscape

As noted, various frameworks, tools and guidance exist to address the goals and attempt to establish a framework for Transition Finance. As the starting point for this report, many of these were reviewed for this landscape analysis.

What is apparent from the landscape analysis is that while there is broad consistency in the overarching principles across most of the frameworks, there are differences at the more granular level – particularly with regard to their level of detail, stringency and interpretation of the Paris Agreement. The IPSF Transition Finance Working Group and this report therefore aim at enhancing the comparability and interoperability of approaches in assessing transition strategies.

The following section puts forward a brief summary of the approaches to the transition as they relate to: a) economic activities, b) entities (companies) and c) portfolios.

There are many frameworks that can be assessed relating to the transition and a significant amount of detail associated with each one. It is not the intention of this paper to summarise each approach or framework but rather to put forward the key points from which a set of principles can follow. As a result, this section is intended to be brief. A fuller summary can be found in the Annex.

Economic activities in transition

The primary tool being used to assess individual economic activities are taxonomies of sustainable/green economic activities. A green or sustainable taxonomy is a classification system to define eligible green/transition/sustainable activities. There has been an explosion in activity on green/sustainable finance taxonomies over the past 2 years following initial work by China and the EU on developing regulatory definitions of what can be considered green or sustainable economic activities.

Other jurisdictions have followed the examples of EU and China. Their taxonomies have been developed by different authorities – sometimes at the national level, sometimes at regional level, sometimes by public sector authorities, sometimes by private sector and sometimes a mix, sometimes as binding, sometimes as voluntary tools. Thus, there is no single approach to developing a taxonomy. International efforts to reduce unnecessary divergences and enhance interoperability and comparability across various taxonomies (including via the IPSF work on taxonomies) are however increasing, thereby reinforcing the role of taxonomies as part of transition planning.

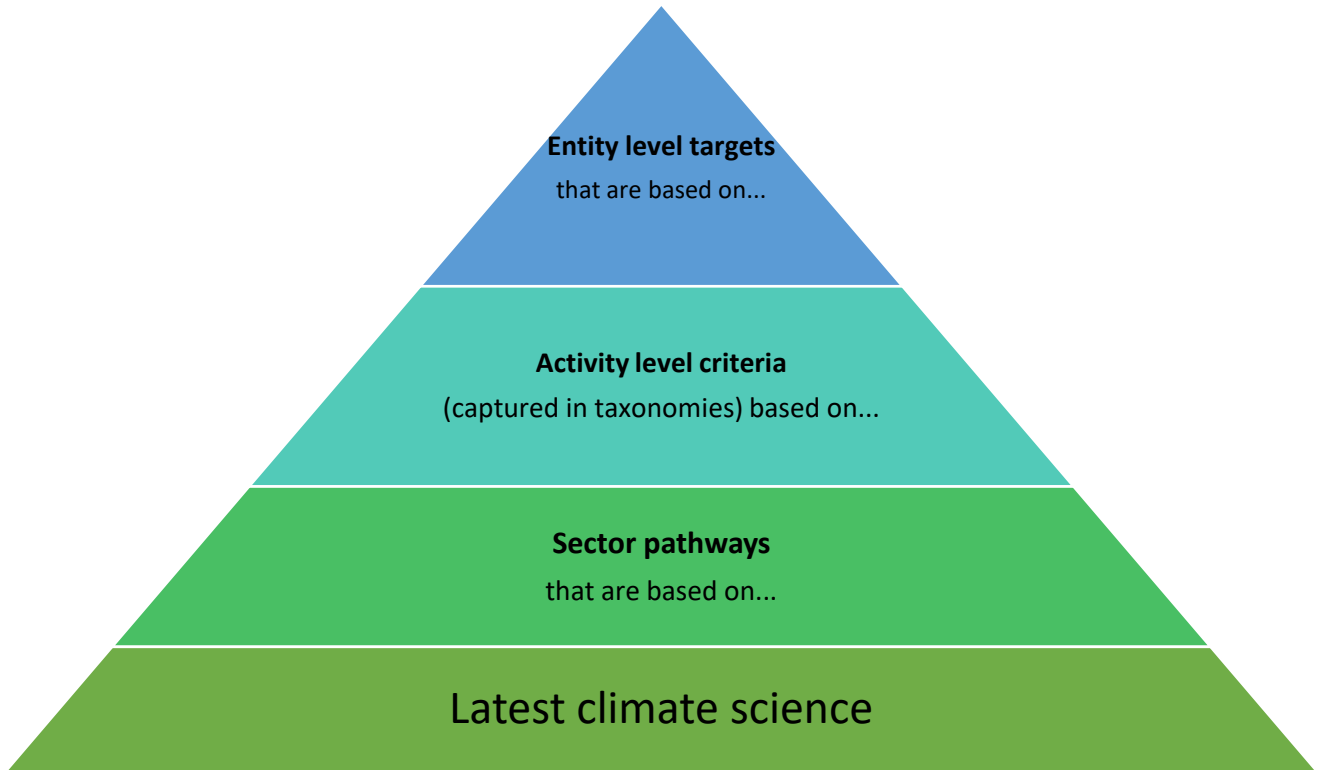
Most taxonomies can be adjusted over time in line with climate science and to include additional activities, although there may be some challenges in downscaling global climate scenarios at regional and/or national level. Green/sustainable taxonomies are providing targets/metrics which will define what it means for an economic activity to be considered sustainable, in other words what is the end point. Given this, taxonomies can be one of the tools to help companies devise a transition target and strategy and enable them to raise finance for this transition.

Taxonomies, as definitions of sustainable/green economic activities, are in many cases (e.g. in the EU) a critical basis for disclosures by economic actors that partake/finance such activities. As such, Taxonomies (and related disclosures) can also support financial institutions such as banks and investors when setting targets and tracking progress over time at the portfolio level – i.e. they can be used to track what proportion of investments are aligned with the taxonomy. They can also help finance institutions track how their investees/clients are progressing with respect to their own transition processes accordingly.

While this area is a work in progress, the inclusion of transition considerations in taxonomies has been one of the key focus points in many frameworks (e.g. EU, Singapore, South Africa etc.).

In order to be credible, taxonomy performance criteria and disclosure elements need to align with science-based sector decarbonisation pathways.

Figure 1: Role of taxonomies in establishing entity and activity level targets



Source: Climate Bonds Initiative, 2022

Table 1: Activity level frameworks

Background	Name	Taxonomies (incl. transitional activities)		Taxonomies (traffic lights)		
		EU	South Africa	EU PSF *	ASEAN	Indonesia
Objective	The key objective is...	... to provide companies, investors and policymakers with appropriate definitions for which economic activities can be considered environmentally sustainable	...to develop a taxonomy to take the first critical steps towards ensuring that economic activities are green, and positions South Africa as a resilient, competitive and low carbon economy and society	...to inform on the ways in which an extended environmental Taxonomy can become a Taxonomy for transitioning the whole European economy. * The EU PSF report provides input on this topic, without prejudging any decision by the European Commission on the matter	... to serve as a common building block that enables an orderly transition and fosters sustainable finance adoption by AMS ... to be an overarching guide for AMS that caters to the different ASEAN economies, financial systems and transition paths	... to encourage innovation in developing green products/projects/initiatives, in accordance with the government's thresholds (Classification does not focus only on activities that are categorized as green, but also includes activities that are yet to be classified into green category)
Level of detail	High-level principles				X	
	Specific requirements / elements	X	X	X		X
Type of recommendations	Structure-oriented Recommendations & questions to consider when developing transition plan (e.g. do the GHG emissions reduction targets take into account offsets?)			X		
	Content-oriented recommendations (e.g. Offset do not count)	X	X	X	X	X
Other	End-user incl. portfolio considerations	Real economy sectors & Generic	Real economy sectors & Generic	Real economy sectors & Generic	Real economy sectors & Generic	Real economy sectors & Generic

Companies in transition

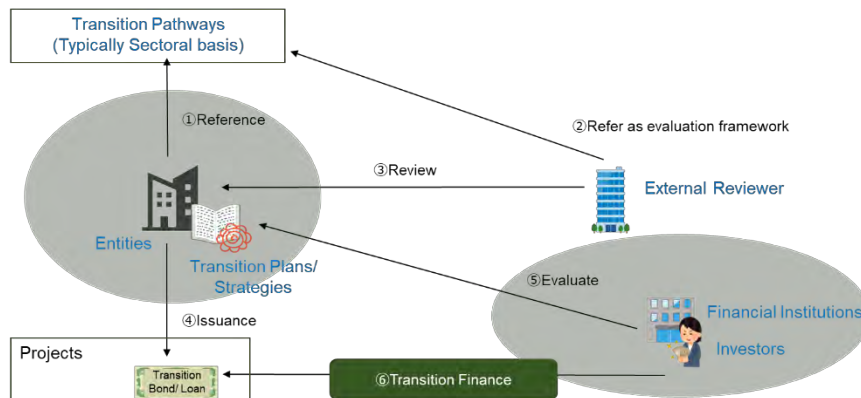
A taxonomy is one tool for assessing the alignment of economic activities with a sustainability goal and ultimately enabling the measurement/monitoring of transition performance. As described in the previous section, some jurisdictions have made efforts to capture and align with the dynamic nature of transition. However, other tools may be used to plan and communicate the details of an entity’s transition.

In order to capture the dynamic process of entity transitions and to make sure those transitions are in line with the temperature goals of the Paris Agreement, the transition process should be judged based on its alignment with science-based decarbonisation pathways and associated targets. On top of that, it is necessary to move the hard-to-abate sectors² with current high emissions toward carbon neutrality, rather than assessing their level of sustainability based on their current level of emissions in order to achieve the transition to a decarbonized economy.

Given the different starting points amongst hard-to-abate sectors, it is important that (1) each company set a credible transition plan that follows a decarbonisation pathway, and (2) financial market participants properly evaluate such entity-level alignment from a forward-looking perspective that takes into account decarbonisation technology³ advancement and other factors.

Some existing guidance for issuers and borrowers, as shown in the Annex, illustrate some elements needed to promote the transition: corporate transition strategies or plans based on decarbonized pathways or trajectories, and implementation transparency through disclosure as well as third-party verification.

Figure 2: Entity-level Approach



² It is noted that some sectors need urgent transition but not all sectors may be fully decarbonized under the current technologies.

³ Examples for decarbonized technologies: McKinsey (2020) says, by 2050, those mature and early-adoption technologies (such as CCS, electric and fuel cell technologies for aviation, shipping, and long-haul road transport, and long-term flexibility solutions in power) would account for 60 percent of total abatement. Also, Morgan Stanley (2019) estimates that reducing energy-related carbon emissions is possible utilizing five decarbonisation technologies (renewables, electric vehicles, hydrogen, carbon capture and storage (CCS), and biofuels). IEA (2020) describes four technology value chains (carbon capture, utilisation and storage (CCUS); hydrogen and hydrogen-related fuels; and bioenergy) contribute about half of the cumulative CO2 savings.

(Source) IPSF, excerpt from “Transition Finance in Japan⁴”

The Annex illustrates current practices of these corporate-level alignment approaches by each step, as well as touches upon how external reviewers or investors assess companies’ transition efforts.

To summarise:

- **Transition Pathway:** Currently there are a number of public or private sector-led initiatives that focus on developing transition pathways, typically sectoral trajectories, which entities can refer to when establishing transition strategies (Annex Table 1). Some jurisdictions (such as the EU⁵, France,⁶ the United Kingdom⁷ and Japan⁸) have taken steps toward developing national/jurisdictional-sectoral pathways or sectorial policies behind them at national/jurisdictional level.
- **Transition Plans/Strategies:** Many frameworks and methodologies for credible plans/strategies based on the above pathways are being developed (Annex Table 2). Moreover, more initiatives are encouraging entities to present their transition plans publicly with the aim to increase transparency to investors through disclosures⁹.
- **Certification Scheme / Assessment Framework and methodologies:** As a result of the growing sustainable and transition finance market and the need for transparency and assurance to financial institutions as well as to real economy stakeholders, there is an increasing demand for external assessments of transition targets and plans— both for individual components and overall evaluations. Private sector initiatives, evaluation institutions, service providers and financial institutions are, at the same time, creating their own evaluation frameworks (Annex Table 4).

There are various initiatives to develop and assess transition pathways and plans, but each objective and methodology is different. The Annex considers some challenges to developing pathways and plans and to assess their credibility. In order to enhance the credibility, transparency and interoperability of these initiatives, common challenges include but are not limited to: how to ensure that transition pathways or plans are “science-based”, how to reconcile the possible gaps between global/ regional/ sectoral approaches, how to facilitate financial institutions’ engagement with clients to implement their own transition plans, and how to deal with dynamic nature of the transition in assessing and evaluating the credibility of transition plans.

Entity-level approaches should be dynamic, flexible and interactive. The sectorial pathways represent the “movement” aspect of transition. Companies can flexibly develop their own transition strategies by

⁴ https://www.fsa.go.jp/en/announce/state/20220526_EN_02.pdf

⁵ <https://www.estep.eu/clean-steel-roadmap/>

⁶ <https://www.iea.org/policies/15029-france-2030-investment-plan-heavy-industry-decarbonisation-investment>

⁷ [Net Zero Strategy: Build Back Greener - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/net-zero-strategy-build-back-greener)

⁸ [Taskforce Formulating Roadmaps for Climate Transition Finance Established, Plus Call for Examples of Model Projects \(meti.go.jp\)](https://www.meti.go.jp/eng/press/2022052601/2022052601_01.pdf)

⁹ For instance, in the EU, the CSRD and future sustainability standards or the draft European Banking Authority (EBA) implementing technical standards (ITS) on Pillar 3 disclosures on ESG risks are going to impact corporate transition plans disclosure.

referring to those sectorial pathways. Finally, evaluation or certification of transition strategies are interactive, and should assess the credibility of different approaches.

Table 2: Entity level frameworks

Background	Name	Transition plans guidelines				Financial Institutions focus	
		IGCC	UK	CDP	TCFD (transition plans)	GFANZ (for financial institutions)	UNEP FI
Objective	The key objective is...	... to detail what investors should expect of companies developing climate transition plans that are seeking alignment with net zero emissions by 2050 or sooner. It aims ... to provide guidance for companies creating these plans and an overarching framework for investors to assess these plans	... to establish guidelines for financial and non-financial companies that set out how they will decarbonise and support economy-wide decarbonisation as part of the transition to net zero. ... to enable standardised and actionable transition plans. ... address how companies should disclose information on their strategies and action plans	... to offer a definition for climate transition plans, principles to factor in whilst establishing a plan, and some of the key elements which constitute a credible climate transition plan.	... to provide guidance on considerations around the disclosure of transition plans	... to identify the best practices for developing credible net-zero transition plans for financial institutions	to outline key recommendations which should be applied by a financial institution in order to establish a credible commitment and implementation strategy
Level of detail	High-level principles	X	X	X	X	X	X
	Specific requirements / elements	X	X	X		X	X
Type of recommendation	Structure-oriented recommendations & questions to consider when developing transition plan (e.g. do the GHG emissions reduction targets take into account offsets?)		X		X	X	
	Content-oriented recommendations (e.g. Offset do not count)	X		X		X	X
Other	End-user	Real economy sectors (FI perspective)	Generic	Generic	Generic	Financial sector	Financial sector
	incl. portfolio considerations					X	X

Background	Name	Issuers		Reporting		Sectoral pathways		
		ICMA	Japan	EFRAG	ISSB (disclosures)	SBTi (standard)	TPI	ACT
Objective	The key objective is...	... to provide clear guidance and common expectations to capital markets participants on the practices, actions and disclosures to be made available when raising funds in debt markets for climate transition-related purposes	...to provide examples of responses and interpretations so that they can serve as a reference for the fundraiser, the financier and other market participants when they consider concrete actions to transition finance	... to specify disclosure requirements which will enable users of sustainability statements to understand: i.a. (c) the plans and capacity of the undertaking to adapt its business model(s) and operations in line with the transition to a sustainable economy and to contribute to limiting global warming to 1.5°C;	... to enable users of general purpose financial reporting to assess entities' exposure to and management of climate-related risks and opportunities, across markets, to facilitate capital allocation and stewardship decisions; i.a. to evaluate the entity's ability to adapt its planning, business model and operations to significant climate-related risks and opportunities	... to provides guidance, criteria, and recommendations to support corporates in setting net-zero targets through the SBTi. The	... to evaluate and track the quality of companies' governance/management of their greenhouse gas emissions and of risks and opportunities related to the low-carbon transition	... to determine the extent to which companies are in line with a transition towards a low-carbon economy
Level of detail	High-level principles	X	X					X
	Specific requirements / elements		X	X	X		X	X
Type of recommendation	Structure-oriented recommendations & questions to consider when developing transition plan (e.g. do the GHG emissions reduction targets take into account offsets?)	X	X	X	X		X	
	Content-oriented recommendations (e.g. Offset do not count)	X	X			X		X
Other	End-user	Real economy sectors	Real economy sectors	Generic	Generic	Real economy sectors	Generic	Real economy sectors & Generic
	incl. portfolio considerations							

Portfolios in transition

Investment/lending decisions are inherently forward-looking. As such, financial market participants should not just assess the past and current state of companies' greenhouse gas emissions, but also take into account credible production and capital expenditure plans, as well as the transition plans associated with pledges to reach net zero. A successful transition is facilitated by companies across the entire economy that are sufficiently rapid in reconfiguring their business models and adapting their investment plans. Therefore, it is key that financial market participants are able to identify leaders and slow starters within all industries to guide better their financing decisions¹⁰.

While financial market participants can progress towards net-zero aligned portfolios by withdrawing capital from today's carbon-intensive industries, this strategy would not help provide capital to companies that are credibly engaged in a transition to net zero. Financial market participants should therefore increasingly use engagement strategies to effectively incentivize companies to reduce their emissions. To accelerate real-world decarbonisation, it is important that the financial sector both reallocates capital and works alongside those carbon-intensive companies that are truly committed to a transition to net zero. Transition finance and transition risks are two sides of the same coin. Investments into transitioning towards less emitting and more sustainable economic activities and companies also contribute to the resilience of the financial sector by lowering transition risks in their balance sheets. Ultimately, if the financial sector can assess the position of companies and portfolios on the path to net zero, compare peers and track progress, it will be better able to identify opportunities that benefit the transition, assess risks and vulnerabilities to the transition, and guide engagement with companies.

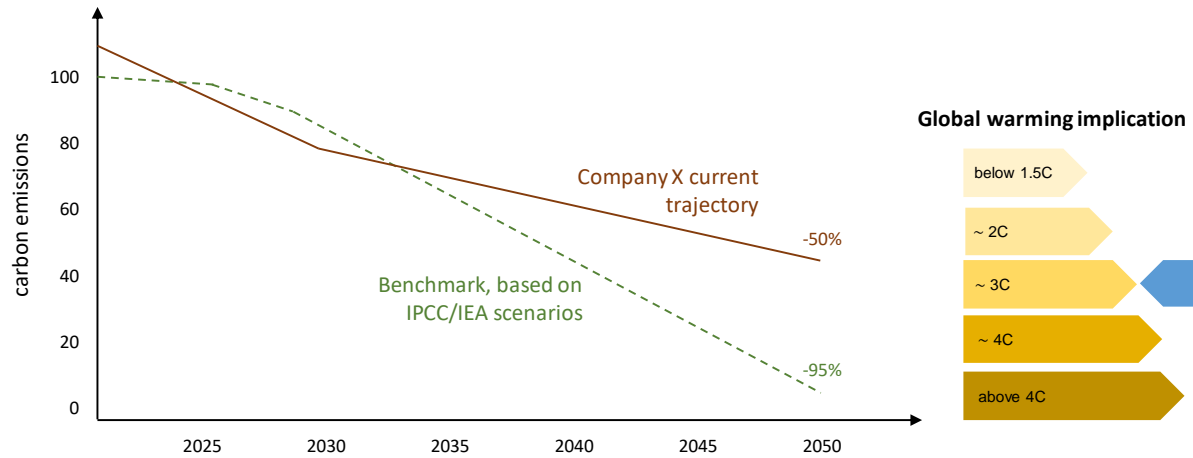
Portfolio alignment metrics (some also referred to as implied temperature ratings/scores) first emerged in the wake of the Paris Agreement, as investors sought to quantify the alignment of their investments with the Paris climate goal. Well-designed portfolio alignment metrics incentivise a whole-economy transition, minimising the risk of disorderly wholesale divestment from all high-emitting industries and/or companies, regardless of their commitment and trackable changes to emissions reductions as well as a positive contribution to a transition consistent with the Paris Agreement.

