ICMA
International Capital Market Association

Overview and Recommendations for Sustainable Finance Taxonomies

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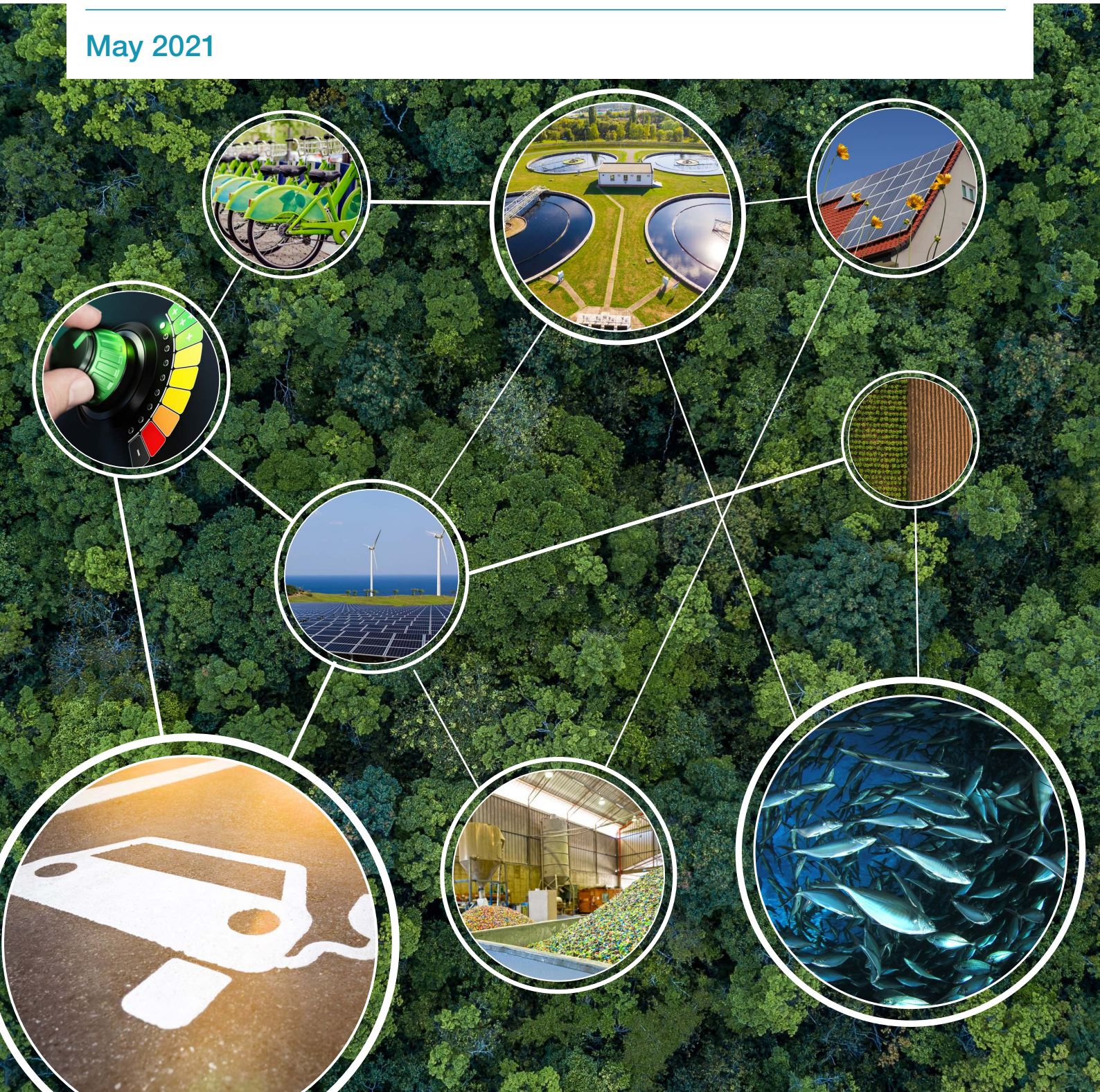

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ICMA promotes well-functioning cross-border capital markets, which are essential to fund sustainable economic growth. It is a not-for-profit membership association with offices in Zurich, London, Paris, Brussels and Hong Kong, serving around 600 member firms in 60 countries. Among its members are private and official sector issuers, banks, broker-dealers, asset managers, pension funds, insurance companies, market infrastructure providers, central banks and law firms. It provides industry-driven standards and recommendations, prioritising four core fixed income market areas: primary, secondary, repo and collateral and sustainable finance. ICMA works with regulatory and governmental authorities, helping to ensure that financial regulation supports stable and efficient capital markets. www.icmagroup.org

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Executive summary

This paper provides an international overview of both official and market-based taxonomies of which there are an increasing number with multiple initiatives arising in line with the mainstreaming of sustainable finance. It summarises the various approaches that have been taken as well as the different objectives that are being pursued. This publication aims to help market participants and stakeholders to better understand existing taxonomies and their usage. It is also designed to inform policy makers and the regulatory community in their reflections on the pertinence of further taxonomy related initiatives and the goals that they may wish to pursue with these efforts.

Taxonomies have come to be developed and used in sustainable finance as classification systems. Market-based efforts have reflected a sectoral and project-based methodology in line with the approach of the sustainable finance market. The official sector has also developed taxonomies, in some cases based on identifying green and/or sustainable activities building on classification systems developed for statistical and economic analysis purposes.

Official sector taxonomies may incorporate additional considerations beyond classification purposes, such as requirements to consider multiple sustainable objectives or to avoid conflicting aims (e.g. “do no significant harm”), as well as to take into account social criteria. Beyond classification, they are also often progressively, and not necessarily by initial design, referenced in financial and prudential regulation which can lead to usability and data challenges amongst other issues.

Considering ongoing and new taxonomy initiatives, there have been recommendations from several parties on how these should be designed both in developed and emerging markets. We propose here key success factors for taxonomies with the objective of promoting international consistency and market usability. Taxonomies should be:

1. Targeted in their purpose and objectives.
2. Additional in relation to existing international frameworks.
3. Usable by the market for all intended purposes.
4. Open and compatible with complementary approaches and initiatives.
5. Transition-enabled incorporating trajectories and pathways.

This publication was prepared by ICMA staff and represents their views. It also benefits from the input of members of ICMA’s Sustainable Finance Committee and of the Executive Committee of the Green and Social Bond Principles.

Introduction

The sustainable bond markets have grown exponentially since 2014. As sustainable finance has become mainstream, there has been increasing interest from the official sector and financial market participants in whether there is a need for taxonomies and how to develop them to provide clear guidance to the market on what activities, assets and/or projects are eligible as green (and increasingly as transitional). The progress made on the EU Taxonomy further accelerated the discussion about taxonomies all over the world.

In sustainable finance, a "taxonomy" is a classification system identifying activities, assets, and/or project categories that deliver on key climate, green, social or sustainable objectives with reference to identified thresholds and/or targets. Taxonomies may incorporate different approaches towards green eligibility. Some introduce eligibility criteria that can be quantitative (e.g., absolute and relative performance thresholds) or qualitative and process based. Others only list and describe the projects, assets, activities based on an assessment of their sustainability.

There are established market-based taxonomies developed by the industry and there are a growing number of official taxonomies being designed for financial product classification, information disclosure, and risk assessment purposes.

This paper provides an international overview and comparison of both official and influential market-based taxonomies, and also considers their application in the sustainable bond market. It does not aim to be exhaustive and there are official taxonomy initiatives being developed that are not included in this paper.

We hope with this paper to help users of taxonomies and service providers to better understand existing taxonomies and their different perspectives. Finally, we also propose key success factors for taxonomies with the objective of promoting international consistency and market usability.

Readers can also find in the Annex a high-level comparison of the taxonomies that we have covered.

Official sector taxonomies

1. The EU Taxonomy

The EU Taxonomy is seen as the most sophisticated initiative to define and scope environmentally sustainable economic activities. It constitutes the main enabler of the European Green Deal and illustrates the EU's intention to steer both private and public capital towards a sustainable economy. Essentially, the EU Taxonomy establishes a common language on what is "sustainable" which will crystallize as disclosure obligations and in official labels for financial product.

As background, in December 2016, the European Commission established a High-Level Expert Group on Sustainable (HLEG) to guide the development of its sustainable finance roadmap. The recommendations of the HLEG formed the basis of the Commission's Action Plan on Financing the Sustainable Growth of March 2018[1]. The development of an EU-wide classification system of green activities was identified as the priority action under both documents.

To operationalize this and also the other actions, the Commission announced a comprehensive legislative package in May 2018 (including a Taxonomy Regulation) and established a Technical Expert Group on Sustainable Finance (TEG) of 35 members (from the civil society, academia, business, and the finance sectors). With extensive scientific expert input and various stakeholder consultations, the work of the TEG led to a Final Report (March 2020) with recommendations on the overarching design of the taxonomy, practical implementation guidance as well as a comprehensive technical annex with screening criteria.

The general framework, objectives, requirements of the EU Taxonomy recommended by the TEG Final Report are enacted in the Taxonomy Regulation 2020/852 adopted in June 2020. It sets six environmental objectives: (i) climate change mitigation (CCM), (ii) climate change adaptation (CCA), (iii) the sustainable use and protection of water and marine resources, (iv) the transition to a circular economy, (v) pollution prevention and control, and (iv) the protection and restoration of biodiversity and ecosystems. The delegated act on CCM and CCA released in April 2021 also originated from the work of the TEG, while for the remaining environmental objectives the screening criteria are currently being developed. Also, the Taxonomy Regulation established an EU Platform on Sustainable Finance with the mandate to assist the Commission in the further development of the EU Taxonomy and its wider sustainable finance policy[2].

Overall, the EU Taxonomy is built on the economic activity classification system of NACE, an existing but not widely used classification system of economic activities in Europe. An economic activity is "environmentally sustainable" if it fulfils the following conditions under the Taxonomy Regulation:

1 The European Commission is due to announce a Renewed Sustainable Finance Strategy in the second half of 2021.
2 The Platform is currently working on the remaining four environmental objectives and the taxonomy's usability and inquiring whether the EU Taxonomy should be extended to environmentally harmful activities and social activities. Compared with the TEG, which was financial industry focused, the Platform has larger representation from the real economy and civil society.

Table 1: Conditions to be "green" under the EU Taxonomy

Conditions	High-level explanation
1. **"Substantial contribution" (SC)** to one or more of the environmental objective(s)	• The definition of "SC" depends on each environmental objective (e.g., for CCM: it is the stabilisation of the Greenhouse Gas (GHG) concentrations in line with the Paris Agreement's long-term goal with activities related to, among other, the renewable energy, energy efficiency, clean mobility etc.). • Concrete requirements for what constitute the "substantial" are established by the Technical Screening Criteria.
2. **"Do No Significant Harm" (DNSH)** to other environmental objectives	• This means that Substantial Contribution to an environmental objective should not come at the cost of significantly harming another one. • Concrete requirements for what constitute the "significant" are established by the Technical Screening Criteria.
3. Compliance with the **Minimum Safeguards**	• This constitutes the social dimension of the EU Taxonomy and relates to "how" an economic activity is conducted rather than "what". • It requires compliance (by undertaking conducting the "green" activity) with the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights, including the relevant ILO texts and the International Bill of Human Rights.
4. Compliance with the **Technical Screening Criteria (TSC)**	• This is the operationalising/implementation part of the EU Taxonomy. • It provides concrete requirements for both the Substantial Contribution and the DNSH (so, the TSC essentially consists of SC and DNSH). • It is introduced via delegated acts[3]. • The Taxonomy Regulation provides design requirements and limitations for the TSC, which need to be based on technological neutrality (i.e., do not favour or discriminate against any specific technology), refer to the EU labelling and certification schemes, follow conclusive scientific evidence, take into account the nature of the activity (i.e., enabling or transitional), avoid the risk of creating stranded assets and distorting competition in the market, etc.

