



Sustainable Finance in Asia: A Comparative Study of National Taxonomies

Evaluating the policy approaches, challenges, and opportunities in Asia's green finance landscape

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Key Findings

Sustainable finance and green taxonomies assess the sustainability attributes of various economic and financing activities. Asian countries have developed individual taxonomies with diverse standards, aims, and goals, which can create uncertainty for investors, lenders, businesses, and other stakeholders.

The diversity of approaches in Asian green taxonomies reflects each country's unique contexts. However, it also presents significant challenges for interoperability and consistency. A unified framework that aligns with international standards is crucial for fostering a sustainable financial ecosystem in the region.

Asian taxonomies vary significantly, with comprehensive examples like Singapore's to less rigorous approaches in countries such as Indonesia, Malaysia, and the Philippines.

Well-designed taxonomies can effectively guide investments toward environmentally beneficial activities and foster a sustainable financial ecosystem, ensuring the transition to a greener economy is accelerated, effective, and equitable.



Executive Summary

The growing awareness and use of sustainable finance in recent years has led to demands for organized methodologies or taxonomies to classify “sustainable” activities, the financing of which could then qualify as sustainable finance. Sustainable finance taxonomies and their environment-focused counterparts, green taxonomies, assess the sustainability attributes of various economic and financing activities, classifying them as eligible or ineligible.

A sustainable taxonomy aims to establish clarity, consensus, and understanding regarding activities considered sustainable. Green taxonomies carry out this function from the perspective of environmental sustainability, while social and nature taxonomies categorize economic activities with a social and nature-related perspective. A sustainable taxonomy is thus a classification tool designed to help businesses and investors make informed investment decisions on sustainable economic activities. Taxonomies are also public policy tools that can be the basis for further policy design and regulations.

Sustainable finance taxonomies have evolved recently with the emergence of sustainable finance. However, despite this short period, various taxonomies have developed with differing standards, aims, and goals, often creating confusion for investors, lenders, businesses, and other stakeholders. This report emphasizes the importance of clarity and precision in defining a “green” activity. A robust taxonomy should establish clear definitions, science-based activity criteria, and stakeholder engagement mechanisms. For example, the European Union (EU) taxonomy delineates six environmental objectives, ensuring comprehensive coverage across various sectors. In contrast, taxonomies that focus on a limited number of sectors may fail to provide relevant guidance for financial and business participants.

A related risk is inadvertently facilitating greenwashing, where companies incorrectly claim sustainability credentials. A well-designed taxonomy can mitigate this risk by enforcing stringent reporting requirements and ensuring transparency.

This report examines taxonomies or documents that substitute for taxonomies in Asia - primarily in Singapore, Hong Kong, Indonesia, Thailand, the Philippines, Malaysia, South Korea, China, and the regional Association of Southeast Asian Nations (ASEAN) taxonomy. It explains their similarities and differences, highlights key aspects, and analyzes the extent to which clarity, objectivity, and transparency goals are met.

Most Asian taxonomies are voluntary and lack the EU’s mandatory disclosure mechanisms. This raises concerns about the effectiveness of these frameworks in combating greenwashing and ensuring accountability.

A key variation between different Asian taxonomies is how fossil fuels are addressed. While many countries, including Thailand, Malaysia, and Hong Kong, clearly exclude coal from being classified as green, Indonesia takes a more lenient approach. The Indonesian taxonomy allows new coal plants to

be classified as green under certain conditions, raising concern about its commitment to reducing emissions and aligning with international standards.

Transition finance is another critical area of focus. As economies strive to decarbonize, there is a need for financing activities that are currently carbon-intensive but are on a path toward sustainability. The ASEAN taxonomy adopts a traffic light system to categorize activities as green, amber (transitional), or red (non-compliant). This tiered approach aims to provide clarity and facilitate investment in transition activities. However, the effectiveness of such categorization depends on the rigor of the underlying criteria.

The Singapore taxonomy appears the most comprehensive, encompassing various economic activities and providing detailed technical criteria. Employing a traffic light system to categorize activities establishes stringent emissions standards and includes sunset clauses for transition activities. This specificity aids investors in making informed decisions and enhances market integrity. The taxonomy in Hong Kong, while focusing on a limited number of sectors, aligns closely with EU standards, enhancing interoperability. However, it lacks "Do No Significant Harm" (DNSH) criteria and "Minimum Safeguards" (MS).

Indonesia is an outlier, with permissive criteria allowing new coal plants to be classified as green under certain conditions. This approach raises significant concerns about the country's commitment to reducing emissions. Conversely, other taxonomies, such as in the Philippines and Malaysia, rely on principles-based approaches that lack quantitative criteria, leading to potential uncertainty and subjective interpretations. However, both countries' taxonomies exclude coal from being classified as green, while Thailand also excludes all new gas-based facilities.

The South Korean taxonomy is limited in scope. It was established as a pilot with the specific purpose of helping Korean financial institutions make green loans. The standards are not comprehensive, and their future application is unclear. A clear exception in Asia is Japan, which has not developed a taxonomy for sustainable finance.

