ASIA TRANSITION FINANCE GUIDELINES

1st Edition

September, 2022

CONTENTS

LIST OF ABBREVIATIONS

ACT	Assessing low carbon transition
AFOLU	Agriculture, forestry, and other land use
APAC	Asia Pacific
APLMA	Asia Pacific Loan Market Association
ASEAN	Association of Southeast Asian Nations
ATB	ASEAN Taxonomy Board
ATF	Asia Transition Finance
BAU	Business-as-usual
CAPEX	Capital expenditure
CCGT	Combined-cycle gas turbine
CCS	Carbon capture and storage
CCUS	Carbon capture, utilization and storage
CN	Carbon neutral
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNSH	Do No Significant Harm
ERIA	Economic Research Institute for ASEAN and East Asia
ESG	Environment, social, and corporate governance
EU	European Union
FI	Financial institution
FY	Fiscal year
GDP	Gross Domestic Product
GFIT	Green Finance Industry Taskforce
GHG	Greenhouse gases
IATA	International Air Transport Association
ICMA	International Capital Market Association
IEA	International Energy Agency
IFC	International Finance Corporation
ITMO	Internationally transferred mitigation outcome
JPY	Japanese Yen
KPI	Key performance indicator
LMA	Loan Market Association
LSTA	Loan Syndications & Trading Association
METI	Ministry of Economy, Trade and Industry
MLITT	Ministry of Land, Infrastructure, Transport and Tourism
NDCs	Nationally Determined Contributions
NGFS	Network for Greening the Financial System
NGO	Non-governmental organization
OCGT	Open cycle gas turbine
OECD	Organization for Economic Co-operation and Development
OPEX	Operating expense
R&D	Research & Development
SBTi	Science Based Targets initiatives
SDS	Sustainable development scenario
SPO	Second party opinion
SPS	Stated policies scenario
TCFD	Task Force on Climate-related Finical Disclosure
UoP	Use-of-proceeds
USAID	United States Agency for International Development
VCMI	Voluntary Carbon Markets Integrity Initiative
WWF	World Wildlife Fund for Nature

FOREWORD AND ACKNOWLEDGEMENT

The Asia Transition Finance (ATF) Study Group is a private initiative led by Asian and global banks. It was set up in recognition of (i) the important role that transition finance will play in helping Asian economies move toward climate (carbon) neutral/net zero emissions and (ii) the challenges financial institutions (FIs) can face assessing the suitability of corporate plans and projects for transition finance.

The ATF Study Group has held nine Study Group sessions that aim to understand the challenges that are particularly relevant to transition finance in Asia and to develop guidelines that will supplement existing frameworks, including global ones, to address those challenges. The Study Group presented an interim report at the Asia Green Growth Partnership Ministerial Meeting in April that compiled the discussions from the learning and working sessions.

The *Asia Transition Finance Guidelines* (*ATF Guidelines*) is the end product of the Study Group sessions. This document is principally for FIs that are starting to provide transition finance and that need support making the necessary assessments. It is also useful to companies and other organizations working with FIs on transition finance. The guide is designed to complement recommendations for labelling debt instruments as a "transition" introduced in the *Climate Transition Finance Handbook* published by the International Capital Market Association (ICMA) and stretch the recommendations to other financing solutions. The *ATF Guidelines* outlines practical steps that can be taken to assess whether financing might be suitable as transitional finance in Asia[1]. As its name suggests, the *ATF Guidelines* provides references regarding transition finance, case by case judgement is subject to each FI's responsibility such as how to follow the outlined steps. There is no guarantee that in doing so, the financing will be labeled as transition finance. On a side note, the case examples listed in the *ATF Guidelines* are selected from the cases discussed and studied in the Study Group sessions.

We would like to thank all those who have assisted in the work of the ATF Study Group and contributed to this report. The core members of the ATF Study Group are currently Asian and global banks, and observers from development banks, export credit agencies, public associations and other finance associations also participated. We also thank the knowledge contributors who have provided expertise and helped us to bring together the *ATF Guidelines* (Exhibit 1).

1 Transition labels are certified through further assessment which could include the one by a second party opinion (SPO) provider. The *ATF Guidelines* intends to focus on assessing process for FIs. It should be noted that the *ATF Guidelines* does not intend to imply whether projects without transition labels should be financed or not at all.

Exhibit 1

Category		Participants			
Core members of Study Group	**Commercial banks (19)**	• MUFG Bank • Mizuho Financial Group • Sumitomo Mitsui Banking Corporation • Sumitomo Mitsui Trust Bank	• Bank Mandiri • Bank Danamon • Maybank • BDO Unibank • Security Bank • United Overseas Bank	• Bank of Ayudhya • Kasikornbank • VietinBank	• Macquarie • Barclays Bank • Standard Chartered Bank • HSBC • UBS • Citibank
Observers of Study Group	**Development banks, ECAs, and others (6)**	**(Multilateral)** • International Finance Corporation	**(State-affiliated)** • Development Bank of Japan • Japan Bank for International Cooperation	• Export-Import Bank of Thailand • Nippon Export and Investment Insurance	**(Commercial)** • DBS Bank
	Public agencies and finance associations (13)	• ASEAN Taxonomy Board • Sustainable Finance Institute Asia • The International Capital Market Association	• Australian Government • Ministry of Energy and Mineral Resources, Indonesia • Ministry of Finance, Indonesia • Ministry of Finance, Japan	• Financial Services Agency, Japan • Ministry of Economy, Trade and Industry, Japan • Economic Planning Unit, Malaysia	• Department of Energy, Republic of the Philippines • Ministry of Energy, Thailand • Japanese Bankers Association
Knowledge Contributor (4)		• DNV • ERIA • JCR • Moody's			

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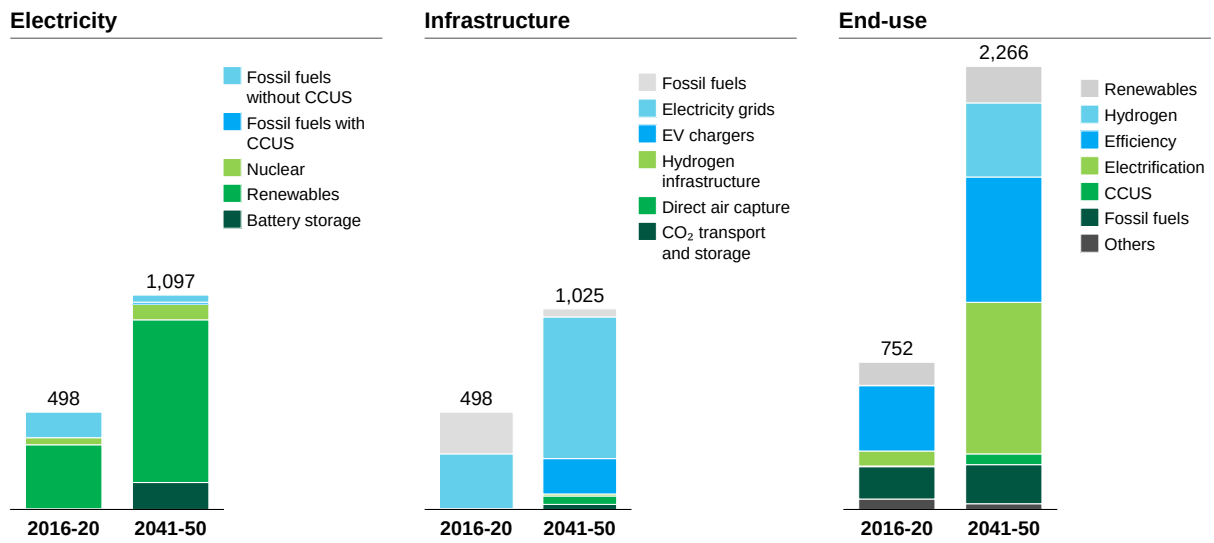
CHAPTER 1 INTRODUCTION TO ASIA TRANSITION FINANCE GUIDELINES

1.1 INTRODUCTION

The urgent need for decarbonization is globally recognized, though it remains unclear exactly how countries will transition to climate (carbon) neutral/net zero emissions within the time frames set out in the Paris Agreement. What is clear, however, is that FIs will play an important role in financing the activities that will support the transition. Under the Net Zero scenario from the International Energy Agency (IEA), the global average annual energy investment in electricity, infrastructure and end-use needs to increase significantly to $1,097, $1,025 and $2,266 billion USD, respectively, by 2050 (Exhibit 2). An increasing number of FIs are now taking business sustainability and climate transition into consideration when making investment decisions, which highlights the importance of the degree of a business entity's decarbonization efforts.

