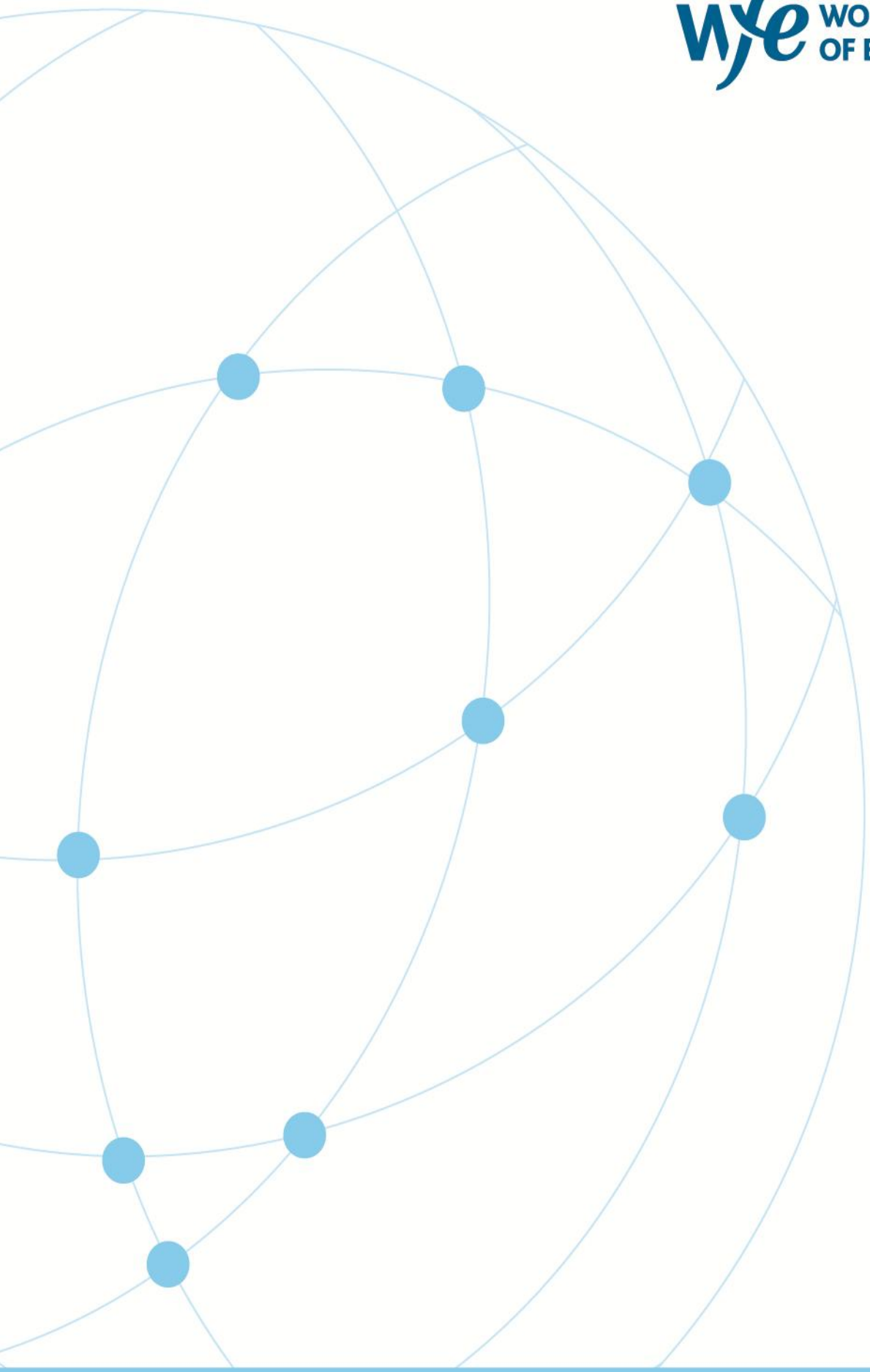
WORLD FEDERATION OF EXCHANGES



Classifying Capital - Part 2: Taxonomies built to support transition finance

February 2026

Executive Summary:

In this paper, the World Federation of Exchanges (WFE) addresses the importance of transition taxonomies in mobilising capital for the economy-wide transition to net zero. Unlike green taxonomies, which identify activities already sustainable, a transition taxonomy also recognises activities that are not yet aligned but are on a credible, time-bound pathway, ensuring continued access to finance for these activities as the wider economy decarbonises.

Financing only what is already green will not deliver net zero. For investors, the transition creates both risks and opportunities: those who anticipate regulatory shifts and invest in companies adapting early are better positioned to capture long-term value and avoid stranded assets. Transition taxonomies provide the roadmap by translating high-level pledges into predictable, actionable signals that help issuers plan and investors allocate capital with confidence, alongside credible transition plans at the firm level. Achieving climate goals requires both incremental improvements and innovation in sectors not yet green, and continued investment in activities already meeting sustainable thresholds.

Transition taxonomies strengthen markets by providing:

- **Predictability**: signalling what counts as credible transition, helping issuers plan investments and avoid regulatory surprises.
- **Comparability**: standardising definitions to reduce fragmentation and support cross-border investment.
- **Credibility**: embedding safeguards and regular updates to minimise greenwashing and prevent transitional activities from continuing indefinitely.

Key messages

- **For policymakers**: The evolution of taxonomies and lessons learnt strongly suggest that any new taxonomies developed should be transition focused from the outset, rather than green. Transition taxonomies can play a vital role in linking national policy goals with corporate transition efforts and directing investment flows, but only if they are designed with credibility and usability in mind. To maximise impact, they should be science-based and regularly updated to reflect evolving technologies; include sunset clauses and phase-out timelines to prevent lock-in of unsustainable activities; progressively expand technical screening criteria (TSC) to avoid gaps and ambiguity; and be - subject to proportionate supervision to ensure comparability, credibility, and investor confidence. The paper sets out two frameworks emerging and provides case studies which highlight the policy decisions involved and their impact.
- **For exchanges**: By embedding the use of taxonomies, building issuer capacity, and anchoring new products such as indices and transition-linked instruments, exchanges help ensure capital markets accelerate the transition of the wider economy.
- **For issuers**: Transition taxonomies translate corporate transition plans into investor-relevant language, reduce financing uncertainty, and protect against greenwashing claims, while signalling seriousness and enabling continued access to capital.

Background

Established in 1961, the WFE is the global industry association for exchanges and clearing houses. Headquartered in London, it represents over 250 market infrastructure providers, including standalone CCPs that are not part of exchange groups. Of our members, 37% are in Asia-Pacific, 44% in EMEA and 19% in the Americas. WFE's 87 member CCPs and clearing services collectively ensure that risk takers post some $1.3 trillion (equivalent) of resources to back their positions, in the form of initial margin and default fund requirements. WFE exchanges, together with other exchanges feeding into our database, are home to over 51,000 listed companies, and the market capitalisation of these entities is over $110 trillion; around $140 trillion (EOB) in trading annually passes through WFE members (at end 2024).

The WFE is the definitive source for exchange-traded statistics and publishes over 350 market data indicators. Its free statistics database stretches back more than 40 years and provides information and insight into developments on global exchanges. The WFE works with standard-setters, policymakers, regulators and government organisations around the world to support and promote the development of fair, transparent, stable and efficient markets. The WFE shares regulatory authorities' goals of ensuring the safety and soundness of the global financial system.

With extensive experience of developing and enforcing high standards of conduct, the WFE and its members support an orderly, secure, fair and transparent environment for investors; for companies that raise capital; and for all who deal with financial risk. We seek outcomes that maximise the common good, consumer confidence and economic growth. And we engage with policymakers and regulators in an open, collaborative way, reflecting the central, public role that exchanges and CCPs play in a globally integrated financial system. If you have any further questions, or wish to follow-up on our contribution, the WFE remains at your disposal.[1]

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[1] Our EU Transparency Register number is 973382524675-69

Classifying Taxonomies - Part 2: Taxonomies built to support transition finance

Introduction

Nearly 140 countries, covering 90% of global emissions, have net zero targets under the Paris Agreement framework. In advance of COP 30, countries will have reviewed their national commitments. A July 2025 advisory opinion by the International Court of Justice confirmed that States have an obligation to regulate private actors' emissions as a matter of due diligence. This, together with the reality of climate change impacts, underlines that moving towards net zero will remain a core priority despite political challenges.

Achieving net zero demands more than financing what is already 'green', to help it scale effectively and meet a net zero target, it requires a transition of the whole economy. Governments simply cannot fund this alone; unprecedented mobilisation of public and private capital is essential across all sectors and regions. Capital markets have driven early green investment, but their greatest challenge now is financing the transition at scale. Green taxonomies, and transition taxonomies in particular, play an essential role in helping identify what changes are consistent with those goals.

The scale of investment needed to decarbonise industries, develop sustainable infrastructure, and adapt to climate change is unprecedented and exceeds the fiscal capacity of most governments. McKinsey estimates global spending on physical assets must rise from $5.7 trillion today to $9.2 trillion annually through to 2050 - around 9% of GDP in the late 2020s.[2] Similar studies for Africa, Asia, and Latin America find multi-trillion-dollar requirements, far exceeding public fiscal capacity.[345678]

Financial markets have innovated to offer new products, including green bonds, green equities, and impact investments but there is a growing demand for instruments that directly finance transition pathways. To meet this demand, market participants need clarity and comparability. Taxonomies fill this gap by standardising terms such as 'green' or 'sustainable' across sectors and by signalling how classifications evolve with science and technology.