Portfolio alignment metrics rely on comparing a company's actual and projected emissions to global carbon budget benchmarks that are associated with different levels of global warming, based on climate models. Required mitigation actions can be quantified using carbon budget approaches that link cumulative greenhouse gas emissions to global mean temperature increases.¹¹

¹⁰ For further reading on this topic see: The Alignment Cookbook : A Technical Review of Methodologies Assessing a Portfolio's Alignment with Low-Carbon Trajectories or Temperature Goal - Green and Sustainable Finance : Green and Sustainable Finance (institutlouisbachelier.org).

¹¹ See 'Special Report: Global Warming of 1.5°C', IPCC, 2018, p.96.

Figure 3: Illustrative example of portfolio alignment metrics



Coordinated climate tests based on portfolio alignment metrics are already used by various jurisdictions, such as Austria, France, Japan, Mexico, Norway, Sweden, Switzerland, the Netherlands, as well as California and New York.¹² These tests help evaluate in a comparable manner whether financial institutions are following through on their climate commitments and help them identify where more action is needed. As such, they form a central instrument of the commitments made by financial institutions (as non-state actors) under the umbrella of the Glasgow Financial Alliance for Net-Zero (GFANZ) to measure the credibility of net-zero commitments. GFANZ as an umbrella for the different alliances of FIs committing to net zero established a workstream to support the further development and effective implementation of Portfolio Alignment Metrics for the financial sector and to drive convergence in the way portfolio alignment is measured and disclosed.

Portfolio alignment metrics are also increasingly used as a basis for transparency at the investment product level, in particular for transition bonds but also for diversified corporate equity and bond funds. To efficiently support the transition to net zero, clients assessing an investment decision require indicators on the level of the investment product that help them understand the portfolio’s expected transition.

¹² See ‘Taking the Plunge – A stocktake of national financial sector climate alignment assessments’, 2degrees-investing, 2021

Table 3: Portfolio level frameworks

		Portfolio focus		
Background	Name	The Swiss Climate Scores	GFANZ (Portfolio Alignment Measurement - PAT reference)	Paris Agreement Capital Transition Assessment (PACTA)
Objective	The key objective is...	... establish best-practice transparency on the Paris-alignment of financial investments to foster investment decisions that contribute to reaching the climate goals	to facilitate progress on adoption, convergence, and enhancement of portfolio alignment measurement	...PACTA enables users to measure the alignment of financial portfolios with climate scenarios as well as to analyze specific companies.
Level of detail	High-level principles		X	
	Specific requirements / elements	X		X
Type of recommendation	Structure-oriented recommendations & questions to consider when developing transition plan (e.g. do the GHG emissions reduction targets take into account offsets?)		X	
	Content-oriented recommendations (e.g. Offset do not count)	X		X
Other	End-user	Financial sector	Financial sector	Financial sector
	incl. portfolio considerations	X	X	X

3. Target setting Principles – guiding robust transition targets

Target setting is at the heart of transition planning. Science-based and sufficiently ambitious and inclusive targets form the backbone of current and future credible and comparable performance indicators for transitioning companies (including the activities they practice) and investment portfolios. This section outlines the principles required to set a robust and ambitious transition target and pathways to that target. The principles address target setting for individual activities, whole companies and financial portfolios. Which are more relevant to each of these levels is illustrated in the summary diagram. Also noted here is the relevance of these principles to external bodies setting targets to guide the activity, company or portfolio-level transition.

Principle	Sub-principle	Relevance for...		
		Company	Portfolio	Assessor
1. 1.5 degrees	1.1 Pathways aligned with 1.5 degrees	✓	✓	✓
	1.2 Recognition of regional variation	✓	✓	✓
	1.3 Metrics tailored to use	✓	✓	✓
2. Ambitious	2.1 Differentiate by sector	✓	✓	✓
	2.2 Extend targets to 2050	✓	✓	✓
	2.3 All material emissions addressed	✓	✓	✓
3. All-encompassing	3.1 All material activities	✓	✓	✓
	3.2 All sectors and sub-sectors	✓	✓	✓
	3.3 Challenge for everyone, recognising performance categories	✓	✓	✓
4. Compatible	4.1 Marry multiple objectives	✓	✓	✓
	4.2 Align with just transition	✓	✓	✓

Principle 1: The (collective) goal is to keep global warming to 1.5 degrees Celsius (TARGETS)

A successful climate mitigation transition would achieve the goal set by the Paris Agreement. That is, to collectively limit global warming to well below 2°C compared to pre-industrial levels, and ideally 1.5°C. At this stage, there is a broad agreement that the goal should be to stay within 1.5°C. Company and investor-led initiatives looking to align their activities and portfolios with this goal, and criteria setting initiatives are aligning their methodologies and data with 1.5°C scenarios. This currently implies reaching aggregate net zero emissions globally by or around mid-century.¹³ Under Paris Agreement, each Party's successive nationally determined contribution will reflect its highest possible ambition, its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances. How targets are differentiated by region to collectively hit this global goal is addressed below.

1.1. Scientific community sets 1.5 degree aligned criteria that companies and financial market participants can benchmark their KPIs against

An objective, independent climate science community must drive the development of 1.5 degree aligned criteria that are effectively the **external targets** that companies and financial market participants need to a) aim for and b) benchmark their own **internal targets (KPIs)** against.

In essence, these external targets define what 'must' be done, translating the Paris Agreement into tangible criteria detailing the speed and scale of the transition needed. Setting common targets in a centralised way significantly increases the chance of global emissions reductions reaching the scale needed, and boosts comparability. But the task is complex.

Establishing science-based 1.5 degree aligned targets requires a top-down carbon budget allocation approach, where that allocation takes account of interlinkages between sectors and is compatible with bottom-up assessments of technological feasibility. Hence, this task needs to be led by the climate science community in partnership with other technical experts.

A number of initiatives have taken on the role of working with the scientific and technical community to determine these external targets, including but in no way limited to, SBTi, TPI, CBI or the Japanese Government for Japan's "Sector-specific Roadmap for the Climate Transition Finance".¹⁴

At the same time, entities and investors will set their own **internal targets (KPIs)** based on their assessment of what is possible for them. These may or may not align with the external, scientific-community derived 1.5 degree pathways. Therefore, benchmarking against external targets is a key

¹³ See 'Special Report: Global Warming of 1.5°C', IPCC, 2018, p.95.

¹⁴ An approach to assess companies' efforts for transition. Japan's approach is unique in a sense that government takes a lead to raise interest of industry rather than provide given rules to industry. Japan formulated "Basic Guidelines on Climate Transition Finance" and developed technology-based roadmaps for hard-to-abate sectors such as iron & steel, chemicals, electricity, oil, gas, pulp & paper, and cement. A roadmap for automobile sector is planned to be formulated. These roadmaps are intended to be credible and science-based, and set out what kind of low-carbon and zero-carbon technologies should be adopted by companies in those sectors with specified timeframes for such adoption. By the end of March 2023, the roadmaps will be updated by quantifying the emission pathways of those transitions. The guidelines and roadmaps not only focus on individual projects that require funding in Japan, but also allow for a comprehensive judgement of project operators' transition strategies toward decarbonisation.

component of an assessment of climate alignment (noting there may have been many other reasons for deviating from those external targets – economic, political, regulatory or otherwise).

Importantly, progress with respect to the transition should be measured not just by the progress in achieving those KPIs, but also in aligning those KPIs with external targets, i.e. their consistency with the trajectory toward net zero in the eyes of climate science.¹⁵

1.2. Recognition of regional differentiation in transition target setting

Under the Paris Agreement, countries have common but differentiated responsibilities in the light of national circumstances. The question of the extent to which and how region/ country specific challenges such as the status of economic development should be taken into account in the determination of transition criteria is challenging, and there are a variety of views on this in the reviewed frameworks (see box below).

In theory, it makes sense to align transition pathways with Nationally Determined Contributions (NDCs), since the Paris Agreement allows for flexibility for nations to determine their own contributions, and to determine how emissions reductions will be shared across the economy. However, although a number of countries and jurisdictions set 1.5 degree targets, on aggregate, NDCs currently do not equate to limiting warming to 1.5°C goals and there is a ‘climate ambition gap’¹⁶. Furthermore, recognising such a degree of differentiation is a huge challenge for financial market participants for whom global consistency is a critical objective. At present, there are no clear rules on how regional variations should be dealt with.¹⁷

¹⁵ The speed of alignment is also important and proposals here vary. The Extended Taxonomy Report from the EU Platform on Sustainable Finance recommended that alignment to the 1.5 degree pathway is needed from now onwards, noting that this will require the taxonomy criteria to be adjusted over time to ensure continual tracking towards the ultimate net-zero goal which for some industries will be 2050 and for others earlier (and in some exceptional cases in developing countries, later). SBTI’s approach is similar. However, in CBI’s forthcoming proposals for entity transitions entities are required to align with 1.5 degree pathways by 2030 at the latest.

¹⁶ IEA (2021) points out that COP26 pledges could limit warming to 1.8C.

¹⁷ The OECD Guidance on Transition Finance recognises that regional differentiation may mean that some jurisdictions will aim for below 2-degree targets. For more details, see OECD (2022), *OECD Guidance on Transition Finance: Ensuring Credibility of Corporate Climate Transition Plans*, Green Finance and Investment, OECD Publishing, Paris, <https://doi.org/10.1787/7c68a1ee-en>.

The stakeholder mapping undertaken revealed very limited discussion in support of or against regional variation and, therefore, limited guidance on the regional differentiation of transition pathways. Generally, regional or national frameworks allow for regional differentiation while international/global frameworks allow it only in very limited circumstances.

Regional/national frameworks, while generally supportive of differentiation, generally did not provide the bigger picture as to how the global goal would be met – i.e. they delineated their own differentiated approach but did not state how it related to other regions.

From the reviewed high-level guidelines, only the input paper submitted by UNEP Finance Initiative for the G20 Sustainable Finance Working Group acknowledges that financial institutions aim to introduce targets that encourage alignment with “appropriate global sectoral and regionally granular pathways”. More regional granularity is needed however from the scientific community.

TPI recognises regional variation in its transition pathways for the electricity utilities only for reasons related to the more localised nature of power markets.

Climate Bonds Initiative recognises regional variations in transition pathways for the buildings sector due to differences in the existing building stock and the different climatic zones.

Neither recognise broader economic or policy differentiators or carbon budgets.

The ICMA transition handbook recognises that transition pathways must be tailored to the sector and operating geographies of an issuer and the issuers are generally at different starting points and on different pathways. Therefore, ICMA gives over issuers’ choice of their local taxonomies and definitions.

Figure 4: Discussion on regionalisation within reviewed frameworks

1.3. Tailoring transition targets and metrics by use(r)

Delivering the collective goal of halving emissions by 2030 and reaching net zero by mid-century requires that global, absolute emissions go down rapidly and substantially. However, it may be that at the micro level of an activity, company or portfolio, absolute emissions may rise before they fall. For example, there are sectors or serving markets where expansion is needed to service a development need for transition or where acquisitions or other changes in company structure result in expanded operations. Intensity targets also help to benchmark performance against peers operating within the same market or compare different portfolios.

For these reasons, sector specific emissions intensity metrics (e.g. emissions per unit production) and targets can be a useful indicator at the micro scale, and can support the transition in a flexible manner, as long as top-down derived emissions intensity metrics have absolute emission pathways embedded into them¹⁸. If these pathways are attained, absolute emissions would be lower at the macroeconomic level, thus ensuring that focusing on emissions intensity actually supports and does not undermine the absolute emission reduction goals.

¹⁸ Deriving an emissions intensity target via a top-down carbon budget allocation approach, where that carbon budget takes account of the overall absolute emissions and needed reductions and allocates emissions accordingly between sectors taking into account bottom up assessments of sector specific technological feasibilities and volume growth or contraction means that the resulting emissions intensity criteria are tailored to ensure alignment with the collective absolute net zero goal.

In addition to GHG metrics, qualitative indicators and/or proxy indicators that are known to represent alignment with the decarbonisation pathway can be a powerful tool to support the transition for companies and investors by giving a clear direction with respect to the nature of transition, and minimising unnecessary GHG accounting. For example, simple exclusion criteria such as no new fossil gas facilities, or no production of fossil fuel powered cars after a certain date can be useful. Conversely, requirements for the deployment of advanced, low-emission technologies after a certain date can also help.

For portfolios, a broad variety of metrics have been proposed. Further work is needed to align the market around consistent, robust metrics for portfolios.

Lastly, it is also important for the targets and metrics to identify and address the specific capital investments or other measures *within* an activity that will enable that activity to align with the decarbonisation pathways. Not only does this provide the necessary direction to companies and financial institutions and policy makers as to how the transition can be delivered, but it also enables the targeted financing of those incremental changes, for example through the highly developed use-of-proceeds and green/sustainable loan markets.

Figure 5: Discussion on metrics for transition targets¹

Absolute and intensity-based metrics are important for companies and their activities

The landscape review shows that there credible science-based targets may refer to both absolute and intensity-based metrics depending on circumstances.

The draft EFRAG ESRS (European Sustainability Reporting Standards) propose that the targets are set in absolute terms, and recommends considering intensity targets as a complementary feature. The ISSB acknowledges either approach.

The methodologies established by voluntary market initiatives are also diverse. SBTi conditions the selection of metric for the long-term GHG reduction target based on sectors. For some (e.g. buildings, cement), it allows for either absolute or intensity targets, for others such as power generation the intensity-based metric has to be applied. At the same time, if a cross-sector pathway is being used to identify GHG reduction targets, then only absolute metrics are possible. CBI focusses on emissions intensity targets, or qualitative proxies that align with those. Like EFRAG, the Climate Policy Initiative expects that targets are set in absolute terms but recommends considering intensity targets as a complementary feature

Both metrics are required by the guidelines published by ICMA.

In investor-led initiatives, absolute emissions are considered the most relevant measure (e.g., NZAOA, NZBA). Some initiatives (e.g., IIGC, NZAM, NZBA) allow both absolute emissions and emissions intensity to deal with wider range of clients.

Options for portfolios

The landscape review highlights different approaches towards portfolio emissions reduction. As discussed by the G20 SFWG, these can be divided into five main categories:

- Absolute contraction approach - Reducing the absolute amount of carbon in the portfolio;
- Economic intensity-based approach - Achieving a greater carbon efficiency per dollar invested;
- A capacity/technology-based approach – phasing out selective capacities/technologies in the portfolio;
- Portfolio coverage approach – increasing the share of net-zero aligned companies in the portfolio;
- Sector decarbonization approach – benchmarking companies against sectoral pathways;
- Temperature alignment approach – aggregating alignment ratings for the portfolio and mapping them to a temperature outcome.

While the first three allow to devise strategies on how to reduce emissions in the portfolio, the latter can help benchmark the performance of the portfolio against decarbonization targets/pathways. Detailed requirements for portfolio, sector and temperature approaches have been also outlined by the SBTi criteria for financial institutions. Nonetheless, all of these approaches have benefits and shortcomings.

To avoid some of the challenges, the G20 SFWG report recommends combining the absolute contraction and sector decarbonization approaches. It argues that resulting information, although more disaggregated than in the case of the temperature alignment approach, can provide data that offers greater added value when it comes to steering a portfolio towards net-zero. Importantly, such solution promotes simultaneous decarbonization of all sectors through the identification of best performers and laggards in the portfolio – a level of detail that is not available when using the temperature approach.

However, the TCFD's Portfolio Alignment Team (PAT) as well as GFANZ highlight a rising interest from investors and lenders in tools that could offer a single metric to indicate whether the portfolio is meeting the temperature targets. Although there are two approaches currently available to obtain the portfolio temperature score:

- Weighted average of company-level temperature scores, and
- Aggregated over (under)-shoot of the company-level absolute emissions, relative to allocated carbon budget, translated into a temperature score,

the PAT highlights that more work is needed to identify the best methodology to assess alignment with the decarbonization goals based on the aggregate values and GFANZ cautions that application of this method is associated with higher degrees of uncertainty.

Principle 2: Targets must embed deep, rapid and sustained change (TARGETS)

The transition to a low carbon economy has to be understood as a process. For that process to be aligned with the objective of limiting global warming to 1.5 degrees, **rapid and deep emissions reductions are required in all sectors**. In practical terms, **according to IPCC AR6, transition efforts need to roughly halve global emissions by 2030 (and have global greenhouse gas emissions peak before 2025)** and allow for climate neutrality by 2050. Meeting these ambitious targets will not be possible solely through incremental actions. Instead, as IPCC AR6 highlights, the focus must be on shifting development pathways. Such systemic change requires, among others, redirecting financial flows to investments that allow for deep decarbonisation.

2.1. Targets will be differentiated by sector

While some sectors will be able to reach net zero before 2050, others might only do so after 2050. Some might even generate net negative emissions. For example, renewable energy technologies with low or zero emissions already exist, whereas the decarbonisation of other sectors is dependent on technological advances such as green hydrogen and carbon capture and storage (CCS). Therefore, to maximise mitigation potential while recognising sectoral opportunities and constraints, including the availability of negative emissions technologies, external transition targets need to be tailored by sector. Internal targets (KPIs) will of course vary across companies, depending on their business model and specific factors influencing their decarbonisation potential (economic, political, regulatory or otherwise).

The implication for the portfolios of financial market participants is that there will likely be no common headline target for portfolios. Each portfolio will require its own bespoke target that reflects its degree of exposure to different sectors. However, all of these should be transparent and comparable among portfolios.

2.2. Targets extend to 2050

The transition requires sustained change over the short-, medium- and long-term. Therefore, transition targets should (to the best of current knowledge, and subject to updates over time) extend over the full time horizon until 2050 – and in some cases beyond - with identified interim (e.g. 3/5 year) and long term targets collectively representing a transition pathway. Only with such information can the necessary benchmarking and forward planning be adequately established by companies and investors.

2.3. Targets will be differentiated according to transition technologies

While the objective is to ensure comparable targets for new and existing assets, in some instances ambition may be higher for new assets compared to existing ones. A sector-by-sector assessment is required to ensure that the best available technologies are used as much as possible while avoiding locking in sub-optimal solutions. For example, the speed of decarbonising existing buildings may be limited by structural factors which cannot be overcome given the nature of the building stock, in which case the 'last mile' of emissions reductions may come only when power supplies are fully decarbonised. Whereas for new buildings, alternative designs and construction materials can help lower the GHG footprint from the onset of use. In the steel sector, significant decarbonisation can be achieved by switching to scrap and electric arc furnaces, or using green hydrogen or CCS with blast furnaces. Such technologies should be utilised for all new facilities, but upgrades of existing facilities may not be undertaken until a relining would

otherwise be necessary. Thus, in the interim, other measures will be needed to decarbonise the facility, which may be less impactful.

2.4. Transition targets should address all material emissions

To maximise mitigation potential, target setting should include all material¹⁹ scope 1, 2 and 3 emissions over the full lifecycle. The disclosure of material Scope 3 emissions data could follow a gradual approach, as it becomes possible, reflecting progress on data availability.