Exhibit 2

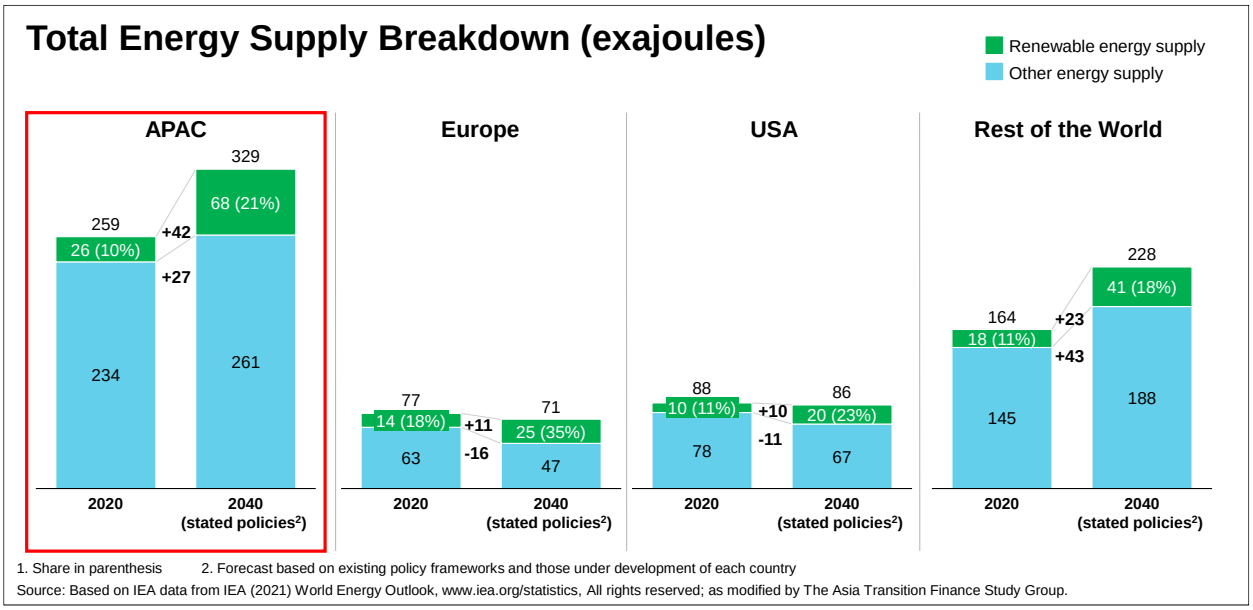
Global Average Annual Energy Investment Requirements by Sector and Net Zero Emissions Technology by 2050 Scenario (Billion USD)



Source: Based on data from International Energy Agency (2021) Net Zero by 2050: Net Zero by 2050 Scenario - Data product – IEA, https://www.iea.org/data-and-statistics/data-product/net-zero-by-2050-scenario, as modified by The Asia Transition Finance Study Group

It is also clear that different countries will need to take different decarbonization pathways (see Chapter 3 for details). There are myriad decarbonization opportunities in Asia, but these will need to weigh Asia's continued industrialization, which is accompanied by a growing demand for energy. Many Asian nations also have a high dependency on fossil fuels. The IEA estimates that the supply of renewable energy in Asia-Pacific countries will increase by 42 exajoules or 11 percent by 2040, but that it will still only account for some 20 percent of the region's total supply, given strong rising energy demand. That same year, renewable energy will account for 35 percent of Europe's total supply (Exhibit 3).

Exhibit 3

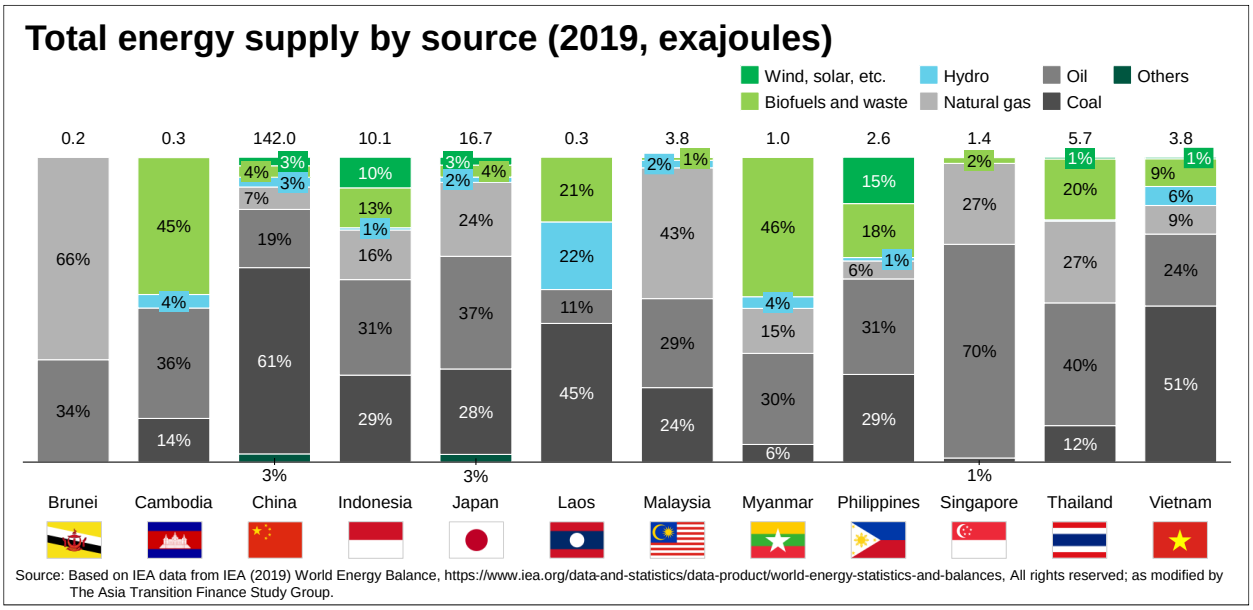


1. Share in parenthesis 2. Forecast based on existing policy frameworks and those under development of each country

Source: Based on IEA data from IEA (2021) World Energy Outlook, www.iea.org/statistics, All rights reserved; as modified by The Asia Transition Finance Study Group.

It is also necessary to be mindful of the regional challenges of generating renewable energy in the Asian region. Considering the Association of Southeast Asian Nations (ASEAN) region, the ratio of renewable energy in the total energy supply varies across the region, while many of these countries are dependent on fossil fuels for energy supply (Exhibit 4 shows total energy supply by source in ASEAN countries, China and Japan). Also, diverse environmental conditions across the region need to be evaluated in understanding how much of each country's traditional energy supply could be replaced with renewable energy sources in the future. While countries like Vietnam may have relatively higher potential for solar and wind power generation due to its high solar radiation intensity and long coastline, some other countries face significant challenges in expanding renewable energy with similar efforts. Island countries like Indonesia and the Philippines have fragmented electricity grids due to their geography, an infrastructure obstacle that hinders renewable energy efforts. Many of these countries also lack land-use policies to measure the environmental impact of development, another concern for large scale renewable energy projects.

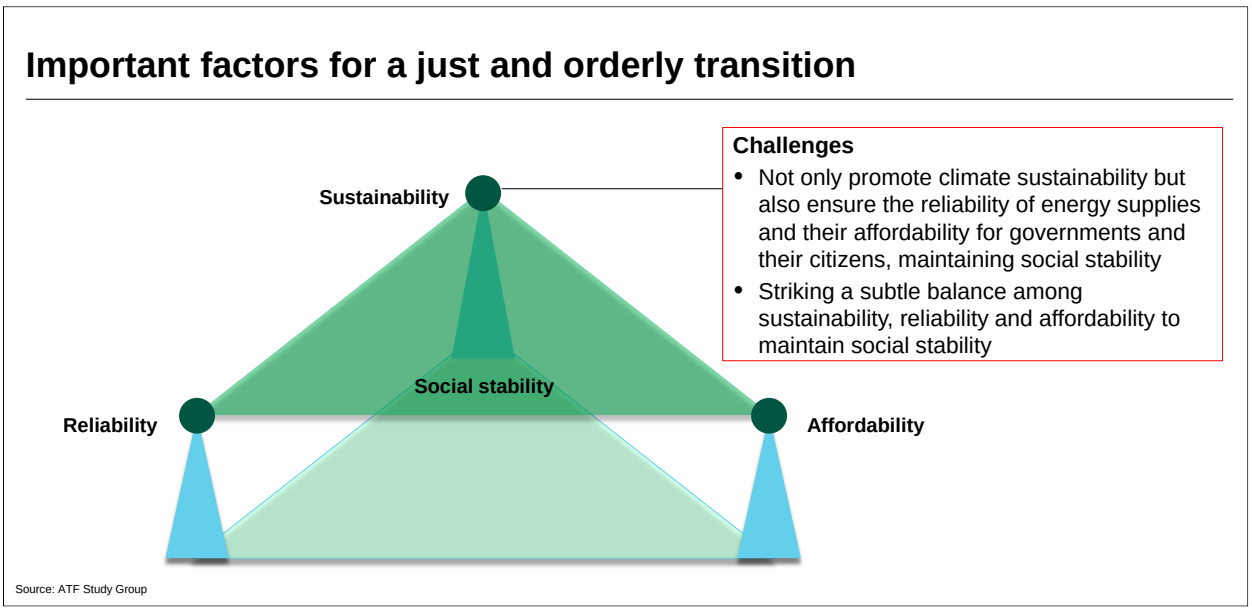
Exhibit 4



Source: Based on IEA data from IEA (2019) World Energy Balance, https://www.iea.org/data-and-statistics/data-product/world-energy-statistics-and-balances, All rights reserved; as modified by The Asia Transition Finance Study Group.