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[2] McKinsey report 'The net-zero transition: what would it cost, what could it bring' p19 report of June 2022. Mc Kinsey assessed the net-zero transition along two dimensions: sectors and geographies. For the first, they examine energy and land use systems that account for about 85 percent of global emissions: power, industry (steel and cement production), mobility (in particular, road transportation), buildings, agriculture and food, and forestry and other land use. They also looked at fossil fuels that supply energy to many of these systems. For the geographic dimension, we analyse effects in depth in 69 countries, which make up about 95 percent of global GDP.

[3] University of Cambridge Institute for Sustainability Leadership (CISL). (2024). *Financing Africa's Low Carbon Green Economy Transition.* Cambridge, UK: University of Cambridge Institute for Sustainability Leadership. In its study for African states, the University of Cambridge Institute for Sustainability Leadership (CISL) noted that those states will need to spend over $2.5 trillion by 2030 to meet their climate commitments. Emissions reduction makes up close to 80% of spending needed, while adaptation to climate change is expected to cost $418 billion

[4] IMF report, 29 January 2024, "Unlocking Climate Finance in Asia-Pacific: Transitioning to a Sustainable Future" According to the IMF in a January 2024 report, meeting climate mitigation and adaptation needs in emerging and developing Asia requires the investment of at least $1.1 trillion annually. The current level of investment falls short by about $800 billion.

[5] Reuters "Latin America must invest up to 4.9% of GDP annually to meet climate goals -UN" December 4, 2023
A recent Economic Commission for Latin America and the Caribbean (ECLAC) report presented at the COP28 summit in Dubai noted the region must spend between 3.7% to 4.9% of GDP annually, up from just 0.5% in 2020. This would amount to a total investment of $2.1 trillion to $2.8 trillion

A transition taxonomy defines the stages an activity must reach as it moves from harming a sustainability objective to actively supporting it.

Roadmap of this paper:

In our accompanying sister paper, Part 1 - Classifying Capital: Global Taxonomy Trends and Evolutions, we set out the key characteristics of taxonomies and how they operate, distinguishing between the various types of taxonomies that exist and how they have evolved over time. This paper, however, focuses solely on a new and important evolution of taxonomies – those designed specifically to support the transition of the wider economy – and why they are particularly valuable despite the additional complexity.

In section one, it explains what transition taxonomies are and why they are needed, distinguishing them from traditional green taxonomies. It then explores the opportunities and challenges for policymakers, exchanges, and issuers, including the risks of lock-in, greenwashing, and weak technical screening criteria. Section two includes case studies from ASEAN, Australia, Canada, and the EU to illustrate how different jurisdictions are addressing these challenges. Section three distils lessons for taxonomy developers and sets out recommendations for policymakers on how transition taxonomies can be designed to mobilise capital effectively while maintaining credibility.

Section 1

What is a 'transition taxonomy' and what role do transition taxonomies play?

A 'transition taxonomy' is not a standardised term, and the word 'transition' is often used broadly in sustainability debates to refer to climate change mitigation or environmental policies in general. **In this paper, however, a transition taxonomy refers specifically to a classification system that recognises activities which are not yet fully sustainable but are on a credible, time-bound pathway toward alignment with net-zero and broader sustainability goals**. What makes transition taxonomies distinct is that they extend beyond the binary structure of green taxonomies, offering a more dynamic framework for guiding investment across the whole economy. **Most importantly, transition taxonomies can enable the continued access to capital that is required for transition-committed entities to attract the necessary investment to effect their transition, thereby supporting decarbonisation pathways and reducing the risk of stranded assets.** The distinction between green and transition taxonomies' key features are compared side by side in Annex I.

For policymakers, transition taxonomies offer a bridge between national transition plans and capital markets. They provide a structured way to translate high-level pledges into sector-specific signals, helping avoid disorderly shifts, reducing the risk of carbon lock-in (the potential risk that activities are classified as 'transition positive' but that classification is not updated in light of evolving science and technology), and supporting innovation in hard-to-abate sectors. Importantly, they also allow flexibility to reflect specific domestic economic contexts - particularly in resource-based economies that are expected to continue contributing essential materials to the global economy, while simultaneously requiring investment to transition these sectors in support of an orderly global shift to a low-carbon economy.

Green taxonomies such as the EU's are designed primarily to identify activities that are already sustainable, providing a high bar for capital allocation and comparability across markets. While some green taxonomies include transitional elements (e.g. EU's conditional treatment of natural gas and nuclear, or thresholds that may tighten over time), these are not systematically structured as pathways with clear deadlines or incremental categories.

Transition taxonomies, by contrast, are explicitly designed to guide activities from 'not aligned' towards 'aligned' in a transparent, time-bound way. They provide interim classifications for progress in hard-to-abate sectors, where immediate green eligibility is unrealistic, while ensuring that activities which cannot credibly reach alignment are ultimately phased out. In short, green taxonomies focus on defining the end-state of sustainability, while transition taxonomies combine a trajectory approach with mechanisms for phasing out activities that cannot credibly align with long-term goals.

What do transition taxonomies deliver for different types of stakeholders?

For exchanges:
Taxonomies enable exchanges to promote sustainable investment opportunities with confidence:

- Providing a common classification language that reduces search/verification costs and greenwashing risk for investors;
- taxonomies enable the creation of thematic listing segments/labels, indices, benchmarks exchange-traded funds, derivatives etc based on objective criteria;
- taxonomies feed into data and transparency initiatives, and support market integrity;
- transition taxonomies enable exchanges to provide opportunities for even more of their issuers to benefit from sustainable finance through initiatives such as the creation of thematic listing segments/labels, indices, benchmarks exchange-traded funds, derivatives etc.

For **policymakers,** transition taxonomies offer a bridge between national transition plans and capital markets. They provide a structured way to translate high-level pledges into sector-specific signals, helping avoid disorderly shifts, reducing the risk of carbon lock-in (the potential risk that activities are classified as 'transition positive' but that classification is not updated in light of evolving science and technology), and supporting innovation in hard-to-abate sectors.

For **investors**, they create visibility into which activities are credibly moving toward net zero, distinguishing genuine progress from greenwashing. By mapping 'transition within' activities (e.g. decarbonising steel or cement) and 'transition away' activities (e.g. replacing fossil fuels with renewables), they enable portfolios to align with 1.5°C pathways while managing stranded-asset risk.

For **issuers**, they provide a recognised language to communicate transition plans. Companies can demonstrate to markets how they intend to decarbonise existing operations or pivot towards low-carbon alternatives, improving access to capital, building investor confidence, and reinforcing transparency. They also set out thresholds and criteria that help issuers understand what constitutes a credible transitional state for their sector and what market participants are likely to expect in terms of ambition, timelines, and disclosure.
Together, these perspectives show that transition taxonomies are not just technical tools but practical frameworks for aligning government policy, market capital, and corporate action.

Addressing risks arising in transition

- **The risk of greenwashing and addressing the challenge of 'lock-in' which delays action**

As the OECD's 2021 review identified, in the new space of transition finance there is potential risk of greenwashing and a need to ensure environmental integrity (Tandon, 2021). There are also other risks associated with transition finance, including the potential for a '**carbon-intensive lock-in'**. Failure to make updates can lead to the classification of activities that are relatively emission-intensive when compared with current practices being 'locked in' as sustainable. Another risk is that investing into efficiency or other types of improvements, as part of existing polluting assets, could potentially delay the transformation or replacement of those assets.

There are two ways to protect against 'lock-in' and 'delayed action' risks: 1) regulators must update thresholds regularly so that they align with evolving science and technology, and 2) entities must set ambitious transition plans that align with broader net zero goals, mitigating the risk that their practices fall out of step with broader decarbonisation efforts. Entities can also protect themselves from greenwashing allegations by ensuring that their high-level net-zero pledges translate into clear, transparent and actionable targets that can be verifiably implemented. These steps are critical to ensuring that transition finance does not become a way for market actors and governments to justify delayed or insufficient action.

- **Addressing challenges in traditionally hard-to-abate sectors**

Hard-to-abate sectors such as steel, cement, aluminium, shipping, aviation and chemicals account for a large share of global greenhouse gas emissions. These industries are critical to economic development, but they are also difficult to decarbonise because, whilst promising low-carbon technologies exist, most are not yet widely available or cost-competitive at scale. This makes them a particularly important test case for sustainable finance frameworks. Traditional green taxonomies, which use binary categories to classify eligible activities as either sustainable or not, are not well suited to these sectors. In many cases, the activities involved cannot yet be labelled 'green' but nor can they be excluded from financing altogether if the economy is to transition successfully. This gap creates a risk that companies in these sectors will be left without access to the investment needed to develop or adopt new solutions, while investors lack clarity on whether interim improvements are credible or sufficient.

Transition taxonomies address this challenge by introducing intermediate categories that recognise incremental progress. Some models use 'traffic light' classifications, while others apply decision-tree frameworks to map pathways for activities that are not yet aligned but can move towards climate goals. The common feature is that these frameworks create space for activities that fall short of green thresholds today but can improve over time - typically with *sunset clauses* or review points to ensure alignment with long-term targets. This enables capital to be channelled into innovation, such as carbon capture and storage in cement production, hydrogen-based steelmaking, or the development of sustainable fuels in shipping and aviation. It also provides companies with incentives to steadily reduce emissions, while helping investors to avoid stranded-asset risks and support credible transition plans.

At the same time, transition categories need strong safeguards. If thresholds are too weak or deadlines too flexible, there is a risk that they become a way to justify continued high-emitting activities with little genuine progress. Science-based benchmarks, clear sunset dates, and regular review cycles are therefore essential.