Greater uniformity among the various Asian taxonomies is needed for adoption and widespread use. While the diversity of approaches reflects the unique context of each country, it also poses challenges for interoperability and consistency. A unified framework that aligns with international standards is crucial for fostering a sustainable financial ecosystem in the region. Instituting clear standards and accountability mechanisms will be vital in transitioning to a greener economy effectively and equitably.

A Brief History of Taxonomies in Asia

Green taxonomies have developed with the emergence of sustainable finance as an important financial specialization.¹ The EU taxonomy regulation, established in 2021, is perhaps the most comprehensive framework and is the only taxonomy mandatory for the finance sector and corporations that are obliged to report on its various metrics.² It focuses on environmental metrics (thus is currently mainly a green taxonomy) but plans to introduce metrics related to social aspects in the future.

Taxonomies were initially developed by independent organizations and industry bodies to help their stakeholders and finance sector players navigate the emerging sustainable finance area. The Climate Bonds Taxonomy, established in 2013³, is regarded as the first sustainable finance taxonomy, followed by the International Capital Markets Association, an industry body comprising participants in the international bond markets, who launched their Green Bond Principles in 2014.⁴

In Asia, China made the first attempt at codifying and standardizing sustainable finance. While there is no specific nationwide green taxonomy, the country released its Green Bond Endorsed Projects Catalogue (GBEPC) in 2015, laying the groundwork for identifying eligible green projects.⁵ There have been periodic updates to align with international standards, reflecting a growing commitment to sustainable finance. Countries such as Mongolia and Bangladesh⁶ also launched taxonomies early on, focusing on specific sectors and projects eligible for green financing.⁷ Malaysia introduced its taxonomy in 2021, aiming to guide financial institutions in assessing economic activities based on climate objectives.⁸ Taiwan's Sustainable Taxonomy, released in 2023, emphasized substantial contributions to climate change mitigation and outlined specific technical criteria for a few sectors.⁹

Singapore launched the Singapore-Asia Taxonomy in 2023¹⁰, utilizing a traffic light system to categorize activities as green, amber, or red, thus promoting transparency and reducing greenwashing. Thailand¹¹ and Indonesia¹² have also developed their frameworks. Thailand's taxonomy focuses on energy and transportation, while Indonesia's encompasses a broader range of

¹ IEEFA. [Fact Sheet: Green taxonomies explained](#). 31 August 2022.

² European Commission. [EU taxonomy for sustainable activities](#).

³ Climate Bonds Initiative. [Climate Bonds Taxonomy](#).

⁴ ICMA Group. [Green Bond Principles](#).

⁵ The Asian and Pacific Energy Forum. [CHINA: The People's Bank of China Announcement No. 39 of 2015 on the Issuance of Green Financial Bonds](#). 2015.

⁶ Bangladesh Bank. [Sustainable Finance Policy for Banks and Financial Institutions](#). December 2020.

⁷ Mongolian Sustainable Finance Association. [Mongolia's Sustainable Finance Journey & SDG Taxonomy](#).

⁸ Bank Negara Malaysia. [Climate Change and Principle-based Taxonomy](#). 30 April 2021.

⁹ Financial Supervisory Commission, Republic of China (Taiwan). [FSC, EPA, MOEA, MOTC, and MOI jointly issue "Taiwan Sustainable Taxonomy" to encourage financial institutions to support enterprises transition towards sustainable and low-carbon economy](#). 11 January 2023.

¹⁰ Monetary Authority of Singapore. [Singapore-Asia Taxonomy for Sustainable Finance | 2023 Edition](#). December 2023.

¹¹ Bank of Thailand. [Thailand Taxonomy - A Reference Tool for Sustainable Economy](#).

¹² Sustainable Finance Indonesia. [Indonesian Taxonomy for Sustainable Finance](#).

economic activities but with significantly permissive interpretations of green activities. Meanwhile, Hong Kong's taxonomy has been released with the intent of working towards operationalizing the Common Ground Taxonomy, aiming to regularize standards with the EU and China.¹³

Principles and Features

A well-designed and practical taxonomy enables transparency and reduces the risk of greenwashing — the practice of companies falsely claiming sustainability credentials. However, the variety of taxonomies in Asia, while codifying and promoting green standards and concepts, has also led to uncertainty, especially given the many variations between different national standards.^{14, 15, 16} This report aims to highlight the commonalities and differences between the regional taxonomies, and what stakeholders need to keep in mind while navigating them.

The Essential Features of a Robust Taxonomy

Taxonomies can effectively guide investments toward environmentally beneficial activities by establishing clear definitions, robust criteria, and stakeholder engagement and accountability mechanisms. As countries develop their green taxonomies, adhering to these best practices will be crucial for fostering a sustainable financial ecosystem:

Clarity in definition and objectives

Clarity in defining what constitutes a "green" activity is the first step to a successful taxonomy. A good example would be the EU taxonomy, which delineates six environmental objectives, including climate change mitigation and biodiversity protection. This establishes a comprehensive framework, covering large parts of the economy and ensuring that all activities align with sustainability goals. In contrast, taxonomies that cover just one or two sectors omit many activities and consequently cannot be a comprehensive guide for financial and business participants.