Given this regional context, while investments in green or zero-emission activities will contribute to the decarbonization of Asian economies, investments in so-called transition activities—that is, those that focus on eliminating or significantly reducing emissions from existing sources or against a baseline over a set time period, will also be crucial. Only a combination of both will enable a just and orderly transition—one that promotes climate sustainability by reducing emissions but also ensures the reliability of energy supplies and their affordability for governments and their citizens, maintaining social stability. Exhibit 5 is conceptual illustration of a just and orderly transition —social stability is placed on top of sustainability, reliability, and affordability as absence of a subtle balance among them may challenge stability.

Exhibit 5



Source: ATF Study Group

Energy disruptions in China and Europe have demonstrated just how quickly and deeply fossil fuel shortages—often unanticipated—can disrupt economies in the absence of sufficient renewable energy supplies to replace them, illustrating the challenge of an orderly transition to low-carbon economies and the importance of transition finance to secure resilience in the energy system.

Box: Recent energy disruptions in Europe and China demonstrate the challenge of a just and orderly transition

1. China

In China, tightened coal demand-supply due to regulations on coal mines and energy dual-control targets has resulted in a sudden decrease in total energy production and consequently some blackouts and rationing among businesses and residents.

Domestic coal supply tightened in 2021 due to an increase in coal mine closures after stricter environmental and safety checks, among other reasons. With the significant mismatch of demand-supply, thermal coal price in China significantly increased in 2021 from the same period in 2019. Simultaneously, a number of provinces in China didn't meet energy dual-control targets in 2021 H1 – the reduction target set by the Chinese government in terms of total energy consumption and energy intensity (energy consumption per unit GDP) –and thus faced more pressure in H2[2].

The coal situation had an impact on electricity supply as 60 percent of China's power was generated from coal as of 2020, and many power plants reduced production to meet the restriction target[3]. As a result, together with other underlying drivers such as lower than normal hydro power generation because of the dry season, a number of provinces published strict policies in September to limit the usage of electricity by restricting the industrial production activities. The ripple effects have also been felt in the global economy, as plummeting Chinese factory production in sectors such as textiles and steel disrupted supply chains.

2. Europe

In Europe, decreasing gas imports from Russia have accelerated the need for energy source reconsideration. This issue emerged in 2021 when gas demand threatened to exceed supply, highlighting the need for policies to promote a medium- and long-term strategic transition to renewable energy. At the same time, the energy supply challenge faced in Europe over the past two years suggests the critical importance of ensuring security of supply for traditional energy sources while aiming for a more sustainable energy mix on the path to a just and orderly transition to zero emissions.

2021 was the year in which a significant change in energy supply trends was witnessed across Europe. A post-Covid-19 economic rebound led to an increase in electricity consumption from 2020, with fossil fuels overtaking renewables as the leading source. Electricity supply jumped by 4.2 percent from 2020, the use of petroleum products increased by 5 percent (though still below pandemic levels), and sold fossil fuels increased by 13.7 percent, with hard coal use up by 14.7 percent year-over-year, and brown coal up by 12.8 percent[4]. Investment in LNG facilities also intensified with the European Commission approving a €166.7 million terminal in Alexandroupolis[5], and Offshore Energies UK, British trade association, stimulating investment in North Sea oil and gas production[6]. While dependency on coal increased, the European Commission proposed classifying gas and nuclear energy within its sustainable finance taxonomy, saying the plan would help move toward a more low-carbon energy mix[7].

2 National Development and Reform Commission, 通知公告[Notice Announcement], *关于印发《2021年上半年各地区能耗双控目标完成情况晴雨表》的通知[Notice on Issuing the Barometer on the Completion of Dual Control Targets for Energy Consumption in All Regions in the First Half of 2021]*, August 17, 2021, https://www.ndrc.gov.cn/xwdt/tzgg/202108/t20210817_1293836.html?code=&state=123

3 International Energy Agency, World Energy Statistics and Balances, 2019, https://www.iea.org/data-and-statistics/data-product/world-energy-statistics-and-balances

4 European Commission, Eurostat, Fossil fuels led in electricity generation in 2021, June 30, 2022, https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20220630-1.

5 European Commission, Press Corner, *State aid: Commission approves €166.7 million Greek public support for construction of LNG terminal in Alexandroupolis*, June 17, 2021, https://ec.europa.eu/commission/presscorner/detail/en/ip_21_3045.

6 Offshore Energies UK, *Business Outlook 2021*, 2021, https://oeuk.org.uk/wp-content/uploads/2021/01/OGUK-Business-Outlook-2021.pdf.

7 European Commission, Press Corner, *EU Taxonomy: Commission begins expert consultations on Complementary Delegated Act covering certain nuclear and gas activities*, January 1, 2022, https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2.

In 2021, gas imports from Russia accounted for almost ~35 percent (158 billion cubic meters per annum) of natural gas demand and supply of European Union and UK[8]. Russia-Ukraine War 2022 changed that dynamic. With EU-imposed sanctions, and the prospect of Russia cutting or stopping supplies to some countries, the expected imports from Russia declined significantly. Despite renewable energy's growing role in Europe, fossil fuels still accounted for the majority of its energy mix. Thus, the decline in Russian imports had non-negligible impacts on European and international energy security, amidst an already tight supply in 2021 prior to Russia-Ukraine War 2022. The threat of reduced gas imports was particularly destabilizing, with LNG prices increasing more than fivefold from their five-year average[9]. Those countries most dependent on Russian gas imports could potentially face government-mandated rationing of gas supplies. In response, the EU has proposed not only accelerating its development of renewable energy, but diversifying energy supplies—a proposal that could include gas imports from other countries and, temporarily, coal imports as well[10]. The ripple effects have also been felt in the global economy, as prices for LNG imported to Asia soared, causing transition disruptions and market/policy responses such as increased coal and oil use.

The importance of a just and orderly transition to zero emissions is becoming broadly recognized today. Nevertheless, most frameworks and guidelines that can help financiers assess whether decarbonization activities might qualify for transition finance have largely focused on energy sources that are natively zero/low carbon—in other words, green technologies. Activities that support a just and orderly transition to low-carbon economies by lowering rather than eliminating emissions – so called transition activities – have been less often considered.

Some organizations are beginning to address this. For example, in 2020 the International Capital Market Association (ICMA) published its *Climate Transition Finance Handbook* (The *ICMA Handbook*, see Chapter 3.2 for details), recommending the disclosures that fundraisers of bonds might need to credibly position their debt as transition finance. But challenges remain. As there is still no single accepted approach to assessing a company's decarbonization activities and their suitability for transition finance, FIs need to navigate a plethora of international, regional and country-level decarbonization frameworks drawn up to align with the Paris Agreement—each with its own requirements – that might be relevant to transition finance. With no globally unified definition of transition activities, they are much harder to evaluate than green ones with a single target—zero emissions (see Chapter 2 for details). And there is a shortage of reference material—whether it's national decarbonization pathways that companies can use to compare plans, or real transition finance case examples.

This document seeks to help FIs overcome such challenges. It supplements the guidelines and frameworks already available in ways that will help further mobilize transition finance. The primary regional scope of this document is Asia given its regional decarbonization challenges. As a starting point, many of the guidelines are formed based on analyses and reflection of the ASEAN region. While private and public funds will be critical to the transition, this document's focus is private capital, given that the ATF Study Group is a private initiative led by Asian and global banks and its guidance is applicable for assessing whether to extend transition funding to all types of finance such as loans and bonds. The *ATF Guidelines* suggests the relevant steps for FIs to assess transition finance suitability, and it also provides alternatives for when the key information for the assessment is not available due to technical and other challenges.

To be clear, the document does not lay down mandatory rules or procedures, and readers are not obliged to adhere to its guidance but can refer to it as needed. Neither will adherence to the guidelines guarantee that any funds extended will be regarded as transitional finance by second-party opinion (SPO) providers.

8 IEA, Share of Russia in European Union and United Kingdom gas demand, 2001-2021, IEA, Paris https://www.iea.org/data-and-statistics/charts/share-of-russia-in-european-union-and-united-kingdom-gas-demand-2001-2021

9 IEA, Press release, Global natural gas demand set to decline slightly in 2022 as Russia's war disrupts markets and economies, April 15 2022, https://www.iea.org/news/global-natural-gas-demand-set-to-decline-slightly-in-2022-as-russia-s-war-disrupts-markets-and-economies

10 European Commission, Press corner, REPowerEU: A plan to rapidly reduce dependence on Russian fossil fuels and fast forward the green transition*, May 18, 2022, https://ec.europa.eu/commission/presscorner/detail/en/IP_22_3131

1.2 STRUCTURE OF *ATF GUIDELINES*

This document has six chapters (Exhibit 6). Chapter 1 and Chapter 2 aim to provide context. Chapter 1 introduces the background and objectives of the *ATF Guidelines*, describing what this document is, and what it is not. Chapter 2 outlines challenges in transition finance and discusses what the *ATF Guidelines* seeks to address.