Ultimately, the inclusion of hard-to-abate sectors in transition taxonomies demonstrates the added value of transition taxonomies. By creating credible pathways and requiring transparency, transition taxonomies and transition plans enable investment while maintaining accountability. They also illustrate that such frameworks are not just about rewarding what is already green, but about supporting the whole economy on its journey to net zero.

Taxonomies are ultimately standardisation tools. As such, they are not neutral and theoretically carry re-distributive consequences. Labelling certain activities as 'transitional' can be controversial, particularly where they are significantly harmful or require a 'transition away'. Legal challenges can arise even in established frameworks; the well-publicised dispute over classifying natural gas and nuclear as 'green' in one major taxonomy illustrates the point. To mitigate such risks, taxonomy developers have experimented with a range of design responses:

- **Grandfathering clauses** allow existing assets to continue under older, more permissive rules, avoiding retroactive prohibition (e.g. older power plants may be treated differently from new ones based solely on commissioning date).
- **Sunset clauses** place time limits on transitional eligibility, ensuring that activities cannot remain transitional indefinitely.
- **Improvement pathways or grace periods** grant conditional eligibility provided that activities meet specific performance upgrades within a defined timeframe.
- **Pathway-based decision trees that provide differentiation by technology generation or decision-tree models.** This goes further than grandfathering by including improvement pathways. Rather than exempting all older assets, they classify activities based on both vintage and demonstrated alignment with net-zero pathways. For example, older assets with no credible retrofit options may be excluded altogether, while newer or upgradeable ones can qualify as transitional.

These approaches — which are developed in the ASEAN, Canadian and Australian approaches — show that there is no single solution, but a toolkit of options that taxonomy developers can draw upon to balance credibility, legal certainty, and the need for orderly transition.

Transition taxonomies therefore represent a new and important evolution in taxonomy development: they expand the scope from identifying what is already green to guiding how the rest of the economy moves towards sustainability. By making the conditions, timeframes, and safeguards under which high-emitting activities can remain eligible explicit, they offer policymakers, investors, and issuers a tool to mobilise capital credibly while trying to minimise the risks of greenwashing and technological lock-in. This is the context in which the following sections of the paper explore their application across jurisdictions and their implications for policy and practice.

Section 2

Detailed Approaches to transition taxonomies:

In this section, we explore the different approaches taken to transition taxonomies with some specific case studies that fall under broadly three types of approach: a traffic light approach; a categorisation framework approach; and the retrofitting of an existing taxonomy to expand its transition focus.

However, we note some broader considerations in developing transition taxonomies first.

The Investor Leadership Network (ILN)[9] identified a commonality of considerations that had underpinned its members' efforts to establish proprietary transition taxonomies.

The considerations identified which would apply to all approaches, include that they are:

- ***Dynamic by design***: "frameworks should reflect the dynamic nature of the transition. Investors should be able to articulate changes in thresholds and have them in place for its periodic review and updating". For example, the ILN notes, that the taxonomies and frameworks used to assess transition need to be "agile enough to consider external factors such as technology developments, consumer and corporate behaviour, government regulation and carbon markets, amongst others".
- ***Permissive versus prescriptive:*** ILN members sought "a balance of integrating objective and science-based criteria, whilst not designing overly prescriptive guidelines that limit the investible universe to such an extent that the flow of capital to transition-enabling activities is severely reduced".
- ***Data and tooling***: the ILN noted "there are challenges and opportunities in accessing robust data and tooling required for multi-faceted analysis that includes credible transition plan assessment to inform engagement activity and value estimations."
- ***Resourcing***: the technical skillset and intensity of resource required to perform quantitative transition modelling[10] and translate complex results.

'Can do' vs 'must do'

Some taxonomy developers face an additional element: national or regional taxonomies start from the specific realities of their economies, sometimes prioritising near-term development needs. This creates a tension for policymakers between what they believe '*can be done'* versus what '*must be done'*.

- A **"must do"** approach starts with the end goal - such as net zero by 2050 - and works backwards from that goal.
- A **"can do"** approach builds forward from the current economic or business model, prioritising stability and feasibility.[11]

[9] August 2023, The Investor leadership Network "Transition and the Enabling Role of Taxonomies and Frameworks". This report also includes helpful case studies of different firms approaches to build a framework and taxonomy that would help identify transition risks and opportunities.

[10] Formal quantitative modelling is potentially a useful method to help understand the many mechanisms underlying transitions and their complex interactions. For more on this see 'Modelling Transitions: An appraisal of experiences and suggestions for research'

[11] In May 2021, the Sustainable Finance Action Council (SFAC) was mandated to provide advice and recommendations to Canada's Deputy Prime Minister and Minister of Finance and the Minister of Environment and Climate Change on defining green

The choice of balance also shapes how criteria evolve. Taxonomies leaning heavily on a 'can do' approach may later face pressure to ratchet thresholds more abruptly to stay aligned with 1.5°C pathways, increasing adjustment costs and policy uncertainty. By contrast, a stronger 'must do' orientation front-loads ambition and provides clearer long-term signals, though it may impose greater short-term disruption. Divergent national approaches could also heighten cross-border fragmentation if thresholds tighten unevenly.

Below, we outline three categories of approach taken to transition taxonomies thus far. The taxonomies highlighted below are illustrative of the most common categories of transition taxonomy (this is not an exhaustive list of transition taxonomies using each of these approaches).

A "Traffic Light" Approach (the ASEAN Taxonomy)

The ASEAN Taxonomy epitomises a 'traffic light' approach, intended to capture activities and sectors in transition more effectively than a binary system. The latest version (Version 4) of this Taxonomy was adopted in November 2025.[12] The release of Version 4 marks the completion of the development phase of the ASEAN Taxonomy. The Asean Taxonomy Board (ATB)[13] will continue to maintain and update the Taxonomy as a living document, ensuring it remains responsive to technological, scientific, and market developments. The ATB will also be shifting its focus to encouraging adoption of the Taxonomy, including conducting targeted capacity building activities.
It is the inclusion of green, amber, and red designations that establishes the ASEAN Taxonomy as a traffic-light model. In introducing an amber category, ASEAN (along with similar Asian taxonomies such as Singapore's) determined that an "amber transition cannot last forever". The introduction of sunset clauses was critical to ensure

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and transition investment (taxonomy). The SFAC confirmed and prioritised taxonomy as an early area of focus and identified characteristics and issues from previously developed taxonomies in order to assess how best to develop the Canadian Taxonomy. The SFAC subsequently convened a Taxonomy Technical Experts Group (TTEG) to harness the leadership and expertise needed to deliver on this mandate item. Following substantial research and engagement, the TTEG prepared a report—the Taxonomy Roadmap Report—which was endorsed by the SFAC in September 2022.This report noted that taxonomies will then try to balance what we 'can do' versus what 'must be done'. The report is accessible here: https://www.canada.ca/content/dam/fin/publications/sfac-camfd/2022/09/2022-09-eng.pdf

[12] Version 4 can be accessed https://www.sfinstitute.asia/asean-taxonomy/

Key updates included in the ASEAN Taxonomy Version 4 were:

• Inclusion of TSC for the three (3) remaining focus sectors: Agriculture, Forestry and Fishing; Manufacturing; Water Supply, Sewerage Waste Management and Remediation;

• Inclusion of TSC for the two (2) remaining enabling sectors: Information & Communication; and Professional, Scientific & Technical Activities;

• Introduction of a methodology for reporting on entities, portfolios, and financial instruments based on exposure to underlying Activities across the Taxonomy's classification tiers;

• Updates to grandfathering criteria to include grandfathering of Amber Tiers 2 and 3; and

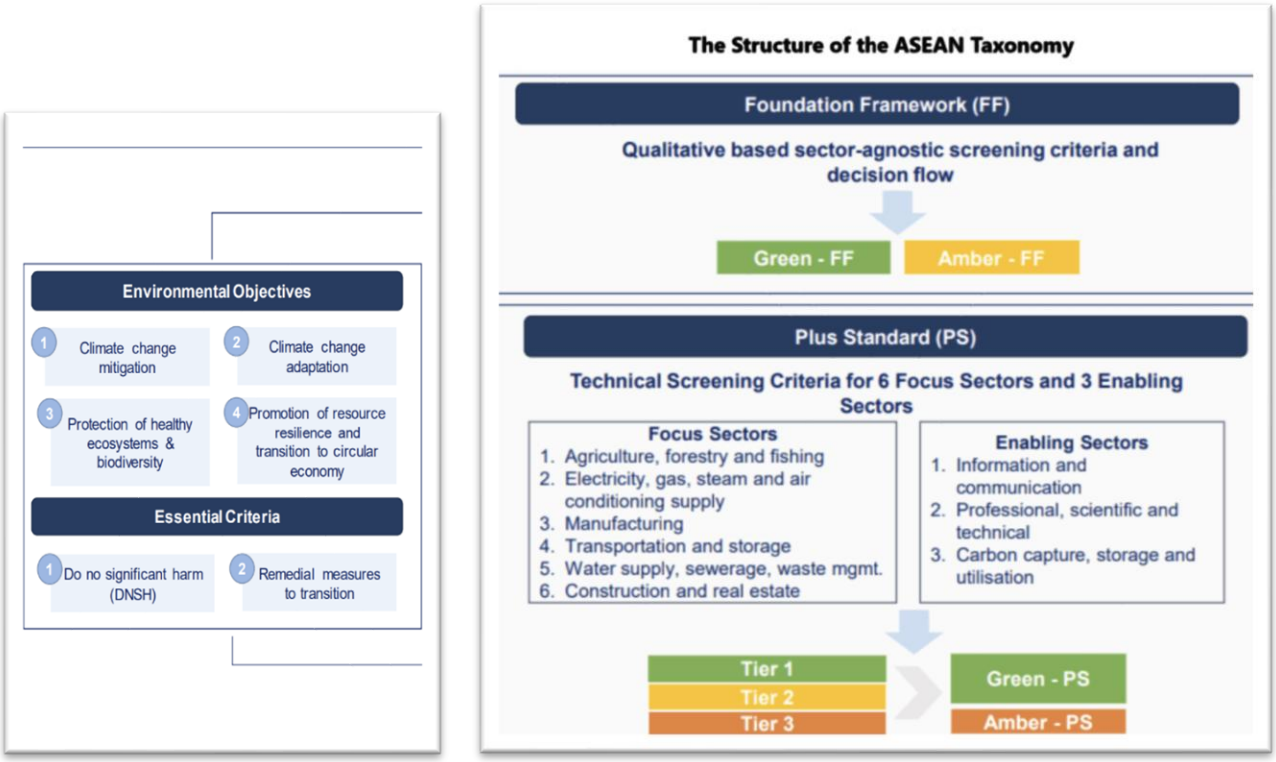
• Enhancement of Essential Criteria 3, Social Aspects, updated to consider informal workers in labour and social protection systems.