Having set out the general framework, for the CCM objective, the Taxonomy establishes three broad activity categories:

(1) **Low carbon:** Activities which avoid or reduce GHG emissions or increase GHG removals.

(2) **Transitional:** Activities for which there is no technologically and economically feasible low-carbon alternative, but which support the transition to climate-neutral economy consistent with the 1.5 degree target of the Paris Agreement including with best GHG performance in respective sectors and industries. Transitional activities should also not hamper the development of low-carbon alternatives and not cause lock-in of carbon intensive assets. Criteria for transitional activities will be reviewed at least every three years.

(3) **Enabling[4]:** Activities which directly enable other activities to make a substantial contribution to the environmental objective(s). Like transitional activities, enabling activities should avoid lock-in of assets that undermine long-term environmental goals taking into account life-cycle considerations.

3 The Climate Delegated Act is adopted by the European Commission in April 2021 with its Annex 1 on CCM and Annex 2 on CCA.
4 Please note the "enabling" category is a cross-cutting activity type that also applies to environmental objectives other than the CCM.

The eligibility criteria required for the CCM objective under Annex 1 of the Climate Delegated Act are very diverse. Some low-carbon (e.g., renewable energy generation from solar and wind) and enabling activities (e.g., manufacturing of low-carbon technologies) are considered eligible and substantially contributing to the CCM by their very nature and without performance thresholds, but indeed subject to the DNSH this time. For other activities, especially the transitional ones, the Substantial Contribution depends on the satisfaction of GHG performance thresholds[5] and/or various process-based requirements (due diligences and verification). For example:

- Passenger cars need to meet the threshold of < 50gCO2/km until 2026.
- For acquisition and ownership of buildings constructed before 2021, the building needs to have Energy Performance Certificate class A, or alternatively, it should be within the top 15% of the national or regional building stock expressed as operational Primary Energy Demand (PED) and demonstrated by adequate evidence as specified in the Annex 1.
- Various "hard to abate sector" manufacturing activities need to have a GHG performance that reflects the average value of the 10% most efficient installations in Europe according to the EU ETS data[6].
- The bar for the technology-agnostic renewable electricity generation is set at lifecycle emissions of 100gCO2e/kWh while the decision on the potential inclusion of natural gas and nuclear energy and the conditions thereof will be made at a later point.

The DNSH criteria, on the other hand, may vary depending on the potential presence and nature of environmental risks for each economic activity, but they are mostly standard across activities, qualitative, and process based. As an example, the circular economy DNSH may include requirements to assess the availability and adopt techniques that support the reuse and use of secondary raw materials and design for high durability, recyclability, easy disassembly, and adaptability of manufactured products. The generic DNSH criteria for CCA, pollution prevention and control regarding use and presence of chemicals, and biodiversity and ecosystems are included as specific appendixes.

Regarding the CCA objective, an activity needs to provide an adaptation solution either for itself or enable the adaptation of people, nature, or assets. This approach is comparable with the CBI Climate Resilience Principles where the adaptation can be asset-focused or system-focused. The location and context-specific nature of climate adversities and avoiding adverse impact on other activities, people, nature, and assets also need to be considered.

The Substantial Contribution for CCA under Annex 2 of the Climate Delegated Act, on the other hand, are qualitative and quite standard across most activities. These require the implementation of physical and non-physical solutions that substantially reduce the material physical risks based on the identification of the latter from an indicative list of climate-related hazards (included as an appendix) and with an assessment that is proportionate to the scale and expected lifespan of the activity. Also, among other requirements, nature-based, green, or "blue" adaptation solutions should be favoured to the extent possible, and consistency with overarching adaptation efforts as well as regular monitoring of solutions should be ensured. It is also important to note that the Annex 2 on the CCA includes some specific adaptation-enabling activities (e.g., engineering, financial and insurance services, etc.) as well as activities that provide essential services and solutions (health, education, arts).

5 Regarding the CCM transitional activities, there have been concerns that the taxonomy criteria can represent a static and binary approach towards "sustainability" that does not sufficiently accommodate transition considerations. To address these questions, the EU Platform on Sustainable Finance recently published a Report on Transition Finance in March 2021. Amongst other things, the Platform found that the EU Taxonomy should establish transition pathways and trajectories, recognize the use of the taxonomy as a metric in forward looking financial products, and grandfather taxonomy-aligned products against the potential tightening of the Technical Screening Criteria.

6 These reflect the average value of the 10% most efficient installations in 2016 and 2017 (t CO2 equivalents/t) as set out in the Annex to the Commission Implementing Regulation (EU) 2021/447 of 12 March 2021 determining revised benchmark values for free allocation of emission allowances for the period from 2021 to 2025 pursuant to Article 10a(2) of Directive 2003/87/EC.

The design of the EU Taxonomy is very innovative, not only because it establishes the most detailed eligibility criteria, but also it requires that significant trade-offs between environmental objectives are avoided or at least minimized. The EU Taxonomy also promotes the life cycle assessment of activities wherever possible and requires compliance with a social dimension by undertakings with reference to international texts and conventions. The EU Taxonomy explicitly excludes solid fossil fuels such as coal.

The usability of the EU Taxonomy is a major topic of debate given that it is cross-referenced in many other regulations and policies, and the Platform on Sustainable Finance has a dedicated group working on the subject. Firstly, companies subject to the Non-Financial Reporting Directive (NFRD) in Europe, generally large public companies, will disclose to what extent their business activities align with the EU Taxonomy in terms of turnover, CapEx, and OpEx as of 2022 for the CCM and CCA objectives. Asset managers will also disclose the proportion of alignment of their sustainability-focused products. Secondly, the EU Taxonomy will become the main reference for regulated sustainable financial products in Europe. The EU Green Bond Standard (EU GBS), as recommended by the TEG, is an example, given that it requires full alignment of funded projects with the EU Taxonomy. Finally, the EU also has the ambition to make the EU Taxonomy an international "gold standard", the influence of which is already visible in other jurisdictions that look to develop taxonomies (see below the section "Other national taxonomies").

Nonetheless, many challenges exist and the learning curve on usability may prove steep. Getting the taxonomy-alignment data in place will be a burdensome process and require extensive assessment by companies of their operations. Furthermore, some of the buy-side disclosure obligations are likely to create extraterritorial impact, resulting in pressure on non-EU issuers to disclose against the EU Taxonomy. The EU Taxonomy's Technical Screening Criteria, especially the DNSH requirements, reference EU laws and processes extensively, which may pose challenges for such international assessment.

Additionally, as green bonds focus on projects rather than economic activities, there will be a need for interpretation to determine the taxonomy alignment. The TEG explains this correspondence and provides high-level examples of how to apply the EU Taxonomy at project level in its usability guidance (p.16-20) in the context of its recommendation for an EU Green Bond Standard (EU GBS). Reconciling the two approaches remains challenging however (see section below "Complementary approaches: the GBP's eligible project categories"). Similarly, there are significant difficulties with the DNSH assessment. As recommended by the TEG in the same report, a pragmatic approach to assess the DNSH and minimum safeguards could be process-based[7].

On the international front, the EU initiated an International Platform on Sustainable Finance (IPSF) in October 2019, which now serves as a multilateral forum with 17 Members and 9 Observers to coordinate sustainable finance regulatory actions across jurisdictions. As revealed by its annual report in October 2020, the IPSF has currently a dedicated workstream led by the EU and China to develop a "Common Ground Taxonomy". The outcome of this workstream is much awaited and is expected to be released in the summer of 2021.

7 The TEG promotes a process-based approach for assessing the DNSH and the Minimum Safeguards, especially where Technical Screening Criteria are qualitative. In such cases, the DNSH requirements would be satisfied based on the presence of entity-level due diligence processes as well as of project-level permits and authorisations.

2. China's catalogues

In China, the official sector guidelines on eligible projects for green bonds can be traced back to 2015 when two sets of standards prevailed in the market. The Green Bond Endorsed Project Catalogue (2015 Edition) ("2015 Project Catalogue") published by the China Green Finance Committee, an organisation supported by the People's Bank of China (PBOC), applied to all types of green bonds in China[8], except green enterprise bonds which were regulated by the National Development and Reform Commission (NDRC)'s Guideline for Issuing Green Bonds ("2015 Guideline").

Only in 2019, seven authorities – NDRC, the Ministry of Industry and Information Technology, the Ministry of Natural Resources, the Ministry of Ecology and Environment, the Ministry of Housing and Urban-Rural Development, PBOC, and the National Energy Administration – published a catalogue of green industries, the Green Industry Guidance Catalogue (2019 Edition) ("2019 Industry Catalogue"). It is a remarkable consensus reached on what is green at the cross-ministerial level.

The 2019 Industry Catalogue is intended to be used by various ministries, bureaus, and authorities in China for a wide range of policies not limited to those for the financial markets, including macroeconomic policies, tax incentive policies, industry certifications, and standards for the financial sector. It allows the relevant authorities to develop further detailed catalogues or "sub-catalogues" for the implementation for different policy purposes.

As the name indicates, the 2019 Industry Catalogue identifies a concise list of industries considered green in China. It lists the categories in a three-level structure where:

- Level 1 includes six broad categories: energy conservation and environmental protection sectors, clean manufacturing sectors, clean energy sectors, ecological environment sectors, green upgrade of infrastructures, and green services;
- Level 2 covers 30 categories;
- Level 3 lists out 211 categories.

Based on the 2019 Industry Catalogue, PBOC, NDRC, and the China Securities Regulatory Commission (CSRC) published the Green Bond Endorsed Project Catalogue (2021 Edition) ("2021 Project Catalogue") in April 2021. The new catalogue replaces the two prevailing sets of guidelines, creating a unified national definition of "green" for green bonds, while making updates commensurate with technology developments, policy priorities and evolvement of technical standards.

The 2021 Project Catalogue stipulates an exhaustive list of eligible projects for green bonds in China, envisioning green bonds' support in:

- improving the environment;
- addressing climate change;
- saving and efficiently utilising resources, etc.

8 Types of green bonds in China include green financial bonds, green corporate bonds, green enterprise bonds, green debt financing instruments and green ABS.

The eligible projects are listed at the fourth level and supplemented with a descriptive explanation or conditions that should be met for each level-4 category, illustrated with the following extract:

Table 2: Extract from the 2021 Project Catalogue

Area		Project name	Explanation/conditions
3. Clean energy			
3.2 Clean energy	3.2.2 Construction and operation of renewable energy facilities	3.2.2.7 Construction and operation of marine energy utilisation facilities	The construction and operation of facilities that utilise ocean tidal power, wave power, marine current power, ocean thermal gradient energy, and salinity gradient power to generate electricity, with a precondition of DNSH to marine ecology and biodiversity.
...			
5. Green upgrade of infrastructures			
5.2 Sustainable building	5.1.2 Building energy efficiency and green building	5.2.1.1 Construction of ultra-low energy building	Adapt to climate characteristics and site conditions; reduce dependency on building heating, air conditioning, and lighting through passive architectural design; use active technical measures to improve the efficiency of building energy equipment and systems in the construction of public and residential buildings; and purchase of such ultra-low energy buildings. The building technicalities must comply with the technical indicators in the "Technical Standards for Near Zero Energy Consumption Buildings" (GB/T 51350).
		5.2.1.2 Green building	...