Chapter 3 is designed as a knowledge repository, which addresses overviews, roles, and interrelationships of existing guidelines and frameworks introduced in the report (further details are available in Appendix). This chapter may be able to help readers get a sufficient grasp of key facts and the framework important for transition finance.

Finally, Chapter 4 through Chapter 6 outline guidelines on transition finance. Chapter 4 aims to lay out the scope and guiding principles for the guidelines, as well as the expected steps for conducting a transition finance assessment. Chapter 5 is a corporate-level deep dive, while Chapter 6 is a use-of-proceeds-level in-depth examination.

Exhibit 6

Structure of ATF Guidelines

Chapter	Sub-chapter
Foreword and acknowledgement	—
1. Introduction to Asia Transition Finance Guidelines	1.1 Introduction
	1.2 Structure of ATF Guidelines
2 What ATF Guidelines addresses	—
3. Overview of relevant frameworks (Knowledge Repository)	3.1 Role of different guidelines and frameworks in supporting transition finance
	3.2 Guidelines: ICMA Handbook
	3.3 Decarbonization pathways
	3.4 Taxonomies, technology roadmaps, technology lists
	3.5 Carbon credit
4. Practitioner's guidelines	4.1 Intended audience
	4.2 How to use ATF Guidelines
	4.3 Step 1. Communicate with fundraisers
	4.4 Step 2. Assess transition finance suitability
5. Assessing corporate strategies	5.1 Step 2-A. Basic approach for assessing corporate strategy
	5.2 Step 2-B. Interim approach for assessing corporate strategy
	5.3 Introduction to case studies
6. Assessing use-of-proceeds	6.1 Step 2-A. Basic approach for assessing UoP
	6.2 Step 2-b. Interim approach for assessing UoP
	6.3 Introduction to case studies
Appendix	Glossary + other technical details (e.g., taxonomy overview)

2

CHAPTER 2
WHAT ATF GUIDELINES ADDRESSES

The ATF Study Group strongly adheres to the view that each country's transition to climate (carbon) neutral/net zero emissions is just and orderly. Any assessment of the suitability of financing instruments to be positioned as transitional finance are therefore guided by the extent to which the activities they support are both sustainable, reliable and affordable.

In addition to balancing out sustainability, reliability, affordability and social stability for a just and orderly transition, the *ATF Guidelines* focuses on some of the practical challenges that FIs often face, namely:

Differing standards. There are several different standards and taxonomies[11] for practitioners to navigate, each with their own requirements. The *ICMA Handbook*, which provides recommendations for transition bonds, is recognized by many practitioners as the conceptual foundation of what should be considered as transition finance, even for other financial instruments. The *ATF Guidelines* is designed to complement recommendations for labelling debt instruments as a "transition" introduced in the *ICMA Handbook* and stretch the recommendations to other financing solutions. FIs should also refer to other more-specialized documents to determine which financial instruments to issue and obtain an SPO as necessary. Capital market issuers should consult ICMA's *Green Bond Principles*, *Social Bond Principles* and *Sustainability Bond Guidelines*. Those FIs that want to align their financing plan to their climate transition strategy and decarbonization trajectory can refer to the guidance in *Sustainability-Linked Bond Principles*. For debts, lenders may follow recommendations by *Green Loan Principles*, *Social Loan Principles* and *Sustainability Linked Loan Principles* jointly published by Loan Market Association (LMA), Asia Pacific Loan Market Association (APLMA), and Loan Syndications & Trading Association (LSTA).

However, it is unclear whether certification under one standard can be transferred to certification under other taxonomies, with uncertainty over the interoperability of the *ICMA Handbook*, ASEAN taxonomy, and other taxonomies developed or under development by individual countries (see Chapter 3 for details).

Assessment complexity and reference material. There are a limited number of globally recognized practical approaches to transition finance that address the various challenges in assessing a project's suitability for transition finance. Transition activities can prove particularly hard to evaluate for the following reasons (see Chapter 4 for details):

- Transition finance projects are more complex to evaluate than green projects. In the case of transition finance, targets or thresholds are in principle subject to a science-based decarbonization trajectory, which is relative to the starting point and life cycle of a project across countries and sectors. Green projects have clearly defined targets.
- Developing corporate level decarbonization strategies are not yet standard for companies (both large corporations and small and medium enterprises). It is impossible to assess a strategy that does not exist.

Localized references. Transition solutions are context specific, meaning that localized references are critical for evaluation. However, Asia currently largely lacks the official national and sectoral pathways to climate (carbon) neutral/net zero that are aligned with the Paris Agreement. Based on such current constraints, necessary support particularly from public entities should be listed and proposed to governments (for example, creation of sector-level or country-level decarbonization pathways and technology roadmaps for ASEAN).

Limited track record. There are limited case examples for FIs to use as reference points when trying to assess or develop finance transition activities, especially the ones aligned with the *ICMA Handbook*.

Many of these challenges could take years to overcome. It is therefore critical that some approaches are developed and accepted by stakeholders to unlock transition finance and accelerate progress toward climate (carbon) neutral/net zero emissions.

11 A taxonomy is a classification system that provides businesses with a common language and the means to identify whether a given economic activity is environmentally sustainable.

3 CHAPTER 3 OVERVIW OF RELEVANT FRAMEWORKS (KNOWLEDGE REPOSITORY)

3.1 ROLE OF DIFFERENT GUIDELINES AND FRAMEWORKS IN SUPPORTING TRANSITION FINANCE

It is critical to understand existing frameworks and guidelines as a basis to discuss the implementation of transition finance. The different types of existing frameworks and guidelines consist of basic guidelines as laid out in the ICMA's *Climate Transition Finance Handbook* in 2020, plus various additional components that contribute to a transition finance suitability assessment. This chapter provides a brief overview of these concepts, followed by a more detailed explanation of the major pathways, taxonomies, technology roadmaps, and other relevant framework (such as carbon credits). The methodologies around which references FIs could use are available in Chapter 4, Chapter 5, and Chapter 6.

3.1.1 Basic transition finance guidelines

The ICMA's *Climate Transition Finance Handbook* in 2020, which this document refers to as the *ICMA Handbook*, offers essential guidance to capital market participants on best practices and disclosures for raising funds in debt markets for climate transition-related purposes. Although targeted at corporations seeking to raise finance in carbon-intensive sectors that have committed to reduce emissions in line with the Paris Agreement, the general concept recommended by the *ICMA Handbook* is relevant to companies across sectors seeking to raise all types of finance such as loans, bonds, and equity[12] that can be labeled as transitional finance (see Chapter 3.2 for details).

3.1.2 References for transition finance assessment

While the focus of the *ICMA Handbook* is on debt instruments, such as green bonds, social bonds and sustainability-linked bonds, the *ATF Guidelines* covers transition finance as a whole. Climate-transition-related funding instruments are categorized in two formats:

(i) General Corporate Purposes financing[13] , which supports a corporation's overall decarbonization strategy; and

(ii) Use-of-Proceeds (UoP) financing[14], which supports specific projects contributing to decarbonization.

The next section is a high-level summary of the main reference points, which can be used for assessing transition finance for each intended purpose.

3.1.2.1 Decarbonization pathway

Decarbonization pathways are essential to assessing decarbonization strategy as part of a transition finance assessment. But they also have a broader significance beyond transition finance. They represent the decarbonization plan for a country or company and are focused on absolute volume of carbon dioxide (CO_2) emissions or emission intensity (volume of emissions per unit of economic and physical activity). They frequently take the form of a yearly plan published by policymakers and global institutions, setting out how to achieve the Paris Agreement goal of restricting the rise in mean global temperature to well below 2°C above pre-industrial levels, and preferably limiting the increase to 1.5°C. The aim is to deliver long-term emissions reductions and sustainable development in collaboration with local communities, businesses and other stakeholders (see Chapter 3.3 for details).

12 While the *ICMA Handbook* and its relevant principles do not delve into equity, the *ATF Guidelines* covers transition finance as a whole, including equity.

13 The term 'General Corporate Purposes financing' is borrowed from ICMA, which specifies that it takes the form of sustainability-linked bonds. *Sustainability-Linked Bond Principles* and *Sustainability Linked Loan Principles* list specific requirements for issuing sustainability-linked bonds/loans. (The *ATF Guidelines* is not limited to debt instruments.)

14 The term 'UoP financing' is borrowed from ICMA, which stipulates that it can be either green bonds, social bonds, or sustainability bonds. For more detailed information, see the ICMA's *Green Bond Principles*, *Social Bond Principles* and *Sustainability Bond Guidelines* for debt instruments, as well as *Green Loan Principles*, *Social Loan Principles* and *Sustainability Linked Loan Principles* published by LMA, APLMA and LSTA.

3.1.2.2 Taxonomy

A taxonomy is a classification system that provides businesses with a common language and the means to identify whether or not a given economic activity is environmentally sustainable. A taxonomy typically introduces a threshold that indicates if a goal is reached. Although taxonomy can be applicable within a wider context, it is also relevant to a transition finance assessment to see if UoP financing (specific project) for a proposed transition finance is in line with the Paris Agreement (see Chapter 3.4 for details).