Science-based criteria for screening activities

Precise screening criteria based on scientific knowledge are a prerequisite for transparent taxonomies. A useful taxonomy would have specific thresholds for greenhouse gas emissions and other environmental impacts. These should be based on the latest scientific and industry knowledge and minimize reliance on unproven technologies. Detailed criteria for various sectors ensure that only genuinely sustainable activities receive recognition. This level of specificity helps investors make informed decisions and enhances market integrity.

¹³ Hong Kong Monetary Authority. [Hong Kong Taxonomy for Sustainable Finance](#). 03 May 2024.

¹⁴ Regulation Asia. [Too Much Leeway Offered by Updated ASEAN Taxonomy](#). 07 March 2024.

¹⁵ Sustainable Views. [EU regulations are boosting sustainable investing, but are too confusing](#). 10 July 2024.

¹⁶ A O Sherman. [Taxonomies - why the world needs harmonization but not uniformity](#). 07 March 2024.

Accounting for transition needs

Recognizing that not all economies can transition at the same speed and not all sectors can transition simultaneously is particularly crucial to Asia. A robust taxonomy should allow for the classification of activities on a path toward sustainability, supported by clear plans and rigorous metrics for monitoring. The emergence of traffic light approaches in the ASEAN region that categorize activities into green, amber (transition), and red (non-compliant) is a move in this direction. Such approaches encourage companies to improve their practices over time, acknowledging the complexities of transitioning economies.

Interoperability with other taxonomies and adherence to internationally accepted standards

A primary purpose of green taxonomies is to allow financial market stakeholders to distinguish clearly between environmentally sustainable and unsustainable activities (or, in the case of social taxonomies, to identify if they contribute to social causes). National-level taxonomies should recognize that science-based metrics determining environmental soundness are unlikely to change significantly from one country to another. Finance and investment are global and across borders, creating additional practical classification issues when national taxonomies categorize the same activity differently.

Mandatory requirements

Taxonomies must enforce stringent reporting requirements to combat greenwashing. The EU's Corporate Sustainability Reporting Directive (CSRD) mandates that companies disclose their taxonomy alignment, providing a clear framework for accountability. Most Asian taxonomies, however, have limited or non-existent mandatory requirements for disclosure, being entirely voluntary.

Dynamic and regularly updated

To remain effective, taxonomies should evolve as science and technology progress. They must be dynamic and updated regularly to reflect new scientific evidence and market developments. This is crucial for effectively incorporating transition needs while remaining interoperable with different taxonomies.

The following sections analyze how various Asian taxonomies compare on the key aspects constituting a well-designed framework. The frameworks of China, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand are also examined on a standalone basis. The voluntary and non-binding ASEAN taxonomy, intended to serve as a model for member countries, is also discussed.

Disclosures

The utility of taxonomies depends on whether data is disclosed uniformly and regularly, bringing transparency to economic activities. As of date, only the EU has made reporting against taxonomies mandatory. No country in Asia has made such data reporting obligatory.

Currently, the jurisdictions mentioned above state that adherence to the taxonomy is voluntary. However, some differences hold promise. The Singapore-Asia Taxonomy (the Singapore taxonomy) states that it is voluntary in the initial years but that further work will be undertaken on the (i) mandatory/voluntary nature of the Taxonomy, (ii) use of the Taxonomy in disclosure guidance/regulation, (iii) use of the Taxonomy in debt financing, and (iv) expectations on the frequency of reporting and compliance. Similarly, the regulatory Hong Kong Monetary Authority (HKMA) is debating whether to make the Hong Kong taxonomy mandatory for the banking sector in the coming years.¹⁷

Taiwan promises to “encourage”¹⁸ listed and financial companies to follow the taxonomy, while Indonesia and the Philippines have announced that such reporting will be mandatory for banks. Banks in the Philippines will have to report to the banking regulator on their exposures to the various activities based on the taxonomies from 2025, while Indonesian financial institutions will have to do the same only for energy sector exposures from 2024. It is unclear whether this reporting will be public disclosures or internal reports to the relevant central banks.

China does not have an official sustainable finance taxonomy yet. However, in 2021, it updated the GBEP, which lists the projects eligible to be considered for green financing. Rather than specifying the activities that qualify to be labeled green, the catalogue takes a “whitelisting” approach whereby any project mentioned in the catalogue is effectively considered green. China and the EU have also made efforts to develop the China-Europe Common Ground Taxonomy (CGT), which largely follows EU principles and is intended to be interoperable with the European taxonomy.