In terms of scope 3 emissions, this means understanding all upstream and downstream emissions and the ways they can be addressed. Nonetheless, the ability to influence or control these emissions in the short term may vary from sector to sector and even from company to company. Due to technical or supply chain transparency considerations, and data availability or double counting issues, some climate transition initiatives allow for some flexibility with respect to scope 3 emissions when setting climate transition targets, at least in the short term.

For example, materiality is defined differently by different climate finance initiatives, though there may be nuances in the detail and application. According to SBTi²⁰, the targets must cover company-wide scope 1 and scope 2 emissions and if a company's relevant scope 3 emissions are 40% or more of total emissions and/ or it is involved in the sale or distribution of natural gas and/or other fossil fuels, scope 3 must be included in the near-term science-based targets. SBTi also says that all companies should include emissions from relevant scope 3 categories in long-term science-based targets.²¹

There is an urgent need for overcoming these practical challenges on calculating scope 3 emissions. The above possible flexibility should therefore be exercised with caution and should not extend into the medium or long term.

Some examples of how Scope 3 emissions can be included in transition targets include:

- A biofuel producer, targets should encompass the emissions associated with the production of the input biomass, as the producer has (or should have) oversight and control over who / where biomass is sourced from – and improving supply chain transparency will be a key transition requirement.
- A coal extraction company, targets should encompass emissions associated with burning the coal by others, as the company has control over whether it stays in the mining business. Its transition strategy should address its re-orientation towards other low-carbon sectors.
- A shipping company, targets should encompass the nature of its cargo, as the company should be seeking to move away from transporting products enabling fossil fuel activities. It is noted however that these targets need not be in the form of GHG targets, and that more simple exclusions (e.g., no transportation of fossil fuel cargo) might deliver equivalent emissions reductions.

¹⁹ as defined by the GHG Protocol Corporate Standard, for example.

²⁰ SBTi Corporate Net-Zero Standard, October 2021

²¹ In terms of significant thresholds, according to SBTi companies may exclude up to 5% of scope 1 and scope 2 targets. For short-term scope 3 targets, at least two-thirds (67%) of scope 3 emissions must be covered. For long-term scope 3 targets, at least 90% of scope 3 emissions must be covered.

2.5. Verified/certified offsets are for last mile emissions

Transition targets should reflect that the focus needs to be on what can be done to directly reduce one's own material emissions rather than relying on offsets.

Certain high-quality and credible carbon offsets projects may contribute toward both climate goals and sustainable development, such as through afforestation and solar off-grid installations especially in emerging and developing markets. Given this, with aim to effectively reduce emissions globally, offsets may be required for 'last mile' residual emissions once all other options have been exhausted, subject to quality criteria, no double-counting and requirements regarding additionality as well as measures to address impermanence, but they cannot be used as a primary part of a decarbonization strategy.

As emphasized by IPCC AR6, although offsets to counterbalance hard-to-abate residual emissions are unavoidable to achieve the net zero objective and play a role in all of the 1.5 degrees aligned scenarios, "[...] Carbon Dioxide Removals²² cannot serve as a substitute for deep emissions reductions [...]".

The Claims Code of Practice currently being developed by the Voluntary Carbon Markets Integrity Initiatives (VCMI) will offer some useful guidance and best practices on offset claiming by companies²³ and could help market participants better assess the stringency of corporate offset practices.

Principle 3: Transition is all-encompassing (TARGETS)

The scale and speed of collective decarbonisation needed requires the full breadth of sectors across the economy (high GHG emitting and low GHG emitting) to play their part. It also requires that all actors, both those already on a transition journey and those that are not there yet, be mobilised and continue to act over the years and decades to come.

3.1. All material economic sectors need transition targets

Generally speaking, the term 'transition sector' or 'transition activity' is used to refer to high GHG emitting sectors (hard-to-abate) that have a more difficult transition pathway with significant economic and technological barriers to overcome.

The reality is that all sectors²⁴ have to do their part in the transition, whether directly or indirectly.

Companies practicing activities at risk of stranding need to re-orientate their operations. High-emitting companies that have a role to play in a 2050 economy, need to decarbonize their activities. Companies that develop and deliver products and services that enable other companies to decarbonise their activities also have a role to play. Furthermore, investors need to decarbonize their portfolios.

Most activities, companies and financial market participants are not expected to be carbon neutral today – but what is needed is for them to be aligned with the transition criteria that will align that activity/ company/ financial market participant with net zero. Therefore, targets are needed for different sectors.

²² Anthropogenic activities removing carbon dioxide (CO₂) from the atmosphere

²³ [VCMI-Provisional-Claims-Code-of-Practice.pdf \(vcmintegrity.org\)](#)

²⁴ The only potential exception to this is sectors that are inherently climate neutral i.e. by their very nature they do not give rise to significant emissions either directly or indirectly. This may be the case for some service sectors without a high emissions asset base. Of course, such sectors will still have some degree of emissions (e.g. use of energy by hairdressing salons) but this is at a significantly lower order of emissions than most other sectors.

This includes separate, but Paris-aligned, targets for sectors and sub-sectors. For example, companies and financial market participants will require targets and pathways for activities such as electricity generation from hydropower, wind, and solar, which are sub-sectors of the energy sector. In addition, targets and pathways are needed at the macro-level of ‘energy generation’ to guide the necessary speed and scale of the transition by those who need to move from fossil fuel energy generation to renewable energy generation, for example by setting targets for renewables in the energy portfolio. Setting targets only at the sub-sectoral level may be too siloed to address these broader considerations.

3.2. Challenge is for everyone

Given the scale of the mitigation challenge, it is essential to ensure that all companies and financial market participants²⁵ decarbonise. Those that are performing well today against credible benchmarks will need to keep decarbonising to bring their emissions down in the short and medium and long term. Those that are behind the curve should be encouraged to come into the fold and move even faster to ‘catch up’. Only with the active participation of all, the Paris-Agreement targets will be met.

3.3. Recognise different stages of transition

Connected to this, it may be desirable to recognise different stages of transition, to enable clearer identification of i) those already aligned with externally-set targets and pathways for their sector/ portfolio and with ambitious transition plans to continue to do so; ii) those not yet aligned with such targets but with ambitious transition plans that will enable them to do so; both in contrast with iii) those who are not aligned with such targets and with either no transition plan or a transition plans that are simply not ambitious enough in speed and/or scale to achieve such alignment.

Performance categories have an established precedent in the green finance markets, where bonds and other instruments have been evaluated as various shades of green. With respect to the evaluation of transition and transition plans, many tools/ services/ regulatory frameworks have attempted a similar categorisation – see the box below. The challenge here is that of comparability, as these approaches all capture different levels of performance in each recognised tier/ rating/ transition category.

²⁵ See above footnote.

Figure 6: Levels and categories of transition within the landscape

A number of frameworks, guidance and tools have multiple performance categories, although what they recognise in them varies.

Taxonomies:

The ASEAN taxonomy suggests a **“stacked approach”** in developing activity-level thresholds. There are multiple thresholds per activity at a single point in time, to cater for different starting points of entities across ASEAN undertaking a particular activity. The implemented solution allows for higher emissions for a limited period, while incentivising progression to lower emissions by retiring the less ambitious tiers over time.

Singapore Green Finance Industry Taskforce (GFIT) Taxonomy: On 12 May 2022, GFIT published for public consultation detailed thresholds and criteria for economic activities in the Energy, Real Estate, and Transportation sectors. This consultation is the second version of the taxonomy, building on GFIT’s earlier proposed taxonomy in January 2021. The proposed thresholds and criteria within can be used to classify an economic activity as green, amber, or red (harmful), using a traffic light system, to differentiate its contribution to climate change mitigation. The proposed amber (or transition) thresholds take into consideration the feasibility and availability of alternative technologies in Singapore and the region. In the next phase of its work, GFIT will soon release the criteria and thresholds and criteria for the remaining five sectors for public consultation, and aims to finalise the full taxonomy in 2023.

The Indonesian taxonomy published in 2022, although based on the concept of **traffic light system**, differs in the approach towards defining the categories. Green activities have to: do no significant harm, apply minimum safeguards, provide a positive impact on the environment and align with the environmental objective of the taxonomy, yellow: do no significant harm, and red entail harmful activities. In this context, activities labelled yellow were designed to ensure that they comply with regulations and best practices rather than with a transition objective in mind.

The EU transition taxonomy concept has been put forward by the Platform on sustainable Finance in March 2022. It establishes three performance levels, with the middle one – amber category – being for activities that neither fail the TSC for DNSH, nor can be classified as substantially contributing to the environmental objectives. The activities in the Amber Transition category are classified as part of the intermediate transition, provided performance continues to improve to stay out of the significantly harmful performance category.

The **Working Group on Sustainable Finance Taxonomy in Latin America and the Caribbean** (LAC Taxonomy Working Group), constituted by the UNEP and its Finance Initiative (UNEP FI), World Bank Group, IMF, ECLAC, UNDP, IDB, CAF, FAO, and the European Commission, as an external technical advisor. The LAC Taxonomy Working Group is developing a Common Framework of Sustainable Finance Taxonomies for LAC, which establishes a set of guiding principles for taxonomies in the LAC region to ensure harmonisation and interoperability with taxonomies globally. The LAC Common Framework focusses on climate change objectives, as a first phase, and prioritises sectors that have an importance for these objectives. It additionally provides guidance for activity inclusion based on substantial contribution, transition, enabling and those with low performance. Finally, the LAC Common Framework provides options and pathways for selection of metrics for key priority sectors for the climate objectives.

Other:

The Transition Pathway Initiative introduced a **five-level assessment approach**, through which it evaluates to what extent and how pro-actively the company has addressed the issues related to “governance of greenhouse gas emissions and the risks and opportunities arising from the low-carbon transition”. While companies being at Level 0 are perceived as idle, those at Level 4 are being strategically prepared to face the challenges and realise the opportunities arising from the decarbonisation of the economy. The interim levels are for companies that have yet to develop a comprehensive carbon management approach.

ACT initiative uses a ranking system to evaluate the alignment of a company’s transition with the requirements of the low-carbon economy. The framework assigns weightings to each group of indicators (e.g. targets, management) and offers a detailed quantitative and qualitative evaluation of individual indicators. The system allows not only to verify individual components of the entity’s strategy, but to also assess the overall transition performance of the transition efforts.

Climate Bonds Initiative is working on proposals to recognise two transition categories in its certification scheme: one for those aligned with sector specific criteria and pathways today and with plans to remain aligned going forward; and another for those non-aligned with sector-specific criteria today, but whose transition plans demonstrate they will align by 2030 and remain aligned going forward.

Principle 4: The climate mitigation transition must be compatible with other environmental and social goals (TARGETS)

4.1. Transition criteria can marry multiple objectives

A successful decarbonisation transition must support and enable livelihoods, increase economic opportunity and be compatible with the restoration of a resilient healthy ecosystem. That is, it must be part of a wider just and sustainable transition towards the realisation of the Sustainable Development Goals.

At a minimum, this means avoiding harming the achievement of other objectives – i.e. while dealing with a climate mitigation transition, there should not be unintended consequences, such as toxic pollution or net job losses.

Ideally, a transition should seek to maximise co-benefits – i.e. to actively promote social inclusion, economic opportunity, resilience and a variety of co-benefits.

4.2 The transition has to be just

Ensuring a ‘Just Transition’ is important for all countries at all levels of development and for all economic sectors. While the net-zero transition is associated with new opportunities and benefits, these are not always distributed equally. Some are set to be more exposed to economic losses resulting from ambitious climate action than others.

Therefore, in order to be successful, the transition process should take into account measures that aim to support vulnerable communities and safeguard social and economic opportunities in a way that ensures that no one is left behind and the transition is fair and inclusive to everyone concerned. Entities’ transition plans should accordingly identify and address impacts for vulnerable communities or workers.

This should be part of the broader dialogue and cooperation between financial market participants and public authorities in charge of defining a comprehensive strategy to address negative economic and social implications.

Out of the reviewed frameworks, only a few documents highlight the importance of taking into account other objectives (e.g. just transition, SDGs) than climate change mitigation in transition plans. The stocktake shows that different approaches are being taken:

- Exclusion list (e.g. CPI) to ensure that harmful activities are not undertaken by entities;
- Requirement of a broader sustainability strategy (e.g. ICMA) to ensure that any negative externalities to the environment and society are avoided and that the company contributes to the SDGs;
- Do no significant harm (DNSH) principle (e.g. G20 SFWG, EU Taxonomy) – that requires the entity to avoid any negative contribution to other sustainability goals;
- Minimum safeguards (e.g. EU Taxonomy) – requiring a due diligence process to avoid any negative impacts and to comply with the human and labour rights standards;
- Active proof (e.g. GFANZ) to provide detail on how a given transition strategy supports the just transition, for instance.

While taxonomies most commonly apply the DNSH principle and introduce minimum safeguards, other frameworks refer to a mix of different options. Not many of the frameworks offer detailed guidance on the exact requirements for these measures. Commonly these are just high-level conditions. However, the situation is different when it comes to taxonomies. Some of them have precise requirements for DNSH for each of the environmental objectives and for each of the activities analysed.

4. Delivery Principles - demonstrating the ability to deliver on targets

The section outlines the principles required to ensure the credibility of the transition, i.e. to assess the ability to deliver on the established transition targets. While many of the frameworks reviewed addressed this from the perspective of a company or portfolio, many of the principles derived from these frameworks and presented below can and should also be applied to economic activities. The most relevant to each are illustrated in the summary diagram. The relevance of these principles to external bodies providing assessment or certification services with respect to the robustness of the company or financial institution’s ability to deliver on its transition targets has also been included.

Principle	Sub-principle	Relevance for...		
		Company	Portfolio	Assessor
5. Comprehensive Transition Plan	5.1 Sufficient information	✓	✓	
	5.2 No material omissions	✓	✓	
	5.3 Covers short-, medium-, long-term	✓	✓	
6. Internal governance	6.1 Board oversight	✓	✓	
	6.2 Alignment with other policies	✓	✓	
	6.3 Internal monitoring	✓	✓	
7. External engagement	7.1 Supply chain management	✓		
	7.2 Client engagement		✓	
8. External reporting	8.1 Transparency	✓	✓	
	8.2 Verification	✓	✓	
	8.3 Communication	✓	✓	
9. Standardised assessment	9.1 Transparency and consistency			✓

Principle 5: The transition plan is sufficiently comprehensive to be credible (DELIVERY)

To have confidence in the organisation's ability to deliver change, financial market participants and other stakeholders are looking for transition plans that are comprehensive enough to demonstrate the ability and willingness of the organisation to achieve decarbonisation targets, but concise enough not to overwhelm. They should also be concrete enough to highlight the actions that will be taken (particularly in the short term), but flexible enough to enable tailoring to unknown circumstances ahead. In this context, the transition plan should aim to operationalise targets (see chapter 3) into an actionable roadmap, against which, with the use of the right KPIs, the company can assess its progress and if needed optimize its transition efforts. At the end of the day, it is action, not promises, that will count.

5.1. Plan provides sufficient information to assess delivery capability

Transition plans need to include both concrete transition targets and a credible strategy to meet those targets. The box below demonstrates how this has been articulated by a range of transition initiatives. More specifically, the key elements of credible transition plans include, but are not limited to:

- Information on GHG related KPIs:
 - The short- medium- and long-term GHG KPIs set
 - The benchmarking of the KPIs against the selected science based 1.5-degree sector targets and pathway(s) appropriate to that activity/ company to illustrate how they align with externally-set targets and pathways (per principle 1.1)
 - How they compare to any national targets (per principle 1.2)
 - Full transparency over the use of offsets
 - GHG accounting methodologies to be documented.
- A business plan including:
 - The strategic narrative on how the business will evolve, including but not limited to any organic growth, mergers and acquisitions, divestments or retirements (subject to confidentiality considerations).
 - The risks and opportunities associated with that strategy, including a sensitivity analysis of risks to delivery and their impact
 - Concrete action that will be taken in the short and medium term. These will very much depend on the activities or the company, but for example might include capital investments to change energy source, update production processes, changes in procurement/supplier relationships, staff training etc.
 - Longer term actions planned to deliver the sustained decarbonisation over the long term, including but not limited to advance plans to deploy transformational technologies, where appropriate, retrofits of existing facilities, new facilities, etc.
- Evidence that the business plan is integrated into the organisation's finance plan and includes:
 - The needs for and commitments to CapEx and potentially Opex needed to deliver the transition and associated transition targets. This includes any necessary Research & Development expenditure²⁶.

²⁶ For capital intensive activities and actors, projected CapEx spend is a commonly sought indicator, but for low-capital intensive sectors such as the financial sector, it is less relevant. However, the value of detailed information on forecast Opex as an indicator of future transition capability remains debated.

- Information on changes in revenue projections and the balance sheet forecasts that result from the transition strategy .
- An overview of governance and enabling processes:
 - Governance structures including Board oversight and internal policy alignment (see Principles 6.1 and 6.2)
 - External engagement with key stakeholders, including supply chain partners for companies and activities, and client engagement for portfolio management (see Principle 7)
 - Any non-GHG KPIs relating to the business plan, finance plan or enabling environment
- Information on other environmental and social impacts:
 - How the delivery on the GHG KPIs and other non-GHG KPIs will impact (positively or negatively) other key environmental and social goals (per principle 5.1)
- Monitoring and reporting:
 - The process for internal monitoring (per principle 6.3)
 - The process and timing of external reporting on progress and updates to the transition plan (per principle 8).

Figure 7: Definitions of Transition Plan

CDP “A climate transition plan is a time-bound action plan that clearly outlines how an organization will achieve its strategy to pivot its existing assets, operations, and entire business model towards a trajectory that aligns with the latest and most ambitious climate science recommendations, i.e., halving greenhouse gas emissions by 2030 and reaching net-zero by 2050 at the latest, thereby limiting global warming to 1.5oC.”

EFRAG ESRS E1 “Aspect of an undertaking’s overall strategy that lays out a set of targets and actions supporting its transition toward limiting climate change to 1.5°C.”

GFANZ “a set of goals, actions, and accountability mechanisms to align an organization’s business activities with a pathway to net-zero GHG emissions that delivers real-economy emissions reductions in line with achieving global net zero.”

IGCC "A climate transition plan (or climate transition action plan) is a time-bound plan that outlines how a company will align its business model with its decarbonisation goals.”

ISSB “An aspect of an entity’s overall strategy that lays out the entity’s targets and actions for its transition towards a lower carbon economy [...].”

TPT “A transition plan sets out how an organisation will adapt as the world transitions towards a low carbon economy. It should set out a) high-level targets the organisation is using to mitigate climate risk, including greenhouse gas reduction targets (e.g. a net zero commitment), b) interim milestones, and c) actionable steps the organisation plans to take to hit those targets.”

5.2. The transition plan has no material omissions

Activities that are relatively neutral in terms of emissions do not need to be addressed in a company's transition plan. Similarly, investments in activities that are relatively neutral in terms of emissions do not need to be addressed in a portfolio transition plan²⁷. Taking this to its logical conclusion, entities or portfolios which are entirely made up of emission neutral activities and investments do not need to deliver transition plans. This may apply to some service sector activities with low emission footprints. Arguably though, even traditionally 'green' companies such as solar pure-plays or forestry enterprises may be non-neutral when full lifecycle emissions and supply chain factors (scope 3 emissions) are taken into account. For all material activities (or associated investments) that are non-neutral, in line with Target Principle 3, all material scope 1, 2 and, as data becomes available, material scope 3 emissions of the entity, portfolio or activity being assessed need to be accounted for in the GHG KPIs set, and therefore by extension need to be addressed in the business plan, finance plan, enabling environment and all other aspects to be addressed in the transition plan listed in Delivery Principle 5.1.

This focus is purely pragmatic to ensure attention is focussed on key drivers of emissions, rather than needing to account for and address every last tonne of GHG.