3.1.2.3 Technology roadmap

Technology roadmaps outline the technologies that will be necessary to get specific industry sectors aligned with the Paris Agreement, showing which technology should be ready for use in what year. Although technology roadmaps can be applicable within a wider context, they are also relevant to transition finance assessment to see if UoP financing (specific project) for a proposed transition finance is in line with the Paris Agreement (see Chapter 3.4 for details).

3.1.2.4 Technology list

A transition technology list can help FIs by acting as a reference point when assessing potential transition technologies until technology roadmaps or taxonomies with thresholds and eligible activity lists are developed. Although technology lists can be applicable to a wider context, they are also relevant to transition finance assessment to see if UoP financing (specific project) for a proposed transition finance is in line with the Paris Agreement (see Chapter 3.4 for details).

3.1.3 Other relevant framework: Carbon credit guidelines

A carbon credit is a certificate representing a carbon dioxide equivalent (CO_2e) that is either prevented from being emitted into the atmosphere or removed from the atmosphere. Use of carbon credits is often a key question for transition finance practitioners to assess whether a certain climate strategy can be considered suitable for transition finance (see Chapter 3.5 for details).

3.2 GUIDELINES: *ICMA HANDBOOK*

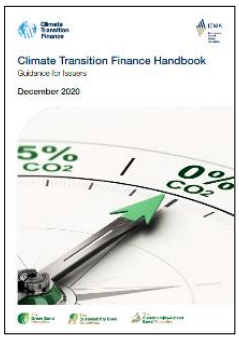
ICMA, a not-for-profit organization for participants in international debt capital markets, established the Climate Transition Finance Working Group and Social Bond Principles Working Group. These working groups reviewed analysis and disclosure frameworks developed by industry groups, regulatory bodies, and the scientific community regarding climate-change mitigation and adaptation. Based on this work, it published the *Climate Transition Finance Handbook* in 2020 (further details are available in Appendix 2) to provide clear guidance and common expectations to capital markets participants on the practices, actions, and disclosures to be made available when raising funds in debt markets for climate transition-related purposes: UoP and General Corporate Purposes financing.

The *ICMA Handbook* is targeted at corporations seeking to raise finance in carbon-intensive sectors that have committed to reducing emissions in line with the Paris Agreement. However, companies in many different sectors wishing to raise debt that can be labeled as transitional finance often reference the *ICMA Handbook*. It recommends that transition-labeled debt instruments meet certain requirements in four areas (Exhibit 7)

Exhibit 7

Transition Finance Issuance guidelines are available globally by ICMA – involving 4 key elements of requirements

Overview of ICMA Transition Finance Handbook…



- Objective is to provide issuer-level disclosures to finance the transaction, particularly for hard-to-abate sectors
- Designated guidelines when issuing green bonds, social bonds, sustainability bonds or sustainability-linked-bonds.

… which shows four key requirements for transition finance suitability

1 **Strategy**

Financing purpose should be for enabling an issuer's climate change strategy

2 **Materiality**

Climate trajectory should be materially relevant to business model

3 **Science-based**

Science-based target and pathways

4 **Transparency**

Transparency of underlying investment program

Source: ICMA, Climate Transition Finance Handbook 2020, 2020, https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Climate-Transition-Finance-Handbook-December-2020-091220.pdf

1. Element 1: Climate transition strategy and governance

The finance should support the implementation of a fundraiser's decarbonization strategy, which should be based upon credible commitments and changes in practices. The strategy should make clear how the business model will be adapted to assist a transition to a low-carbon economy.

2. Element 2: Business model environmental materiality

The strategy and its decarbonization trajectory should be relevant to the material parts of the issuer's business model—its core activities—as these account for most of the fundraiser's carbon emissions. The fundraiser should also consider how the trajectory will affect the environment and society and seek to mitigate any negative impact.

3. Element 3: Science-based targets and pathways

The fundraiser's decarbonization strategy should reference science-based targets and transition pathways. The planned decarbonization trajectory should be:

a. Quantitatively measurable (using a consistent measurement methodology)

b. Aligned with, benchmarked against, or otherwise refer to recognized, science-based trajectories where such trajectories exist

c. Publicly disclosed (ideally in main financing filings) and include interim milestones

d. Supported by independent assurance or verification

4. Element 4: Implementation transparency

A decarbonization strategy requires the long-term, internal allocation of capital by the company along with governance and process changes. Both are crucial if future operations are to support the strategy. Market communication of a fundraiser's strategy should provide transparency on the intended underlying investment program and its expected impact, including planned capital and operational expenditure, where feasible. Additionally, where a transition might negatively affect workers and communities, fundraisers should outline how they have incorporated consideration of a "just transition[15]" into their strategy and may detail any relevant social expenditure

15 The concept of just transition is defined in *Guidelines for a just transition towards environmentally sustainable economies and societies for all*, International Labour Organization, 2015, and *Just Energy Transition: A Framework for Company Action*, the Council for Inclusive Capitalism, December 2021.

Other global guidelines

In addition to the *ICMA Handbook*, other guidelines have been published, most notably the *Financing Credible Transitions* by the Climate Bond Initiatives, an international organization working to mobilize global capital for climate action[16]. FIs can credibly refer to this paper for guidance when assessing transition finance proposals (further details are available in Appendix 4).

3.3 DECARBONIZATION PATHWAYS

Decarbonization pathways represent the decarbonization plans for a country or company and are focused on absolute volume of CO_2 emissions or emission intensity (volume of emissions per unit of economic or physical activity). They take the form of mid- and long-term plans published by policymakers and global institutions, setting out how to achieve the Paris Agreement goal of restricting the rise in mean global temperature to well below 2°C above pre-industrial levels, and preferably limiting the increase to 1.5°C. In the *ATF Guidelines* for transition finance assessment, country- and/or sector-level pathways published by local governments or governmental organizations are encouraged to be used (see Chapter 4 and Chapter 5 for details) although none of the ASEAN countries have so far published an official country pathway.

In addition to pathways published by local governments or governmental organizations, there are several other potential reference pathways for use, as outlined below. These scenarios are based on cost-optional deployment of energy technologies for the whole Asian region. Other scenarios (for instance, ones published by local governments) could be chosen if, for instance, affordability or other relevant factors are the consideration being assessed.

- **IEA.** Published in May 2021, Net zero by 2050: A roadmap for the global energy sector is a comprehensive study of how to transition to a net zero energy system by 2050, while ensuring stable and affordable energy supplies, providing universal energy access, and enabling robust economic growth[17].
- **NGFS.** The Network for Greening the Financial System (NGFS) has developed a set of six emission scenarios out of which four are climate (carbon) neutral/net zero scenarios (June 2021 edition), split into three categories, to provide a common starting point for analyzing climate risks to the economy and financial system[18].
- **ERIA.** The Economic Research Institute for ASEAN and East Asia (ERIA) has published a study that aims to quantitatively describe the energy transition pathway necessary to achieve climate (carbon) neutrality across 10 ASEAN countries through model analysis[19].

More details of specific pathways can be found in Appendix 5. See also the following section on ICMA Climate Technology Finance Methodologies registry for further references.

OTHER REFERENCES: ICMA CLIMATE TECHNOLOGY FINANCE METHODOLOGIES REGISTRY

Released in June 2022, ICMA's Climate Technology Finance Methodologies registry is a list of tools specifically to help issuers, investors, or financial intermediaries validate that their emission reduction trajectories/pathways are "science-based." This list is dedicated to validation of specific emission reduction trajectories and pathways and is not complete. It does not seek to provide a comprehensive repository of all the complementary tools that an issuer, investor, or financial intermediary may also utilize to design, report, or guide the setting of those trajectories. As such, this document should be seen as "live" and will evolve over time with regular updates.

16 Climate Bond Initiative, Financing credible transformation, 2020, https://www.climatebonds.net/resources/reports/financing-credible-transitions-white-paper

17 International Energy Agency, Net Zero by 2050, 2021, https://www.iea.org/reports/net-zero-by-2050

18 Network for Greening the Financial System, NGFS Climate Scenarios for central banks and supervisors, June 2021, https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf

19 Economic Research Institute for ASEAN and East Asia, Decarbonisation of ASEAN Energy Systems: Optimum Technology Selection Model Analysis up to 2060, 2022, https://www.eria.org/publications/decarbonisation-of-asean-energy-systems-optimum-technology-selection-model-analysis-up-to-2060/

3.4 TAXONOMIES, TECHNOLOGY ROADMAPS, TECHNOLOGY LISTS

To assess transition finance, it is critical to understand which types of technology can be considered as environmentally sustainable. In Asia, three main types of reference documentation are available to facilitate this: taxonomies, technology roadmaps and technology lists.