[13] The ASEAN Taxonomy Board (ATB) is the regional body overseeing the design, implementation, and upkeep of the ASEAN Taxonomy for Sustainable Finance, under the auspices of the ASEAN Finance Ministers and Central Bank Governors. The ATB includes representatives from ASEAN financial regulators — such as members of the ASEAN Capital Markets Forum (ACMF), ASEAN Insurance Regulators' Meeting (AIRM), ASEAN Senior Level Committee on Financial Integration (SLC), and the ASEAN Working Committee on Capital Market Development (WC-CMD).

progress by a fixed date. To further safeguard ambition, the ASEAN Taxonomy restricts amber eligibility to existing activities only, preventing the construction of new projects that would prolong reliance on sub-optimal technologies even if subject to future phase-out.

Certain focus sectors and enabling sectors are identified within this system. Amber is divided into two tiers: a **Plus Standard Framework**, which applies science-based metrics and thresholds, and a **Foundation Framework**, which is principles-based and applies where detailed thresholds are not yet available. Figure 1 below illustrates the framework's design.

Figure 1: Illustration of the ASEAN Taxonomy Design



The diagram above blends detail on environmental objectives presented in the first version of the ASEAN Taxonomy November 2021 version 1 (left hand side illustrating environmental objectives and essential criteria) and adds the updated list of new sectors in Version 3.

With Version 3 (December 2024), the ASEAN taxonomy expanded its science-based technical screening criteria (TSC) to cover construction and real estate, transportation and storage sectors, building on the TSC already applied in the energy sector and carbon capture, utilisation and storage, laying the groundwork for the full coverage finalised in Version 4 (2025). By contrast, Version 1 (2021) conceptually mapped six focus sectors that together represented around 85% of regional emissions and 55% of gross value added but did so without articulated TSC. In other words, Version 1 offered wide scope but limited depth, while Version 3 provides deeper, science-based coverage for a smaller share of emissions-intensive activities. Version 4 (November 2025) now completes the Plus Standard (PS) by providing comprehensive TSC coverage across all six focus and three enabling sectors first identified in Version 1 — adding Agriculture, Forestry and Fishing; Manufacturing; and Water Supply, Sewerage, Waste Management and Remediation, as well as the enabling sectors Information and Communication and Professional, Scientific and Technical Activities.

This marks the full operationalisation of the ASEAN Taxonomy's science-based framework, combining breadth of sectoral coverage with technical rigour.

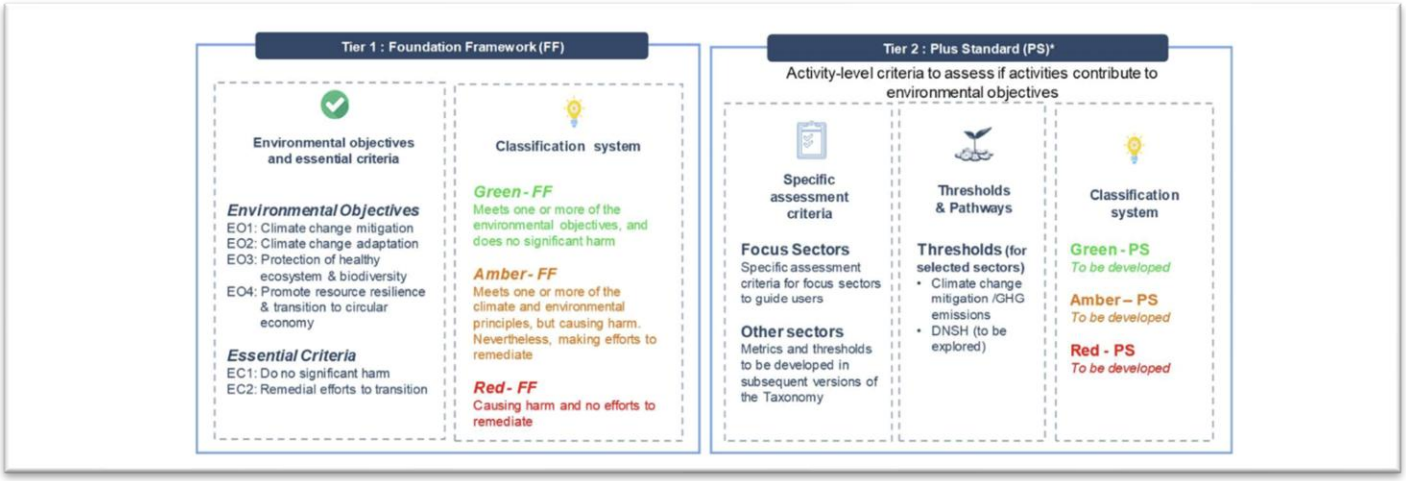


Figure 2: Multi-tier Taxonomy Design (ASEAN Version 1, 2021). Note: thresholds and pathways for other environmental objectives were to be developed in later versions.

The Foundation Framework, introduced in Version 1 and maintained through Version 4, adopts a principles-based approach, applicable to all economic activities. Under the Foundation Framework, an economic activity must fulfil at least one of the four environmental objectives – climate change mitigation and adaptation, protection of healthy ecosystems and biodiversity, promotion of resource resilience, and transition to a circular economy. Most importantly, the economic activity must 'Do No Significant Harm' to the broader environment and must demonstrate concrete actions to lessen harm and progress toward sustainability over time. The Foundation Framework uses a single sector-agnostic decision tree to assess and classify activities into different categories (outlined below in Figure 3).

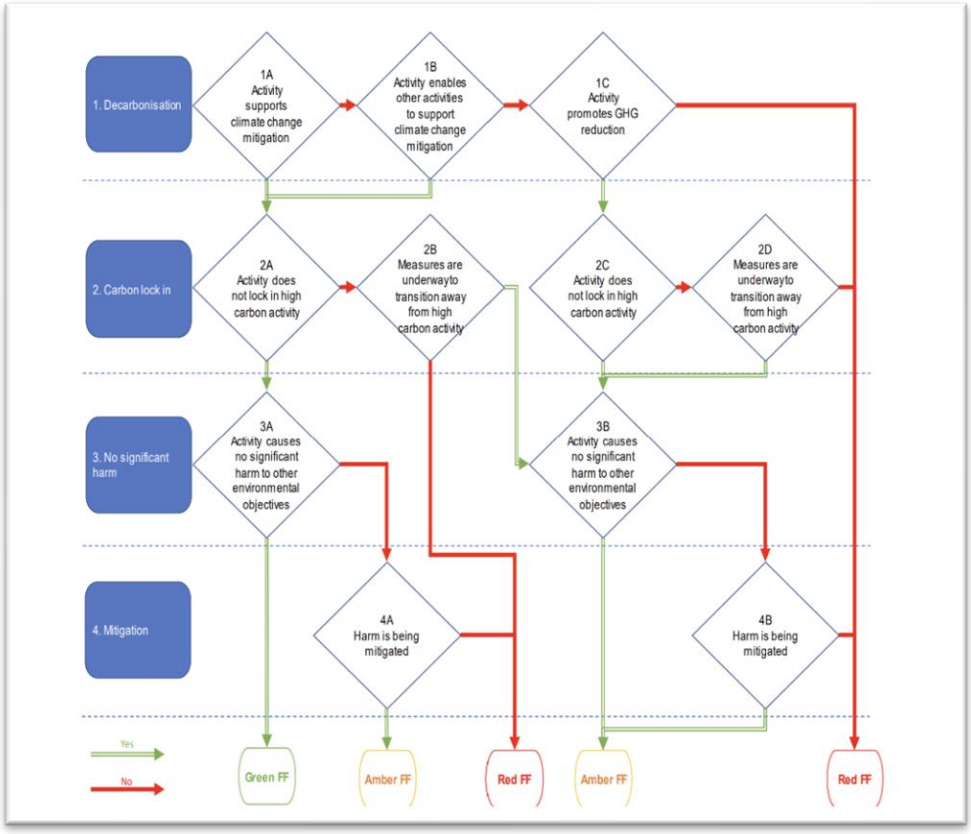


Figure 3: Sector Agnostic Decision Tree/ Source: November 2021 Asean Taxonomy for Sustainable Finance version 1

For some hard-to-abate sectors, technology whitelists or defined mitigation measures have proved more practical than thresholds — identifying best-available options (e.g. clinker substitution in cement, CCS, or energy-efficiency improvements) that, in combination, can still achieve meaningful emissions reductions aligned with transition pathways.