As shown by the example above, there is no detailed justification on why each project is classified as green, but some national industrial standards and simple quantitative requirements are referenced for some but not all projects. A few project categories also have a high-level mention of DNSH in their respective explanation text, illustrated by project category 3.2.2.7 above. The 2021 Project Catalogue also does not compare the level of "greenness" of different projects. All projects included are considered green, as long as they meet the conditions set out in their respective descriptive explanation in the catalogue.

The most significant change in this document, compared with previous standards, is removing clean utilisation of coal and oil from the list of eligible projects, which has long been a contentious issue for international market participants, especially investors. The revision reflects China's determination to move towards further convergence with international standards and improvement of credibility of the Chinese green finance market. With respect to natural gas, for projects of industrial energy efficiency and urban centralised heating, switching to natural gas from coal and other high carbon fuels is allowed. For distributed Combined Cooling, Heating and Power (CCHP) projects, the use of natural gas or other fossil fuels will only be qualified for green bonds if they meet the energy efficiency requirements in related national standards.

It is noteworthy that nuclear energy is clearly included. For the shipping industry, manufacturing of gas, electric, solar and wind powered ships and related infrastructure is covered, while for aviation, only the construction of power supply facilities for airport jet bridges is mentioned. In the 2021 Project Catalogue, enabling activities including green services are also included, and operation projects are mentioned in the description of some green projects and thus allowed.

The 2021 Project Catalogue also clarifies grandfathering. Outstanding green bonds or those that are already approved or filed before the publication of the 2021 Project Catalogue may follow the 2015 standards but are encouraged to comply with the 2021 Project Catalogue for information disclosure.

This classification system of green in the 2021 Project Catalogue is used for determining green eligibility for green bonds only and not for financial product level disclosure, corporate disclosure or FI regulatory reporting purposes.

Following this achievement in harmonising domestic definition of green, the three regulators – PBOC, NDRC and CSRC – announced in April 2021 that they will work on creating standards for climate finance and striving for international harmonisation of green bond standards as the next steps.

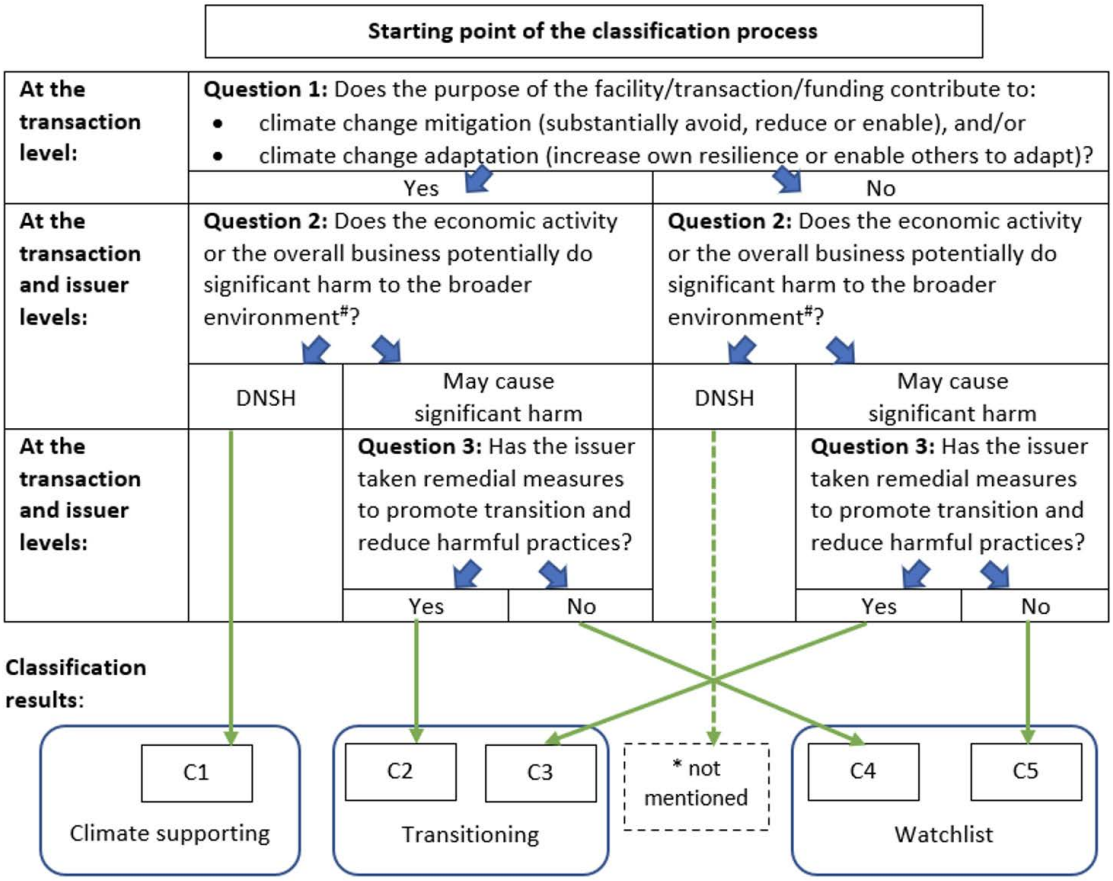
3. Malaysia's Climate Change and Principle-based Taxonomy

Malaysia's central bank, Bank Negara Malaysia (BNM), issued a discussion paper on Climate Change and Principle-based Taxonomy in December 2019 and finalised it as a guidance document in April 2021, creating a classification system for assessing economic activities that promote transition towards a low carbon and climate resilient economy.

The taxonomy will apply to licensed banks, investment banks, Islamic banks, insurers and reinsurers, takaful and retakaful operators, and prescribed development financial institutions under the supervision of BNM. Malaysia's taxonomy is principally designed for financial institutions to classify the assets in their lending and investment portfolios, measure the climate-related risks and exposure, and report to BNM, for internal risk management and supervisory purposes.

The taxonomy is focused on climate change and does not provide an exhaustive list of green activities or projects. Rather, it provides a framework for FIs to classify their assets into categories related to climate transition (See flowchart below). The level of climate-friendliness ranges from category C1 ("climate supporting") to C2 and C3 ("transitioning") to C4 and C5 ("watchlist").

Figure 1: Flowchart illustration of the classification process of the BNM taxonomy



 # with specific regard to pollution, biodiversity and resource efficiency.

** The update to the Malaysian taxonomy in April 2021 does not specify which category this kind of economic activity will fall into.*

The approach of looking at both "economic activities" (effectively meaning transactions) and the "issuer's overall business activities" levels is unique among existing taxonomies in the world. The taxonomy looks at the positive environmental impacts at the transaction level, and looks at the negative environmental impacts (i.e. harm) at transaction and issuer levels.

The taxonomy also takes into consideration and puts the focus on whether the company makes remedial efforts to promote transition at the issuer level and reduce the potential harmful practices identified.

If the issuer makes remedial efforts to promote transition (which can be satisfied by following the Climate Transition Finance Handbook), then it can be categorised as "Transitioning" (C2 or C3). If the issuer has not taken remedial efforts to promote transition, not only will it go onto the "Watchlist" (C4 or C5), but the FI will also need to engage with the customer to encourage transition and can consider applying more stringent lending terms or reassessing the customer relationship.

A green bond that has projects contributing to climate change mitigation or adaptation, due to the Use of Proceeds (UOP) approach, can pass the first testing question and may be subsequently classified into C1, C2 or C4, depending on the answer to the other two questions.

However, a sustainability-linked bond (SLB) of which the proceeds are used for general corporate purposes (and not dedicated for climate mitigation or adaption like a green bond), will not pass the first testing question and thus will fall into C3 or C5 categories. If the sustainability-linked bond is very carefully and credibly structured, by applying the Climate Transition Finance Handbook and having a transition trajectory, it may score on the third testing question on remedial efforts to transition and thus classified as C3 in the best scenario.

This means that the Malaysian taxonomy provides a methodology to compare the level of contribution to climate change of green bonds and sustainability-linked bonds, while there is no such comparison in the international markets as long as they are structured credibly and comply with the Green Bond Principles (GBP) and the Sustainability-Linked Bond Principles (SLBP) respectively.

As the name "principle-based" suggests, the Malaysian taxonomy does not define "substantiality" for assessing the contribution to CCM and CCA, and does not provide quantitative thresholds like the EU Taxonomy or qualitative descriptions like China's catalogue. However, it provides additional lists of examples of economic activities that are generally regarded as contributing to CCM and CCA.

Banks and insurance companies completed the pilot survey based the taxonomy in July 2020 and will be required to start regular reporting over the course of 2021. Apart from reporting, as the 2021 updates requires, financial institutions are expected to use the taxonomy to engage with customers and guide their lending and investment decisions with a perspective of climate transition. BNM may also develop further regulatory, supervisory or prudential policies based on this taxonomy.

4. Other national taxonomies

Besides EU and China, a few countries have also developed taxonomies with specific national focuses or based on the local context. The EU and Chinese taxonomies are influential and provide reference value for other national taxonomies. This section will focus on taxonomies that are led or supported by the official sector, introduce and compare the taxonomies developed or in development by Bangladesh, Mongolia, Singapore, and South Africa. It is acknowledged that other countries, such as Australia, Canada, and Colombia, are currently developing their taxonomies, but as they have not published any progress reports or revealed information about the design, usage, etc., we will not cover those initiatives in this section. Industry-led national taxonomies that are without support or endorsement by their national authorities are also not discussed in this section.

Overview

Bangladesh Bank (BB) published a Sustainable Finance Policy for Banks and Financial Institutions in December 2020. In that policy document, the chapters on sustainable finance taxonomy and green taxonomy summarise what constitutes sustainable and green finance in Bangladesh. The description on screening, mirroring the contents of the EU Taxonomy, mentions the use of technical screening criteria, six environmental objectives, and the principles of substantial contribution to one of the six environmental objectives, DNSH and minimum social and governance safeguards. It also provides two exclusion lists of economic activities considered ineligible for financing and sustainable finance respectively. The taxonomy also provides a List of Green Products/Projects/Initiatives for Term Finance, simply naming the eligible categories and sub-categories. Use-of-proceeds bonds and loans, financings for working capital (OpEx) such as wages, direct labour costs, procurement and trade related to the projects in the list are classified as sustainable finance.

The Mongolian Green Taxonomy, approved by the Financial Stability Commission of Mongolia in 2019, takes a similar form to China's catalogue. It identifies that Mongolia's key environmental challenges are i) climate change mitigation and adaptation, ii) pollution prevention, iii) resource conservation, and iv) livelihood improvement. It stipulates a list of activities considered as environmentally sustainable for investment purposes, such as green loans and green bonds. Seven overall categories are identified and supported with quantitative policy targets mostly set against 2030, for example, reducing greenhouse gas emissions in the energy sector by 32% by 2030. The overall categories are then expanded in 8 directions and broken down to sub-categories and then specific technologies with descriptive examples (sample extracted below). The format looks similar to China's catalogue but is slightly more generic, as the Chinese one references relevant national standards and supplements with simple quantitative requirements for some but not all projects.