3.4.1 Taxonomies

A taxonomy is a classification system that provides businesses with a common language and the means to identify whether a given economic activity is environmentally sustainable. Across Asia, multiple countries have produced national taxonomies (for instance, Indonesia, Malaysia) alongside a regional taxonomy formulated by ASEAN (Exhibit 8). Meanwhile, China has published similar documentation, *Green Bond Endorsed Projects Catalogue*, governing China's green bonds market.

Exhibit 8

Overview of taxonomies in Asia (as of August 2022, not exhaustive)

ASEAN

- **ASEAN:** ASEAN taxonomy
- **Indonesia:** Indonesia green taxonomy
- **Malaysia:** Climate Change and Principle-based Taxonomy[1]
- **Singapore**: Singapore taxonomy
- **Thailand:** Thailand taxonomy
- **Vietnam:** Vietnam taxonomy

Other

- **Bangladesh:** Sustainable Finance Policy for Banks and FIs
- **China:** Green Bond Endorsed Projects Catalogue
- **Republic of Korea:** K-Taxonomy

1. The Securities Commission Malaysia is currently developing the principles-based SRI Taxonomy for the capital market, which is targeted to be released by end of 2022. The SRI Taxonomy will provide more clarity and guidance for the market in identifying sustainable investment assets or activities.

Source: Press release

Among the taxonomies in the ASEAN region, there are some notable differences (Exhibit 9). For an in-depth look at the various taxonomies in Asia, see Appendix 7.

Exhibit 9

Taxonomies in ASEAN countries show different approaches for classification while they all cover transition activities

✓ Applicable ✗ Not applicable

		ASEAN taxonomy	Singapore taxonomy	Indonesia taxonomy	Malaysia taxonomy[2]
Publication		November 2021 (Version 1)	May 2022 (2nd draft)	January 2022 (Published)	Apr. 2021 (Published)
Scope	**Green**	✓	✓	✓	✓
	Transition	✓	✓	✓	✓
Guiding principles	**Environmental objectives**	✓	✓	✓	✓
	DNSH[1]	✓	✓	✓	✓
Classification	**Pre-determined list of activities**	TBD	✓	✓	✗
	Thresholds	✓	✓	✗	✗

1. Do No Significant Harm principle
2. The Securities Commission Malaysia is currently developing the principles-based SRI Taxonomy for the capital market, which is targeted to be released by end of 2022. The SRI Taxonomy will provide more clarity and guidance for the market in identifying sustainable investment assets or activities.

Source: ASEAN Taxonomy Board, ASEAN Taxonomy for Sustainable Finance, November 2021, https://asean.org/wp-content/uploads/2021/11/ASEAN-Taxonomy.pdf
Green Finance Industry Taskforce, Identifying a Green Taxonomy and Relevant Standards for Singapore and ASEAN, May 2022, https://abs.org.sg/docs/library/second-gfit-taxonomy-consultation-paper
Sustainable Finance Indonesia, Indonesia Green Taxonomy, January 2022, https://www.ojk.go.id/keuanganberkelanjutan/Uploads/Content/Regulasi/Regulasi_22012011321251.pdf
Central Bank of Malaysia, Climate Change and Principle-based Taxonomy, April 2021, https://www.bnm.gov.my/documents/20124/938039/Climate+Change+and+Principle-based+Taxonomy.pdf

3.4.2 How could the taxonomies be used?

These taxonomies could be employed in the context of transition finance: most importantly, as a reference for assessing transition suitability—providing they include enough detail (pathways, lists of eligible activities, and thresholds)—or, in other cases, as an additional reference in relation to compliance, even if some components might be missing. If a taxonomy includes a pathway, revenue breakdown or CAPEX and/or OPEX allocation, it could be used for a transition finance suitability assessment of corporate strategy or a project plan.

The FI can use the taxonomy to check whether the proposal under review includes a long-term decarbonization plan including CO_2 emissions reduction targets, and to ensure that it is aligned with a Paris Agreement-compliant country and/or sector pathway, or in other words, a pathway to climate (carbon) neutral/net zero emissions. If a taxonomy includes a list of eligible activities and thresholds, it could be used for a transition finance suitability assessment to see if a technology in a targeted project can be assumed as climate (carbon) neutral/net zero with publicly recognized sources (Exhibit 10). The details of how FIs could use a taxonomy are in Chapter 4 and Chapter 6.

Exhibit 10

Taxonomies could be used as (1) reference for transition suitability assessment or (2) additional reference

Transition finance suitability assessment		Use of taxonomies
Corporate level	**Company** has a **long-term decarbonization plan** in line with **the Paris-aligned country and/or sector** pathway, or in other words**,** a **pathway to climate (carbon) neutral/net zero**, with **a medium-term target included**	(1-1) If a taxonomy includes a **pathway,** it could be used for **transition finance suitability assessment**
Use of proceed level	**Project** has a **long-term decarbonization plan** aligned with • **Paris Agreement-compliant country and/or sector pathway** • **Corporate strategy**[1]	
	The technology in a targeted project can be assumed as eligible with publicly-recognized sources, e.g. • **Paris Agreement-compliant country technology roadmap** • Corporate strategy	(1-2) If a taxonomy includes **a list of eligible activities and thresholds, they** could be used for **transition finance suitability assessment** (2) Even if not, taxonomies could be an **additional reference to comply** in order to be recognized as transition in the jurisdiction

1. Even if both project plan and corporate strategy are aligned with Paris compliant pathway, project plan may possibly not be aligned with corporate strategy

Source: ATF Study Group

3.4.3 Technology roadmaps

Technology roadmaps can be used as reference materials for consideration of funding via transition finance. They outline the technologies expected to be necessary to make specific industry sectors climate (carbon) neutral, showing which technology would be ready for use in what year, depending on the choices. Technology roadmaps include expected future innovations alongside tried-and-tested low-carbon technologies available today (for example, energy conservation and transition). They may refer to domestic policies and international scenarios.

Technology roadmaps are designed to be referred to by companies when considering climate measures that use transition finance. They also help FIs (banks, securities companies, investors, rating agencies) decide whether a company's strategies and efforts toward decarbonization are suitable for transition finance when the company approaches them for funding (further details are available in Appendix 8). To remain useful and relevant for FIs to make such assessments, technology roadmaps should be regularly updated to reflect the latest technological innovations.

3.4.4 Technology lists

FIs can use a technology list as a reference point when reviewing transition technologies for Asia-based projects until other stakeholders (such as ASEAN and governments in Asia) develop technology roadmaps or taxonomies with thresholds and eligible activity lists.

In September 2022, ERIA published the *Technology List and Perspectives for Transition Finance in Asia* to help FIs assess potential transition technologies. Its first edition covers some of the main potential transition technologies in the power sector and its upstream, which together account for more than 50 percent of Asia's CO_2 emissions. The document also provides six key framework dimensions to holistically assess potential transition technologies. Those 6 framework dimensions are composed of ones concerning technology characteristics (emissions impact, reliability, and affordability) and additional considerations (lock-in prevention considerations, Do No Significant Harm (DNSH) considerations, and social considerations). ERIA is planning to expand its sector coverage at a future date. For now, it covers technologies that have a direct impact on carbon emission reduction and does not cover green technologies (those with zero carbon emissions through operation).

The tools mentioned above are not comprehensive and may not include all potential transition technologies available in Asia. They are not tools on which FIs can solely rely when making a final decision on whether to provide transition finance. Under certain circumstances, taxonomies, technology roadmaps, and technology lists can be interchangeable: for example, FIs can use either a taxonomy that includes thresholds and a list of eligible activities, a technology roadmap, or a technology list to consider a project as transition finance, as long as the tools allow them to gauge whether the project can reach compliance with the Paris Agreement.

3.5 CARBON CREDIT

3.5.1 What is a carbon credit?

A carbon credit is a certificate representing CO_2e that is either prevented from being emitted into the atmosphere or removed from the atmosphere. In this context, carbon offsetting refers to the use of carbon credits to compensate or neutralize greenhouse gases (GHG) emissions emitted elsewhere. High-quality carbon credits are certified to a reputable standard by an independent third-party to verify that their impact is, for example:

- Real
- Enforceable
- Measurable/verifiable
- Legally attributable (avoids double counting)
- Permanent
- Additional

3.5.2 How relevant are carbon credits to transition finance?

Carbon credits could be included in corporate/project decarbonization plans, which transition finance needs to examine. However, some global climate finance standards and taxonomies tend not to support carbon credits for transition finance (Exhibit 11). Other global standards, on the other hand, do not mention the use of carbon credits in the guidelines or taxonomy. Although the ATF Study Group recognizes the challenges of doing so, given divergent views among stakeholders, creation of practical guidelines for the use of carbon credits in assessing transition finance eligibility may be needed. More details are outlined in Appendix 9.