Where a financial instrument is targeted towards only part of an entity's activities (e.g. a Sustainability Linked Bond (SLB) where the KPIs relate to a subdivision of a company, or a use-of-proceeds bond relating to one sub-division of a company), and the excluded part is also the source of material emissions, the question of whether the transition plan should focus only on the activities linked to the financial instrument or the wider entity is an interesting one. Investors favour coverage of the whole entity. For example, investors in a use-of-proceeds bond financing new renewable energy generation facilities issued by a predominantly fossil fuel energy generation company often look for broader information and evidence of the issuer's company-wide transition to give some assurance that the green/ transition loan or bond is not greenwashing ongoing harmful activities.

5.3. The transition plan covers the short-, medium- and long-term

For organisations, the plan should cover the full timeframe, breaking this down to specifically address short-, medium- and long- term milestones. The short term might be defined as the first 3-4 years (aligned with many company planning processes), the medium term the following 5-10 years (and therefore crossing and addressing the key milestone date of 2030 by when global emissions should be halved), and long term for the extended period to achieve net zero emissions (which will vary by sector, but collectively requires net zero emissions by mid-century). Short term targets and plans should be highly detailed, but it is recognised that less detail will be possible towards 2040 and onwards.

Where the transition plan is linked to a fixed-term financial instrument, such as an SLB, the transition plan for the issuing entity should still address the full timeframe to which the issuing entity will reach net zero emissions, and incorporate associated short-, medium- and long-term targets over that timeframe. That is, it should not be restricted to the term of the instrument. This will give assurance that the issuing entity is fully committed to the net zero goal.

Principle 6: Put in place strong internal governance (DELIVERY)

A well-developed transition plan is just the start. Strong and supportive internal governance frameworks are essential to be able to deliver those plans, particularly over the longer timeframes that will be needed

²⁷ Given the importance of also not harming other objectives/targets, these portfolios should of course avoid as much as possible harming e.g. the social / human rights goals.

for most organisations. Support and an enabling environment for the transition will need to be ingrained in the organisation.

6.1. Board level oversight

Board level oversight and responsibility for setting and delivering the transition plan sends a clear signal on the importance attached to the plan. This is important internally to ensure the transition is not sidelined amidst other organisational priorities. This responsibility can only be effectively carried out if the Board has the knowledge and expertise to guide the definition and delivery of a durable and ambitious plan.

6.2. Internal policy alignment

Delivery of the transition plan will run much more smoothly if company policies and processes are aligned, for instance when product sourcing policies that prioritise low carbon alternatives, or hiring policies that by default seek environmental/transition expertise. This will ensure that the transition becomes ‘mainstream’ and the default position across the organisation.

6.3. Internal monitoring and correction mechanisms in place

The transition will not be smooth. It will likely not go entirely according to plan. Companies’ ability to deliver on their targets may be significantly impacted (positively and negatively) by events both within and outside of their control. Hence, they could either exceed or fall behind their KPIs. What is important is that this is anticipated, monitored and that corrective actions are taken as needed. Processes should be in place to ensure that performance is monitored on an ongoing basis, and targets and delivery strategies are recalibrated as needed to reflect changing operating conditions and market developments (e.g., new technologies coming online sooner or later than expected). Such recalibration should aim to tighten stringency where possible and ensure continuous improvement. In essence, the transition plan must be a living strategy, subject to regular re-evaluation and updating.

Figure 8: Elements relating to governance included in a number of frameworks that are not put forward here

<p>Remuneration linked to delivery of the selected KPIs</p> <p>Several frameworks argue that creating monetary incentives linked to climate goals has the potential to increase progress towards decarbonisation and is a manifestation of the more advanced management practices (e.g. ACT, TPI). Similarly, both EFRAG and ISSB ask in the context of disclosures whether and how the remuneration process for the Board and management is linked with climate related considerations.</p> <p>A review of transition finance guidance carried out by GFANZ shows that many frameworks identify the need to link remuneration to the delivery of the selected KPIs, but that there are questions as to how to structure it effectively and to what extent compensation should be dependent on the successful implementation of the transition plan.</p>

Principle 7: Promote active external engagement to create enabling environment (DELIVERY)

No organisation works in a vacuum. Its performance is affected by its relationships with suppliers, customers, the policy environment it operates within, cost and availability of finance, etc. Delivery of a transition plan will require an organisation to engage with their stakeholders to align priorities and objectives across their organisations behind a shared decarbonisation goal.

7.1. Supply chain engagement

Companies need to account for their material scope 3 emissions, both upstream and downstream. Doing so requires engaging with suppliers with the objective of sourcing low carbon inputs, and engaging with customers to move into markets and to organisations similarly committed to ambitious zero carbon trajectories. For example, a food manufacturer could look to source agricultural products that are not associated with deforestation at a minimum, and ideally (and likely over time subject to the suppliers' own transition) to farms that are net sequesters of carbon. A shipping freight operator could look to move away from a business model built on transporting fossil fuels.

7.2. Client engagement by financial market participants

The transition of financial institutions requires decarbonizing investment portfolios over time. Ongoing engagement with clients and investees to support them if and as they decarbonize their portfolios, activities, and/or divest from high emitting sectors is crucial.

While divestment may improve the emission metrics of the divesting entity, its overall impact might be more limited with respect to reducing overall emissions if the divested activities or companies are bought or supported by others. Also, sectors with high-emitting assets are typically those that need the most investment to transition to low-/no-GHG emissions technology. Withdrawing finance from high-emitting assets and sectors may limit the possibilities of decarbonizing them and therefore whole-economy. The timing and balance of divestment strategies may have significant wider reaching implications for the economy, society and financial stability.

Engagement is critical to ensure an orderly and rapid transition, and arguably more so when companies have a difficult and costly transition to make. This is also in the financial sector's interest to enhance its resilience by lowering transition risks in their balance sheets. Thus, it is important for financial institutions to build resilient and sustainable business models, engaging with their clients and investees, as well as supporting their efforts to respond to climate-related opportunities and risks.

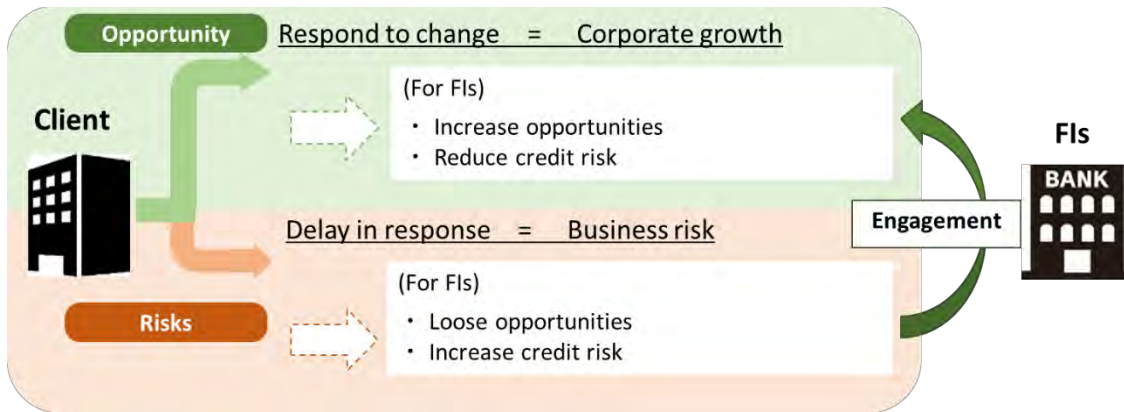
This engagement must be deep and effective. Engagement plans are required clearly setting out who they will engage with, the objectives of engagement, the strategy, the methods, and the monitoring. This includes but is not limited to:

- Using both public and private engagement channels to maximize influence;
- Establishing clear requests to those they are engaging with, requests that are both practical and economic as well as aligned with 1.5 degree goals, as well as applied consistently across supply chains;
- Maximizing influence and resources through collaborative and coordinated engagement action with others;

- A process of monitoring and recalibrating the strategy should it prove ineffective.

However, extended dialogue with no discernible impact is not meaningful to advance the transition. For the credibility of the engaging institution, consideration also needs to be given to the timing and balance of engagement and divestment.

Figure 9: Relationship between opportunity/risk of clients and financial institutions



(Source) Supervisory Guidance on Climate-related Risk Management and Client Engagement (FSA, July 2022)²⁸

Figure 10: Relationship between opportunity/risk of clients and financial institutions (FIs)

Policy engagement/lobbying and peer engagement/membership of trade unions (companies and investors)

The frameworks assessed see policy engagement/lobbying as both a potentially positive or negative indicator of an organisation’s commitment to their transition depending on the alignment of the lobbying position with transition plans.

Lobbying often has a relatively low weight in the mix of factors assessed when determining the credibility of transition commitments. While, it could be assumed that organisations who have a robust transition plan and associated KPIs that have been publicly disclosed would not jeopardise their credibility by engaging in driving policies that are in contravention to their stated low carbon vision, this is not always the case. Some frameworks such as ACT or TPI thus propose some safeguards, e.g.

ACT: “The company has a policy on what action to take when industry organisations to which it belongs are found to be opposing “climate-friendly” policies”

TPI: “Commitment to ensuring that direct lobbying activities are aligned with and support the decarbonisation target”

These safeguards nonetheless can be difficult to assess, making them less useful in a framework against which organisations will be assessed.

²⁸ [Publication of "Supervisory Guidance on Climate-related Risk Management and Client Engagement" \(fsa.go.jp\)](https://www.fsa.go.jp/en/publication/20220701-01)

Principle 8: External reporting and engagement (DELIVERY)

External reporting is well established in the sustainable finance markets and several jurisdictions/initiatives are recommending or developing mandatory ESG reporting. Providing transparency to financial market participants and other stakeholders creates an expectation on their part and, by extension, a form of commitment by the organisation to deliver. More broadly, providing transparency enables scrutiny from any interested party, including but not limited to organisations dedicated to monitoring environmental commitments and calling out good and poor behaviour.

8.1. Comparable transparency over transition plans

Organisations should publicly disclose their transition plans in a way that makes them comparable (as described in Delivery Principle 1, Element 1.3). Further, as the transition is a moving instrument, external reporting on those plans should be done on annual basis. These annual reports should include any progress against key KPIs, progress against identified actions in the plan, and if necessary, any updates to the plan since the last reporting (to reflect past, current or future changed conditions and/or simply to provide more details on short term actions given the updated timeline).

8.2. Verification

The credibility of disclosed information can be significantly bolstered by a verification assurance report from an independent, external verifier with relevant expertise, such as an auditor or environmental consultant. Specialist GHG audits may also be required to verify claimed emissions reductions. External verification is now commonplace in the sustainable finance market and seen as essential by many financial market participants.

8.3. Interactive communication mechanism between stakeholders

Since there are still few examples of best practices related to transition finance, efforts by all stakeholders need to be refined through dialogue from a variety of perspectives. The interactive process of transition planning by companies and evaluation by financial market participants and financial institutions can contribute to strengthening the credibility of these efforts and the capacity of all parties involved. Establishing a communication mechanism through disclosure or direct dialogues is important to facilitate this interactive process.

Principle 9: Credible assessment mechanisms (DELIVERY)

All of the above describes what is needed for the setting of robust targets, and the establishment and re-evaluation of credible plans and actions to deliver on those targets. However, stakeholders can find it difficult to deal with the evaluation of transition plans in practice, as this requires subjective assessments of the quality of each of the elements within the transition plan and a weighting to be given to each of those elements.

9.1. Transparent and consistent assessment mechanism/certification schemes are needed

As noted above, external verification is now commonplace in the sustainable finance market and seen as essential by many investors. A number of tools and services are emerging to assess the credibility of transition plans. For the assessment of company transitions, this includes ACT, SBTI's Net Zero Standard, TPI, or CBI's planned certification scheme.

Such tools and services play a critical role in ensuring the integrity of the transition and by extension in supporting the growth of transition finance. At a minimum, it is essential that the assessment methodologies they employ are robust and transparent. Ideally, those methodologies should have a high degree of commonality to build confidence in the market and remove complexity and subjectivity and ultimately reduce the chances of reaching a different opinion on whether a specific transition plan is robust and credible²⁹. For example, the ACT assessment methodology gives a rating score. TPI assessments employ a five-level classification system. Some portfolio approaches talk about 'exact non alignment'. A mapping of these assessment methodologies would be beneficial.

²⁹ Some initiatives are being taken to enhance transparency of the methodologies by external reviewers. IOSCO (2021) published a report and set of recommendations in relation to the providers of ESG ratings and data products. Based on this IOSCO's recommendation, India (SEBI) has proposed regulation and Japan (FSA) is developing Code of conduct for ESG rating providers, which will also focus on "issuer pay model" of in which the company issuing the bonds bears the costs of issuing the bonds, including transition bonds, and assesses the consistency with various guidelines on the bonds to be issued.

5. Commonality of these principles across the landscape of transition finance frameworks

Currently there are over 20 frameworks and guidelines that focus on transition finance³⁰, and even more specifically, on different components of the process of identification of transition activities and their implementation.

The table below summarises how the Transition Finance Principles put forward in this report are represented across the landscape of these frameworks and tools. In the mapping exercise only the text of the guidelines was taken into account and the assessment does not cover the broader context e.g. level of ambition of different countries or other documents regulating some of the dimensions of the guidelines.

As mentioned in the earlier chapters, the landscape analysis shows that while there is broad consistency in overarching principles across most of the frameworks, there are notable differences at the more granular level – particularly with regards to the described level of detail, stringency and application of the principles in practice.

Nevertheless, it is important to emphasise, that:

- most of the guidelines incorporate the two dimensions addressed in the principles, namely the Targets and the Delivery of those targets.
- while only a few guidelines explicitly refer to the principle of inclusivity (Principle 3), most can be used across industries including hard to abate sectors.
- very few guidelines place transition plans in the context of the broader objectives outlined by the Sustainable Development Goals (per Principle 4). Such a well-rounded approach is generally only currently seen in taxonomies. In other cases, guidelines refer to Just Transition considerations and have limited or no details with regards to environmental objectives other than climate change. However, many frameworks and tools focused on climate change mitigation note that they are in the process of being expanded to include other objectives. All efforts around climate action must seek to maximise synergies and leverage co-benefits with other areas of environmental protection.
- there are not many frameworks that focus on the assessment of transition plans. While many frameworks identify components of such plans, the level of detail available does not allow to differentiate between more robust and basic transition plans. Such thinking is nonetheless important for frameworks from initiatives whose core aim is to provide transition validation or assessment services.

Note on coding in the table:

³⁰ This overview is non-exhaustive and does not include frameworks published after summer 2022.

To accommodate the differences in objectives and scopes of available guidelines, the mapping presented in the table focuses predominantly on identification of common approaches

Disclosure category/ transition plan component (e.g. requirement to say whether the pathway is 1.5 or 2, rather than requirement to comply with 1.5)	X
not applicable	NA
not addressed	
disagree	
agree but no details	
in depth coverage	

Table 4: Mapping of commonality of principles across the landscape of transition finance frameworks. Focus on transition of activities

Focus: activities	Taxonomies (transitional activities)		Taxonomies (traffic lights)		
	EU	South Africa	EU PSF	ASEAN	Indonesia
Principle 1: The (collective) goal is to keep global warming to 1.5 degrees Celsius (TARGETS)	Green	Orange	Green	Orange	Blue
Principle 2: Targets must embed deep, rapid and sustained change (TARGETS)	Green				Orange
Principle 3: Transition is inclusive (TARGETS)	Blue		Green		
Principle 4: Climate mitigation transition must be compatible with other environmental and social goals (TARGETS)	Green				
Principle 5: Transition plan is sufficiently comprehensive to demonstrate transition credibility (DELIVERY)	NA	NA	Green	NA	NA
Principle 6: Put in place strong internal governance (DELIVERY)	NA	NA	Green	NA	NA
Principle 7: Promote active external engagement to create enabling environment (DELIVERY)	NA	NA	Blue	NA	NA
Principle 8: External reporting and engagement (DELIVERY)	NA	NA	Green	NA	NA
Principle 9: Standardised assessment mechanisms (DELIVERY)	NA	NA	Blue	NA	NA

Table 6: Mapping of commonality of principles across the landscape of transition finance frameworks. Focus on transition of entities.

Focus: entities	Transition plans guidelines				Financial Institutions focus			Portfolios in Transition		
	IGCC	UK	CDP	TCFD (transition plans)	GFANZ (financial institutions)	UNEP FI	CPI	GFANZ (Portfolio Alignment Metrics)	Swiss Climate Scores	PACTA ³¹
Principle 1: The (collective) goal is to keep global warming to 1.5 degrees Celsius (TARGETS)										
Principle 2: Targets must embed deep, rapid and sustained change (TARGETS)				X				X		
Principle 3: Transition is all-encompassing (TARGETS)										
Principle 4: Climate mitigation transition must be compatible with other environmental and social goals (TARGETS)										
Principle 5: Transition plan is sufficiently comprehensive to demonstrate transition credibility (DELIVERY)								X		
Principle 6: Put in place strong internal governance (DELIVERY)										
Principle 7: Promote active external engagement to create enabling environment (DELIVERY)										
Principle 8: External reporting and engagement (DELIVERY)								X		
Principle 9: Credible assessment mechanisms (DELIVERY)								X		

³¹ Paris Agreement Capital Transition Assessment

Table 6: Mapping of commonality of principles across the landscape of transition finance frameworks. Focus on transition of entities.

Focus: entities	Issuers		Reporting			Sectoral pathways				Taxonomies (transitional activities)		Taxonomies (traffic lights)		
	ICMA	Japan ³²	EFRAG	ISSB (disclosures)	GFANZ (real economy sectors)	GFANZ ³³	SBTi (standard)	TPI	ACT	EU	South Africa	EU PSF ³⁴	ASEAN	Indonesia
Principle 1: 1.5 degrees														
Principle 2: Deep, rapid and sustained change			X	X										
Principle 3: Transition is all-encompassing			X											
Principle 4: Compatible with other env / social goals			X											
Principle 5: Transition plan is comprehensive			X	X	X	NA	NA	X		NA	NA		NA	NA
Principle 6: Strong internal governance			X	X	X	NA	NA	X		NA	NA		NA	NA
Principle 7: Active external engagement			X	X	X	NA	NA	X		NA	NA		NA	NA
Principle 8: External reporting			X	X	X	NA	NA	X		NA	NA		NA	NA
Principle 9: Credible assessment						NA	NA			NA	NA		NA	NA

³² METI, FSA, MOE “Basic Guidelines on Climate Transition Finance” (May 2021), see also

³³ (Draft framework for developing, interpreting and assessing sectoral net-zero pathways

³⁴ Note: The European Platform on Sustainable Finance Report on environmental transition taxonomy provides input on this topic, without prejudging any decision by the Commission on the matter.

6. Annexes: Detailed overview of state of play / stock take

This chapter presents the various ways through which taxonomies may enable financial market participants, companies and other economic actors to plan, disclose and implement their transition efforts. It also considers certain challenges with respect to the use of taxonomies for transition financing and proposes possible ways to address them and to strengthen the potential of taxonomies further to support the transition and achieve the goals set out in the Paris Agreement.

Economic activities in transition

Framing of the transition in taxonomies

This section presents the various ways through which taxonomies may enable financial market participants, companies and other economic actors to plan, disclose and implement their transition efforts. It also considers certain challenges related to the use of taxonomies for transition financing and proposes ways to address them and to strengthen the potential of taxonomies to enable the transition and achieve the goals set out in the Paris Agreement.

Framing the transition in taxonomies

Most of the currently existing taxonomies are labelled and positioned as either green taxonomies (e.g. China, Colombia, Indonesia, South Africa) or sustainable finance taxonomies (e.g. ASEAN, EU) although there are significant overlaps between the terms.