Since disclosures are optional, companies have made limited progress in disclosing data that may determine adherence levels. A recent report stated, “In Asia-Pacific, of the 17,900 listed companies located in markets there that are covered by a local or regional taxonomy, only 136 mentioned the word ‘taxonomy’ or a word related to taxonomy disclosure in their reporting, based on keyword searches.”¹⁹











¹⁷ South China Morning Post. [Hong Kong’s de facto central bank mulls making green rules mandatory for banking sector](#). 05 June 2024.

¹⁸ Financial Supervisory Commission, Republic of China (Taiwan). [FSC, EPA, MOEA, MOTC, and MOI jointly issue “Taiwan Sustainable Taxonomy” to encourage financial institutions to support enterprises transition towards sustainable and low-carbon economy](#). 11 January 2023.

¹⁹ BloombergNEF. [Self-Policing of Green Taxonomy Reporting Isn’t Working](#). 30 January 2024.

Sector Coverage

Table 1: Taxonomy Characteristics Across Asia

Taxonomy	 Singapore	 Hong Kong	 ASEAN	 China	 Taiwan	 Thailand	 Malaysia	 Indonesia	 The Philippines	 South Korea
Sectors Covered	Energy, transport, construction, industry, information technology, waste, water, forestry, agriculture, and some industry-specific measures	Electricity, transport, waste management, construction	Energy, transportation, construction		Manufacturing, transport, construction (electricity generation not included)	Energy and transportation in Phase 1; Manufacturing, agriculture, waste, construction in Phase 2		Energy only	Energy, transport, waste, industry, agriculture	Industry, power, energy, transportation
Mandatory	Voluntary for now	May ask banks	Voluntary		Listed companies "encouraged"		Voluntary	Banks to report to central bank from 2024	Banks to report from 2025	Voluntary - mainly for bond issuance
Incorporates safeguards	Yes, with DNSH initially on a Best Efforts basis	Not yet, intention	Weak provisions for remedial measures		Yes	Weak - need to publish plan for action in 3 years			Weak, 5 year timeframe for remedial measures	Yes
Interoperability	Generally yes	EU, China aligned	No, as can be principles-based	Yes - EU Common Ground Taxonomy	No - limited coverage	Yes, partly	No	No	No	No

Significant variation exists in the sectors covered by the Asian taxonomies. The Singapore taxonomy can be considered the most comprehensive, covering a broad range of sectors with detailed technical criteria to help assess the eligibility of any activity. In comparison, the Malaysian taxonomy and the Sustainable and Responsible Investment (SRI) taxonomy, intended for capital market participants in Malaysia, do not specify any particular sectors and are meant as a guide for any economic activity. Indonesia has so far only specified the energy sector for coverage. The energy, power, and transportation sectors feature prominently across the taxonomies. However, the Taiwan taxonomy excludes the energy and power sectors, with its guidance applicable only to the manufacturing, transport, and construction sectors.

Only some taxonomies mention criteria such as the DNSH and MS, which ensure that an activity promoting one of the taxonomy-approved goals does not negatively affect any other goals. This contrasts with the EU taxonomy, where failure to meet the DNSH or MS standards automatically makes an activity ineligible for green status regardless of other positive attributes. The Taiwan taxonomy mentions this (although it covers only a few sectors), as does the Singapore taxonomy, which allows for the DNSH criteria to be fulfilled on a best-efforts basis in the initial years. Other jurisdictions either plan to insert such rules at a later time (such as Hong Kong) or give a multi-year period for unspecified "remedial measures" to those who cannot meet the criteria (Thailand, Philippines, and the ASEAN taxonomy).

MS usually refers to social measures, such as fair treatment of workers and preventing child or bonded labor. In practice, these are governed by the laws in each country and, more broadly, by United Nations conventions and bodies such as the International Labour Organization (ILO). Country taxonomies usually regard MS standards as being met if the country's relevant laws are followed.

The Stance Towards Fossil Fuels in the Region's Taxonomies

The eligibility of fossil fuels, primarily coal and gas, shows wide divergence among the region's taxonomies.

Coal

Coal is uniformly classified as not green by most taxonomies, with Indonesia being the only exception. Thailand specifically says coal projects are not green, as does Malaysia for new coal ventures. China also excludes coal projects from its approved list. The ASEAN taxonomy regards coal-related activities as “high carbon” and thus inadmissible – except for financing coal operators as part of an accelerated coal-fired power plant (CFPP) shutdown. Singapore uses a traffic light system similar to the ASEAN taxonomy, designating coal projects as mostly inadmissible (red) except in cases of a comprehensively planned, accelerated CFPP shutdown. Meanwhile, Taiwan and the Philippines do not explicitly mention coal-related activities.