Exhibit 11

Global standards for climate finance and taxonomies mostly either do not support carbon credits or do not mention them

Carbon credits in global standard and other taxonomies

	Non-supportive for carbon credits	Not mentioned	Under development
Global standard	Climate Bonds Initiatives "Credible transition goals and pathways **don't count offsets" (carbon credits)**	ICMA Climate Transition Finance Handbook	
Taxonomy	EU taxonomy "Not considered suitable for climate mitigation, separate and distinct from impacting activities, **last step of the mitigation hierarchy**, after harm has taken place, not guaranteed to remediate the harm[1]"	China taxonomy Indonesia taxonomy Malaysia taxonomy	ASEAN taxonomy Singapore taxonomy

1. EU position on carbon credits is increasingly unfavorable (Certified Emission Reductions are no longer swappable with EU Allowances since 2020)

Source: ATF Study Group, press release,
Climate Bond Initiative, Financing Credible Transitions: Summary note, 2020, https://www.climatebonds.net/files/reports/transition-summary-note-092020-report-page.pdf
Platform on Sustainable Finance, Part A Methodological Report, March 2022,
https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/220330-sustainable-finance-platform-finance-report-remaining-environmental-objectives-taxonomy_en.pdf

4 CHAPTER 4 PRACTITIONER'S GUIDELINES

4.1 INTENDED AUDIENCE

Users who benefit most

The *ATF Guidelines* is principally for FIs that are starting to provide transition finance and that need support making the necessary assessments. The document is also useful to companies and other organizations working with FIs on transition finance.

Countries of note

Transition investments are particularly important in Asia as the region needs to balance sustainability against its growth objectives and unique decarbonization challenges. Many individual countries in the region have begun to consider transition finance. In most cases, however, they lack a "practical playbook" that would help in areas such as using pathways, technology roadmaps, and technology lists for transition finance assessment. To help scale transition finance in the Asian region, this guide is intended to fill that gap.

While the primary regional scope of this document is Asia given its regional decarbonization challenges, many of the guidelines and perspectives are based on analyses and realities of the ASEAN region. Singapore, Malaysia, Indonesia, Vietnam, Thailand, and the Philippines are relatively far along in their development of sustainability taxonomies and case studies, so this document uses those countries' experiences to illustrate the approach and guidance.

Financial products covered in the *ATF Guidelines*

The *ATF Guidelines* is applicable to all types of fundraising instruments, including loans, bonds, and equities.

4.2 HOW TO USE *ATF GUIDELINES*

Complement to the *ICMA Handbook*: The *ATF Guidelines* is designed to outline practical steps that can be taken to assess whether the financing might be suitable as transitional finance in Asia, referring to the *ICMA Handbook*.

- As described in Chapter 3, the *ICMA Handbook* discusses four key elements:
  1. A credible climate transition strategy and governance
  2. Materiality with respect to a fundraiser's core activities
  3. Science-based targets and pathways
  4. Implementation transparency.
- Most FIs tend to have a basic understanding of how to assess fundraisers' funding requests on Element 2 and Element 4—materiality and implementation transparency. FIs could refer to the disclosure sections of the *ICMA Handbook* to gauge these elements. It may be as simple as checking a fundraiser's annual report and sustainability report. Relevant guidance from accounting standards bodies or professional accounting advice can help FIs discuss materiality. For implementation transparency, they may want to explore the sections related to capital expenditures (CAPEX) and operating expenses (OPEX) to determine which expenditures were part of the fundraiser's decarbonization strategy. As what FIs should do appears to be relatively clear with respect to these two elements, they are not the main focus of the *ATF Guidelines*.

- Element 1, relating to strategy, and element 3, relating to science-based targets and pathways, are more complicated. For Element 1, FIs need to determine whether a prospective fundraiser's strategy includes a long-term target aligned with the goals of the Paris Agreement for the maximum amount by which global temperatures should rise. As the Paris Agreement provides only a global target, allocation of emission reduction targets across countries and sectors is not easy. Challenges remain in creating and documenting country-level and sector-level targets and pathways linked with the global target, as well as evaluating interim goals[20]. Moreover, there is no clear guidance on which of the available references to consult for the assessment. Pathways, taxonomies, and technology roadmaps are among the possibilities.
- Element 3, relating to science-based target setting, has its own assessment challenges. Many organizations have put forward definitions of what it means to be "science-based"—the Science-Based Targets initiative is one of them. However, the definitions are not always aligned with one another, making it hard for FIs to know which to use or how to choose it. Even if FIs get help from an independent company for scienced-based target setting, there will still be some uncertainty about how to do these assessments given the different approaches and measures taken. Moreover, factors such as the reliability of energy supplies and their affordability for governments and their citizens need to be considered in addition to setting science-based, top-down targets. Such multifaceted perspectives are critical to enable a just and orderly transition as introduced in Chapter 1.

Essential Steps in Transition Finance: FIs conducting transition finance assessments can refer to a three-step process, as described below (Exhibit 12).

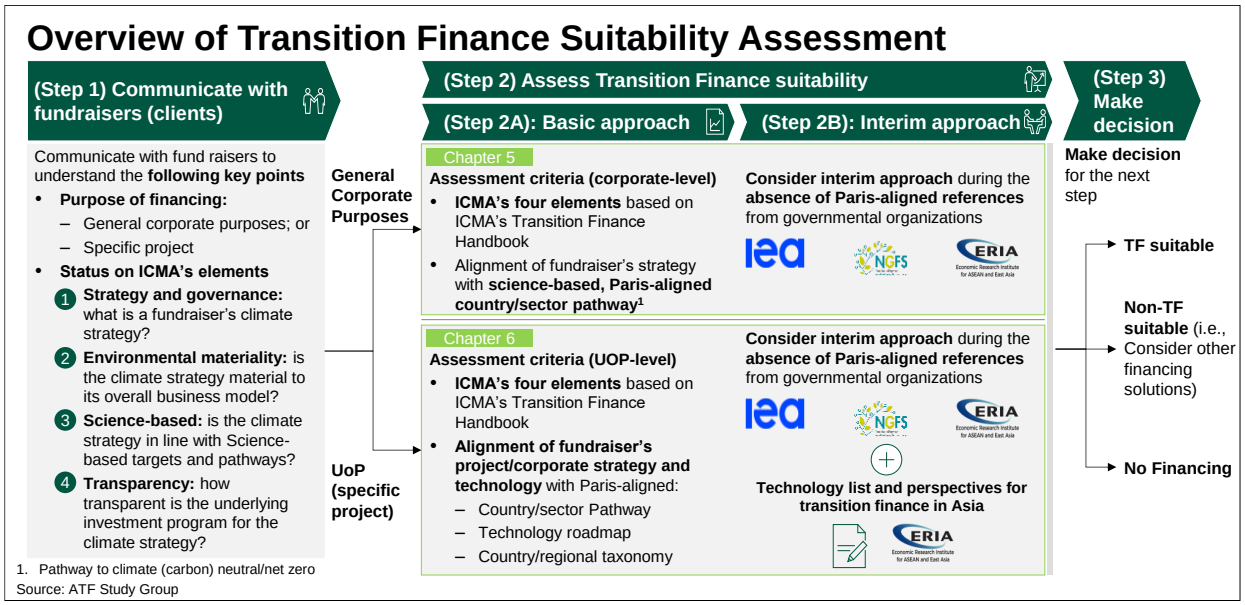
- **Step 1: Communicate with fundraisers (clients)** to understand the emissions of those considering raising transition finance, with a view to:[21]
  - Deciding the type of finance required —General Corporate Purposes finance or UoP finance for a specific project
  - Helping a fundraiser assess whether it meets the ICMA's transition finance criteria (the four elements)
- **Step 2: Assess transition finance suitability.** Here, the FI assesses whether the requested financing might reasonably be treated as transition finance. The ideal determination will include a review of a government's stated pathway, taxonomy, and technology roadmap to use as a cross-check reference. (This assessment will be discussed in more detail in the following sections.)
- **Step 3: Make decision**: Based on Step 1 and Step 2, the FI decides whether to proceed with the requested financing under its internal procedures as transition finance suitable, non-transition finance suitable — for instance, go with other financing solutions — or no financing. This decision is subject to each FI's judgment based on its internal policies, additional due diligence (which may include collaboration with SPO providers,[22] usually initiated and led by a fundraiser) and more, as well as the assessments made in Step 1 and 2. Accordingly, the focus of the *ATF Guidelines* is on information related to Steps 1 and 2, which is described in more detail below.

20 Governments are highly encouraged to create country-level targets and pathways where none exists.

21 The order of these two sub-steps will vary from case to case. What matters most is that FIs capture all relevant information | needed from fundraisers at this step.

22 External organization that provides an independent, expert assessment of whether a green, social, sustainability bond/loan, or transition loan/bond/equity framework conforms with credible guidelines provided by ICMA or LMA, APLMA and LSTA. FIs could refer to such assessments in deciding whether to proceed with the requested financing.

Exhibit 12



1. Pathway to climate (carbon) neutral/net zero

Source: ATF Study Group

4.3 STEP 1. COMMUNICATE WITH FUNDRAISERS

This step is particularly relevant when FIs consider transition finance opportunities, and when a client requests a transition finance assessment.

The first consideration is the **type of financing required by the fundraiser**. There are two main types: General Corporate Purposes financing and UoP financing. FIs use different processes to evaluate applications for each, so it is important to be clear (Exhibit 13).