A Categorisation Framework Approach (from the development of the Australian and Canadian taxonomies)

Australia and Canada have both advanced taxonomy designs that explicitly include a transition category. Their approaches illustrate how different methodologies can also balance ambition with feasibility while safeguarding credibility.

Australia

To bring credibility and rigour to its transition category, the Australian Sustainable Finance Institute (ASFI) convened a Technical Expert Group (TTEG) to develop a methodology for defining transition activities. This methodology builds on

international experience, including that of Canada, Singapore and ASEAN, and reflects the way taxonomies are evolving across jurisdictions.[14]

The TTEG recommended that the transition category must:

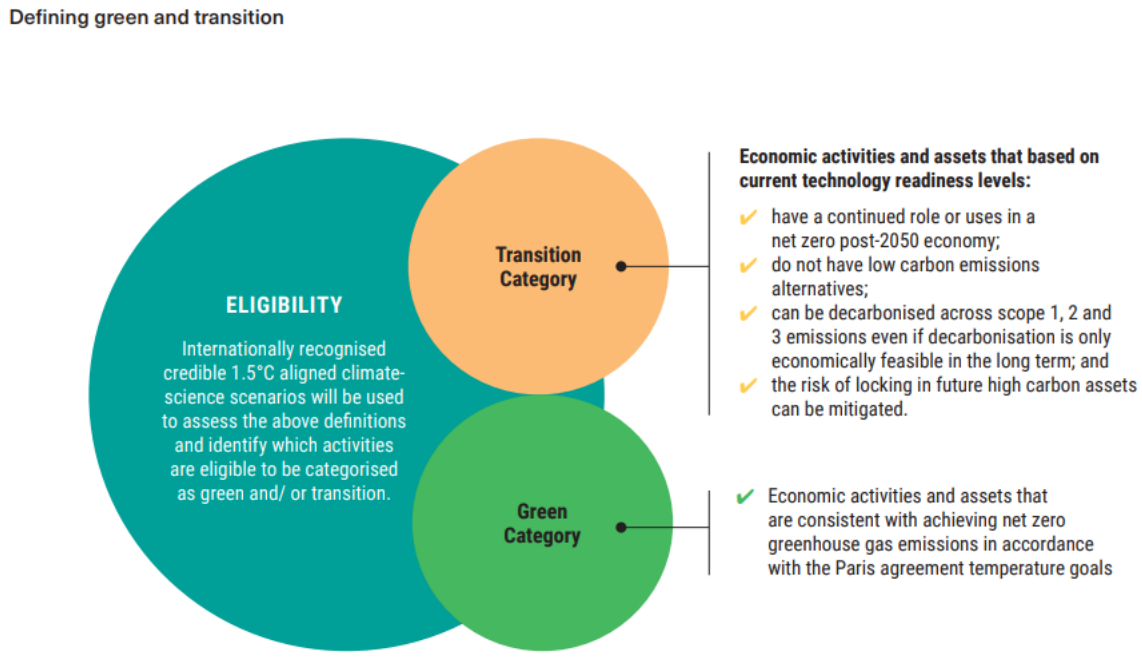
- Avoid greenwashing by excluding activities incompatible with a net zero economy.
- Direct capital toward activities essential for a Paris Agreement-aligned, net zero pathway.
- Prevent lock-in of high-carbon technologies.
- Apply criteria that require improvement over time, with explicit sunset dates.
- Cover full Scope 1, 2 and 3 emissions, not only direct emissions.
- Exclude activities with readily available low-carbon alternatives.[15]

Examples that may qualify include activities for which no viable low-carbon substitute exists today, that can be fully decarbonised across the value chain, and that do not risk locking in future emissions. By contrast, activities such as new internal-combustion-engine vehicle production are excluded given the availability of alternatives.

[14] Factsheet: Methodology for defining 'transition' in the Australian taxonomy

[15] ASFI, *Methodology for Defining Transition in the Australian Economy* (the full report, Dec 2023)

Figure 4: Methodology for Defining Transition in the Australian Economy
*Source: Australian Sustainable Finance Institute (ASFI), December 2023.



The methodology assumes periodic updates to reflect advances in climate science and technology readiness. It requires the use of credible, internationally recognised 1.5°C scenarios when assessing eligibility for both green and transition categories.[1]

Like Canada, Australia employs a decision-tree framework. See below for an illustration of how this operates.

ASFI transition methodology decision tree

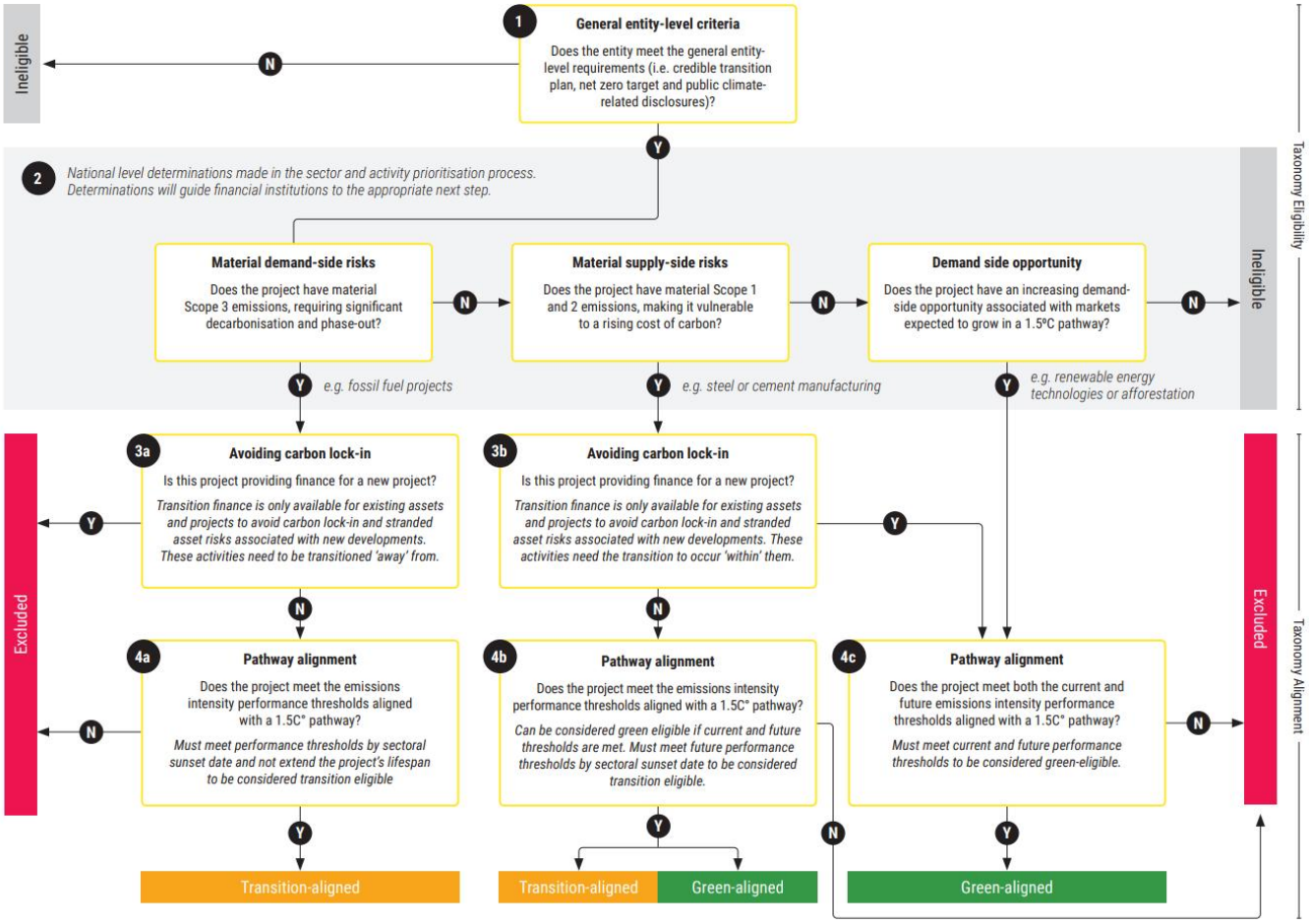


Figure 5 Australian Decision-Tree – Activity-Level Sub-criteria (illustrative detail) Source: ASFI, December 2023.

Canada

Canada's proposed taxonomy, developed by the Sustainable Finance Action Council (SFAC), also adopts a decision-tree approach but places greater emphasis on demand-side risk and Scope 3 emissions.[16]

Please see below Figure 6 to compare the Canadian decision framework.