In its taxonomy, Indonesia's Financial Services Authority (OJK) has classified new coal plants as green if they are captive plants for the mining/mineral processing industry. The OJK sought to justify this inclusion by emphasizing the end use of these minerals in advancing the energy transition, for example, in electric vehicles and battery storage systems. Furthermore, it mandates that these power plants must close by 2050 and reduce their emissions by 35% by 2030 compared to the 2021 Indonesian average and that new captive power plants established until 2030 would be considered eligible.²⁰

The 35% mandated reduction would likely translate broadly to a 510 grams of carbon dioxide per kilowatt-hour (gCO₂e/kWh) emission level (in 2022, the International Energy Agency estimated an emissions intensity of 750 gCO₂e/kWh for the electricity sector)^{21, 22} which even the ASEAN taxonomy regards as Amber - Level 3, and therefore to be sunset by 2030, raising the possibility of using carbon offsets to achieve this.

The Indonesian taxonomy uses lenient criteria at multiple levels, deviating from international taxonomies that exclude coal-fired plants from green status. Such a move calls into question the country's commitment to lowering emissions according to its Nationally Determined Contributions

²⁰ Sustainable Finance Indonesia. [Indonesian Taxonomy for Sustainable Finance](#).

²¹ IEA. [Age and technology of existing coal power fleet in Indonesia and FIDs](#). 17 July 2020.

²² IEA. [An Energy Sector Roadmap to Net Zero Emissions in Indonesia](#). 2022. Page 67.

(NDCs) under the Paris Agreement. IEEFA has previously explored this taxonomy and the false assumptions used to justify a pro-coal stance.^{23, 24}

Gas











China's GBEPCC excludes gas financing as eligible under its green framework. Similarly, Hong Kong, Singapore, and Thailand also stand out.

Hong Kong applies a rigorous 100 gCO₂e/kWh lifecycle emission standard (similar to EU standards) to determine if a power-generating activity qualifies as green under its taxonomy without any exemptions. Thailand is similar for all new projects, thereby effectively excluding gas. The Singapore-Asia taxonomy is also stringent in its guidelines, allowing only those power sources with a lifecycle emission level of <100 gCO₂e/kWh. Only power sources below this limit qualify as green under the taxonomy, although the transitional category does allow some use of gas provided it is retrofitted to be hydrogen-ready and has direct emission levels lower than the EU's 270 gCO₂e/kWh.

Other than these, most Asian taxonomies are more permissive about gas. The Taiwan taxonomy does not cover electricity generation and does not mention gas. Similarly, the Philippines and Malaysia frameworks do not proscribe it. The South Korean taxonomy allows it to be classified as green with a lenient 340 gCO₂e/kWh standard until 2035.

Variations in Defining Transition Finance

Table 2: Comparison of Emissions Limits for Green Classification

Taxonomy	 Singapore	 Hong Kong	 ASEAN	 China	 Taiwan	 Thailand	 Malaysia	 Indonesia	 The Philippines	 South Korea
Electricity emissions limit to qualify as green	100 gCO ₂ e/kWh until 2035, 90 gCO ₂ e/kWh and lower from 2036	100 gCO ₂ e/kWh to qualify	100 gCO ₂ e/kWh. Applicable only if using Plus Standard	NA	Electricity generation is out of scope	100 gCO ₂ e/kWh for green until 2040	No emission limits stipulated	100 gCO ₂ e/kWh	No thresholds stipulated	
Emissions calculation on lifecycle basis	Yes for green Not for amber activities	Yes	Yes, for Plus Standard			Yes	No	No/partly	No	

Fossil fuels account for a large share of the electricity generation in many parts of Asia, along with a higher share of combustion engine vehicles for transport and lower decarbonization of electrical grids. Therefore, financing for these activities cannot be shut down abruptly as it would significantly shock economic activity. Hence, there is a need to finance businesses while they are developing and implementing plans to transition to a greener future. Thus, transition finance can be defined as the

²³ IEEFA. [Pro-coal arguments in ASEAN are based on false assumptions and unproven solutions](#). 12 August 2024.

²⁴ IEEFA. [Will the new Indonesian Taxonomy for Sustainable Finance really serve its national interest?](#) 27 February 2024.

investment, financing, insurance, and related products and services necessary to support a methodical real-economy transition to net-zero.

Typically, transition finance refers to funding entities that are currently carbon emitters but are either already well on the path to aligning with a 1.5°C future or are committed to transitioning toward it. However, there is no universal definition of what qualifies as transition financing. Therefore, there is a risk that such financing could fund heavy polluters without driving any real change. This also creates reputation risks for investors and financiers, resulting in hesitancy on their part. This is not an ideal outcome, as essential activities are not financed.

Preferably, including transition as a category in taxonomies should be accompanied by the following features: the taxonomy should use quantitative or Technical Screening Criteria (TSC) to delineate what is permissible and when, the category should have sunset clauses, and there should be a differentiation between new and existing facilities, with benefits provided only to existing facilities.

Regulators, especially in the ASEAN region, attempt to address these challenges by guiding what constitutes transition finance through taxonomies, frameworks, and principles. The advisory ASEAN taxonomy has adopted a three-tiered system, with sectors categorized as green (sustainable), amber (transitional - not green but transitioning towards sustainability), and red (not sustainable). Singapore, Thailand, Indonesia, and the Philippines have also instituted similar tiered traffic light systems in their taxonomies.