Figure 2: Extract from the Mongolian Green Taxonomy

2 Low pollution energy		
Sub-category	**Technologies**	**Example**
 2.1 Bio-energy	2.1.1 Bio-energy product facilities	Facilities for producing biofuel, biomass, biogas and other bioenergy products including fuel preparation process facilities, pre-treatment facilities and bio-refinery facilities, gaseous, liquid and solid (forest) biofuel manufacturing facilities (including anaerobic digestion facilities)
	2.1.2 Heat & power generation	Power & heat generation facilities including electricity generation facilities, heating facilities and CHP facilities, biomass power station, biomass CHP station, improved biomass stove, use of agricultural and forest waste, wastage from crops for electrification

In Singapore, the Green Finance Industry Taskforce (GFIT), convened by the Monetary Authority of Singapore, has consulted the market on its proposed design of a taxonomy for Singapore-based financial institutions. It will classify activities that can be considered green or transitioning towards green, based on not only the Singaporean context, but the economic activities and environmental objectives of the 10 southeast Asian countries in ASEAN. The taxonomy sets out similar environmental objectives to the EU Taxonomy, but does not have "pollution prevention and control" as a self-standing one. Leveraging the work done by the EU Taxonomy, it will require complying with the "do no significant harm" principle and minimum safeguards and choose metrics that could be consistent globally but thresholds that could be region or country specific for these metrics.

In South Africa, led by the National Treasury and supported by IFC, a national taxonomy is being developed by the National Business Initiative and Carbon Trust. According to the Briefing Report released in October 2020, the first version, expected to be published in mid-2021, will produce a non-exhaustive list for environmental activities, covering 'fully' green and transitional activities. Building on the work of the EU Taxonomy and mirroring its approaches, the South African taxonomy will review the economic activities identified in the EU Taxonomy, apply the criteria of "make significant contribution" and "do no significant harm", and set technical criteria or thresholds. Meanwhile, it will take its national emissions by sector and adaptation needs into account to adapt, replace, and add activity entries, as well as adapting some thresholds based on its national context.

Project vs. activity-based approach

As explained in the section below on "Complementary approaches: the GBP's eligible project categories", since the green, social and sustainability bond market functions with a project-based approach, whether a taxonomy is designed as project-based (at the transaction level) or activity-based (at the entity level) might affect its usability. However, it is noted that many taxonomies do not recognise the difference and often do not mean the same thing when using the words "project" and "(economic) activity". While China's catalogue opts for projects and the EU taxonomy for economic activities, the Mongolian Green Taxonomy does not differentiate "projects" and "activities" and uses them interchangeably. The Singaporean and South African taxonomies intend to classify economic activities, but the details remain to be seen in their first drafts.

Social elements

While China's catalogue is purely environmentally focused with no social elements, the Mongolian taxonomy includes livelihood improvement as one of its overall objectives. The Malaysian taxonomy encourages financial institutions to assess if the economic activity contravenes national human rights and labour laws during the classification process. The EU Taxonomy embeds social considerations in the minimum social safeguard requirements. As does the Bangladeshi one, though it is not clearly elaborated how the minimum safeguards are implemented in practice. South Africa has the larger ambition to develop a social taxonomy and a brown taxonomy in the years to come.

Approach towards transition

There is an increasing focus on elaborating on transitional activities as a separate category. For example, Singapore proposes to use a traffic light system, i.e., green, yellow and red, to address transition. South Africa thinks alike in that its green taxonomy will cover green and transition activities and it will develop a brown taxonomy for environmentally harmful or risk-exacerbating activities separately. The green taxonomy will draw the lines between "net zero" activities, "pathway to zero" activities, and activities that are needed for the future South African green economy but at present have "no pathway to zero". Utilising the thresholds published in South African regulations where relevant, it will specify the criteria and thresholds to classify economic activities as a certain level of green, applying a graduated approach to include transitional activities.

In comparison, Malaysia's taxonomy creates a progressive system of three broad transition categories, namely climate supporting, transitioning, and watchlist. It aims to promote an orderly transition of the economy by avoiding outright exclusion of economic activities that are currently not contributing to climate change objectives and putting the emphasis on remedial measures to transition.

Approach towards coal and other fossil fuels

As China revised its catalogue for green bonds to exclude clean use of coal and oil, the Mongolian Green Taxonomy includes clean coal for Ger area[9] improvements and gas as "sources alternative to coal", without setting any conditions or numeric thresholds. Singapore's GFIT taxonomy considers the role of natural gas in the ASEAN context and consulted on the inclusion of abated natural gas.

A phased approach and periodic review

To avoid a prolonged taxonomy development period that may risk it becoming less relevant in a market, many countries have opted for a phased approach in developing their taxonomies. For example, South Africa will initially focus on climate mitigation and adaptation and review at a later stage to further incorporate other environmental objectives. Singapore's GFIT taxonomy will focus on selected sectors first and then evolve into a comprehensive taxonomy covering all types of economic activities. The Mongolian taxonomy has embodied the mechanism of periodic review and update every 3-5 years, to incorporate any technological developments or advancements.

Industrial classification code

Not all taxonomies utilise industrial codes in their taxonomies to facilitate the classification. Singapore's GFIT proposes to use ISIC (International Standard Industrial Classification of All Economic Activities), while the EU Taxonomy uses NACE. The Chinese, Mongolian, Malaysian, South African, and Bangladeshi taxonomies have not associated the economic activities or projects with any industrial codes.

Use case and application

While China's 2021 catalogue will be used for green bonds only, the Mongolian Green Taxonomy is designed to be applied for a wider range of financial instruments, including loans, bonds, equity investment, insurance, etc. Beyond the eligibility of green financial products, the taxonomy is also used for banks to report exposures and for the central bank to track the development of its green loan markets.

Similar to Malaysia, the Bangladeshi taxonomy is mainly used to encourage and supervise banks and FIs to grant sustainable loans and conduct sustainable investments. BB set a minimum target of 5% for direct green finance for all banks and FIs from January 2016 onwards. The list of green products/projects/initiatives is also used as eligibility criteria for whether bank assets can be refinanced with BB under the Refinance Scheme for Green Finance.

Among those taxonomies, the South African one has a well organised, holistic plan to ensure comprehensive integration of its taxonomy into regulatory policies. It will establish a governance mechanism and appoint an institution as the custodian of the taxonomy to monitor user applications and incorporate the taxonomy in any further regulations, standards, etc.

Singapore's GFIT taxonomy, in comparison, has not yet revealed what it is being designed to do. Reading between the lines, the consultation paper hints that taxonomy will be used by FIs to classify their portfolios and loan books. It is not evident whether it will be used for green bond classification or fund disclosure.

9 The detached yurts in the Ger residential districts often do not have adequate infrastructure for electricity, heating, and water. As a result, residents often burn coal for heating and cooking, leading to a high pollution level.

5. OECD Rio Markers

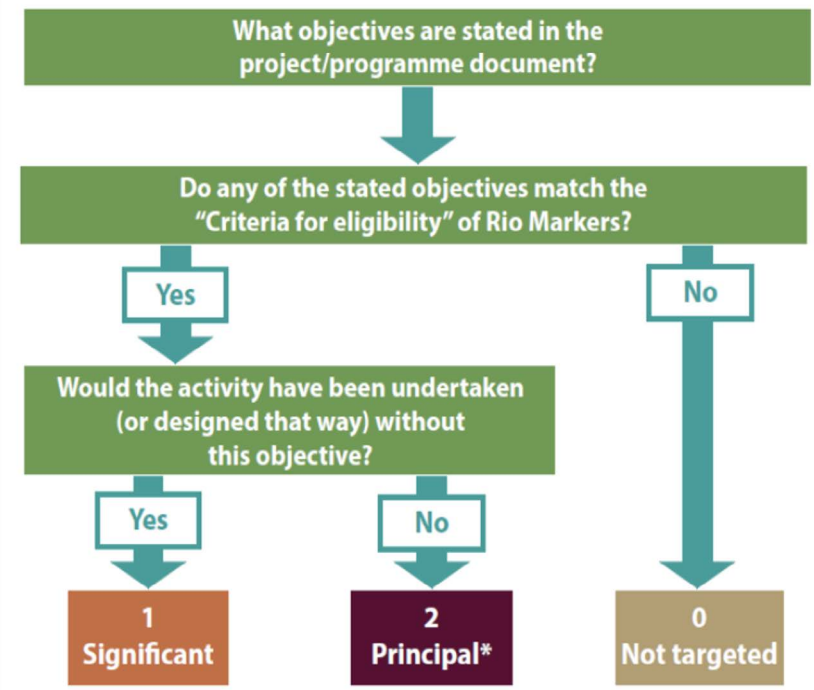
OECD's "Rio Markers" are a public sector focused tool used to track development finance aid for CCM, CCA, biodiversity, and desertification. It was initially used in 1998 to monitor and report on the contribution of the members of the OECD's Development Assistance Committee (DAC) to the objectives of the Rio Conventions of 1992 including the UNFCCC. Alongside reporting purposes, the OECD uses the Rio Markers to collect data on finance flows for official development assistance and other relevant official flows.

The Rio Markers are comprehensively descriptive, rather than strictly quantitative and consist of definitions and criteria for eligibility in the form of potential contributions for these four environmental objectives. In summary:

- The CCM references the GHG emission reductions and limitations as well its sequestration;
- The CCA references the intention to reduce the vulnerability of human and natural systems against the current and expected impacts of climate change and adopts the process-based approach under the MDBs-IDFC Common Principles;
- Biodiversity references its conservation, sustainable use of its components (ecosystems, species or genetic resources), or fair and equitable sharing of the benefits of genetic resources; and
- Desertification references combatting it or mitigating the effects of drought in arid, semi-arid and dry sub-humid areas through prevention and/or reduction of land degradation, rehabilitation of partly degraded land, or reclamation of desertified land.

A high-level scoring system then applies to these definitions and criteria to determine the level of relevance of an activity for the targeted environmental objective. Briefly, an activity is marked as **"Principal"** (Score: 2) if the environmental objective is explicitly stated as fundamental to its design and intention. It will be marked as **"Significant"** (Score: 1) if the environmental objective is explicitly stated, but is only a positive externality, i.e., not its core driver. Activities which do not target any of these environmental objectives in a significant way are classified as **"Not Targeted"** (Score: 0)[10].

Figure 3: Decision tree for scoring an activity against a Rio Marker (Source: OECD)



10 Activities that are not assessed against the Conventions shall not receive any score.

Importantly, for the CCM and CCA activities, the Handbook on Rio Markers for Climate provides an indicative table to guide the "Rio Marking" exercise by sector/sub-sector with qualifying activity examples. The list is comprehensive and diverse in nature with activities ranging from education, tourism, financial services sectors to renewable energy and industry (with over 20 sectors), but not exhaustive.

The indicative list of qualifying activities and examples is quite granular with the aim to connect various development activities to a potential climate impact. The attribution of Rio Markers scores is therefore constructed on the potential relevance of a sector from a climate perspective. This approach diverges from the GBP which are sector agnostic. For example, activities that reduce GHG emissions in the health sector (e.g., shift to renewables or energy efficiency in hospitals) are indicated only as "Score 1: significant" under this indicative guiding list. As such, the Rio Markers are also not appropriate to systematically aggregate and determine the positive climate impact since the claim is based on the intention that underlies an activity, rather the actual or estimated environmental impact. Similarly, the Rio Markers have not been designed for use in financial products.