Most publicly available taxonomies already include some narrative on the transition, and many countries and regions incorporate ‘transition activities’ into their green/sustainable taxonomies (ASEAN, EU, Indonesia, Malaysia, Singapore, South Africa, South Korea, Vietnam). The EU, for example, puts many ‘transitional activities’ such as cement and steel into its the broader sustainable taxonomy with thresholds that are ‘green’ but are not currently near zero and will ratchet down over time. The ASEAN approach is to separate green and transition using a traffic light system, although this is purely conceptual at this stage.

A transition taxonomy is not a universally agreed term but generally refers to a taxonomy that guides activities and sectors to reach alignment with the Paris Agreement.

Given that almost every activity and sector will have to make some kind of transition, trying to draw a distinction between activities that belong in a transition taxonomy vs. a green one may not be a useful exercise and, instead, that transition can be seen as a subset of a wider green/sustainable finance.

Table 4: Approaches to defining the transition in taxonomies³⁵

Transition concept	Approach	Examples
What are transition activities?	Usually seen as high-carbon activities where the transition to net zero will occur over time	EU , South Africa , Vietnam]
Role in the low-carbon economy	Most taxonomies frame activities based on their role in a low carbon economy - whether their presence in 2050 will be compliant with the Paris Agreement aligned transition of the economy.	EU, South Africa , Vietnam
Lock-in	Explicit provisions exclude the lock-in of high carbon technologies – that is, they aim to prevent investments that prolong the life-time and existence of emissions intensive assets and activities beyond the timeframes that are compliant with Paris Agreement aligned transition pathways.	EU, South Africa, Malaysia
Transition Away Vs. Transition Within (decarbonisation)	Most taxonomies identify activities recognise both activities that ‘transition away’ (e.g. renewable energy replacing gas) as well as activities that require a ‘transition within’ – i.e. need to be decarbonised as there is no low carbon replacement.	EU, South Africa , Vietnam [,
Interim activities	Some taxonomies include interim activities/measures for the short term which are not part of a low carbon economy	South Africa , South Korea
Phase out	Limited detail is provided in taxonomies to date beyond conceptual.	South Africa

Source: Climate Bonds Initiative, 2022

Types of transition activities in taxonomies

Taxonomies can cover a range of different types of activities in the transition process.

The Climate Bonds paper Financing Credible Transitions identifies 5 categories of transition as well as enabling activities that cut across all definitions:

³⁵ Based on a limited selection of taxonomies

	Near Zero	Pathway to Zero	No pathway to zero	Interim	Stranded
Definition	<ul style="list-style-type: none"> Activities already at or near net-zero emissions that may require some further decarbonisation but not a significant transition - e.g. wind power generation. 	<ul style="list-style-type: none"> Activities needed beyond 2050 and have a clear 1.5-degree decarbonisation pathway to 2050 – e.g. shipping. 	<ul style="list-style-type: none"> Activities that are needed beyond 2050 but at present, do not have a clear 1.5 degree decarbonisation pathway to 2050 – e.g. long-haul passenger aviation 	<ul style="list-style-type: none"> Activities currently needed but should be phased out by 2050 – e.g. production of energy from municipal waste. 	<ul style="list-style-type: none"> Activities that cannot be brought into line with global warming targets and have an alternative, low-emissions substitute – e.g. electricity generation from coal or solid fossil fuels.
Impact on transition	<ul style="list-style-type: none"> Activities that are supporting creation of the demand for zero-emission solutions – transition target setting 	<ul style="list-style-type: none"> Activities that support the transition through reduction of the negative impact on environmental objective e.g. by supporting phaseout of GHG emissions, ensuring credibility and ambition of the transition process 	<ul style="list-style-type: none"> Limited role in the transition 	<ul style="list-style-type: none"> Activities that help to manage and fast-track decline of emissions of intensive economic activities in the short term 	<ul style="list-style-type: none"> Activities that support transition away from environmentally harmful activities through decommissioning and closure
Selected examples	<ul style="list-style-type: none"> All currently existing taxonomies 	<ul style="list-style-type: none"> The EU, Vietnam, South Korea 	<ul style="list-style-type: none"> None of the existing frameworks 	<ul style="list-style-type: none"> ASEAN, Indonesia 	<ul style="list-style-type: none"> None of the existing frameworks
<p>Enabling Activities cut across all of the categories above. Within each category, there are activities whose biggest contribution to transition will not be their own decarbonisation, but the decarbonisation they enable – e.g. manufacture of wind turbines or metals recycling or carbon capture and storage.</p>					<ul style="list-style-type: none"> The EU, South Africa, ASEAN

CBI categories

For some high-emitting activities, feasible low- or zero-emissions solutions are available or credibly envisaged within a reasonable timeframe, and the transition should be towards those solutions. For others, there are no such solutions, but substitute low-emission activities exist or are in development and so the transition should be away from those activities and towards the better alternatives. Economic activities are categorised based on their role in a global, economy-wide transition to the Paris Agreement targets. Specifically, this categorisation depends on:

- how long the product or service delivered by the activity will be needed (which depends in turn on the availability of low-carbon substitutes); and
- the viability of decarbonising the activity so that it aligns with the global warming limits targeted in the Paris Agreement, taking into account its scope 1, 2 and 3 emissions

5 distinct categories for economic activities are identified:

1. Near zero: activities already at or near net-zero emissions that may require some further decarbonisation but not a significant transition - e.g. wind power generation.
2. Pathway to zero: activities needed beyond 2050 and have a clear 1.5-degree decarbonisation pathway to 2050 – e.g. shipping.
3. No pathway to zero: activities that are needed beyond 2050 but at present, do not have a clear 1.5 degree decarbonisation pathway to 2050 – e.g. long-haul passenger aviation.
4. Interim: activities currently needed but should be phased out by 2050 – e.g. production of energy from municipal waste.
5. Stranded: activities that cannot be brought into line with global warming targets and have an alternative, low-emissions substitute – e.g. electricity generation from coal or solid fossil fuels.

Enabling Activities cut across all of the categories above. Within each category, there are activities whose biggest contribution to the transition will not be their own decarbonisation, but the decarbonisation they enable elsewhere. In other words, the goods and services they produce are essential to enable other activities to follow Paris aligned decarbonisation pathways – e.g. manufacture of wind turbines or metals recycling or carbon capture and storage. This indirect contribution to the transition is addressed in more detail later in this section.

How does a credible transition look for entities and activities falling into each category?

- For ‘Pathway to Zero’ activities: decarbonise as fast as possible along appropriate transition pathways.
- For ‘no pathway to zero’ activities: reduce emissions as much as possible without locking-in technologies that might prevent future rapid decarbonisation.
- For ‘Interim’ activities: phase them out in line with their future sunset date, but in the meantime decarbonise them as fast as possible along appropriate transition pathways.
- For ‘Stranded’ activities: phase them out, but at the same time take any measures that can deliver substantial emissions reductions without locking in those stranded assets and technologies.
- For enabling activities in any of these categories: the primary objective is simply that the activity makes a substantial contribution to facilitating another activity to follow an appropriate transition pathway. Their own decarbonisation is a secondary priority.

Taxonomies generally aim to provide guidance on economic activities that can be “environmentally sustainable”, thus supporting efforts needed to reach this environmental performance

In general, taxonomy thresholds are in line or anticipate policy measures and regulatory constraints that are inevitable to meet the Paris Agreement targets. In the case of activities that make a substantial

contribution to climate change mitigation, this means performance levels which substantially contribute to meeting Paris Agreement targets³⁶. Such performance criteria would help companies and financial market participants understand what level of environmental performance is eventually needed to achieve these targets.

Additionally, the EU Taxonomy introduced the concept of the ‘enabling activities’³⁷ across different sectors that has also been incorporated by some other taxonomies (e.g. South Africa). The substantial contribution of enabling activities is justified based on the notion that they enable implementation of other activities that are aligned with the framework of the given green/sustainable finance taxonomies (e.g. by providing critical materials to taxonomy-aligned activities.)

By identifying green and enabling activities, taxonomies support creation of the demand for zero-emission solutions. Taxonomies can provide companies with performance criteria at the level of economic activities, which allow them to progressively increase their share of “green” activities and seek financing for reaching these goals.

Transition considerations could be integrated by incorporating transition activities with credible decarbonisation pathways into sustainable finance taxonomies.

Beyond identifying activities (pertaining to all sectors of the economy) that are already low carbon, taxonomies may also identify those that are on a decarbonisation pathway that is aligned with the Paris Agreement cannot yet be performed in a way consistent with a net-zero economy but have a role to play in the net-zero transition. These activities could either:

- (1) Be on a transition pathway that is aligned with the Paris Agreement
- (2) support intermediate transitions i.e. help the activity that does not meet the threshold for substantial contribution to reduce their negative impact in the short term and transition towards meeting substantial contribution criteria in the medium – long term, or
- (3) support the transition away from environmentally harmful activities through decommissioning and closure

Transition activities on a pathway aligned with the Paris Agreement (1)

These are the activities for which there are no low-carbon alternatives, however they are decarbonizing in line with the Paris Agreement and the transition to net-zero economy. These activities in order to be classified as substantially contributing to environmental objectives (labelled as “transitional activities’ in the EU Taxonomy), are usually required to comply with a set of rules which ensure that they can be included in the green/sustainable taxonomies. Such conditions often include:

Transition activities to be approved only if there are no-low carbon alternatives | e.g. EU, Singapore, Vietnam,

³⁶ The EU taxonomy is based on the precautionary principle and the idea of making a substantial contribution, which is a high confidence threshold for environmental performance.

³⁷ Under the EU Taxonomy “An economic activity shall qualify as contributing substantially to one or more of the environmental objectives set out in Article 9 by directly enabling other activities to make a substantial contribution to one or more of those objectives, provided that such economic activity: (a) does not lead to a lock-in of assets that undermine long-term environmental goals, considering the economic lifetime of those assets; and (b) has a substantial positive environmental impact, on the basis of life-cycle considerations.”

Transition activities must not hamper the development of low-carbon alternatives | e.g. EU, Malaysia, South Africa

Transition activities have to comply with the DNSH | e.g. EU, South Africa, Vietnam,

Transition activities do not lead to a lock-in of carbon-intensive assets | e.g. EU, Malaysia, South Africa

Often, these activities are considered taxonomy aligned for a period of time before further performance improvements are required and available through, for example, new technological advances³⁸. Typically, although they are not low-carbon as of yet, the TSC set the level of ambition that ensures that they are the best on the market e.g. in the top 10%. The definitions and frameworks for these activities were predominantly designed with climate change mitigation objective in mind however, this does not preclude them from being relevant for other environmental objectives.

Intermediate transitions (2)

Many activities which are not yet on a pathway aligned with the Paris Agreement should continue to improve their performance and limit any potential negative impact on objectives. In general, taxonomies may also support intermediate transitions, in parallel with the transition toward Paris Agreement alignment. Under certain conditions (such as establishing, disclosing and monitoring a robust activity specific transition plan³⁹ to ensure continuous improvement in environmental performance), taxonomies may thus support transition opportunities that allow for e.g. transitioning out of significant harmful performance levels into intermediate performance levels or transitioning within the intermediate performance space through improving environmental performance.

These transitions are commonly referred to as amber/ yellow/ intermediate transitions. Often, they are associated with the frameworks that are structured around the concept of traffic light systems (e.g. ASEAN, Singapore, EU, Indonesia), with the middle category representing activities that do not cross the significant harm boundary, yet do not meet the requirements set for substantial contribution.

The EU Platform on Sustainable Finance recommends in its “Transition Finance Report” published in March 2022, subject to the establishment of criteria for sufficiently robust activity-specific investment plans, that the Taxonomy allow companies to count taxonomy-aligned investments towards meeting the TSC in the future (over 5 years and exceptionally over 10 years) and those investments should cover CapEx, OpEx and related finance.

However, economies such as Canada and South Africa are investigating the opportunities to develop framework solely dedicated to transition activities. Given the level of complexity of such task, the success of such efforts is dependent on more extensive work that is to be carried in upcoming months.

Taxonomies and the traffic-lights approach

³⁸ In the EU, for instance, “transitional” activities in Article 10(2) of the Taxonomy Regulation; they are subject to review every three years.

³⁹ The activity-specific investment plans are different from the corporate-level transition strategies that encompass the entire business model of a company. The strategy can help the company ‘tell its transition story’ but has no impact on mandatory capex KPI reporting.

The ASEAN taxonomy suggests a “stacked approach” in developing activity-level thresholds. There are multiple thresholds per activity at a single point in time, to cater for different starting points of entities across ASEAN undertaking a particular activity. The implemented solution allows for higher emissions for a limited period, while incentivising progression to lower emissions by retiring the less ambitious tiers over time.

Singapore Green Finance Industry Taskforce (GFIT) Taxonomy: On 12 May 2022, GFIT published for public consultation detailed thresholds and criteria for economic activities in the Energy, Real Estate, and Transportation sectors. This consultation is the second version of the taxonomy, building on GFIT’s earlier proposed taxonomy in January 2021. The proposed thresholds and criteria within can be used to classify an economic activity as green, amber (transition), or red (harmful), using a traffic light system, to differentiate its contribution to climate change mitigation. The proposed amber thresholds take into consideration the feasibility and availability of alternative technologies in Singapore and the region. In the next phase of its work, GFIT will soon release the criteria and thresholds and criteria for the remaining five sectors⁴⁰ for public consultation, and aims to finalise the full taxonomy in 2023.

The Indonesian taxonomy published in 2022 although based on the concept of traffic lights system, differs in the approach towards defining the categories. In this case green activities have to: do no significant harm, apply minimum safeguard, provide positive impact to the environment and align with the environmental objective of the taxonomy, yellow: do no significant harm, and red entail harmful activities. In this context, activities labelled yellow rather allow to ensure that comply with regulations and best practices than contribute to the transition objective.

The EU Platform on Sustainable Finance issued a report in March 2022 recommending the extension of the EU Taxonomy. It suggests three performance levels, with the middle one – amber category – being for activities that neither fails the TSC for DNSH nor can be classified as substantially contributing to the environmental objectives. The activities in the Amber Transition category are classified as part of an intermediate transition provided performance continues to improve to stay out of significantly harmful performance. The Platform report provides input on this topic, without prejudging any decision by the Commission on the matter.

Transition away (3)

As highlighted in the recommendations provided in the recent report on the extended environmental taxonomy published by the European Platform on Sustainable Finance, Taxonomies could also consider identifying activities that could support the transition by enabling the cessation of those activities (through decommissioning or closure) that cannot improve to a level of performance better than significant harm. By defining these activities, companies and financial market participants can get recognition for these highly necessary transition efforts.

Although taxonomies already encourage closure of activities that cause harm to environmental objectives, as the framework promotes these actors that have a greater share of taxonomy aligned activities, the explicit inclusion of decommissioning could make access to capital easier for such investments what could encourage fast-tracking of the phase-out process.

⁴⁰ Agriculture and Forestry/Land Use, Industrial, Information and Communications Technology, Waste/Circular Economy, Carbon Capture and Sequestration.

Challenges: Addressing the transition challenge through taxonomies may be a way to recognize companies/financial market participants efforts aimed at emissions reduction. Inclusion of transition activities may help companies with reporting on their progress with regards to the transition to low carbon economy. However, any such developments should preserve the integrity of taxonomies and address greenwashing concerns.

Especially, in the case of transition activities that aim to drive intermediate transitions, to avoid situations where any improvements only have a very limited impact on reducing total greenhouse gas emissions, clear and credible pathways, criteria, metrics, disclosure and monitoring procedures as well as demarcation between substantial contribution and transition through technical screening criteria need to be put in place.

Furthermore, given the interim nature of transition activities it is necessary to put in place a robust governance structure in order to ensure that the right level of ambition is maintained over time – to monitor any technological developments and social considerations to adjust taxonomies accordingly and drive the transition forward.

Additionally, the transition of a given activity often is closely related to the entity-level transition strategy – creating another level of complexity that needs to be addressed through the framework given that most taxonomies are activity-oriented. As already shown by the experiences of Canada and South Africa, this is a very complex exercise, that has not yet been implemented on the ground.

Taxonomies, when used for the disclosure purposes can be used by companies to plan and communicate their transition.

One key component of taxonomies, is the possibility to use them for the process of disclosure, allowing for addressing the key issue of having imperfect information in the market regarding sustainability performance of specific companies and the activities they undertake. The taxonomy is a tool available for financial market participants and companies for assessing the alignment of economic activities with a climate and environmental goal. The degree of present and future exposure to taxonomy-aligned activities or assets can help companies to better communicate on transition efforts. Taxonomy exposure can support target-setting and tracking progress.

From a transition finance perspective, for instance, the EU Taxonomy Regulation sets mandatory disclosure requirements of taxonomy-aligned KPIs (Turnover, CapEx and OpEx for Non-Financial Corporations [NFCs]). CapEx disclosures in particular help companies to better demonstrate their progress. CapEx disclosures of NFCs should be accompanied by a plan describing how these expenditures shall help align the activity with the taxonomy criteria and over which period with a 5 to 10 year window allowed. *(see also chapter II on transition plans and disclosure).*

Challenges: Mapping of taxonomy-aligned activities may pose challenges, especially in an early stage of the implementation process. These are mainly related to the collection and management of the data that is needed for disclosure as entity's are yet to adjust to the new regulatory frameworks. Technical screening criteria put forward by the taxonomies require very detailed information that has not always been tracked before, or only covered fragmentarily. Additionally it is necessary that the disclosures take into account specific metrics and formats as presented in the taxonomies that not all of the reporting companies have been applying.

Entity level transition

Transition Pathway

Current practices

Currently there is a number of public or private sector-led initiatives that focus on developing transition pathways. In establishing transition strategies the entities may refer to trajectories such as:

- scenarios developed by widely recognized, global institutions and initiatives (e.g. IEA; IPCC)
- scenarios developed by private-sector oriented initiatives (e.g. Science Based Targets Initiative (SBTi), Transition Pathway Initiative (TPI))
- science-based, Paris Agreement aligned national or industry-led strategies
- The Glasgow Financial Alliance for Net Zero (GFANZ) (2021) pointed out that there are two approaches towards designing transition pathways, a top-down one and a bottom-up one, and each has its own role and advantage.

	Philosophy	Examples
Top-down	<p>Work backwards from net zero globally, typically created by integrated models</p> <p>Allocate emissions across sectors and regions</p> <p>Consider interlinkages across sectors and structural shift</p> <p>Represent the ambition level to get to net zero</p>	<p>IPCC</p> <p>NGFS</p> <p>OECD</p> <p>IEA</p>
Bottom-up	<p>Work forward from where the sector stands today</p> <p>Focus on commercially feasible, scalable action</p> <p>Identify technology and policy step changes</p> <p>Represent the most feasible steps to get to net zero</p>	<p>WBCSD</p> <p>Climate Champions</p> <p>MPP</p>

Source: GFANZ (2021)

While the bottom-up trajectories are developed by industry-led organisations to offer practical view on what can be achieved from the sector’s perspective, they usually do not take into account the economy-wide perspective. However, given that different sectors have different potential to contribute to the decarbonization, either due to technological limitations or decarbonization needs, for establishing the transition strategy it is necessary to select pathways that help to devise decarbonization trajectory for a given sector also accounting for constraints stemming from the economy-wide carbon budget.

European Investment Bank (EIB)

The EIB published its PATH Framework in October 2021⁴¹. The PATH framework has certain key elements required for corporate alignment plans, for which, “in examining the low- carbon dimension, the clear starting point is the need to reduce global greenhouse gas emissions in line with the remaining carbon budget to maintain a reasonable chance to limit global temperatures to 1.5°C. ... In light of the need to

⁴¹ <https://www.eib.org/en/publications/the-eib-group-path-framework>

decarbonise rapidly in the critical decade and to achieve a balance between emission sources and sinks by 2050, the PATH framework is developed around the public disclosure of two crucial elements to a decarbonisation plan: 1. A mid-term, rolling, quantitative emission reduction target (e.g. 5 to 10 years into the future – i.e. aligned to the typical financial relationship through an EIB corporate loan); and 2. Options over a longer time horizon to achieve carbon neutrality towards mid-century.”