A comprehensive taxonomy needs quantitative or logical criteria based on accepted science to classify activities into different categories for clarity, credibility, and avoidance of greenwashing.

Table 2 explains the TSC or the thresholds and standards for the various countries.

While activities that are currently highly emissive but on a path to sustainability may qualify for a transitory category, this should not be a long-term solution. In the long run, such activities must meet the sustainability criteria. For example, an activity classified as “amber” must either progress to “green” or be downgraded to “red” or unsustainable. An effective taxonomy must have a sunset date for such transition categories.

Emission Standards and Transition Thresholds

Table 3: A Comparison of Transition Provisions, Thresholds, and Sunset Clauses

Taxonomy	 Singapore	 Hong Kong	 ASEAN	 China	 Taiwan	 Thailand	 Malaysia	 Indonesia	 The Philippines	 South Korea
Traffic light system or other provision for transition	Yes	No	Yes	Whitelist	No	Yes Amber restricted to existing plants only.	No	Yes; activities in category termed "Transitional"	Yes	
Amber/Transition thresholds (gCO ₂ e/kWh)	220 gCO ₂ e/kWh (until 2030), 150 gCO ₂ e/kWh (from 2030-35) Direct emissions only (green calculated on lifecycle basis)	100 gCO ₂ e/kWh to qualify	Amber Tier 2 - 100-425 gCO ₂ e/kWh Amber Tier 3 - 425-510 Lifecycle emissions			Amber (existing, not new) scales from 381 to 225 gCO ₂ e/kWh by 2030 and 148 gCO ₂ e/kWh by 2040	None stipulated	510 gCO ₂ e/kWh regarded as transitional, indefinitely, including coal New coal development allowed and can be considered transitional	No thresholds	
Sunset Clause	2035 for power		Tier 3 sunsets by 2030 and Tier 2 by 2040		NA	Yes, 2040 for amber		No for amber; only Tier 3 has to meet some criteria by 2030	None	2035, may extend

The Singapore, Thailand, and Hong Kong taxonomies have the most stringent and robust quantitative criteria, allowing only generation with lifecycle emissions of less than 100 gCO₂e/kWh to be classified as green.

The Singapore taxonomy further lowers the limit from 2036 to 90 gCO₂e/kWh. Its three-tier system also allows more relaxed criteria for those wishing to be classified as amber. The limit is 220 gCO₂e/kWh until 2030, which declines to 150 gCO₂e/kWh until 2035. For power generators, the amber category under this taxonomy will end or sunset in 2035, after which their activities must meet the criteria for the green category or be classified as red. Notably, while the 100 gCO₂e/kWh limit for green classification is calculated on lifecycle emissions, the amber category criteria do not stipulate lifecycle-based emissions.

Thailand also uses an amber category, which producers can use only to classify existing power plants. Thus, no new power generation can be assigned amber status. Emissions in this category scale down from 381 gCO₂e/kWh currently to 225 gCO₂e/kWh by 2030 and 148 gCO₂e/kWh by 2040, after which the amber category sunsets.

Hong Kong does not have a transition classification yet, and its 100 gCO₂e/kWh limit applies to all power production.

Malaysia and the Philippines, on the other hand, follow a principles-based taxonomy that avoids using quantitative criteria. This method classifies an activity based on certain principles, such as high emitting, transitioning, or low emitting. The decision of whether an entity is doing enough to qualify for the "transitioning" category is subjective. Although both taxonomies offer examples suggesting how entities may categorize different situations, there are no clear standards or criteria. Consequently, market players may have disagreements due to the ambiguous guidelines.

Indonesia has the most lenient classification criteria. Table 3 shows that a power generation activity qualifies as transitional if it emits less than 510 gCO_{2e}/kWh over its lifecycle. This mainly applies to gas-fired power plants, as the emission levels of CFPPs are higher.

New CFPPs commencing operations before 2030 that are captive for processing energy transition minerals are classified as transition activities in the country. Similarly, any coal plant approved by the country's Electricity Supply Business Plan (RUPTL) before 2022 is also classified as a transition asset. The only requirement for those categorized as transitional is that these plants reduce emissions by 35% within 10 years of starting operations. The large-scale existence and adoption of carbon capture and storage (CCS) technology is presumed, which is currently not possible at this scale. IEEFA has analyzed CCS technology and has shown it is unlikely to be a feasible solution.²⁵

The Indonesian taxonomy also allows for carbon offsets to help achieve the emissions reduction limit, implicitly acknowledging doubt about whether emissions from coal-fired power can be realistically reduced during the stated period. Carbon offsets are generally not an acceptable form of emission reduction for taxonomy purposes. The Indonesian taxonomy not only allows the financing of such assets to continue but also provides ways for these to be classified as a sustainable form of transition financing.

Additionally, CFPPs that commenced operations before 31 December 2022 and are specified under the Just Energy Transition Partnership (JETP) or any international Energy Transition Mechanism (ETM) would qualify as green if they commit to close by 2040 with a maximum operating life of 35 years or as transitional if they close by 2050 with a maximum operating life of 25 years.