[16] *SFAC Taxonomy Roadmap Report* (Sept 2022)

Figure 2: Categorization Framework for Determining Whether a Project Is Green- or Transition-Eligible under the Taxonomy

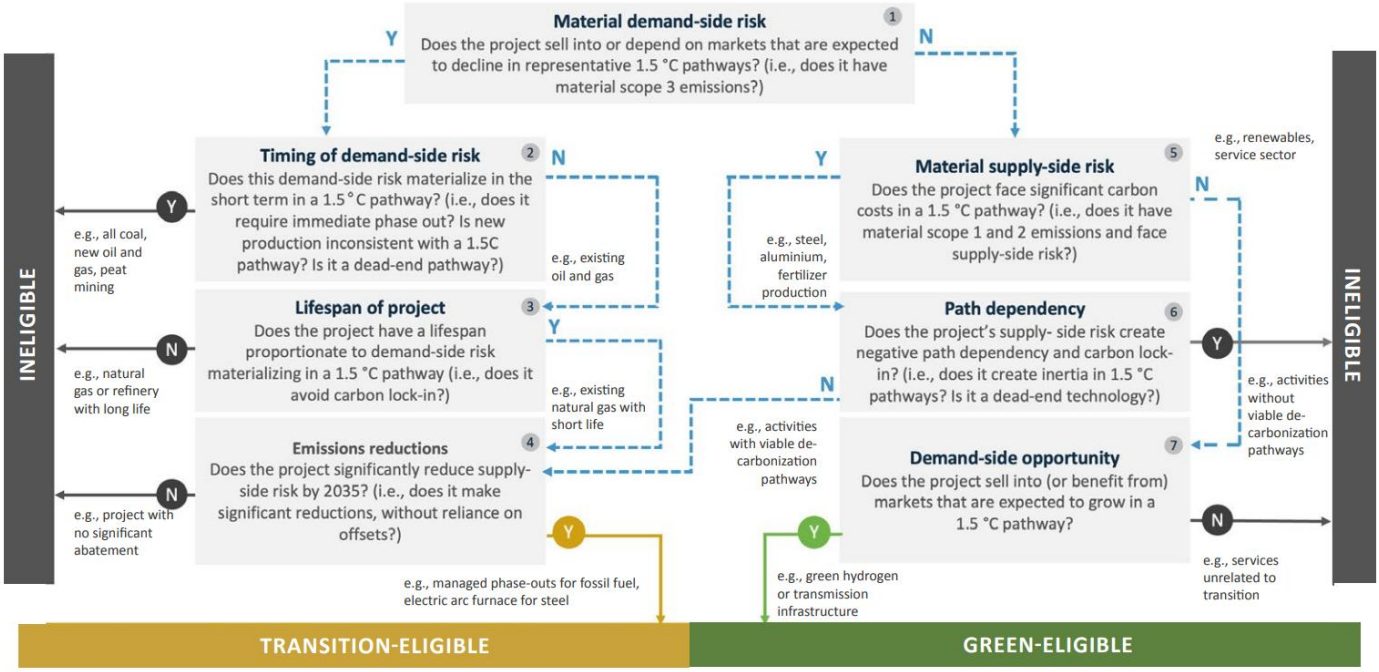


Figure 6: Source: Taxonomy Roadmap Report Sustainable Finance Action Council September 2022.

The framework begins by assessing whether a project faces demand-side risk in 1.5°C pathways. This considers whether markets for its products are expected to contract over time due to declining demand for high-emission goods. Activities heavily exposed to Scope 3 emissions, such as fossil fuel extraction or traditional automotive manufacturing, typically fall into this category.

Key implications are:

- **Thermal coal** is ineligible, given immediate demand decline under 1.5°C scenarios.
- **New oil and gas projects** are also ineligible: they are capital intensive, long-lived, and inconsistent with pathways where demand declines from the 2020s.
- **Existing oil and gas projects** are not automatically excluded but must demonstrate significant reductions in Scope 1 and 2 emissions to remain eligible.
- **Sectors with substitutes** (e.g. passenger vehicles with electric alternatives) are ineligible for the transition label.
- **Projects with short lifespans** or those explicitly tied to early retirement of high-emitting assets may remain eligible if aligned with net zero pathways.

Comparative Insights and Policy Considerations

The ASEAN, Australian and Canadian approaches illustrate different ways of embedding 'transition' into sustainable finance taxonomies, each offering valuable strengths but also presenting challenges that policymakers will need to take into account.

The ASEAN model, as formalised in Version 4, is built around a traffic-light system, with green, amber and red designations. By introducing amber categories, combined with sunset clauses and phased technical screening criteria, ASEAN provides flexibility and early coverage across sectors. This pragmatic approach allows activities to be recognised while they improve over time. At the same time, the framework may create ambiguity and uneven implementation until technical criteria are fully developed and consistently applied.

Australia and Canada have opted for categorisation frameworks based on decision-tree methodologies, which apply more prescriptive rules to define transition activities. The Australian framework places emphasis on technology readiness, comprehensive coverage of Scope 1–3 emissions, and the requirement for sunset dates. These features provide strong safeguards against greenwashing and lock-in. However, they may also narrow eligibility in jurisdictions where low-carbon alternatives are not yet widely available, which could present challenges for certain sectors.

Canada's framework, by contrast, places greater focus on demand-side risk and Scope 3 emissions. In doing so, it directly addresses long-term transition risk and helps prevent stranded assets. Yet this same emphasis may reduce the investability of sectors that remain important to national economies in the short term, raising potential questions of sequencing and timing.

Taken together, these approaches show that there is no single model for incorporating transition into taxonomies. Each offers advantages that can inform policymakers, but also limitations that must be managed. Traffic-light systems can mobilise capital quickly but depend on strong criteria and enforcement to ensure credibility. Decision-tree systems provide clarity and comparability but can become restrictive unless they are regularly updated in line with advances in science, technology and markets. For policymakers, the lesson is to balance clarity, credibility and flexibility, designing predictable review cycles from the outset and maintaining alignment with recognised science-based pathways, so that taxonomies remain both ambitious and usable over time.

EU Taxonomy's Evolution Towards Transition

How the EU Taxonomy Has Approached Transition to Date

The following section draws on the observations of the Platform on Sustainable Finance, which examined how the EU Taxonomy could better accommodate transition activities. Their analysis highlights the conceptual and technical challenges of using a taxonomy to guide wider economic transition.

Since the Platform's reports (2021–2022), the European Commission has updated the Taxonomy through delegated acts and, most recently, the 2025 Omnibus Package, which aims to streamline requirements and improve coherence across sustainability legislation. The introduction of enabling and transitional activities was an important step, but the Platform found that the framework still carries significant limitations as a tool for broader transition finance.

The EU Taxonomy currently includes 25 activities classified as 'transitional'.[17] These are treated the same way as green activities, with a single threshold to qualify as sustainable. While thresholds are intended to tighten over time, this 'ratchet mechanism' created unpredictability: firms reported that a lack of advance guidance on when and how criteria would change offered little incentive for improvement by lower performers. In other words, the EU system does not integrate sunset clauses, which have emerged as a defining characteristic of more dynamic transition taxonomies.

Sector	Examples of Transitional Activities
Metals & Materials	Iron & steel; aluminium; cement; glass; ceramics; lime
Chemicals	Chlorine, ammonia, nitric acid, carbon black, hydrogen peroxide; low-carbon fertilisers
Energy	Electricity generation from gaseous/liquid fuels (meeting thresholds); cogeneration of heat/cool & power
Hydrogen & Fuels	Hydrogen (non-renewable, meeting efficiency thresholds); other low-carbon fuels
Buildings	Renovation of existing buildings (deep energy retrofits)
Paper & Pulp	Manufacture of paper and pulp
Heating & Cooling	District heating and cooling distribution systems
Transport	Low-carbon aircraft; shipping retrofits; improved rail freight; high-efficiency co-generation units

Figure 7: EU Activities Classified as Transitional under the EU Taxonomy
Source: European Commission, Delegated Act on Climate Change Mitigation and Adaptation, Annex I (2021, consolidated 2023*).*[18]

External Proposals to Retrofit the Taxonomy for Transition

In July 2021, the Platform proposed adapting the EU Taxonomy through a more dynamic classification, using a traffic-light model to capture activities that perform 'in between' green and non-aligned thresholds. They cautioned that the existing binary design risked:

- creating 'green bubbles' due to scarce aligned assets,
- suggesting non-aligned activities were inherently unsustainable, and
- overlooking companies on a credible transition pathway.[19]

[17] Please note the European Commission adopted a Delegated Act on 4 July 2025 to simplify the application of the EU Taxonomy, altering disclosure and reporting requirements. At the time of publication this had not changed the classification logic of green/transitional or the list of transition activities.)
[18] European Commission, *Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021* (as consolidated in 2023), Annex I — Climate Change Mitigation and Adaptation. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32021R2139
[19] Platform on Sustainable Finance, *Final Report on Taxonomy Extension Options Linked to Environmental Objectives*, March 2022. Available at: https://finance.ec.europa.eu/publications/final-report-taxonomy-extension-options-linked-environmental-objectives_en

The Platform also suggested activities with no technological potential to improve should be explicitly identified. To date, this work has not been pursued further by the Commission and would understandably be very challenging.

In July 2024, ESMA expressed support for a more comprehensive taxonomy, noting:

"The EU Taxonomy should be completed for all activities that can substantially contribute to environmental sustainability. It should also be extended to cover activities with the potential to improve and those activities that should be decommissioned."[20]

At the same time, ESMA recognised the Taxonomy's central role in mitigating greenwashing, but stressed that its scope remains incomplete and would benefit from extension to both environmental and social dimensions. (This reflects ESMA's opinion as of July 2024 and may be revisited following the review being undertaken through the 2025 Omnibus Package).

The Platform further recommended that criteria should tighten every three to five years to reflect technological progress, with different sectors moving at different speeds. They envisioned 'falling curves' of performance, where low-carbon alternatives accelerate substitution quickly, while hard-to-abate sectors progress stepwise (see Figure 8).