National-sector pathways/Sectoral policies

Decarbonisation pathways are typically developed at a sectoral level (see Annex Table1), while the Platform on Sustainable Finance (2021) recommends establishing activity-specific transition pathways to complement activity-level Taxonomy criteria.

Some jurisdictions such as the United Kingdom and Japan have taken steps toward developing national-sectoral pathways or sectorial policies behind them at national level.

United Kingdom

In October 2021, the UK Government published its policy paper, “Net Zero Strategy: Build Back Greener.” Its main purpose is to build on plans for a ‘green industrial revolution’ and to provide the starting point for the plans and proposals required to deliver ‘net zero’ carbon emissions by 2050. This strategy sets out sectoral policies and proposals (Power, Fuel supply and hydrogen, Industry, Heat & buildings, Transport, Natural resources, Waste & F-gases, Greenhouse gas removals) for keeping on track for carbon budgets, Nationally Determined Contribution (NDC), and then sets out the vision for a decarbonized economy in 2050. Whilst there are a range of ways in which net zero could be achieved in the UK, it set out a delivery pathway showing indicative emissions reductions across sectors to meet targets up to the sixth carbon budget (2033-2037). UK government also declared it will publish a transition pathway for the financial sector in 2023, setting out how the sector will transition to net zero by 2050.⁴²

Japan

In March 2020, the study group on environmental innovation finance within the Ministry of Economy, Trade, and Industry (METI) published a concept paper that illustrates principles on Transition Finance. To complement these principles, the METI, the Ministry of Environment, and the Financial Services Agency published “Basic Guidelines on Climate Transition Finance” in May 2021. The guidelines are developed in accordance with the aforementioned ICMA Handbook. The guidelines are aimed to serve as a reference for market participants on the issuance and use of transition finance. As per guidelines, issuers and fundraisers must articulate a transition pathway and assign targets aligned with the Paris Agreement. To frame a reference for companies, the METI and other relevant agencies are developing sector-specific decarbonisation roadmaps where effectiveness and availability of transitional and innovative technologies contributing to net-zero are described in timeline by 2050. To date, roadmaps for iron & steel, chemistry, electricity, oil, gas, paper & pulp, cement, shipping and aviation are formulated. By the end of March 2023, a roadmap for automobile sector is planned to be formulated.

⁴² <https://www.gov.uk/government/publications/fact-sheet-net-zero-aligned-financial-centre/fact-sheet-net-zero-aligned-financial-centre>

At the same time, it is important to highlight, that while for some sectors decarbonisation pathways are more-straightforward to establish, for others, especially these considered hard to abate, determining the transition pathways poses a substantial challenge and many initiatives still do not offer detailed insights on how these could look like. Additionally, transition pathways for a given sector can differ between initiatives due to different factors such as climate scenarios, methodologies for allocating emissions across industries etc., creating additional challenges for entities to select most appropriate trajectory.

In order to avoid greenwashing and to ensure the credibility of the selected pathways and targets, several institutions have issued guidance on what needs to be taken into account when organisations present their approach towards not only transition strategies but also more specifically transition trajectories. Selected common elements of the disclosure of transition targets and pathways have been summarized in the table below.

	Japan	ICMA	EFRAG ⁴³	IIGC ⁴⁴	CPI ⁴⁵
Coverage: scopes 1-3	X	X	X	X	X
Baseline values	X	X	X	X	X
Scenario utilised, and methodology applied (e.g. ACT,SBTi, etc.);	X	X	X	X	X
Short, medium, and long-term greenhouse gas reduction targets	X	X	X	X	X
Pathways and associated targets aligned with Paris Agreement / 1.5C trajectory	1.5C	PA (with 1.5 being suggested as being relevant)	1.5C	1.5C	1.5C
Targets formulated in intensity / absolute terms	Either	Both	Absolute values as a minimum	Either	Either (with absolute values being suggested to ensure credibility)

Some frameworks require further details or impose greater stringency e.g. interim targets should be set for every 5yr period, in line with global decarbonization targets emissions should halve by 2030, beside disclosing the choice of methodology they require further explanations to the reasoning behind the selection etc. However, across all of the guidelines and specifications, whether they have been

⁴³

https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FsiteAssets%2FED_ESRS_E1.pdf

⁴⁴ <https://igcc.org.au/wp-content/uploads/2022/03/IGCC-corporate-transition-plan-investor-expectations.pdf>

⁴⁵ <https://www.climatepolicyinitiative.org/publication/what-makes-a-transition-plan-credible-considerations-for-financial-institutions/>

established by regulators, financial market participants or think-tanks, the main objective is for the pathways and targets to be science-based.

Detailed recommendations on transition pathways and targets complement already well-established disclosure frameworks on climate metrics and targets that help to evaluate company's sustainability.

With regards to target setting, NZBA (Net-Zero Banking Alliance) and NZAOA (Net-Zero Asset Owner Alliance) published the target setting guidelines⁴⁶ and protocols⁴⁷ for their industries requiring first interim targets set for 2030 and 2025 respectively. The long-term targets shall go beyond alignment with the temperature goals of the Paris Agreement by setting targets for no/low overshoot 1.5C pathways and include a net-zero 2050 target. Members of those alliances have committed to set and disclose targets along with those guidelines and protocols, reporting annually on progress. The following are some examples of initiatives on disclosing metrics and targets.

Among others, the Task Force on Climate-related Financial Disclosures (TCFD) set targets and metrics as one of the four pillars that they recommend disclosing in relation to risk and opportunities stemming from climate change. The TCFD published guidance on metrics and target in October 2021, to further enhance the disclosure of them.

The global baseline for sustainability disclosure by **International Sustainability Standard Board (ISSB)** is currently under the public consultation.⁴⁸ The draft standards are based on the structure of the TCFD framework, and therefore include metrics and targets as requirements to disclose. Compared to the TCFD recommendations, the ISSB standards incorporate more granular industry-based disclosure requirements derived from SASB standards.

TCFD

The "Metrics and Targets" is one of the four pillars in TCFD framework. It has recommended disclosing GHG emissions and other metrics in its final report in 2017 and in October 2021, it published its new "Guidance on Climate-related Metrics, Targets and Transition Plans." It sets out six fundamental principles that should apply to the selection of climate-related metrics. The metrics should be: i) decision useful (relevant to the organization's risks and opportunities); ii) understandable (including limitations, context); iii) verifiable; iv) objective; v) trackable over time (and disclosed consistently from year to year); and vi) aligned to other TCFD pillars (and linked to processes for governance, strategy, and risk management).

Seven metrics are proposed for disclosure by all financial and nonfinancial sectors: GHG emissions (scope 1, 2, and 3), carbon prices (external and shadow/internal), proportion of assets and/or operating, investing, or financing activities materially exposed to physical risk, transition risk and aligned toward climate-related opportunities, amount of senior management remuneration and amount of expenditure or capital investment.

International Sustainability Standard Board (ISSB)

⁴⁶ <https://www.unepfi.org/publications/guidelines-for-climate-target-setting-for-banks/>

⁴⁷ <https://www.unepfi.org/net-zero-alliance/resources/target-setting-protocol-second-edition/>

⁴⁸ <https://www.ifrs.org/news-and-events/news/2022/03/issb-delivers-proposals-that-create-comprehensive-global-baseline-of-sustainability-disclosures/>

In November 2021, a Technical Readiness Working Group, chaired by the IFRS Foundation provided prototypes to the ISSB. Based on the prototypes, the ISSB published its draft Sustainability Disclosure Standards on March 2022. The standards are based on the TCFD recommendations and to align with them, the proposed standards include the metrics and targets to manage and monitor the entity's performance in relation to climate-related risks and opportunities over time. In its draft on climate-related disclosure standards, it says that an entity shall disclose information that enables users of general purpose financial reporting to understand how the entity measures, monitors, and manages its significant climate-related risks and opportunities. To achieve this objective, an entity shall disclose: (a) cross-industry metrics (such as GHG emissions, scope 1,2 and 3); (b) industry-based metrics; (c) other metrics used by the board or management to measure progress towards the targets identified in (d); and (d) targets set by the entity to mitigate or adapt to climate-related risks or maximise climate-related opportunities.

European Union

The Platform on Sustainable Finance in Europe recommends in its "Transition Finance Report" finalised in March 2022 subject to the establishment of criteria for sufficiently robust activity-specific investment plans, that the Taxonomy allow companies to count taxonomy-aligned investments towards meeting the TSC in the future and those investments should cover CapEx, OpEx and related finance. The Platform report does not prejudge any decision by the Commission on the matter. The Corporate Sustainability Reporting Directive (CSRD) introduces a requirement for companies to provide information about any sustainability targets set by the undertaking and the progress made towards achieving them⁴⁹.

The draft European Sustainability Reporting Standards (ESRS) E1 on Climate Change⁵⁰ require companies to disclose its targets on GHG emission reductions in line with limiting global warming to 1.5C (Disclosure Requirement 3). In addition, the company may include other adopted climate-related targets such as targets related to climate change adaptation. The draft ESRS E1 also includes a range of disclosure requirements (DR6 to DRD17) to measure the company's performance on climate change, which include energy mix and energy intensity, GHG emissions (scope 1, 2 and 3), GHG removals and offsets, and financial exposure to physical and transition risks.

European Banking Authority (EBA)

In January 2022, the EBA published its final draft implementing technical standards (ITS) on Pillar 3 disclosures on Environmental, Social and Governance (ESG) risks. The final draft ITS put forward comparable disclosures to show how climate change may exacerbate other risks within institutions' balance sheets, how institutions are mitigating those risks, and their ratios, including the GAR, on exposures financing taxonomy-aligned activities, such as those consistent with the Paris agreement goals.

Transition Plans/Strategies

Many frameworks and methodologies for creating credible plans/strategies based on the above pathways are being developed, however the recommendations put forward by different initiatives are not limited

⁴⁹ EU sustainability reporting standards will develop in detail reporting requirements introduced by the CSRD. The European Financial Reporting Advisory Group (EFRAG) will be develop the draft standards, and the Commission would then adopt the standards as Delegated Acts, after having consulted with the appropriate EU bodies.

⁵⁰ See EFRAG public consultation on the first set of draft ESRS [here](#).

to transition pathways and targets, but also offer broader guidance on the architecture of the transition plans and their verification (See Annex Table2).

Current practices

CDP: In its Discussion paper (2021), it illustrates 6 guiding principles of a Climate Transition Plan; 1) Accountability, 2) Internally coherent, 3) Forward-looking, 4) Time bound and quantitative, 5) Flexible and responsive, and 6) Complete. CDP also identify 8 key elements which constitute a credible transition plans, based on the four pillar of TCFD recommendation.

ICMA’s Handbook: ICMA released the “Climate Transition Financing Handbook” in December 2020. It is a high-level, principles-based guidance and specifies the forms of financing and disclosure requirements for climate transition bonds to demonstrate the credibility of the transition. In addition, it specifies the four key elements recommended for disclosure in the Handbook: 1) Issuers’ climate transition strategy and corporate governance, 2) The importance of considering environmental elements in the business model, 3) The climate transition strategy should be informed by scientifically based goals and pathways, and 4) Transparency of information relating to implementation.

CBI’s Discussion Paper: In September 2021, Climate Bonds Initiatives published a discussion paper entitled “Transition Finance for Transforming Companies: Avoiding greenwashing during financing company decarbonization.” The discussion paper suggests five hallmarks of a credibly transitioning company, namely: 1) goals that are aligned with the Paris Agreement (when setting goals, note that: common industry green transition pathways and company-specific KPIs need to reflect short-, medium- and long-term decarbonization trajectories), 2) robust transition plans, 3) implementation actions, 4) internal monitoring, and 5) external reporting.

ACT’s Assessment Framework: In its framework document (2019), ACT initiative illustrates steps taken by company toward reducing GHG emissions: 1) measurement 2) transparent reporting 3) public commitments including setting science-based targets and de defining the appropriate means to achieve them lays out the pathway to meaningful climate action, and 4) accountability. To assess accountability, ACT assessments use climate scenarios to define the specific level of ambition required for each sector. The ACT assessment process checks the organization against this science-based benchmark to produce the ACT rating.

The mapping of the coverage of the different transition plan elements by the existing guidance frameworks has been carried out both by CDP and GFANZ as well as by the IIGC⁵¹.

Some initiatives, go beyond these elements suggesting that a credible transition plan should also for example take into account broader sustainability targets (e.g. CPI, ICMA, Japan, GFANZ) or envisage continuous evolution (e.g. CDP, CPI, Japan).

Moreover, more initiatives are encouraging entities to present their transition plans publicly with an aim to increase transparency to investors. In 2021, the TCFD has published its guidance⁵² to disclose transition plans. The draft ISSB standard for climate-related disclosure (2022) includes recommendation for entities to disclose information that enables users of general purpose financial reporting to understand the effects

⁵¹ <https://igcc.org.au/wp-content/uploads/2022/03/IGCC-corporate-transition-plan-investor-expectations.pdf>

⁵² “Guidance on Metrics, Targets, and Transition Plans” (October 2021)

https://assets.bbhub.io/company/sites/60/2021/07/2021-Metrics_Targets_Guidance-1.pdf

of significant climate-related risks and opportunities on its strategy and decision-making, including its transition plans.

TCFD

The TCFD suggests that an organization should disclose its transition plan if it has identified material transition risk, including if it: i) operates in a jurisdiction with an emissions reduction commitment, ii) has made an emissions reduction commitment, or iii) has to meet emissions reduction expectations from stakeholders, especially investors and lenders. TCFD adds that all other organizations should consider disclosing their transition plan if their business activity generates significant emissions or is materially dependent on carbon-related assets.

As proposed, transition plans should be: Disclosed as part of the broader organization strategy, anchored in quantitative elements, including climate-related metrics and targets; designed in consideration of and in order to achieve targets; and regularly tracked against targets and metrics, approved by the Board, and regularly overseen by the Board and senior management with relevant climate expertise, actionable and linked to specific initiatives, with near-term accountability, and detailed and verifiable by external stakeholders.

ISSB

In its draft Standard on climate-related disclosure (2022), ISSB defines transition plan as “An aspect of an entity’s overall strategy that lays out the entity’s targets and actions for its transition towards a lower carbon economy, including actions such as reducing its greenhouse gas emissions.” It also requires disclosing transition plans, specifically how it is responding to significant climate-related risks and opportunities including how it plans to achieve any climate-related targets it has set and quantitative and qualitative information about the progress of plans disclosed in prior reporting periods. The standard also specifies information regarding climate-related targets for these plans, such as the processes in place for review of the targets, the amount of the entity’s emission target to be achieved through emission reductions within the entity’s value chain, and the intended use of carbon offsets in achieving emissions targets.

At this point, still few jurisdictions specifically require disclosing transition plans. Switzerland, the United Kingdom, and the European Union are some of the first jurisdictions to attempt to specify this requirement. In some jurisdiction such as Hong Kong, industry experts have made proposals to issuers and borrowers disclose medium and long-term plans. However, while many countries are moving forward to climate-related disclosures based on TCFD recommendations, guidance from the TCFD could accelerate the movement toward mandatory disclosure of transition plans.

Hong Kong

The Hong Kong Green Finance Association (HKGFA) released the “Navigating Climate Transition Finance” in November 2020. It propose that issuers and borrowers disclose medium and long-term plans aligned with the Paris Agreement; constraint(s) on engaging in low-carbon activities with evidence; technologies and activities for climate transition financing; measures in place to ‘do no significant harm’ and propose a ‘do least harm’ strategy; a deliberate phase-out plan for transition technologies and activities to make way for net-zero compatible technologies and activities.

Switzerland

Switzerland's planned TCFD ordinance on climate-related disclosures that will be mandatory for large firms includes a requirement to disclose transition plans. The Federal Council will review the experience with publishing transition plans and compare it with emerging best practice within three years after the entry into force of the ordinance on January 1, 2024.

United Kingdom

In November 2021, Chancellor Rishi Sunak set out the UK's "responsibility to lead the way" and unveil a fresh push to decarbonize the UK's world-leading financial center. Under the proposals, there are new requirements for UK financial institutions, asset managers, regulated asset owners (including pension schemes) and listed companies to publish net zero transition plans that detail how they will adapt and decarbonize as the UK moves towards a net zero economy by 2050.

European Union

The CSRD recently adopted by the EU co-legislators, requires companies to disclose their plans to ensure that its business model and strategy are compatible with the transition to a sustainable economy and with the limiting of global warming to 1.5 °C in line with the Paris Agreement. Draft ESRS E1 on Climate Change addresses transition plans in line with the Paris Agreement. The Disclosure Requirement 1 include, among others, the disclosure of short medium- and long-term targets to reduce GHG emissions, key actions to achieve them and resources supporting the implementation of the transition plan. The DR includes explicit articulation of the entity's « Paris Agreement » transition plan with the Taxonomy.

The recent European Commission proposal for a Directive on Corporate Sustainability Due Diligence (CSDDD) aims at improving corporate governance practices to better integrate risk management and mitigation processes of human rights and environmental risks and impacts, including those stemming from value chains, into corporate strategies. The CSDDD proposal is going through the legislative process and has not yet been agreed. CSRD and CSDDD proposal are closely interrelated and will lead to synergies. First, a proper information collection for reporting purposes under the CSRD requires setting up processes, which is closely related to identifying adverse impacts in accordance with the due diligence duty set up by the CSDDD proposal. Second, the CSRD will cover the last step of the due diligence duty, namely the reporting stage. Third, the CSDDD proposal will set obligations for companies to have in place the plan ensuring that the business model and strategy are compatible with the transition to a sustainable economy and with the limiting of global warming to 1.5 °C in line with the Paris Agreement on which the CSRD requires to report. Thus, this Directive will lead to companies' reporting being more complete and effective. Therefore, complementarity will increase effectiveness of both measures and drive corporate behavioural change for those companies.

While the discussion initially focused on the transition plans for corporate institutions, more guidance is becoming available for financial institutions' own transition plans associated with real sector's transition. Particularly for financial institutions, the GFANZ has set high-level principles which include the commitment to regular disclosure of a transition plan. Similarly UNEP FI has issued a set of 11 recommendations for credible net-zero commitments for financial institutions.

GFANZ ⁵³	UNEP FI ⁵⁴
<ul style="list-style-type: none"> i. Commit to supporting the real economy in its transition to net zero by 2050 or sooner ii. Commit to achieve the greenhouse gas (GHG) reductions required to meet a 1.5 degrees C low or no-overshoot scenario in financing activities, as well as in operations, and to set interim targets for 2030 (or sooner) and a 2050 target. iii. Commit to taking meaningful measures to embed net-zero commitments in business practices. iv. Commit to acting now and disclosing activity to stakeholders 	<ul style="list-style-type: none"> i. Align with science-based, no/low overshoot 1.5°C scenarios ii. Align with the assumptions and criteria of the scenarios (including by sector) as soon as possible iii. Establish near-term (ideally 5-year) targets iv. Commit to transparent reporting of GHG emissions and their allocation to real-economy inventories v. Establish an appropriate emission scope, striving for full coverage as soon as possible vi. Strive for real-economy impact, enabling the transition vii. Require neutralisation of residual emissions viii. Finance the transition (considering investments required for the transition and a Just Transition) ix. Provide transparency on metrics, underlying scenarios and methods used to classify products as sustainable, including appropriately disclosing the sustainability impact of products and services x. Identify unique purpose implementation; and xi. Disclose transparently and comprehensively the scenarios, metrics, and targets employed, and disclose progress ideally annually.

UNFCCC’s Race to Zero is the critical global campaign that mobilizes a coalition of leading net zero initiatives representing cities, regions, businesses, higher education institutions and financial institutions, including those alliances under **GFANZ**.