Thus, with the financing of existing and new coal plants classified as green or transition finance, the Indonesian taxonomy contradicts prevailing standards and risks becoming meaningless for use in international sustainable finance.

Narrow focus

One common inadequacy across the region's taxonomies is the narrow focus on particular environmental objectives and the disregard for other goals, such as biodiversity protection and pollution prevention.

²⁵ IEEFA. [Carbon Capture and Storage](#).

Significant Trends at Regional and National Levels

ASEAN

The ASEAN taxonomy formalized the approach to transition as a separate category for the region and identified the need for mechanisms for retiring coal-based power. The classification of some activities as transitional is justifiable given the developmental needs of the region. The taxonomy adopts a traffic light system and classifies admissible activities as green (Tier 1) or two tiers of amber (Tier 2 and Tier 3). Guidelines for Tier 2 are more stringent than those for Tier 3. Tier 3 will sunset in 2030, while Tier 2 sunsets in 2040. A precise sunset date for higher carbon-intensive activities classified as Tier 3 is a positive development.

The ASEAN taxonomy mostly excludes coal from the green classification but provides financing options for the phase-out/shutdown of existing coal-fired power plants. However, there is some ambiguity in one of the categories, which allows new plants to be considered for shutdown, provided they meet some exacting emission criteria. The ASEAN taxonomy does not allow new coal plants but allows green classification for financing specific independently verified coal plant shutdowns.

Notably, the ASEAN taxonomy is voluntary and is intended as a model for member countries to use or change based on their needs. Many countries in the region have also developed their own taxonomies, which are often significantly different. Therefore, the question arises whether the ASEAN taxonomy is merely a theoretical exercise, with member states choosing some aspects while avoiding or changing others.

The taxonomy allows two separate pathways for assessment, with and without quantitative criteria. The Foundation Framework does not apply quantitative criteria and classifies activities based on responses to a decision tree. For example, whether an activity is high or low carbon emitting is a key differentiator. However, while coal is clearly stated as a high-carbon activity in the appendix, the definition of low-carbon is missing. While flexibility is important, in the absence of quantitative criteria and discretionary classification, there is excessive freedom for companies and countries to choose the criteria that suits them.

Interoperability will likely be hampered by the presence of different methods of assessment. Additionally, the classification of activities as transitional or amber is also a notable difference, as are the variations in the actual technical emissions criteria (see Table 3). Unification of assessment methods is necessary for improvement, clarity, and regional cohesion.

Singapore

The Singapore-Asia or Singapore taxonomy is the most comprehensive in the region in terms of sectors covered and the use of different metrics for tracking transition activities. It is wide-ranging,

covering the economic activities of energy, transport, construction, industry, information technology, waste, water, forestry, agriculture, and CCS technology.

It provides clear technical standards for various activities, aiming to remove ambiguity. The taxonomy has adopted an approach differentiating green, transition, and ineligible activities with technical screening criteria. Such categorization provides utility to investors and helps facilitate the flow of private capital by distinguishing between and identifying eligible green and transition activities following a 1.5-degree pathway. The attempt to be comprehensive may lead to funding being available for potentially non-feasible projects and false solutions. Nevertheless, the specificity in mentioning newer technologies, such as detailed criteria regarding the use of hydrogen-based fuels and ammonia for electricity generation and identifying lifecycle emissions in the case of hydrogen manufacture, is useful.

The Singapore taxonomy will demonstrate whether the traffic light approach to classifying transition activities works as intended and helps guide the effective decarbonization of hard-to-abate sectors. The effectiveness of these measures will depend on how rigorously they are enforced. For example, the taxonomy defines sunset dates for amber activities, which avoids indefinite reliance on unsustainable practices and requires meeting specific emissions reduction targets within a defined period. However, the consequences of failure to meet goals remain to be seen. This is particularly relevant in the case of criteria such as new gas plants being 30% or 50% hydrogen ready, as these are new technologies, and it will be challenging to measure the readiness of plants with confidence.

Nevertheless, the taxonomy has several encouraging aspects, including its scope, detailed measures, intention to enforce DNSH and MS safeguards, and general clarity.

Hong Kong

Hong Kong's taxonomy is the most unambiguous regarding emissions intensity for sustainable power generation qualification. While only four broad sectors (electricity, transport, construction, and waste management) are currently covered, these comprise a significant portion of Hong Kong's greenhouse gas (GHG) emissions and are arguably the most critical for meeting climate targets. The quantitative criteria are largely aligned with the European framework, which will likely facilitate interoperability with the EU taxonomy, the EU-China Common Ground Taxonomy, and the China GBEP.

The Hong Kong taxonomy primarily focuses on climate change mitigation. It intends to develop criteria reflecting climate adaptation later along with including DNSH and MS criteria.