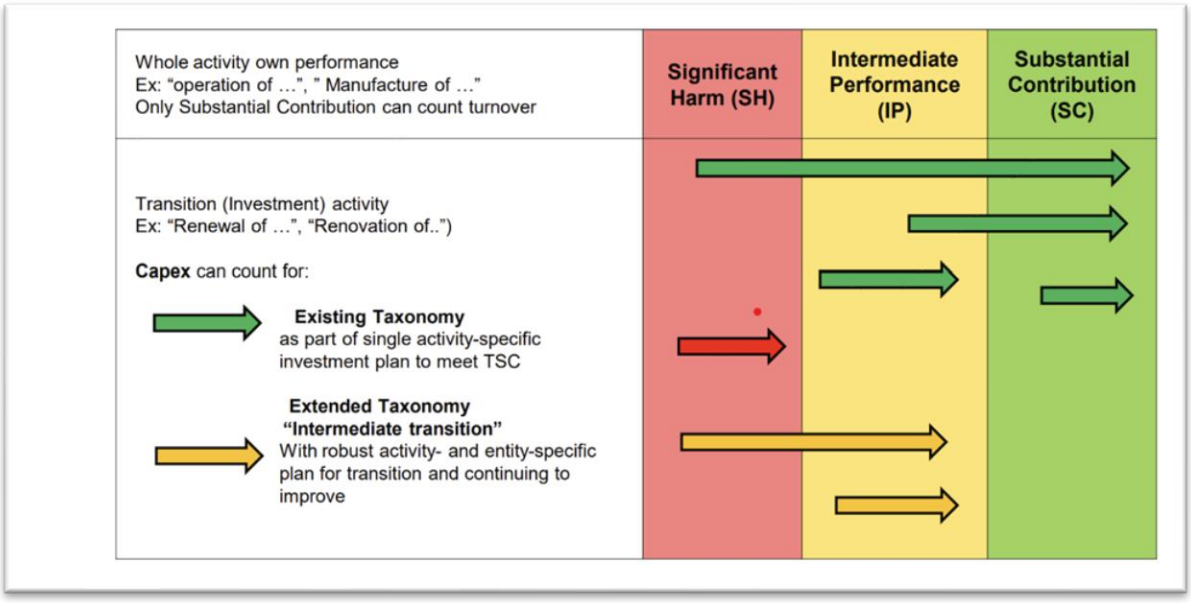


Figure 8: Examples of Changes Across Different Performance Levels
Source: Platform on Sustainable Finance, Final Report on Taxonomy Extension (March 2022); Natixis, "Extended Taxonomy – In-Betweenness and Elitism Softening."[21]

The Investor Leadership Network (ILN), including its member Ninety One, suggested a further approach to categorising intermediate activities (see Figure 9).

[20] European Securities and Markets Authority (ESMA), *Opinion on Sustainable Investments*, July 2024. Available at: https://www.esma.europa.eu/document/opinion-sustainable-investments
[21] Natixis, *Extended Taxonomy – In-Betweenness and Elitism Softening*, 2022. Available at: https://gsh.cib.natixis.com/our-center-of-expertise/articles/extended-taxonomy

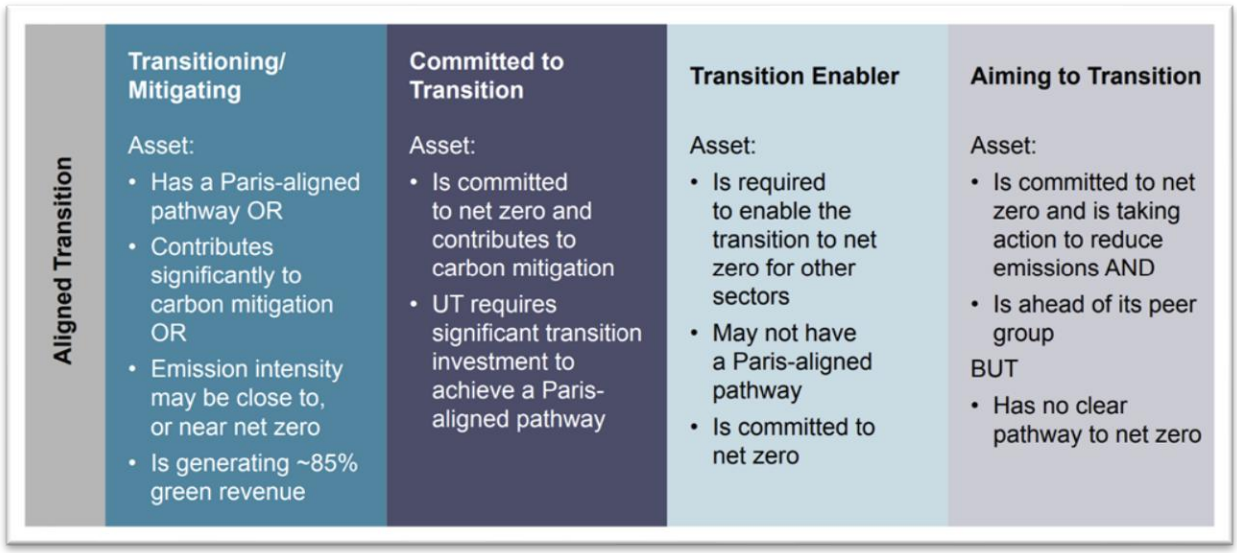


Figure 9: ILN Proposal for Categorising Intermediate Activities
*Source: Investor Leadership Network, "Transition and the Enabling Role of Taxonomies and Frameworks," August 2023.[22]

Challenges and Lessons Learned from Retrofitting an Existing Taxonomy

The EU experience illustrates the difficulty of retrofitting transition logic into a taxonomy originally conceived as a binary green classification tool. Unlike frameworks that embed transition pathways from the outset, the EU Taxonomy introduced 'transitional' activities within its existing structure at the outset, treating them as green but with looser thresholds. This created design tensions: thresholds could be ratcheted tighter over time, but without pre-defined pathways or sunset clauses, companies saw this as unpredictable. Moreover, attempting to adapt the Taxonomy while it was still being completed added complexity and political sensitivity. These challenges are not unique to the EU, but they demonstrate why embedding transition logic from the start is often simpler than layering it onto an existing binary system.

For policymakers, the key lesson is that flexibility and transition pathways are best designed from the outset, rather than added later through retrofits that risk complexity and reduced credibility.

Where the EU Has Taken a Different Path - and Key Takeaways

Since the Platform's work, the European Commission has clarified that it will not expand the transitional category beyond the 25 activities identified in 2021. Instead, transition is being integrated by progressively tightening technical screening criteria within each activity. Threshold reviews will now occur on a predictable three-year cycle rather than as ad hoc 'ratchets'.

[22] Investor Leadership Network, *Transition and the Enabling Role of Taxonomies and Frameworks*, August 2023. Available at: https://investorleadershipnetwork.org/resources For more detail of this case study please p7

As such some would argue that the Taxonomy remains somewhat binary: the proposed amber tier has not been adopted, DNSH continues to apply at the activity level, and minimum safeguards remain at the entity level. Although all six objectives now have criteria, they are still framed as single thresholds rather than staged pathways.

The Commission's reforms thus take an incremental path. The Omnibus Package improves coherence and usability across sustainability legislation but does not alter the Taxonomy's underlying binary structure. This strengthens its role as a classification system for identifying green activities but may - at least in the eyes of some users - limit its usefulness as a framework for financing transition across entire sectors. Proposals that would have required structural redesign - such as introducing an amber tier or entity-level DNSH - have not been pursued to date, while more pragmatic adjustments, such as predictable tightening of criteria, have moved forward.

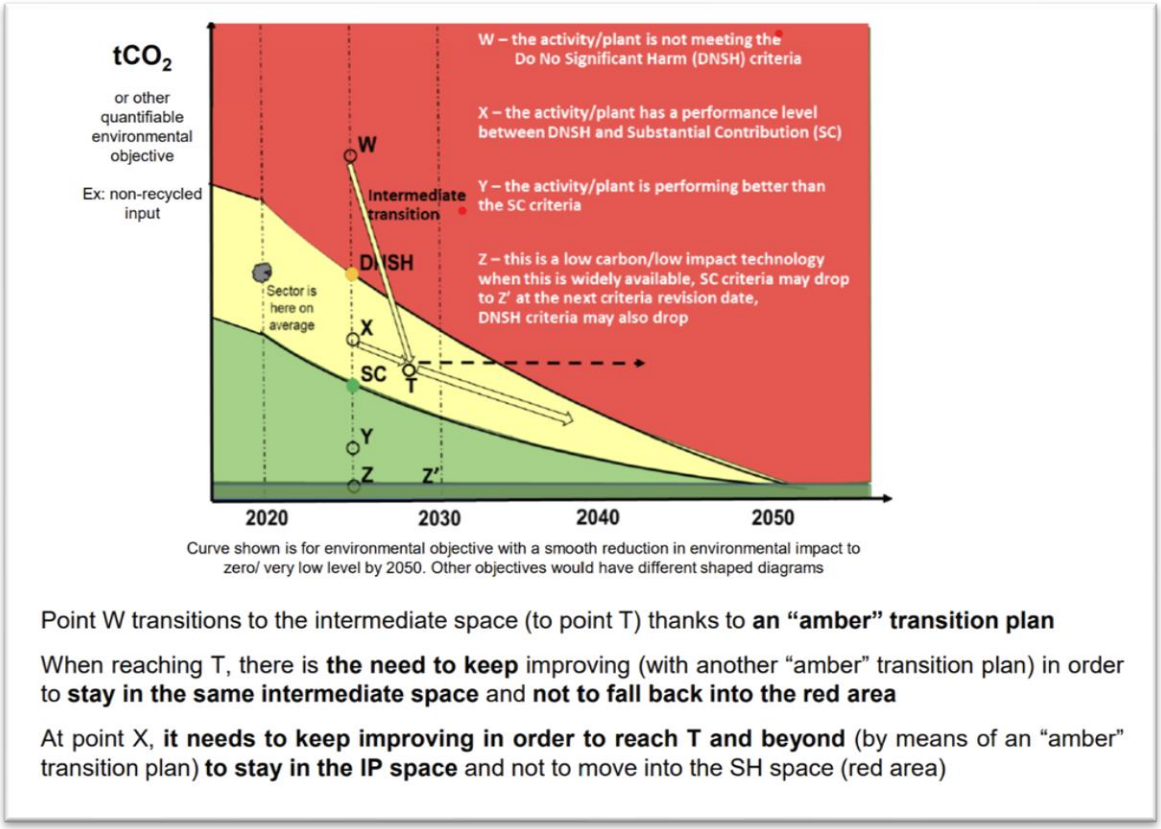


Figure 10: Perspective on Transition Performance Levels of Activities Source: Platform on Sustainable Finance, Final Report on Taxonomy Extension (March 2022); Natixis, "Extended Taxonomy – In-Betweenness and Elitism Softening."[23]