Nevertheless, the Rio Markers have influenced the climate budget tagging systems of several sovereigns. The OECD DAC members use the Rio Markers when reporting to the Rio Conventions. In both cases, countries adjust the Rio Marking exercise depending on their own "green" evaluations and apply fixed coefficients, which are often 100% for the "Principal" score and range from 30% to 50% for the "Significant" score to avoid over-reporting. While the Rio Markers are praised for being pragmatic and simple to implement by public authorities (lower costs), they have also received criticism because of the risk of over-estimating of climate spending and not following the conservativeness principle adopted by the MDBs-IDFC Common Principles.

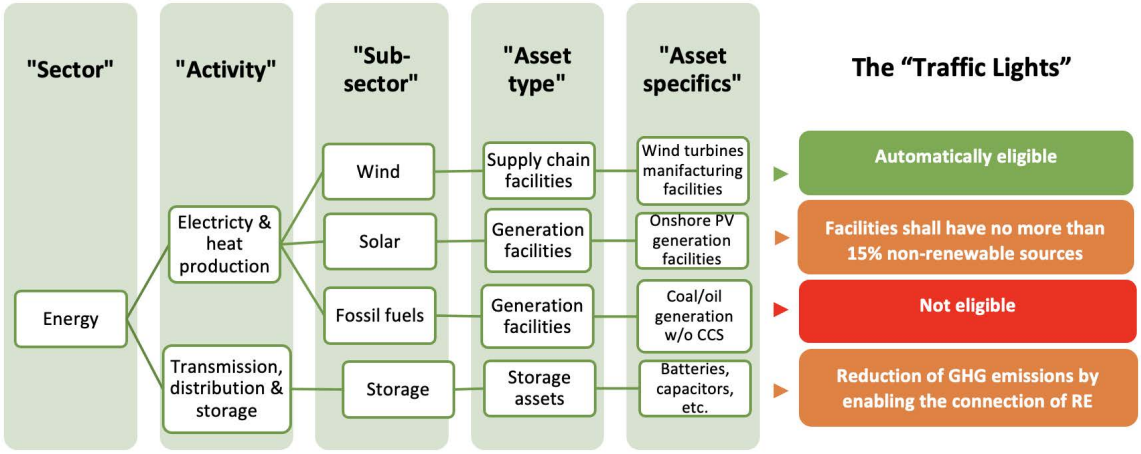
Market based taxonomies

1. Climate Bonds Initiative Taxonomy

First released in 2013 by the Climate Bonds Initiative[11], an influential NGO in the green bond market, the CBI Taxonomy is a globally recognized tool providing an overview of green investment opportunities across the major economic sectors. The CBI uses an adapted version of its taxonomy (based on more descriptive criteria[12]) to determine eligibility of instruments in its green bond list. Together with the detailed Sector Criteria, the CBI Taxonomy is also the cornerstone of the CBI's Certification Scheme for Climate Bonds which to date captures a cumulative issuance volume of USD150bn.

The CBI Taxonomy adopts a "traffic light" system to determine eligibility. Under this system, assets are attributed "green" where they are considered automatically eligible; "orange" if they need to meet certain screening criteria; "red" where they are considered ineligible; and, "grey" if screening criteria have not been determined yet. The assessment of the Taxonomy is done at five different levels with granularity. To illustrate:

Figure 4: CBI's Traffic Lights Taxonomy



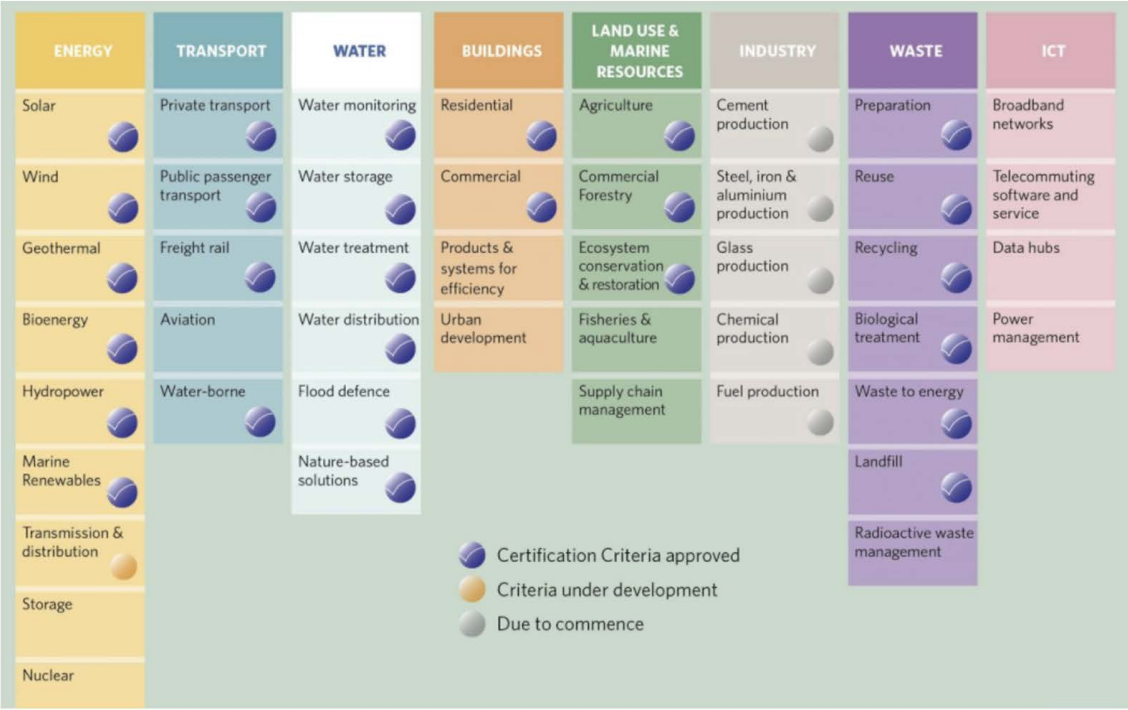
The CBI Taxonomy is generally coherent with the GBP in the case of "green light" qualified assets since the assessment is mainly based on the recognition that these contribute to CCM or CCA by nature. Here, examples can be the manufacturing of renewable energy components. Methodologically, it is also compatible with the GBP and similar systems by adopting a versatile approach between asset, project, and activity-based classifications.

However, the CBI Taxonomy is rather a detailed classification that covers over 165 specific assets from energy, transport, water, buildings, land use & marine resources, industry, waste and pollution control, and ICT sectors. The screening criteria for "orange light" are of a diverse nature and may consist of: (i) absolute quantitative thresholds, (ii) relative thresholds; (iii) qualitative criteria, (iv) supply chain conditions[13], (v) conditions on an asset's intended use[14], (vi) dynamic benchmarks, or even a combination of those in some cases.

11 Climate Bonds Initiative is an influential NGO founded in 2010 to promote the green bond market.
12 See Annex B in the Climate Bonds Initiative Green Bond Database Methodology, September 2020.
13 E.g., in bioenergy, biofuel must be sourced from a sustainable feedstock.
14 E.g., for rolling stock for electrified freight rail, fossil fuel freight must not be more than 25% of the freight transported (in tonne/km).

The CBI Taxonomy's focus is CCM and CCA with the underlying benchmark being the Paris Agreement's "2-degree target", but some of other green objectives are indirectly included in sectors such as "waste and pollution control" and "land use & marine resources". Unlike the EU Taxonomy, the CBI Taxonomy does not contain an overarching "DNSH" concept that addresses environmental concerns beyond climate[15]. Nuclear energy is included as "green light" under the CBI Taxonomy.

Figure 5: Current scope of the CBI Taxonomy (source: CBI)

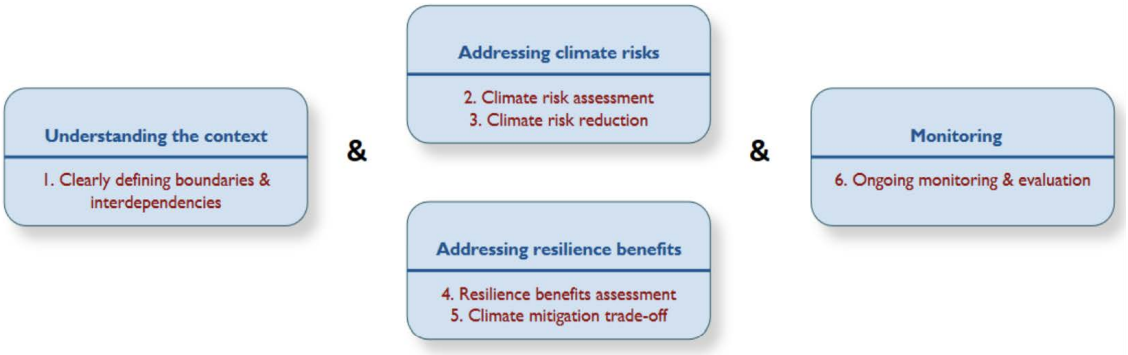


It should be noted that the CBI's guidance on eligibility goes beyond the taxonomy itself, mainly for Certification purposes:

- The Sector Criteria (SC): These are a sub-set of the CBI Taxonomy that provide detailed requirements for 14 sectors with non-exhaustive use-of-proceeds examples. The Sector Criteria require additional disclosures on assets/projects and list out CCA issues to be considered. For some sectors, the SC provide emission reduction trajectories over time, adding up to the taxonomy's initial screening function[16].
- The Climate Resilience Principles (CRP): The CRP add the adaptation layer to the Sector Criteria and help screen CCA investments, which can be "asset-focused" (adapting the asset itself) or "system-focused" (adaptation benefits to the wider system). The CRP are more stringent than the MDBs-IDFC's approach by requiring the evaluation of systemic adaptation "benefits" (vs. the sole physical risks-driven eligibility) and "no significant harm to adaptation itself" (i.e., to avoid the risk of adverse climate-related outcomes or increasing society's vulnerability). They also require eligible CCA measures to be "fit-for-purpose", "flexible", and regularly "monitored". Practically, the latter amounts to an ongoing eligibility test based on preparedness against climate uncertainties. Otherwise, the CRP recognize the possibility of "trade-offs", with potential relaxation to mitigation criteria in case of substantial CCA benefits, but this awaits implementation guidance.

15 Although, in some cases, the eligibility criteria consist of similar requirements to not cause any environmental trade-off.
16 See the Trajectory Method used as absolute eligibility criteria in the Buildings Sector.

Figure 6: Overview of the CRP (source: CBI)



- The Climate Transition Principles (CTP): The CTP are the most recent guidance from the CBI which focuses on the transition and bears 5 conditions: (i) alignment with the 1.5-degree trajectory, (ii) science-based goals/pathways, (iii) non-inclusion of offsets, (iv) technological viability of existing/future solutions (which trumps over economic competitiveness), (v) "actions rather than pledges". The CTP are designed to be applied both to activities and entities, and as such, to a variety of instruments (UOP bonds, SLBs, equity, etc.). The "transition" label builds on the distinction whether an activity has a long-term role to play in low-carbon economy[17]. For entities, the assessment is based on a credible entity-level transition strategy, as is the case with the GBP's Climate Transition Finance Handbook (CTF Handbook).

We believe consistency among the CBI's eligibility guidance could be further enhanced. Firstly, the "trade-off" idea that mitigation criteria may be flexible in case of substantial benefits to adaptation could be further reflected in the CBI Taxonomy, especially for assets that are most relevant to the CCA such as water-related infrastructure. Regarding the transition, the CTP strictly require "1.5-degree alignment" while the CBI Taxonomy is rather built on the "2-degree compatibility".