Race to Zero ensures that the commitments under the Alliances are credible, “certifying” their soundness, while GFANZ plays a pivotal role as a coordination and communications sharing mechanism, to allow for an amplified ripple effect that attracts financial institutions to join and become part of the movement.

⁵³ <https://assets.bbhub.io/company/sites/63/2021/11/GFANZ-Progress-Report.pdf>

⁵⁴ <https://g20sfwg.org/wp-content/uploads/2021/10/2021-UNEP-FI.-Recommendations-for-Credible-Net-Zero-Commitments.pdf>

Given the multidisciplinary approach of Race to Zero, there are different ways in which governments can play a role in making sure their commitments are credible and contribute to the net zero goal.

GFANZ

The progress report (2021) articulates that financial institutions have a vital role to play in supporting and accelerating the decarbonization of the real economy. It took stock of a range of industry groups which put forward guidance on developing transition plans and pointed out that the suggested approaches share much in common, but also contain important differences that reflect the different roles that various types of institutions play in reducing real-economy emissions to net zero. The high-level principles that GFANZ illustrates for financial institutions' transition plans.

1. Commit to supporting the real economy in its transition to net zero by 2050 or sooner.
2. Commit to achieving the greenhouse gas (GHG) reductions required to be met
3. Commit to taking meaningful measures to embed net-zero commitments
4. Commit to acting now and disclosing activity to stakeholders.

Switzerland's recommendations to the financial sector with respect to net-zero alliances: on the Swiss Federal Council recommends financial sector industry agreements to broaden participation in net-zero alliances and to enhance the transparency and comparability of financial institutions' commitments in the context of such alliances. This work aims to incentivize credible, measurable, science-based and ambitious commitments and targets, as well as transparent and regular reporting. It is also a key way to reduce the risk of greenwashing.

Certification Scheme / Assessment Framework and methodologies

Current practices

Against the background of increasing development of pathways and transition plans as well as disclosure, the issuance on bonds with a transition label has been on the rise (See Annex Table 3). An OECD Environment Working Paper (August 2021)⁵⁵ has reviewed 39 transition finance related instruments and products to investigate core features. Regardless of the format of transition elements, the paper points out two core features: Issuer premium/yield discount at issuance and penalty mechanisms. Private sector initiatives, evaluation institutions, service providers and financial institutions are creating evaluation frameworks for these issuances (See Annex Table 4). The next chapter will deep dive into the financial institutions' approaches to analyzing the net-zero alignment of their portfolio.

CBI: CBI published a white paper titled "Financing Credible Transitions: How to ensure the transition label has impact" in September 2020, which provides an initial framework and principles for identifying a credible transition label. The CBI provides certification on pre-issuance, post-issuance, and on-going certification on eligible bonds. It has attempted to expand its certification to transition-labelled bonds. The CBI's Climate Bond Standard 3.0 illustrates how to determine the eligibility of projects and assets that contribute to the transition to a low-carbon and climate-resilient economy in line with the Paris Agreement goal. In addition to Climate Bonds Taxonomy, CBI set sector eligibility criteria. For the

⁵⁵ OECD (2021). "Transition Finance: Investigating the state of play: A stocktake of emerging approaches and financial instruments"

transition label, the CBI published draft standards on cement in February 2022, and those on basic chemicals, steel, oil and gas will follow.

TPI: On annual basis, TPI assesses how companies are preparing for the transition to a low-carbon economy in terms of their management quality and carbon performance. TPI's Carbon Performance assessment is based on the Sectoral Decarbonization Approach (SDA). The SDA translates greenhouse gas emissions targets made at the international level (e.g., under the Paris Agreement to the UN Framework Convention on Climate Change) into appropriate benchmarks, against which the performance of individual companies can be compared.

ACT: The ACT framework consists of an assessment framework to outline a consistent path and a set of common rules for the development of the methodologies and an indicator framework to set the basis for identifying the most relevant indicators for assessing a business climate impact. It then compare company's performance with benchmarks, measure commitment/horizon/action gaps in the GHG emissions performance, compare company pathway results with the benchmark to rate the companies.

CA100+: The Climate Action 100+ Net-Zero Company Benchmark assesses the performance of focus companies against the initiative's three high-level goals: emissions reduction, governance, and disclosure. The types of assessments can broadly be categorised into two types of indicators, which form a dual approach to evaluate corporate progress. Disclosure Framework Indicators evaluate the adequacy of corporate disclosure. Alignment Assessments evaluate the alignment of company actions with the Paris Agreement goals.

Sustainalytics: Sustainalytics launched its second-party advice service for transition bonds in June 2020, which assesses a transition framework in two ways. First, it assesses the components needed for bond issuance, focusing on the Use of Proceeds (UoP), fund management, project selection and fund allocation reporting. Second, it assesses the issuer itself, whether it has established a strategy to address climate change and whether the strategy clearly states how it plans to adapt its business model to contribute positively to the transition to a low-carbon economy. Sustainalytics set the priority on publishing research on transition pathways for the gas and steel industries.

DBS Bank: DBS Bank launched the Sustainable and Transition Finance Framework and Taxonomy in June 2020. It introduces the economic activity classification of 16 industries that conform to the labels set by DBS Bank as sustainable and transition financial industries. It has proposed two verification methods in order to label the activities: (1) to judge whether economic activities meet the conditions based on the purpose of their application; (2) to identify company financing with unspecified UoP, and mark them as 'Corporate in Transition,' as long as this transaction meets three criteria (Divested, Diversified and Decarbonized) within the past 12 months. When the applied financing subject meets one of the criteria, it then can be labelled as corporate in transition.

In addition to these external frameworks, it is of course necessary for entities themselves to strengthen their own efforts and become a leader in the net-zero transition. In Japan, in order to promote corporate initiatives, the METI declared in February 2022 the establishment of a "GX League" as a forum for leading companies that are transitioning to carbon neutrality to contribute to the "Green Transformation" of the Japanese economy, in cooperation with the government and academic experts. By the end of March 2022, 440 companies had endorsed this "GX League" concept.

Challenges and Further Consideration

There are various initiatives to develop and assess transition pathways and plans, but each objective and methodology are different. In order to enhance the transparency and interoperability of these initiatives, the following points highlight key challenges and possible ways forward.

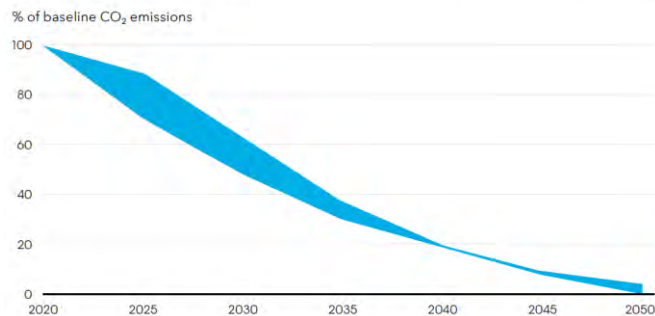
1. **Science-based:** Many methodologies are developed to assess what is “science-based”. Annex Table 5 illustrates various initiatives/methodologies. Given the different starting points among jurisdictions and sectors, however, the basic step for assessing whether transition pathways or strategies are “science-based” would be 1) to use a clear scientific approach stemming from recognised international authorities, such as IPCC, UNFCCC, IEA and academic peer reviewed approaches that allow for a concrete understanding of what is the current climate science, and 2) to see how this is aligned with what is needed to transition at the global level. At the same time, it is necessary to check the consistency between NDCs and aforementioned internationally agreed-upon methodologies such as the IPCC, and to start by clarifying the gap between the two. Especially it is important to ensure that national approaches only deviate positively from the globally agreed basis, thus making sure that the steps taken by the industry within its jurisdictional borders complements the international goals, instead of watering down global alignment. Under the circumstances that each country develop and reconcile its NDC to the internationally agreed-upon methodologies toward Paris Alignment Goals, the alignment with NDC would be an alternative to see what is “science-based”.

2. **Top down and bottom-up approaches:** As illustrated in section A, for example, the GFANZ points out that there are top-down and bottom-up approaches for developing pathways. The SBTi (2021)⁵⁶ also conducted a comparative analysis between top-down mitigation scenarios, which are derived from integrated assessment models (IAMs), and hybrid scenarios (or “sectoral studies”), which are intended to achieve goals in a specific way, calculated with sub-global models, back-casting, and/or detailed sector roadmaps. There might be gaps between both top-down and sector-specific approaches since they have different roles and objectives, and therefore reconciling both approaches is important. A top-down approach can provide the ideal scenario and the scientific vision on what is needed and how to achieve it in emissions terms, while bottom up approach can guide how units align their goals and commitments to achieve Paris Agreement goals. Therefore, a bottom-up approach is needed to turn top-down scientific view into practice by providing the nuance on how to measure the achievement of the top down goals and to make sure financing flows to the sectors, decarbonisation technologies and countries which may have different net zero targets.

The GFANZ illustrates the concept of “credible range of values” between different pathways as a corridor. It also says that it is essential to understand the underlying assumptions driving the differences in approaches to be able to converge on preferred pathways (or corridors) that are high ambition, commercially feasible, technologically viable, and economically just. However, there is no uniform solution as to how wide a range should be allowed.

⁵⁶ PATHWAYS TO NET-ZERO SBTi Technical Summary Version 1.0 (October 2021)

Figure 8: Illustrative example of a corridor for the development of global emissions spanned by various 1.5 degrees C scenarios



Source: Excerpt from GFANZ (2021).

With regard to the top-down approach, there is an issue of how to consider sectoral emissions on a global basis and whether they can be mechanically assigned to each jurisdiction. As for bottom-up approach, how to align the pathways for each company, country/region, and sector, and those for the global net-zero emissions target is an issue. Another issue common to both approaches is how to take into account and evaluate technological innovation, which is essential to achieving net-zero emissions but also highly uncertain. It would be useful for pathway developers to fully explain these issues and gaps and increase transparency when designing pathways and preparing transition plans.

3. Engagement by financial institutions: As also recognized by the G20 SFWG, financial institutions have an important role in supporting the transition by engaging with their clients and investee firms to achieve a steady and just transition as a whole society. Net zero alliances, such as those under the umbrella of GFANZ, have a role to play in getting more financial institutions to commit to carbon neutrality and in accompanying their efforts with appropriate guidance and best practices. This, in turn, will decrease the transition risk of the financial institutions in the long run. It is important to develop a forward-looking framework that captures the transitional period properly and ensures credible science-based emissions reduction paths. In addition, financing the transition of companies in hard-to-abate sectors is necessary to promote the society-wide transition to net zero, but for financial institutions who provide those financial flows, it may lead to a temporary increase in the amount of financed emissions and risk exposures in the short-term due to increase of their exposure to companies whose transitions are underway. These possible short-term side-effects may disincentivise financial institutions from providing transition finance and may lead to divestment, which could unintendedly slow down the speed of decarbonisation of the entire economy and undermine social and economic stability. The jurisdictional authorities need to recognize these challenges and create an environment that supports transition finance.

4. Dynamic nature of the transition: Given the dynamic nature of the transition, a company may face difficulties to audit or validate its transition plan. Therefore, certain certification schemes or sectoral pathways which corporates can refer to is crucial. On top of that, in order to capture the transition's dynamism, it is important to determine a concrete process for assessing alignment with pathways to carbon-neutrality, including how, when, who will review/track the transition and how to incorporate assessment of future technology development in a forward-looking way. This might require solid governance and transparency frameworks from evaluation firms.

Brief conclusion

Current emission levels can be used to judge transition speed and progress, but it is also important is not to judge only by relying current high greenhouse emission levels. It is rather necessary to create a pathway and strategy that include forward-looking elements to determine whether the mid- to long-term goal toward carbon neutrality can be achieved. In particular, assessing and promoting the transition in hard-to-abate sectors requires looking at the entity as a whole, and therefore not only at the activity level – to avoid greenwashing and transition washing.

Yet, there are some initiatives incorporating both activity- and entity-level approaches into one framework (e.g. DBS Bank). In a new position paper (2022), the European sustainable investment forum (Eurosif) underlines that issuers active in some sectors should be required to disclose net zero plans. In this way, an activity-based approach aimed at preventing green and sustainable washing can be complemented with an entity-based approach that allow to capture the transition in a more comprehensive way. The next section will deep dive into how to assess and track the credibility of transitions at the entity-level, particularly from the portfolio lens of financial institutions.

Portfolio level transition

The need for Paris-aligned transparency

While investors and financial institutions can progress towards net-zero aligned portfolios by withdrawing capital from today's carbon-intensive industries, this strategy would not help provide capital to companies that are credibly engaged in a transition to net zero.

Investors and financial institutions should therefore increasingly use engagement strategies to incentivize companies to reduce their emissions, rather than just relying on wholesale divestment to decarbonise their portfolios.⁵⁷ To accelerate real-world decarbonisation, it is important that the financial sector both reallocates capital and works alongside those carbon-intensive companies that are committed to a transition to net zero.⁵⁸ Transition finance and transition risks are two sides of the same coin. Investments into transitioning towards less emitting and more sustainable economic activities and companies also contribute to the resilience of the financial sector by lowering transition risks in their balance sheets.

Ultimately, if the financial sector can assess the position of companies and portfolios on the path to net zero, compare peers and track progress, it will be better able to identify opportunities that benefit the transition, assess risks and vulnerabilities to the transition, and guide engagement with companies. It is important to develop a forward-looking framework that captures transitional period properly, ensures credible science-based emissions reduction pathways and does not disincentive engagement to promote transition of investees and loan recipients by financial institutions (see also Chapter II).

Portfolio alignment metrics with inherent focus on Paris-aligned transition

Portfolio alignment metrics (often also referred to as implied temperature ratings/scores) first emerged in the wake of the Paris Agreement, as investors sought to quantify the alignment of their investments

⁵⁷ See 'Building a private financial system for net zero – Priorities for private finance for COP26', Mark Carney, UN Special Envoy for Climate Action and Finance and the Prime Minister's Finance Adviser for COP26, 2020.

⁵⁸ See 'Our progress and plan towards a net-zero global economy', GFANZ, 2021.

with the Paris climate goal. Some of the earliest records of the concept can be traced back to an OECD conference in Japan in October 2016.

Well-designed portfolio alignment metrics incentivise a whole-economy transition, minimising the risk of disorderly wholesale divestment from all high-emitting industries and/or companies, regardless of their commitment and trackable changes to emissions reductions as well as a positive contribution to a transition consistent with the Paris Agreement.

Portfolio alignment metrics rely on comparing a company’s actual and projected emissions to global carbon budget benchmarks that are associated with different levels of global warming, based on climate models.

Required mitigation actions can be quantified using carbon budget approaches that link cumulative greenhouse gas emissions to global mean temperature increases.⁵⁹ The global carbon budget can be broken down by sector and industry⁶⁰, in line with science-based scenarios, such as those provided by the IPCC and the IEA, to deduct fair-share carbon budgets for individual companies. The fair-share carbon budgets act as benchmarks to define the degree of decarbonisation that individual companies and portfolios need to achieve.

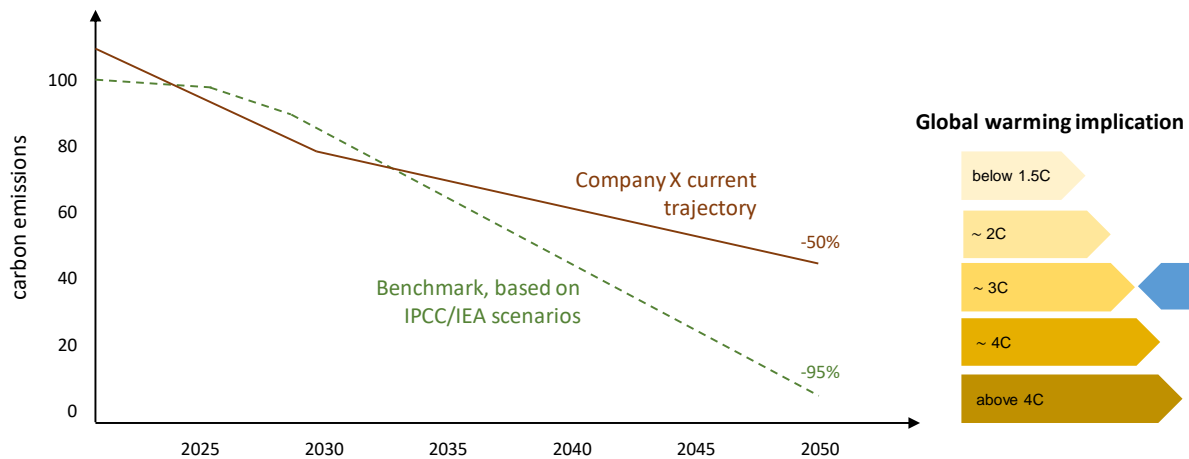


Figure 1: Illustrative example of portfolio alignment metrics

Current Practices

The TCFD recommended in its 2021 revised supplemental guidance for the financial sector that banks, insurances, asset owners, and asset managers describe the extent to which their business activities are aligned with a well below 2°C scenario and refers to the Portfolio Alignment Team’s 2021 report ‘Measuring Portfolio Alignment’ for approaches.⁶¹ Building on these recommendations, and the growing investor and lender interest, the GFANZ established a workstream to support the further development and effective implementation of Portfolio Alignment Metrics for the financial sector and to drive convergence in the way portfolio alignment is measured and disclosed.⁶²

⁵⁹ See ‘Special Report: Global Warming of 1.5°C’, IPCC, 2018, p.96.

⁶⁰ The allocation of the total carbon budget between countries is outside the scope of this report.

⁶¹ See ‘Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures’, TCFD, 2021.

⁶² See ‘Our progress and plan towards a net-zero global economy’, GFANZ, 2021.

Coordinated climate tests based on portfolio alignment metrics are already used by various jurisdictions, such as Austria, France, Japan, Mexico, Norway, Sweden, Switzerland, the Netherlands, as well as California and New York.⁶³ The climate tests help evaluate in a comparable manner whether financial institutions are following through on their climate commitments and help them identify where more action is needed.

Portfolio alignment metrics are also increasingly used as a basis for transparency at the product level. For example, in their 2021 client letter, Blackrock announced that they would publish an implied temperature score for their public equity and bond funds for any markets with sufficiently reliable data.⁶⁴

Case Study: Switzerland

Basis for transparency at financial institution level

Following similar exercises in 2017 and 2020, the Federal Office for the Environment FOEN and the State Secretariat for International Finance SIF have initiated in 2022 a third, comprehensive test to analyse the alignment of the Swiss financial sector with the global temperature goal. This test is conducted using the open-source PACTA (Paris Agreement Capital Transition Assessment) methodology.

All Swiss banks, asset managers, pension funds and insurance companies can test their portfolios anonymously on a voluntary basis. Each participant receives an individual report, yet the disclosure of these results is optional for participants. FOEN publishes a report with the aggregated and anonymized data (the last reports can be found here: www.bafu.admin.ch/climate-and-financial-markets) indicating the progress made over the past years. Moreover, a qualitative survey provides information about the climate-relevant strategies and actions of the participating actors, while a stress test highlights the climate-relevant risks in the portfolios of all participants.

The results of the tests are representative, even though they are conducted on a voluntary basis. In 2020, around 80 percent of investments in global equity and corporate bonds, half of all properties held by institutional investors, and three-quarters of Swiss residential buildings covered by mortgages were assessed.

This regular monitoring exercise is planned on a biennial basis. The PACTA climate tests are coordinated internationally.

Regular climate alignment tests enable Switzerland to generate overarching monitoring reports based on representative, comparable data across the different actors of the financial sector, and building on forward-looking scenarios. This is an important basis to measure progress towards the implementation of Art. 2.1c) of the Paris Agreement, as well as to inform policymakers and the broader public on whether there is a need for further action.