The table (Figure 11) below summarises how the Platform's main proposals could compare with the European Commission's current direction, indicating which might remain possible and which appear unlikely, as well as the

[23] Natixis, *Extended Taxonomy – In-Betweenness and Elitism Softening*, 2022. Available at: https://gsh.cib.natixis.com/our-center-of-expertise/articles/extended-taxonomy

potential implications for policymakers. This table summary reflects the authors' interpretation at the time of writing (and not that of the WFE or its members). If the Platform or other expert bodies were to revisit the issue today, their analysis and recommendations might well differ, and future policy developments could reshape these assessments.

Figure 11: Table summary of Platform's original proposals for Transition and what this might mean post Omnibus adoption, including implications:

Platform Proposal	Current Status	Potential Implications
Expand list of "transitional" activities	Possible but not prioritised	Could support hard-to-abate sectors, but risks diluting credibility; Commission prefers tightening criteria within existing activities.
Add categories for "potential to improve" and "decommissioning"	Conceptual (ESMA 2024 opinion only)	Could guide capital away from high-impact activities and toward mid-performers but would need legislative change and is potentially politically more sensitive.
Develop a "social taxonomy"	Under review (paused then re-prioritised via Omnibus)	Could integrate social objectives into sustainable investment frameworks but needs clear metrics and scope control.
Tighten technical screening criteria on fixed review cycle	Already happening	Makes taxonomy more dynamic and predictable, aligns with the Platform's intent for a ratchet mechanism.
Introduce an 'amber' intermediate tier	Very unlikely	Would require rewriting core regulation; potentially its absence limits taxonomy's usefulness for mobilising transition finance.
Shift DNSH from activity to entity level	Not pursued	Keeps focus on project-level assessment; could be argued that it might miss entity-level transition progress.
Link activities dynamically across all six objectives via "performance curves"	Not pursued	Keeps simplicity and usability but prevents expressing gradual or cross-objective improvement.

Comparative Insights and Policy Considerations – EU

The EU experience demonstrates both the strengths and limits of adapting a binary green taxonomy for transition purposes. On the one hand, the EU Taxonomy has set a global benchmark for scientific rigour, detailed technical screening criteria, and predictable review cycles. On the other, retrofitting transition logic into a structure not originally designed for it has created tensions: companies face uncertainty without pre-defined pathways or sunset clauses, and the binary system may limit the framework's role in financing sector-wide transition. For policymakers, the lesson is that while incremental tightening of thresholds can safeguard credibility, embedding dynamic transition pathways from the outset offers a clearer, more predictable framework for mobilising capital at scale.

Section 3

Key Strategic Considerations for Policymakers:

Reflecting on the lessons learnt from analysing taxonomies, the WFE highlights several strategic considerations for policymakers. These points are not exhaustive, but they represent the most critical areas where effective design and implementation of taxonomies can strengthen market credibility and support the transition.

Setting National-Level Transition Plans and Deadlines

The effectiveness of transition plans at an issuer level is greatly undermined in the absence of national transition plans. It would be useful to complement nationally determined contributions with national transition plans that provide clear signals to industries and the timeframes envisaged for economic activities to transition. Transition taxonomies complement and support these efforts but are not substitutes.

Importance of Sunset Clauses and Phase-out Timelines

Many transition taxonomies include "sunset dates" or other phase-out provisions to ensure that transitional activities cannot continue indefinitely. These measures are designed to prevent the lock-in of unsustainable technologies and to create clear deadlines by which activities must either reach carbon neutrality, achieve defined emissions reductions, or be discontinued. Without such safeguards, companies could perpetually claim they are on track to meet transition goals without ever delivering them, undermining both credibility and investor confidence.

Ensuring Flexibility (Dynamic and Adaptive Criteria)

Taxonomies are only as credible as their ability to keep pace with science and technology. Fixed thresholds risk becoming outdated, locking in activities that no longer align with a 1.5°C pathway. Policymakers must therefore design taxonomies with regular review cycles, predictable tightening of criteria, and the ability to integrate emerging technologies. Flexibility ensures that taxonomies drive ambition rather than entrenching yesterday's standards.

Progressively Expanding Technical Screening Criteria (TSC)

Where technical screening criteria are incomplete, taxonomies risk ambiguity and inconsistent application. Policymakers should prioritise closing these gaps over time to strengthen credibility and guard against greenwashing or lock-in.

Guarding Against Greenwashing and Lock-in

Taxonomies are systems of standardisation. To work effectively, their definitions must be applied consistently across markets and industries. This requires robust supervision and verification of claims, and cost-effective compliance approaches. Without such guardrails, taxonomies risk reinforcing high-emitting pathways or legitimising greenwashing, rather than supporting genuine transition.

Conclusion

Countries around the world face significant challenges in achieving an economy-wide transition to sustainability. Transition taxonomies - are useful tools to articulate what is and is not sustainable. Different approaches reflect national priorities, but common lessons are emerging: taxonomies may not need to be mandatory but do need to be supported by specific and measurable technical screening criteria, and subject to effective supervision. Where policymakers wish to support change for the whole economy, through transition finance, a transition taxonomy, national transition plans and encouraging credible transition plans for all types of firms (listed and unlisted), is vital.

Taxonomies are living documents and must be regularly re-evaluated against up-to-date climate projections and scientific benchmarks. Policymakers should consider how to better support taxonomy developers if they wish to bridge the climate finance gap effectively, while minimising greenwashing. As such where policymakers are considering the development of a taxonomy we urge that they consider the characteristic of transition taxonomies in their design. Over time, there may be a case for a globally harmonised taxonomy, though national priorities will remain important.

Ultimately, the diversity of taxonomies and their constant evolution demands significant resources from investors and issuers. Policymakers should ensure that where taxonomies are incomplete, developers clearly communicate the trajectory of future development. This will improve transparency, protect against unfair accusations of greenwashing, and help sustain momentum towards a more sustainable economy. Our members will continue to build capacity amongst issuers and in their markets on the development of credible transition plans and will continue to address the financing at scale of transition in their economies, through new instruments that capture transition.

Annex 1: The distinction between green and transition taxonomies developed for this paper

Feature	Green Taxonomy (e.g. EU and similar frameworks)	Transition Taxonomy (e.g. ASEAN, Singapore, Canada, Australia)
Classification approach	Defines criteria for activities that are environmentally sustainable ("taxonomy-aligned") within a binary green/not aligned system. Activities outside scope are "unclassified" rather than automatically unsustainable. The EU, for instance, sets eligibility and alignment criteria but does not classify all other activities as harmful.	Recognises activities that are not yet green but are on a credible, time-bound pathway to alignment. These frameworks are explicitly designed to capture intermediate states of progress, rather than only end-state sustainability.
Time-bound eligibility	Criteria are updated over time, but most green taxonomies do not use explicit sunset clauses. In the EU, an activity remains "aligned" until the delegated acts are revised.	Use of sunset clauses, grace periods, and phase-out timelines is common to ensure transitional eligibility cannot be indefinite.
Sector coverage	Prioritises sectors where low-carbon activities are already established or where criteria can be robustly defined. Hard-to-abate sectors are sometimes included, but only at a green threshold (e.g. EU coverage of cement/steel is limited and technology-dependent).	Explicitly focuses on hard-to-abate sectors and enabling activities, recognising incremental improvements on credible pathways toward sustainability.
Types of transition	Green taxonomies do not usually distinguish between "transition within" and "transition away." The EU has some transitional features (e.g. conditional treatment of gas/nuclear, sectoral thresholds that may tighten over time), but these are controversial and limited compared with transition taxonomies.	Explicitly distinguishes between "transition within" existing activities (e.g. lower-emission cement) and "transition away" from unsustainable ones (e.g. fossil fuel phase-out).
Safeguards (DNSH and beyond)	Strong reliance on Do No Significant Harm (DNSH) tests across multiple objectives, plus minimum social safeguards. This is a hallmark of the EU approach and most green taxonomies.	Some adopt DNSH (ASEAN), while others use alternative tools (Canada, Australia) such as commissioning-date rules, performance thresholds, and decision-tree models. All aim to avoid lock-in and greenwashing, though not all frame safeguards under DNSH.