There also seems to be a divergence between the CTP's approach on activity-level transition and the GBP's CTF Handbook. The CTP do not require an entity-level transition strategy for activity-level transition if other requirements are satisfied, but rather "welcomes" it. This means a use-of-proceeds bond can potentially qualify as "transition" without its issuer having a long-term transition plan to back it. In contrast, entity-level transition strategy is a core disclosure and requirement in the CTF Handbook regardless of the financing instrument being a use-of-proceeds or for general corporate purpose.

The CBI Taxonomy is mainly designed to be applied to financial products, especially bonds. As mentioned, an adapted version of the CBI Taxonomy relying more on descriptive and more relaxed eligibility of assets, projects, and activities (see Annex B here) leads to the inclusion of instruments in the CBI's green bond list, which is then used by some index providers to determine eligibility for green bond investments for funds and by some stock exchanges for sustainability-dedicated listing segments. Compliance with the CBI Taxonomy and other eligibility guidance (SC, CRP and CTP, where relevant) is also required to receive the CBI Certification under the Climate Bonds Standard V.3. We must also note that the Climate Bonds Standard V.3. specifies which project and asset types are eligible[18].

17 Carbon-intensive activities/entities aligned the Paris Agreement and zero-carbon by 2050 can be either "green" or "transition". However, activities for which there is no pathway to "zero" by 2050, those that are needed only in the interim, or the "stranded activities" can qualify only as "transition", and if they reduce emissions substantially in the short-medium term without any lock-in effect.

18 Under the CBI Standard V.3., eligible projects and assets consist of: (i) physical assets or projects owned by the issuer; and/or (ii) debt or other financing arrangements provided by the issuer to finance projects or physical assets; and/or (iii) related and supporting expenditures for projects or physical assets where the projects or physical assets meet the relevant Sector Eligibility Criteria. The content and scope of each of these are further detailed in the document.

2. The MDBs-IDFC Common Principles

Multilateral development banks (MDBs) have historically been the pioneers of financing green technologies and creating green finance markets with the first green bond issuance ever in 2007. With the increased global momentum on climate action, nine MDBs[19] have recently committed to targets of USD65 bn of climate finance annually by 2025 (USD50 bn for low- and middle-income countries and USD18 bn for climate adaptation). The IDFC members, which consist of 26 regional and national development banks, are also major climate finance providers with a collective total of USD187 bn reported in 2019, and a similarly increasing focus on adaptation and transition.

In this context, the importance of the Common Principles on Climate Mitigation Finance Tracking and the Common Principles on Climate Adaptation Finance Tracking as guidance should be underlined. These are developed jointly by nine MBDs and the IDFC in 2015 primarily to align their tracking and reporting of climate development finance. Alongside its tracking and reporting function, however, the Common Principles also provide definitions for climate-related financing.

To start with, an activity is classified as "CCM-related" if it promotes efforts to reduce or limit GHG emissions or enhance GHG sequestration. This definition is supported with a list of eligible activities of non-exhaustive nature, consisting of 10 sector categories[20] and broken down into 28 sub-sectors and several examples. It is noteworthy that the sector-level classification is made at a high-level while sub-sectors are constructed around economic activities in a more granular manner. To illustrate:

Table 3: Extract from the Common Principles on CCM

Sector	Sub-sector	Examples
Renewable Energy	Electricity generation	Wind, geothermal (only if net emissions demonstrated), solar, biomass or biogas (net emissions to be demonstrated), ….
	Heat production and other RE application	Solar water heating, thermal applications of geothermal power in all sectors, ….
	Measures to facilitate integration of RE into grids	New, expanded, and improved transmission systems, storage systems, new ICT, smart grid, etc.

The list of eligible activities does not provide any quantitative "greenness" thresholds like the GBP, but rather qualifies the eligibility based on project descriptions. Meanwhile, the Common Principles for CCM require project-specific evidence to claim impact. Also, given the sole focus on GHG emission reductions, this list overlaps to a large extent with the GBP's project categories of renewable energy, energy efficiency, and clean transportation. Other noteworthy points are:

- Inclusion of "transition" at a higher level compared with the EU Taxonomy, but with the backstop of principles such avoiding carbon-lock in, importance of long-term structural shift towards green technologies, and replacing the old technologies before their lifetime with substantially more beneficial ones to ensure additionality.
- Recognition of the enabling sector as a separate category of "low carbon technologies"; and,
- Inclusion of activities that are most relevant to MDBs' support to countries (e.g., technical assistance or policy lending).

Separately, the MDBs have in place a Joint Methodology for Tracking Climate Change Mitigation Finance aligned closely with the Common Principles. One importance difference is that the Joint Methodology makes an explicit reference to the Paris Agreement indicating at a high-level that not all short-term GHG reductions are eligible. Indeed, a similar approach is adopted by the GBP's Climate Transition Finance Handbook where the alignment with the Paris Agreement is central to issuers disclosing on their climate transition finance strategies as well as in ICMA's definition of "climate transition". The Joint Methodology is expected to be updated with a more granular list of eligible activities in 2021.

19 ADB, AfDB, AIIB, EBRD, EIB, IDG Group, IsDB, New Development Bank, and WB Group.
20 The high-level categories include renewable energy, lower carbon and efficient energy generation, energy efficiency, agriculture, forestry and land-use, non-energy GHG reductions, waste and wastewater, transport, low-carbon technologies, cross-cutting issues (e.g. policy support), and other activities with net GHG reductions.

Adaptation finance under the Common Principles, on the other hand, is defined as *"activities that address current and expected effects of climate change where such effects are material for the context of those activities"*. It follows a process-based approach with three steps: (i) setting out the context for the climate-related risks; (ii) stating the explicit intent to address those; and (iii) demonstrating a direct link between the climate risks and the financed activity.

The tracking of climate adaptation finance is made in a granular and conservative manner and aims to segregate projects (or their components) that target adaptation from other development activities with the departure point being the analysis of specific physical risks. We note that the MDBs' Joint Annual Report for 2016 included a non-exhaustive list with potential climate vulnerabilities and adaptation activities per sectors and sub-sectors. Like for the CCM, MDBs also have a separate but closely aligned Joint Methodology for Climate Adaptation Finance Tracking.

3. ISO's upcoming Green Taxonomy

The International Organization for Standardization (ISO), the worldwide federation of national standards bodies, is currently working towards an internationally applicable standard on "Environmental performance evaluation — Green debt instruments". It aims to provide specific requirements and guidance for the designation and verification of green bonds (ISO 14030-1), for which it expands on the Green Bond Principles (GBP) published by ICMA, and green loans (ISO 14030-2), for which it expands on the Loan Market Association's Green Loan Principles (GLP). Those two standards are complemented by a taxonomy (ISO 14030-3) and verification programme requirements (ISO 14030-4). Parts 1, 2, and 4 are expected to be published by the end of Q3 2021 after final approval by ISO member bodies. The publication of Part 3, the ISO Taxonomy, is not expected until 2022.

The objective of the ISO Taxonomy is to identify activities with positive environmental benefits. It provides a framework for classifying all potential projects, assets or activities against a comprehensive set of environmental objectives that are largely inspired from the EU Taxonomy, whilst doing no significant harm to others. Activity descriptions, performance criteria and thresholds, together with the DNSH requirements are also similar to those of the EU Taxonomy.

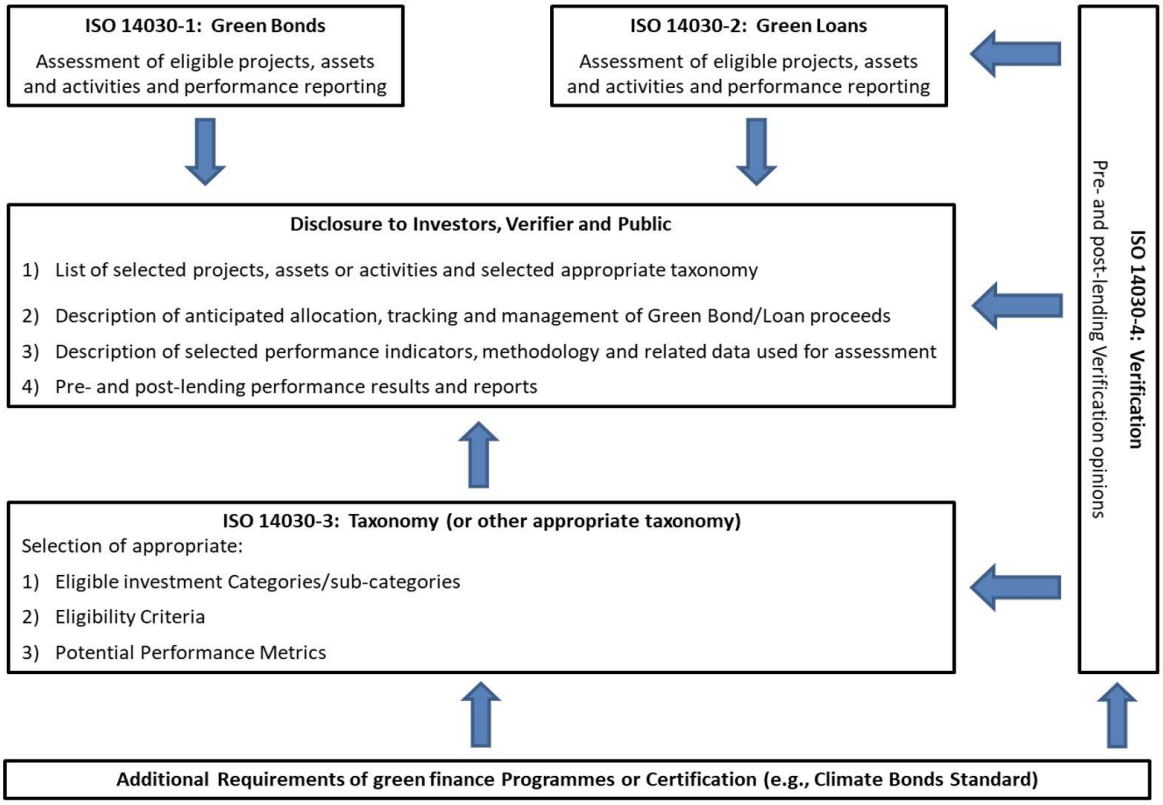
The ISO Taxonomy makes extensive references to the lifecycle considerations as part of its eligibility assessment. In manufacturing, the ISO Taxonomy recognizes the role of "greening by" (or enabling) activities as eligible by their very nature while "greening of" activities need to meet the performance thresholds provided in an annex.

Despite the similarities with the EU Taxonomy, the ISO Taxonomy is being drafted with a higher focus on the potential international acceptance and applicability. It explicitly recognises the local context and promote decarbonization technologies that are the best available options considering various circumstances of countries and regions.

Accordingly, the ISO Standard allows users to select a taxonomy that has been developed for use in the user's country or a taxonomy specified by a green debt instrument programme operator. In such cases, users will be expected to document the rationale for their selection of a suitable taxonomy including, notably, its development by a recognized source (governmental or non-governmental), its appropriateness to the intended jurisdiction of issuance or origination, and its appropriateness to the location of the proposed projects, assets and activities. Verifiers should assess the appropriateness of the selected taxonomy and include their conclusions in any resulting report or opinion.

In addition, users can depart from any existing taxonomy if they apply an eligibility process test to determine the eligibility of projects, assets or activities that are not described in a selected taxonomy. Based on a detailed description, users shall obtain an independent validation of the eligibility of the proposed projects, assets and activities.