China

China does not have a specific green or sustainable taxonomy; instead, it has the GBEP, which serves as a classification system for projects eligible for green financing. The country, therefore, effectively uses a whitelist system rather than notifying the characteristics and metrics of projects

acceptable as green. The GBEPCC has undergone revisions to align more closely with international standards, particularly the EU taxonomy, with the last revision in 2021, which was jointly endorsed by China's central bank, the National Development and Reform Commission (NDRC), and the China Securities Regulatory Commission (CSRC).

In 2021, China also released the EU-China CGT, a joint framework effort with the EU to harmonize Chinese sustainable project standards with those of the EU taxonomy, aiming for interoperability. Chinese companies can voluntarily reference CGT in their offshore green bond issuances, while Western companies can do the same if they issue bonds in mainland China.

The CGT comprises seven sectors – electricity, manufacturing, construction, water supply, transportation, agriculture and forestry, and others, such as carbon and hydrogen storage.

Unlike a standard taxonomy, the GBEPCC does not provide a set of overarching principles or thresholds defining what constitutes as green. It primarily provides a list of approved projects rather than a framework for evaluating sustainability and lacks TSC and quantitative metrics.

The project-wise nature of the GBEPCC means that China has also been separately endorsing various fossil-based projects, such as the unproven “low-carbon” coal and “clean” coal and gas.²⁶ The GBEPCC does not recommend gas-based projects. A Paris-aligned taxonomy would exclude new green or transitional investments in coal-related assets to be interoperable with the EU and other taxonomies. Such a taxonomy would remove confusion and different standards for green bonds and the real economy and increase investor interest.

Taiwan

Taiwan's green taxonomy includes specific TSC to classify activities as green. However, it is limited in scope, with coverage currently extended only to the manufacturing, transport, and construction sectors. The taxonomy does not cover the power generation sector, significantly diminishing the framework's importance. While a good starting point, the taxonomy requires expansion to be effective.

Thailand, Philippines, and Malaysia

Thailand's taxonomy is voluntary and currently only covers the energy and transportation sectors. The taxonomy specifically excludes coal from being classified as green. Also, new natural gas-based power plants (with construction permits after 31 December 2023) are classified as red and excluded from being considered sustainable.

²⁶ National Development and Reform Commission. [Notice on Issuing the "Action Plan for Low-Carbon Transformation of Coal-fired Power \(2024-2027\)"](#) (Faqaihuanzi [2024] No. 894). 15 July 2024.

However, while the taxonomy follows a traffic light approach to building in transition requirements, its amber transitioning category is not Paris-aligned. Instead, it is based on the country's NDCs aligned to a 4-degree warming scenario. The taxonomy also does not specify any conditions for carbon capture, unlike, for example, the EU taxonomy, although retrofitting for CCS is listed for consideration in the amber category.

The Philippines and Malaysia taxonomies do not establish any quantitative criteria for classifying activities as green, amber, or red. Instead, they rely on a principles-based approach that involves answering questions related to the nature of the activity and its impacts. The absence of any quantitative criteria risks rendering assessments based on such taxonomies insubstantial and unlikely to be considered internationally interoperable. The Malaysian taxonomy does not mention fossil fuels in the document. However, the examples provided illustrate coal usage as inadmissible and belonging to the red category.

Indonesia

The Indonesian taxonomy represents the most permissive classification of high-emitting activities into the green and amber categories. It currently applies only to the energy sector, but there is the intent to have banks declare their lending activities based on the taxonomy. However, this disclosure will likely be limited to the central bank only as there has been no requirement for the information to be made public or for other financial sector players, such as fund management companies, to disclose based on it.

With overly lenient quantitative TSC for emitting activities, a range of exceptions and allowances for coal, and a lack of reliable sunset dates for the transition categories, the current Indonesian taxonomy is not interoperable with other taxonomies and is unreliable for use by international financial institutions when determining green or amber activities.

Conclusion

There is significant variance between the national taxonomies in different Asian countries. Most Asian taxonomies remain voluntary, lacking the mandatory disclosure mechanisms seen in the EU. This raises concerns about the effectiveness of these frameworks in combating greenwashing and ensuring accountability.

A key difference between different Asian taxonomies is how fossil fuels are addressed. For example, while many countries, including Thailand, Malaysia, and Hong Kong, explicitly exclude coal from being classified as green, Indonesia takes a more flexible approach. The Indonesian taxonomy allows new coal plants to be classified as green under certain conditions, raising questions about its commitment to reducing emissions and aligning with international standards.

While the diversity of approaches reflects each country's unique contexts, it also presents significant challenges for interoperability and consistency. A unified framework that aligns with international standards is crucial for fostering a sustainable financial ecosystem in the region. Establishing clear standards and accountability mechanisms will ensure the transition to a greener economy is effective and equitable.

Countries would be best served by adopting transparent, reasonable, and science-based criteria for classifying activities and ensuring mandatory activity and financing disclosures. This would provide greater transparency and thereby enable countries to better manage the funding and activities involved in the energy transition.

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