Basis for transparency on product level

In 2021, the Swiss Federal Council recommended that financial market players use comparable and meaningful climate compatibility indicators (such as portfolio alignment metrics) to help create

⁶³ See 'Taking the Plunge – A stocktake of national financial sector climate alignment assessments', 2degrees-investing, 2021, [2degrees-investing.org](https://www.2degreesinvesting.com)

⁶⁴ See 'Letter to Clients', Blackrock, 2021.

transparency in all financial products and client portfolios.⁶⁵ Together with the financial sector, NGOs, and universities, the Swiss government has launched voluntary Swiss Climate Scores that establish best-practice transparency on the Paris-alignment of financial investments to foster investment decisions that contribute to reaching the climate goals⁶⁶ The Swiss Climate Scores aim to provide decision-useful information to investors and customers so that they can decide on their preferred sustainable investment strategy in light of some key climate indicators. Key indicators include current GHG emissions, exposure to fossil fuels, as well as forward-looking aspects such as the share of portfolio companies with verified commitments to net zero, the portfolio’s climate stewardship strategy and an implied temperature rise indicator that remains optional to allow for some time to refine and enhance the consistency of existing portfolio alignment methodologies.

The role Portfolio Alignment Metrics as a basis for transparency on product level

To efficiently support the transition to net zero, clients assessing an investment decision require forward-looking indicators on the financial product that help them understand the portfolio’s expected transition, as well as indicators that focus on the portfolio’s current emissions. Useful forward-looking indicators include the alignment of a portfolio with the global climate goals based on portfolio alignment metrics, the percentage of portfolio emissions with verified commitments to net-zero, as well as the percentage of portfolio emissions subject to credible engagement on the climate transition by the asset manager. Useful current state indicators include the weighted average carbon intensity relative to a benchmark and carbon footprint, as well as the exposure to coal and other fossil fuels.

How transition considerations of portfolio alignment metrics can be further strengthened

Portfolio alignment metrics rely on three methodological steps: first, translating scenario-based carbon budgets into normative benchmarks, second, assessing counterparty-level alignment, and third, assessing portfolio-level alignment. Each step requires design judgments with the potential to lead to diverging outcomes between different metrics. Best practices in design judgments have emerged through the work technical considerations of the TCFD’s portfolio alignment team.⁶⁷

Annex Table 1. Overview of current state of sectoral net-zero pathways

	OEC M	NGFS	IEA	MPP	CA10 0+	TPI	CBI	SBTi	ACT	DNV	Japan	UK
Agriculture												
Aluminium												
Apparel												

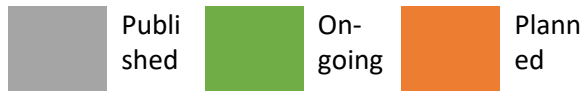
⁶⁵ See ‘Federal Council strives to be international leader in sustainable finance with climate transparency’, press release by the Federal Council, 17.11.2021.

⁶⁶ [Swiss Climate Scores \(admin.ch\)](https://www.admin.ch)

⁶⁷ See ‘Measuring Portfolio Alignment – technical considerations’, Portfolio Alignment Team, 2021.

Aerospace& Defence												
Buildings												
Cement												
Chemicals												
Coal												
Commercial & Residential Real Estate												
Electrical utilities / Power												
Formulated chemical products												
Financial institutions												
Food & Beverage												
Forestry												
Glass												
Hydrogen												
ICT												
Steel (& Iron)												
Mining												
Oil & Gas												
Paper & pulp												
Transport**												
a. Aviation												
b. Shipping												

c. Trucking	Grey		Grey	Orange	Green			Green				
d. Autos	Grey		Grey			Grey			Grey		Orange	
e. Low carbon transport	Grey						Grey	Green	Grey			
Retail									Grey			



Source: GFANZ (2021), CBI (2022), OECM SECTORAL PATHWAYS TO NET ZERO EMISSIONS (2020), NGFD Climate Scenarios Database (2021), IEA Net Zero by 2050 A Roadmap for the Global Energy Sector (2021), CA100+ 2021 Year in Review A Progress Update (2022)

*OECM: One Earth Climate Model, NGFS: Network for Greening the Financial System, IEA: International Energy Efficiency, MPP: Mission Possible Partnership,

**"Transport" covers when transportation methods other than a-e (e.g. rail), or when breakdowns are not specified. Source: GFANZ (2021) and CBI (2022)

Annex Table 2: Org./Initiative/Framework for corporate / financial transition plan

For corporates:

Org./Initiative/Framework	Key features	Common users
Disclosure framework/ standard		
TCFD (Task Force on Climate-related Financial Disclosures)	Developed a framework to help public companies and other organizations disclose climate-related risk and opportunities. The framework consists of four pillars: 1) Governance, 2) Strategy, 3) Risk management, and 4) Metrics and Targets. Most recently, TCFD has published its "Guidance on Metrics, Targets, and Transition Plans" (October 2021).	All economies
ISSB (International Sustainable Standard Board)	A newly established standard-setting board to deliver a comprehensive global baseline of sustainability-related disclosure standards that provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities to help them make informed decisions. In its draft Sustainability Disclosure Standard (2022), ISSB	All economies

CDP (Carbon Disclosure Project)	Not-for-profit that runs the global disclosure system for investors, companies, cities, states, and regions to manage their environmental impacts (note CDP is behind the ACT) In its Discussion Paper (2021), it illustrates guiding principles of a climate transition plans, 8 elements of a credible climate transition plans which aligns with four pillars of TCFD framework.	Corporates
Target setting Methodology		
SBTi (Science Based Targets Initiative)	Drives ambitious climate action in the private sector by enabling companies to set science-based emissions reduction targets	All economies
Assessment Methodology		
TPI (Transition Pathway Initiative)	Global, asset-owner led initiative which assesses companies' preparedness for the transition to a low carbon economy. Using publicly disclosed data, TPI assesses progress companies are making on the transition to a low-carbon economy, in line with the TCFD recommendations.	Investors
CBI (Climate Bonds Initiative)	Investor-focussed not-for-profit working to mobilise the bond market for climate change solutions through the development of the Climate Bonds Standard and Certification Scheme, Policy Engagement and Market Intelligence work	All economies
ACT (Assessing Low Carbon Transition Initiative, CDP)	Provides sectoral methodologies to evaluate past and expected emissions trends, low-carbon investments and research and development, transition plans, engagement with suppliers and clients, and progress in developing low-carbon business models	Corporates
CA 100+ (Climate Action 100+)	Coalition of over 600 investors, with \$55 trillion in AUM with the goal of securing transition plans from the largest GHG emitters aligned with the Climate Action 100+ Net Zero Company Benchmark. TPI is the key data partner on the CA100+ benchmark.	Investors
Investor's Expectation		
IGCC (Investor Group on Climate Change)	A collaboration of Australian and New Zealand institutional investors focused on how climate change affects investments IGCC published "CORPORATE CLIMATE TRANSITION PLANS" in March 2022 which include the principles of	Corporates

	credible climate transition plans and investor expectations for company climate transition plans	
GFANZ (Glasgow Financial Alliance for Net-zero)	<p>A global coalition of leading financial institutions committed to accelerating the decarbonization of the economy. It consists of sector-specific alliances: the Net-Zero Banking Alliance, the Net Zero Asset Managers initiative, the Net-Zero Asset Owner Alliance, the Paris Aligned Investment Initiative, the Net-Zero Insurance Alliance, the Net Zero Financial Service Providers Alliance, or the Net Zero Investment Consultants Initiative.</p> <p>GFANZ took stock of the practices and common elements of real-economic transition plans.</p>	Corporates Financial institutions
CPI (Climate Policy Initiative)	An analysis and advisory organization with deep expertise in finance and policy. The most recent publication (March 2022) shows key elements of a credible transition plan and actions to support credible transition plans by financial institutions.	Financial institutions

For financial institutions:

Brief description

Target	Setting	/	
GFANZ			The GFANZ took stock of the practices and common elements of financial institution transition plans. The following sector-specific alliances under the umbrella of GFANZ have published commitment statements and other guidance on how to set targets to achieve net zero portfolios.
	NZAM		The Net Zero Asset Managers initiative brings together asset managers to reach net-zero portfolio emissions by 2050.
	NZAOA		The UN-convened Net-Zero Asset Owner Alliance brings together institutional investors to reach net-zero portfolio emissions by 2050. Managed by UNEP FI and PRI.
	NZBA		The UN-convened Net-Zero Banking Alliance brings together banks to reach net-zero portfolio emissions by 2050. Managed by UNEP FI.
	NZIA		The UN-convened Net-Zero Insurance Alliance brings together insurers and reinsurers to reach net-zero portfolio emissions by 2050. Managed by UNEP FI.
	PAII		The Paris Aligned Investment Initiative was established by the IIGCC at the request of asset owner members.

	NZFSPA	A global group of Financial Service Providers committed to supporting the goal of global net zero greenhouse gas emissions by 2050 or sooner, in line with the ambition to limit the global temperature increase to 1.5°C above pre-industrial levels.
	NZICI	A new commitment from some of the world’s most prominent investment consultants to align their operations and advisory services with the 1.5 degree emissions trajectory outlined in the Paris Agreement.
	IIGCC	The European membership body for investor collaboration on climate change and the voice of investors taking action for a prosperous, low carbon future. It published the Supplementary Guidance on Target Setting for asset managers and asset owners in NZAM and PAll to develop net zero investment strategies or to fulfil the requirements of net zero commitments.
	SBTi	See above tables
	UNEP FI (United Nations Environment Programme Finance Initiative)	A partnership between UNEP and the global financial sector to mobilize private sector finance for sustainable development. In October 2021, UNEP FI sets high-level 11 recommendations for credible net-zero commitments from financial institutions. It also published Guidelines for Climate Target Setting for Banks (April 2021) outline key principles to underpin the setting of credible, robust, impactful and ambitious targets in line with achieving the objectives of the Paris Agreement.
Disclosure Framework		
	TCFD	See table above
	PCAF	The Partnership for Carbon Accounting Financials was set up for financial institutions to develop and implement a harmonised approach to assess and disclose the GHG emissions of their loans and investments.
Assessment Methodology		
	CA100+	See table above
	TPI	See table above
	IA	The Investor Agenda is a collaboration of seven major groups working with investors — AIGCC, CDP, Ceres, IGCC, IIGCC, PRI, and UNEP FI. The Investor Climate Action Plans (ICAPs) Expectations Ladder and Guidance provides investors with clear expectations for issuing and implementing comprehensive climate action plans, including steps investors can take to support the goal of a net-zero emissions economy by 2050 or sooner.

Transition Plans for Banks / Engagement	
CSLN(Climate Safe Lending Network)	Transatlantic multi-stakeholder collaborative of banks, NGOs, academics, investors, and others aiming to accelerate the decarbonisation of the banking sector to secure a climate-safe world In October 2021, the CSLN published “The Good Transition Plan” as a practical, actionable guide for banks to create effective climate transition plans.
SMI	The Sustainable Markets Initiative’s Financial Services Taskforce (FSTF) is a collection of the world’s largest banks committed to mobilising finance and working with customers to support their transition. In October 2021, FSTF launches a Net Zero Practitioner’s Guide to help the banking industry adopt a consistent and transparent approach to supporting clients’ transition to net zero.
CPI (Climate Policy Initiative)	See table above

Source: Excerpt from GFANZ (2021) and others.

Annex Table 3 Examples of transition-relevant financial instruments

Issuer name	Label	Country / Region	Sector	Amount Issued (USD)	Issue Date
Castle Peak Power Finance Company	Transition	Hong Kong	Power	500m	25/7/2017
Snam SpA	Climate Action	Italy	Gas	EUR 500m	21/2/2019
Marfrig	Transition	Brazil	Food	500m	8/6/2019
EBRD	Green transition	Supranational	Finance	555.7m	17/10/2019
EBRD	Green transition	Supranational	Finance	55m	13/11/2019
Credit Agricole CIB	Transition	France	Finance	110.1m EUR	27/11/2019
Credit Agricole CIB		France	Finance	115.8m	29/11/2019
EBRD	Green transition	Supranational	Finance	83.8m	13/12/2019
Cadent Gas Limited	Transition	United Kingdom	Gas	566.8m	11/3/2020
Snam SpA	Transition	Italy	Gas	564.9m	17/6/2020
Castle Peak Power Finance Company	Transition	Hong Kong	Power	350.0m	22/6/2020
EBRD	Green transition	Supranational	Finance	55.6m	19/10/2020
Etihad Airways	Transition Sukuk	UAE	Aviation	600.0m	3/11/2020
EBRD	Green transition	Supranational	Finance	20.0m	20/11/2020
EBRD	Transition	Supranational	Finance	129.6m	24/11/2020
Credit Agricole CIB	Transition	France	Finance	15.4m	27/11/2020
Snam SpA	Transition	Italy	Gas	666.9m	7/12/2020
BCPE SA	Transition	France	Finance	118.1m	16/12/2020

Bank of China (HK branch)	Transition	China	Finance	500m	14/1/2021
Bank of China (HK branch)	Transition	China	Finance	278.3m	14/1/2021
Palgaz Dogalgaz Dagitim Sanayi ve Ticaret AS	Low-Carbon Transition	Turkey	Gas	22.5m	27/1/2021
EBRD	Green transition	Supranational	Finance	205.3m	28/1/2021
Snam SpA	Transition	Italy	Gas	606.0m	15/2/2021
Castle Peak Power Finance Company	Transition	Hong Kong	Power	300.0m	3/3/2021
Cadent Gas	Transition	United Kingdom	Gas	743.2m	19/3/2021
Snam SpA	Transition	Italy	Gas	303.0m	30/3/2021
China Construction Bank (Singapore)	Transition	Singapore	Finance	310.0m	22/4/2021
Inter-American Investment Corporation	Transition	Supranational	Finance	100.0m	11/6/2021
“K” LINE	Transition	Japan	Shipping	5.9bn JPY	10/3/2021
Snam SpA	Transition	Italy	Gas	579.3m	30/3/2021
Seaspan Corp	Blue Transition	Hong Kong		750.0m	14/7/2021
Nippon Yusen	Transition	Japan	Shipping	90.0m	29/7/2021
Nippon Yusen	Transition	Japan	Shipping	90.0m	29/7/2021
Mitsui O.S.K. Lines	Transition	Japan	Shipping	Not disclosed	9/9/2021
“K” LINE	Transition	Japan	Shipping	110bn JPY	27/9/2021
Japan Airlines	Transition	Japan	Aviation	10bn JPY	1/3/2022
Tokyo Gas	Transition	Japan	Gas	10bn JPY	1/3/2022
Tokyo Gas	Transition	Japan	Gas	10bn JPY	1/3/2022
Sumitomo Chemical	Transition	Japan	Chemicals	18bn JPY	31/3/2022
JERA	Transition	Japan	Power	12bn JPY	24/5/2022

JERA	Transition	Japan	Power	8 bn JPY	24/5/2022
Kyushu Electric Power	Transition	Japan	Power	30 bn JPY	24/5/2022
Kyushu Electric Power	Transition	Japan	Power	25 bn JPY	24/5/2022
Osaka Gas	Transition	Japan	Gas	10 bn JPY	2/6/2022
IHI	Transition	Japan	Heavy industry	11 bn JPY	6/6/2022
JFE Holdings	Transition	Japan	Iron and steel	25 bn JPY	9/6/2022
JFE Holdings	Transition	Japan	iron and steel	5 bn JPY	9/6/2022
Mitsubishi Heavy Industries	Transition	Japan	Heavy industry	10 ~ 20 bn JPY	FY2022 (TBD)
Idemitsu Kosan	Transition	Japan	oil	~20 bn JPY	FY2022 (TBD)

Source: CBI (2022), OECD (2021) and corporate website

Annex Table 4 Examples of External Certification Schemes

Name	Sectors	Geographies
SBTi	Companies from all sectors and of all sizes, except for oil and gas companies.	Global
TPI	Energy (Electricity utilities, Oil and gas), transport (Auto mobiles, airlines, shipping), Industrials and materials (cement, diversified mining, steel, aluminium, pulp and paper)	Global
ACT	Aluminium (draft), Agri Agro (draft), Food, Automotive, Building, Cement, Chemicals (draft), Electric utility, Glass(draft), Iron & Steel(draft), Oil & Gas, Retail, Real Estate, Transport, Pulp & paper (draft), Property developer, Adaptation Methodology (draft), Generic*	Global
BSI PAS 2060**	All Sectors and all sizes	Global
CBI	Energy - solar, wind, geothermal, bioenergy, hydropower, marine renewables, electrical transmission, distribution and storage.	Global

* Generic methodology includes: 1) extraction activities (Mining & Quarrying), 2) Industry (manufacturing, wholesale and repair of vehicles and infrastructure construction), 3) Waste and water management, 4) Services with high GHG impact (Financial and insurance, accommodation and food service, information and communication, human health & social work, arts, entertainment and recreation) and 5) Services with low impact (Education, professional, scientific and technical activities, administrative and support activities, public administration and defence, compulsory social security, activities of households as employers, extraterritorial and other services).

** PAS 2060 is the internationally recognised specification for carbon neutrality and builds on the existing PAS 2050 environmental standard. It sets out requirements for quantification, reduction and offsetting of greenhouse gas (GHG) emissions for organisations, products and events.

Annex Table 5 Examples of methodologies intend to validate decarbonization trajectories

Name	Descriptions
Center for Sustainable Organizations’ Context-Based Carbon Metric	Context-based carbon metric measures the greenhouse gas emissions of a company against reduction targets rooted in science-based mitigation scenarios: 1) SSP1-1.9 scenario, and 2) CERC-LED-OECD scenario. The CSO metric allocates emissions entitlements to individual organizations based upon their contributions to GDP and adjusts them annually in these terms.
Absolute contraction approach	The absolute contraction approach (ACA) is a method for companies to set emissions reduction targets that are aligned with the global, annual emissions reduction rate that is required to meet 1.5°C or WB-2°C.

Sectoral Decarbonization Approach	SDA is a scientifically-informed method for companies to set GHG reduction targets necessary to stay within a 2°C temperature rise above preindustrial levels.
British Telecom - Climate Stabilization Intensity	A method that links a company's financial and environmental performance to the necessary carbon reductions the planet must make in order to avoid catastrophic climate change.
Corporate Finance Approach to Climate-stabilizing Targets ("C-FACT")	C-FACT is a business-friendly, science driven and transparent approach to corporate greenhouse gas target setting. C-FACT entails creating an index that enables companies to: <ul style="list-style-type: none"> - Align corporate GHG reduction target with the IPCC goal - Adjust for relative contribution to global GDP - Annually recalculate target based on the previous year's performance
Greenhouse gas emissions per unit of value added ("GEVA")	The GEVA (GHG emissions per unit of value added) method sets intensity targets based on CO2e per value added (i.e. gross profit) at a rate assuming absolute global emissions would be reduced to stay within 2°C. Under the GEVA method, target is 5% reduction per year.
The 3% Solution	Developed by WWF and CDP. It focuses on potential profits by achieving a science-based target. It is a solution to reduce its absolute emissions by 3.2% a year.
Deep Decarbonization Pathway Project (DDPP)	Aims at helping governments and non-state actors make choices that put economies and societies on track to reach a carbon neutral world by the second half of the century. It is an international collaboration of leading research teams currently covering 36 countries who propose realistic pathways to deep decarbonization
ICT Sectoral Target Setting Approach	The methodology currently applies to mobile network operators, fixed network operators and data centre operators exclusively, with the ICT sub-sector for equipment manufacturers to be added later in 2020.
IAI's "Aluminium Sector Greenhouse Pathway to 2050"	GHG emissions reductions pathways available to the aluminium sector over the next three decades.
The Carbon Risk Real Estate Monitor (CRREM)	The CRREM project has derived country-specific and property type-specific decarbonisation pathways that are aligned with the requirements of the Paris Agreement to limit global warming to 2°C and 1.5°C, to help real estate assets and portfolios thereof to monitor transition risk, and alignment with global targets.