Figure 7: Relationship between the different parts in the ISO 14030 series (source: ISO)



Complementary approaches: the GBP's eligible project categories

The Green Bond Principles (GBP) are voluntary process guidelines that have become the global standard for green and sustainability bond issuance underpinning over 95% of international issuance in 2020. The GBP do not propose a taxonomy but identify key environmental objectives and high-level eligible project categories for green bond issuances. It is important to note that the GBP also explicitly acknowledge national and international taxonomy initiatives and recommend that issuers reference their use. In June 2019, The GBP released its guidance on green project mapping that explains how GBP project categories can be related at a high level to the relevant sectoral classifications of other systems (e.g. CBI, China Green Bond Catalogue, MDB-IDFC).

The GBP's five overarching environmental objectives are: (i) climate change mitigation (CCM); (ii) climate change adaptation (CCA); (iii) natural resource conservation; (iv) biodiversity conservation; and (v) pollution prevention and control. The GBP's list of eligible Green Project categories and examples are expected to contribute to these five environmental objectives. Projects falling under these categories are included based on an ex-ante assumption of positive environmental impact. The list is non-exhaustive and includes the most used categories in the green bond market:

1. Renewable energy
2. Energy efficiency
3. Pollution prevention and control
4. Environmentally sustainable management of living natural resources and land use
5. Terrestrial and aquatic biodiversity conservation
6. Clean transportation
7. Sustainable water and wastewater management
8. Climate change adaptation
9. Eco-efficient and/or circular economy adapted products, production
10. Green buildings

Project categories and the different environmental objectives are not always mutually exclusive and may overlap. For instance, a sustainable water and wastewater management project may contribute to the environmental objectives of both pollution prevention and control and CCA. Similarly, a waste management project may also be reported as a project for circular economy as well as pollution prevention and control. The GBP therefore acknowledge that it is ultimately up to issuer's judgment and the project specifics that determine which environmental objective(s) is (are) served the most. This flexibility is helpful for issuers to communicate their priorities in terms of environmental goals.

The potential interlinkages of project categories are further explained in the GBP's Handbook on Impact Reporting. In fact, the Handbook may establish boundaries between some project categories. For example, it is recommended that projects relating to a building's energy savings falls within the category "energy efficiency" while if it incorporates broader considerations (e.g., water use), it will become a "green building" project.

More recently, the GBP released guidance on taxonomies and nomenclatures. This publication categorised taxonomies under three broad groups from a user perspective: (i) taxonomies for the financial industry (e.g., the EU Taxonomy and the CBI Taxonomy); (ii) standards designed for companies or sectors (e.g., Ecolabel certifications); and taxonomies for broader use (e.g., SDGs). The document explains in detail various existing nomenclatures, how they interplay with taxonomies, their usability and potential contribution to sustainability assessment. Also, that taxonomies can serve different purposes, as product, disclosure, or risk assessment tools (or a combination of these).

The usability of the GBP in conjunction with the taxonomies may however raise methodological issues. This is mainly because the GBP functions with a project-based approach while the EU Taxonomy and some other taxonomies function with an "economic activity" based classification. Although there is existing high-level guidance from the EU's Technical Expert Group on Sustainable Finance on how to convert activities into projects[21], there are challenges in reconciling the two approaches. These are among other:

- Activities can involve primarily operational expenses rather than the capital expenditures or asset refinancing that projects largely focus on.
- The eligibility of green projects can be based on a holistic assessment of their expected sustainability impact that may not fully translate under an activity classification.
- Green projects may rely on new technologies that are not yet reflected in activity classifications.
- Generally, activity classifications often remain incomplete as yet and focused on a limited number of environmental objectives.
- Activity-based classifications can be binary and therefore not fully capture transition-themed projects that typically involve a forward-looking process rather than an activity.

On the topic of transition finance, the GBP have recently contributed to the overall debate on climate transition with the release of the Climate Transition Finance (CTF) Handbook in December 2020. Amongst other topics, the CTF Handbook provides issuers with guidance on how to complement a project-based approach through green or sustainability bonds with a high-level disclosure and strategy framework at the level of their entire organisation. The Handbook's recommendations are also relevant for Sustainability-Linked Bonds (see the Sustainability-Linked Bond Principles released by the GBP) and potentially to other forms of transition-themed financing.

Climate Transition Finance Handbook

Released in December 2020, the CTF Handbook aims to underpin the credibility of an issuer's strategy to address climate change and to meet the global objectives of the Paris Agreement. The Handbook's objective is to clarify the issuer level disclosures which are recommended to credibly position the issuance of Use of Proceeds or Sustainability-Linked debt instruments to finance the transition. The CTF Handbook has four elements:

1. Issuer's climate transition strategy and governance (the financing should be for enabling an issuer's climate change strategy).
2. Business model environmental materiality (climate trajectory should be materially relevant to business model).
3. Climate transition strategy to be science-based including targets and pathways.
4. Implementation transparency (transparency of underlying investment program).

21 See the TEG's Usability Guide on the EU GBS, p.16-20.

Success criteria for future taxonomy developments

As part of its dialogue with regulators and market participants, ICMA is increasingly requested to respond to questions regarding the development of taxonomies. ICMA has also been a key stakeholder in the construction of the EU Taxonomy through its participation in the European Commission's successive expert groups (High Level Expert Group, Technical Expert Group and Platform on Sustainable Finance). Beyond the EU's pioneering efforts, as well as those of China, the emergence of further regional and local taxonomies is already a reality.

These developments reflect that not all geographies are at the same starting point and facing the same environmental challenges, and that they have different economic and social development needs. The Paris Agreement recognizes this referring to "differentiated responsibilities and respective capabilities in light of different circumstances" concerning climate change. The concept of transition is particularly open to regional variations and divergences. Also, countries may prioritise environmental policy goals differently with for example air pollution rather than climate change being perceived as the most potent short-term threat in parts of Asia.

There have already been important calls to ensure a harmonised approach for national taxonomies. The EU's Technical Expert Group (TEG) presented 4 common design principles for international harmonization and mutual recognition of taxonomy frameworks in March 2020. The TEG focused specifically on setting environmental goals that are consistent with the Paris Agreement and providing guidance on building an economic activity-based classification system thereby promoting consistency with the approach that is at the core of its own pioneering Taxonomy. The European Commission's International Platform on Sustainable Finance set up in October 2019 also has a dedicated taxonomy-related workstream (led by the EU and China) which will release its guidance on a Common Ground Taxonomy in 2021.

In June 2020, the World Bank published its Guide on Developing a National Taxonomy recommending 6 actions when developing a national taxonomy. These actions promote usability, recognised expertise and international compatibility. They also provide practical advice on process targeted at emerging markets. The World Bank further underlines the need for adjustment to local considerations and the importance of placing a taxonomy effort in the context of a jurisdiction's environmental ambitions. Similarly, in December 2020, the Global Financial Markets Association (GFMA) published a comprehensive report on Climate Finance Markets and the Real Economy where it called for *"globally consistent principles underpinning the development of sector and region specific taxonomies"*. It proposed 7 such principles based on industry dialogue recommending among other common global definitions, wide applicability, regional flexibility, transition inclusivity and focused metrics.

The OECD is also very active in providing guidance on taxonomies beyond its long-lasting contribution to the monitoring of development flows (explained above). In 2020, the OECD published a comprehensive and detailed report called "Developing Sustainable Finance Definitions and Taxonomies". The report maps sustainable finance definitions and taxonomies in the EU, China, France, Japan, and the Netherlands highlighting the commonalities, differences, and gaps between those, and provides a detailed review of each of these jurisdictions' approach. Substantially, the OECD recognizes the potential jurisdictional differences in terms of climate policy and emission pathways and provides initial policy reflections on taxonomy designs[22].

As noted above, ICMA is following the developments on taxonomies very closely with its participation in the EU's Platform on Sustainable Finance and its engagement globally via consultation responses in many jurisdictions and especially in Asia. In this context, we have been prompted to reflect and respond to questions on how to benchmark the relevance

22 The OECD distinguishes the potential policy considerations for taxonomies under two categories: (i) the role of taxonomies in the achievement of environmental policy objectives (including its overarching and specific objectives, activities vs. products, binary vs. transition and brown taxonomies, stringency of eligibility criteria) and (ii) taxonomy usability and implementation issues (geographical scope, data availability, verification, usability, and proportionality).

of national taxonomy efforts. Building on this experience, and as contribution to the debate on taxonomy design, we propose the following "success criteria" for national taxonomies that need to be:

(1) Targeted

It is crucial to determine at the outset what a taxonomy is being designed to do. Looking at different jurisdictions, taxonomies can serve a variety of different purposes beyond simply classification, as financial product qualification, disclosure, or risk assessment tools (or a combination of several or all of these).

For each of the above-mentioned purposes, careful considerations and clear guidance for implementation is needed when applying a taxonomy. In particular, applying a taxonomy for prudential risk management purposes, which will have direct and mandatory economic implications for the financial sector, could lead to unintended consequences and regulatory arbitrage. We believe that it is also advisable to take into account the intended practical uses of the taxonomy in market regulation and development.

Finally, we would like to emphasise that if a taxonomy at some stage will be adopted for regulatory purposes as we are seeing in the EU, it is important to think about the risk of unintended consequences from its implementation and incorporation into law such as excessive rigidity or interpretation challenges, as well as the availability and provenance of the required data.

(2) Additional

Jurisdictions should consider first the relevance of the leading international and market-based taxonomies several of which are the result of years of scientific and academic input. These should be applied or referenced as much as possible to avoid duplication of cost and effort. National taxonomies should focus firstly on explanatory and illustrative advice to ensure that local actors can leverage this existing guidance.

Further scientific and academic work, as well as guidance, should concentrate on economic sectors that have the greatest potential to contribute to the local environmental objectives with the greatest priority especially if they are not covered with sufficient detail by international taxonomies.

(3) Usable

Taxonomies are often designed primarily for use by financial institutions such as banks, for classification of their portfolios and loan books. For that purpose, and to ensure that the taxonomy is sufficiently understood by banks and their potential advisors, the taxonomy should be clear on both the embedded methodology as well as how to implement it. In particular:

- The taxonomy (or its implementing legislation) should specify which parties are responsible for undertaking the classification of particular activities. Is the intention for corporates to self-declare and for banks to rely on that classification, or should banks make the judgement as part of their due diligence process? Who will be held potentially liable for the classification results?
- The design and implementation of the taxonomy should be clear as to whether and how the classification is to be done at the business group level, legal entity or company level, project level, or by individual activities within any of these. From our experience, this would also be helpful if the taxonomy were to be extended to financial products or adopted for regulatory purposes.

If the taxonomy is to be used for sustainable finance products such as green or other sustainable bonds, it should take into account that the green, social and sustainability bond market functions with a project-based approach. This is important as official sector taxonomies are often activity-based.

(4) Open and compatible

It is important that guidance and recommendations by existing initiatives and tools such as the Taskforce on Climate-related Financial Disclosures (TCFD), Science Based Targets initiative (SBTi), and Transition Pathway Initiative (TPI) are being referenced in the taxonomy as appropriate.

Furthermore, we recommend that a taxonomy should be compatible with established market-based global frameworks such as the GBP and the leading international market-based and official sector taxonomies.

(5) Transition enabled

Leading international taxonomies have been criticised for focusing on identifying sustainability thresholds rather than trajectories or pathways. The first approach works for immediate classification purposes while the second is essential when considering transition whether to meet the challenges of climate change of sustainability more generally. To capture the second, we recommend:

- Encouraging the use of taxonomy thresholds and metrics for forward looking targeting by companies.
- Embedding in taxonomies realistic future trajectories/pathways for companies to reach the identified sustainable technical thresholds.
- Confirming the acceptability of taxonomy grandfathering for sustainable financial products to address the challenge of taxonomy thresholds being adjusted over time.
- Recognising the use of complementary approaches and metrics outside taxonomies (such as those proposed by the GBP's CTF Handbook, SBTi, the TPI and the CBI).

Existing Guidance on transition pathways and trajectories

Currently most decarbonisation pathways and trajectories are sector specific. There are hardly any science-based decarbonisation pathways or tools that apply sectoral and geographical lenses at the same time.

The recognised tools for benchmarking issuers include the SBTi, the TPI, and the scenarios developed by the International Energy Agency (IEA).

- **SBTi:** The SBTi helps companies to set their science-based targets in line with the latest climate science based on the following three methods:
  - (1) Absolute Emissions Contraction: All companies, regardless of their industry or geographical location, shall reduce their absolute emissions at the same rate (minimum 2.5% annual linear reduction), irrespective of initial emissions performance.
  - (2) Sectoral Decarbonisation Approach (SDA): It builds on the Beyond 2°C Scenario (B2DS) developed by the IEA and has developed pathways for selected sectors, including hard-to-abate industries such as power and aluminium. It does not take regional pathways into account but assumes global convergence of key sectors' emissions intensity by 2060. Companies can use the sector-specific pathways to set physical intensity-based targets.
  - (3) Economic Intensity Contraction: Companies are required to reduce their GHG emissions per Value Added (GEVA), denominated by tCO2e/$ value added, by 7% year-on-year.
- **TPI:** TPI assesses companies' preparedness for the transition to a low-carbon economy by analysing the management quality of the companies (qualitative) and benchmarking individual companies' carbon performance (quantitative). Following the same SDA approach, the companies' carbon intensity is compared against three benchmark emissions paths derived from the IEA's work: a Paris Pledges scenario (consistent with the global aggregate of the current NDCs), a 2 Degrees scenario, and a Below 2 Degrees scenario.
- **IEA:** IEA publishes many historical data about carbon emission and energy by country and sector. IEA makes available forward-looking CO2 emission pathways for each country and the global energy sector on how much aggregate carbon emission it should limit itself to each year. However, the geographical and sectoral lenses are not applied at the same time. Corporates will also need to adapt the industry-level figures themselves to use at company level.

Conclusion

This publication illustrates the global mainstreaming of efforts to provide official and market-based support to the growth and integrity of sustainable finance. Developed and emerging markets are increasingly aware of the challenges of sustainability and climate transition with sustainable finance being seen as a key tool to help address these.

As public and private players continue to innovate in sustainable finance, further taxonomy initiatives may be launched to reflect regional or national priorities. For these efforts it will be essential to leverage existing market and international taxonomies to avoid duplication of effort and ensure additionality. It will also be key to consider the objectives being pursued whether in the areas of classification, financial product regulation or sustainability disclosures.

Usability should be factored in at the outset with a particular focus on the availability of data. Taxonomies should also not be considered as panaceas, and they should be designed to work in concert with complementary and alternative approaches prevailing in sustainable finance.

Finally, it should be understood that identifying what is green and sustainable today is arguably less important than shedding light on pathways and trajectories to sustainability. The real challenge is enabling the market to finance the transition rather than unintentionally restricting it to what is already considered exemplary.

Annex: High level comparison of taxonomy systems

System	Environmental objectives	Approach on eligibility	Usability	Other noteworthy aspects
CBI Taxonomy	(i) CCM and (ii) CCA	"Traffic lights": green (automatically eligible); orange (subject to eligibility criteria); and red (not eligible).	The CBI Taxonomy is mainly designed for financial products. The compliance with an adapted version of the CBI Taxonomy (based on less stringent and descriptive criteria) is required for inclusion of green debt in the CBI's Green Bond List (used by index providers and stock exchanges to determine investment eligibility). The compliance with the CBI Taxonomy is also a core pillar the cornerstone of the CBI Certification.	The CBI's guidance on eligibility goes beyond its taxonomy. Issuers wishing to certify their bonds need to comply with the detailed Sector Criteria, the Climate Resilience Principles, and the Climate Transition Principles, (where relevant).
China's Green Bond Endorsed Project Catalogue (2021 Edition)	Green bonds' role to support: (i) improving the environment, (ii) addressing climate change, (iii) saving and efficiently utilising resources, etc.	Descriptive eligibility: projects are considered eligible for green bonds, if they meet the conditions set out in their respective descriptive explanation in the catalogue. Some but not all projects make reference to related national industrial standards, have simple quantitative requirements, and/or make a high-level mention of DNSH.	The 2021 Project Catalogue is used to define green eligibility for green bond only.	In comparison with the previous 2015 edition, clean utilisation of coal and oil is substantially removed from the list of eligible projects. Nuclear energy and enabling activities including green services are included.
EU Taxonomy	(i) CCM, (ii) CCA, (iii) sustainable use and protection of water and marine resources, (iv) transition to a circular economy, (v) pollution prevention and control, (vi) and protection and restoration of biodiversity and ecosystems	An activity needs to substantially contribute to the environmental objective(s); do no significant harm to others; be conducted in compliance with minimum social safeguards; and comply with the Technical Screening Criteria which are introduced with delegated acts.	Large public companies and asset managers will use the EU Taxonomy to disclose the taxonomy alignment level of their businesses and products. The EU Taxonomy will also be referred in official EU product labels such as the EU Green Bond Standard.	The EU Taxonomy refers extensively to the lifecycle assessment of activities, explicitly excludes solid fossil fuels, and categorises activities as "low carbon" and "transitional" for the CCM objective, and as enabling activities for all environmental objectives.
ISO Taxonomy (under development)	Expected to be same as under the EU Taxonomy	To identify activities with positive environmental benefits, it applies activity descriptions, performance criteria and thresholds, together with the DNSH requirements.	It will be used together with the other standards in the ISO 14030 series for the evaluation of environmental performance of green debt instruments, including green bonds and green loans.	The ISO Taxonomy makes extensive references to the lifecycle considerations as part of its eligibility assessment. "Greening by" (or enabling) activities are eligible by their very nature, while "greening of" activities need to meet the performance thresholds provided in an annex.

System		Environmental objectives	Approach on eligibility	Usability	Other noteworthy aspects
Malaysia's Climate Change and Principle-based Taxonomy		(i) CCM and (ii) CCA (with additional three environmental objectives to consider for DNSH: pollution, biodiversity, and resource efficiency)	It does not provide an exhaustive or illustrative list of green activities or projects but designs the key testing questions at both transaction and issuer levels to be used by financial institutions to classify their assets into categories related to climate transition. The level of climate-friendliness ranges from category C1 ("climate supporting") to C2 and C3 ("transitioning") to C4 and C5 ("watchlist").	It is principally designed for financial institutions to classify the assets in their lending and investment portfolios, measure the climate-related risks and exposure, and report to BNM, for internal risk management and supervisory purposes.	The testing questions for classification look at both transaction and issuer levels. It examines the positive environmental impacts at the transaction level and the negative environmental impacts (i.e., harm) and efforts to remedy and improve them at both transaction and issuer levels.
MDBs-IDFC Common Principles		(i) CCM and (ii) CCA	Descriptive eligibility: The Common Principles introduce definitions for CCM and CCA-related financing. Inclusion in the non-exhaustive list of eligible activities is descriptive and not subject to greenness thresholds.	Mainly used for the monitoring and reporting of climate financing in a consistent manner among development banks.	The Common Principles on CCM includes "transition"-related projects/ activities at a high level, with the backstop of principles such as avoiding carbon-lock in, importance of long-term structural shift towards green technologies, and replacing the old technologies before their lifetime (with a distinction of greenfield vs. brownfield investments in energy efficiency).
OECD Rio Markers		(i) CCM, (ii) CCA, (iii) biodiversity, and (iv) desertification	Descriptive eligibility: The Rio Markers introduce definitions and high-level criteria for CCM, CCA, biodiversity and desertification objectives, and then applies a basic scoring based on the underlying intention to undertake the relevant activity. The Markers also present a comprehensive, but indicative list for CCM and CCA-related activities as further guidance.	The OECD Rio Markers are used mainly for monitoring and reporting of the development finance flows related to the Rio Conventions. They are also used by sovereigns in climate budget tagging with the application of coefficients.	The OECD Rio Markers are not designed for financial products nor to aggregate and determine impact. They are found as pragmatic and simple to implement for the public sector but received criticism because of the potential risk of over-reporting.
Bangladesh's taxonomy	Screening	(i) CCM, (ii) CCA, (iii) sustainable protection of water and marine resources, (iv) transition to a circular economy, waste prevention and recycling, (v) pollution prevention and control, (vi) protection and restoration of biodiversity and healthy ecosystems	Mirroring the contents of the EU Taxonomy, mentions the use of technical screening criteria, six environmental objectives, and the principles of substantial contribution to one of the six environmental objectives, DNSH and minimum social and governance safeguards.	It is mainly used to encourage and supervise banks and FIs to grant sustainable loans and conduct sustainable investments. The list of green products/ projects/initiatives is also used as eligibility criteria for whether bank assets can be refinanced with BB under the Refinance Scheme for Green Finance	It also provides two exclusion lists of economic activities considered ineligible for financing and sustainable finance respectively.
	List of Green Products/ Projects/ Initiatives for Term Finance	N/A	The list simply names the eligible categories and sub-categories.		

System	Environmental objectives	Approach on eligibility	Usability	Other noteworthy aspects
Mongolian Green Taxonomy	(i) CCM and CCA, (ii) pollution prevention, (iii) resource conservation, and (iv) livelihood improvement	It stipulates a list of activities considered as environmentally sustainable for investment purposes and does not provide technical criteria.	The taxonomy is designed to be applied for a wider range of financial instruments, including loans, bonds, equity investment, insurance, etc. Beyond the eligibility of green financial products, it is also used for banks to report exposures and for the central bank to track the development of its green loan markets.	It includes livelihood improvement as one of its overall objectives, adding a social element to the taxonomy.
Singapore's Green Finance Industry Taskforce Taxonomy (under development)	(i) CCM, (ii) CCA, (iii) protect biodiversity, and (iv) promote resource resilience	it will classify economic activities using activity specific numeric metrics and require complying with the "do no significant harm" principle and minimum safeguards. The metrics chosen could be consistent globally but the thresholds for the metrics could be region or country specific.	Details on the use of the taxonomy are to be revealed. Between the lines, the consultation paper hints that taxonomy will be used by FIs to classify their portfolios and loan books. It is not evident whether it will be used for green bond classification or fund disclosure.	It proposes to use a traffic light system, i.e., green, yellow and red, to address transition.
South Africa's taxonomy (under development)	(i) CCM, (ii) CCA, (iii) other environmental impact objectives (The first version will initially focus on CCM and CCA).	Mirroring the approaches of the EU Taxonomy, the South African taxonomy will review the economic activities identified in the EU Taxonomy, apply the criteria of "make significant contribution" and "do no significant harm", and set technical criteria or thresholds.	Details on the use of the taxonomy are to be confirmed. It will establish a governance mechanism and appoint an institution as the custodian of the taxonomy to monitor user applications and incorporate the taxonomy in any further regulations, standards, etc. to ensure comprehensive integration of its taxonomy into regulatory policies.	The taxonomy for green will draw the lines between "net zero" activities, "pathway to zero" activities, and activities that are needed for the future South African green economy but at present have "no pathway to zero".

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