- **General Corporate Purposes** financing[23] supports a corporation's overall decarbonization strategy
- **UoP** financing supports specific decarbonization projects

23 Financial instruments that are considered General Corporate Purposes financing are usually sustainability-linked bonds (for details, please refer to the ICMA) or sustainability-linked loans (for details, please refer to the LMA, APLMA and LSTA).

Exhibit 13

Transition finance can support at both project and corporate level

Overview of labeled transition financing structures

General corporate purposes

Only corporate level elements are recommended for consideration

(see Chapter 5 for details)

- **Use of funds** to support decarbonization strategy, **not limited to specific projects**

Use-of-Proceeds

Both Use-of-Proceed level and corporate level elements are recommended for consideration

(see Chapter 6 for details)

- **Use of funds limited** to **specific** decarbonization **project**

Source: ATF Study Group

The second consideration is the assessment of transition finance itself. The *ICMA Handbook* is the starting point for FIs seeking to understand whether the financing is suitable for transition finance. In mapping prospective fundraisers against those elements, FIs are encouraged to get answers to the following key questions (a checklist for FIs is available in Appendix 3).

- **Element 1 (Climate Transition Strategy and Governance):**
  - Does the fundraiser's long-term climate ambition include net zero, climate (carbon) neutrality or is it Paris-aligned? (Namely, the objective of limiting global warming ideally to 1.5°C and, at the very least, to well below 2°C).
  - Has the fundraiser disclosed relevant interim targets?
  - Does the fundraiser disclose measurable levers toward decarbonization and strategic planning toward long-term targets to align with the goals of the Paris Agreement?
  - Does the fundraiser have clear oversight and governance in place to implement its climate strategy? For example, is there an organizational structure for the board of directors and/or an oversight committee to supervise climate change activities, as well as clearly defined roles for management to assess and run the climate-related initiatives?
  - Does the fundraiser have evidence of a broader sustainability strategy to mitigate relevant environmental and social externalities and to follow the 17 UN Sustainable Development Goals?[24]
  - Is the transition strategy based on the risks and opportunities identified through the categorization framework of the Task Force on Climate-related Financial Disclosure (TCFD)?
  - Is the fundraiser's pathway to transition broadly in line with the respective region's pathway and sector roadmap? Also, is the fundraiser's transition strategy based on its own starting point?
  - Is the fundraiser's transition strategy disclosed in advance in the company's integrated report, sustainability report, statutory documents and other materials for investors and FIs?

24 United Nations, Transforming our world: the 2030 Agenda for Sustainable Development, n.d., https://sdgs.un.org/2030agenda

- **Element 2 (Business model environmental materiality):**
  - Is the fundraiser's decarbonization strategy outlined in its business plan or annual report?
  - Is climate awareness evident in the operations of the company's core businesses?
  - Do the initiatives for achieving the transition strategy contribute to transforming core business activities that are environmentally material parts of the company today and in the future?
- **Element 3 (Science-based targets and pathways):**
  - Does the fundraiser state that its strategy, project, and short-, medium-, and long-term targets are aligned with a science-based, Paris-aligned pathway, that is a pathway to climate (carbon) neutral/net zero? (See Box under Chapter 5.1 for details)
  - Does the fundraiser's short-, medium-, and long-term emissions reduction targets have a clear emission baseline — for the baseline year and the business-as-usual (BAU) trajectory — and formulate both in intensity and absolute terms? (See Chapter 3 for details)
  - Does the fundraiser refer to any scenarios used, methodologies applied and the GHG scope (Scope 1, 2, and 3)[25] covered regarding their targets (for example, assessing low carbon transition (ACT)[26], Science Based Targets initiatives (SBTi),[27] etc.)?
- **Element 4 (Implementation transparency)[28]:**
  - Does the fundraiser have a published investment plan for achieving its specified climate goals in and/or related to its transition finance application that the FI can review?
  - If so, does the fundraiser disclose the percentage of assets/ revenues/ expenditures/ divestments aligned to its the climate goals?
  - Does the fundraiser have a CAPEX roll-out plan consistent with the climate goals and science?
  - Does the investment plan outline the assumed climate-related outcomes and impacts with quantitative data where possible, along with the calculation methods and prerequisites?

4.4 STEP 2. Assess transition finance suitability

Here, information gathering gives way to assessment. FIs will assess fundraisers' financing with the ICMA's four elements as detailed in Chapter 3. For the areas that are the most difficult to assess—ICMA's Element 1 (climate transition strategy and governance) and Element 3 (science-based targets and pathways)—two reference points are particularly important:

25 While Scope 3 may not be stipulated as necessary in some pathways, projects that could reach Scope 3 should not be discouraged from including the target.

26 Initiative run by a not-for-profit charity to support and assess the readiness of an organization for transitioning to the low-carbon economy. Further details are available at https://actinitiative.org/about-us/

27 Partnership between Carbon Disclosure Project, the United Nations Global Compact, World Resources Institute and the World Wildlife Fund for Nature to stimulate the private sector to take ambitious climate action. Further details are available at https://sciencebasedtargets.org/about-us

28 What is stipulated in this section will not always apply to loans and, where appropriate, a fundraiser may choose to share relevant information confidentially with lenders rather than making it publicly available.

- **Target level:** This is the climate (carbon) neutral/net zero commitment made by the fundraiser's and/or project's country,[29] depending on the financing purpose.
- **Target year:** This is the year set by governments—or by globally recognized climate organizations—for when Asian countries will achieve climate (carbon) neutral/net zero emissions

The FI should determine whether the fundraiser's decarbonization plan is aligned with the country and sectoral pathways identified by the fundraiser's government or other globally recognized bodies. Those pathways will be aligned with the Paris Agreement, meaning the ones to climate (carbon) neutral/net zero if local governments have committed to it. The FI is also expected to assess the fundraiser's suitability for transition finance by comparing the fundraiser's technology roadmap, threshold-defined taxonomies, and activity lists to those in the Paris Agreement.

Next are an introduction of practical approaches to assess Paris-alignment of fundraisers' climate strategy and targets.

4.4.1 Basic approach: Factors for Paris Alignment Assessment

As discussed in Chapter 1, it is critical to recognize the importance of a just and orderly transition in Asia. Developing Asian countries are facing significant pressure to align their targets with the Paris Agreement, but a hasty transition may result in energy disruptions similar to those seen recently in Europe and China (see Box in Chapter 1 for details). Therefore, as indicated in Exhibit 14, the *ATF Guidelines* recognizes the importance of pathways published by government bodies since they, in principle, are designed to balance the important factors for a just and orderly transition, while considering the decarbonization challenges faced in Asia.

As such, the *ATF Guidelines* sets out different basic approaches to transition finance suitability assessment depending on the type of financing required.

- For General Corporate Purposes financing, only corporate-level elements are recommended for consideration. The most relevant criterion is whether the company has a long-term decarbonization plan in line with the Paris-aligned country and/or sector pathway, or in other words, pathway to climate (carbon) neutral/net zero, and includes a medium-term target. FIs should check individual project specifications for CAPEX and OPEX plans. The basic approach encourages institutions to use pathways published by local governments or ASEAN for the reasons mentioned above, if appropriate.
- For UoP financing, both corporate-level and use-of-proceeds level elements are recommended for consideration. In addition to analyzing the corporate-level factors, FIs should review the following parameters for use-of-proceeds level considerations:
  - **Project-level:** The project should be a part of its corporate decarbonization strategy (see Chapter 6 for details) and be aligned with country or sector pathways to climate (carbon) neutral/net zero in order to implement lock-in prevention. Again, the basic approach suggests that FIs refer to pathways published by local governments or ASEAN if appropriate.
  - **Technology-level:** The technology in a targeted project could be evaluated against publicly recognized sources published by governments such as a science-based, climate (carbon) neutral/net zero country technology roadmap and country or regional taxonomy, as well as corporate strategy.

29 What is needed in this case is the pathway to climate (carbon) neutral/net zero, not the Nationally Determined Contributions (NDCs)

Exhibit 14

Basic approach for transition finance suitability assessment

Transition Finance assessment

Corporate level

The targeted company has a **long-term decarbonization plan** including a medium-term target and KPIs, aligned with a **science-based, Paris Agreement-compliant**[1] country and/or sector pathway

Use-of-Proceeds level

The targeted project has a **long-term decarbonization plan** including a medium-term target, aligned with

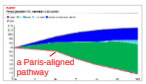
- **Science-based, Paris Agreement-compliant** country and/or sector pathway
- **Corporate strategy**[2]

The technology in a targeted project can be assumed as eligible with publicly-recognized sources, e.g.,

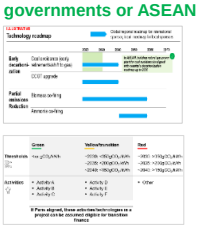
- **Science-based, Paris Agreement-compliant country** technology roadmap
- **Paris Agreement-compliant country** taxonomy that includes both threshold and list of eligible activities
- Corporate strategy

Basic approach

1. **Country-/Sector-level Pathway published by Asian governments or ASEAN**



2. **Technology roadmap/ Taxonomy with threshold and list of eligible activities by Asian governments or ASEAN**



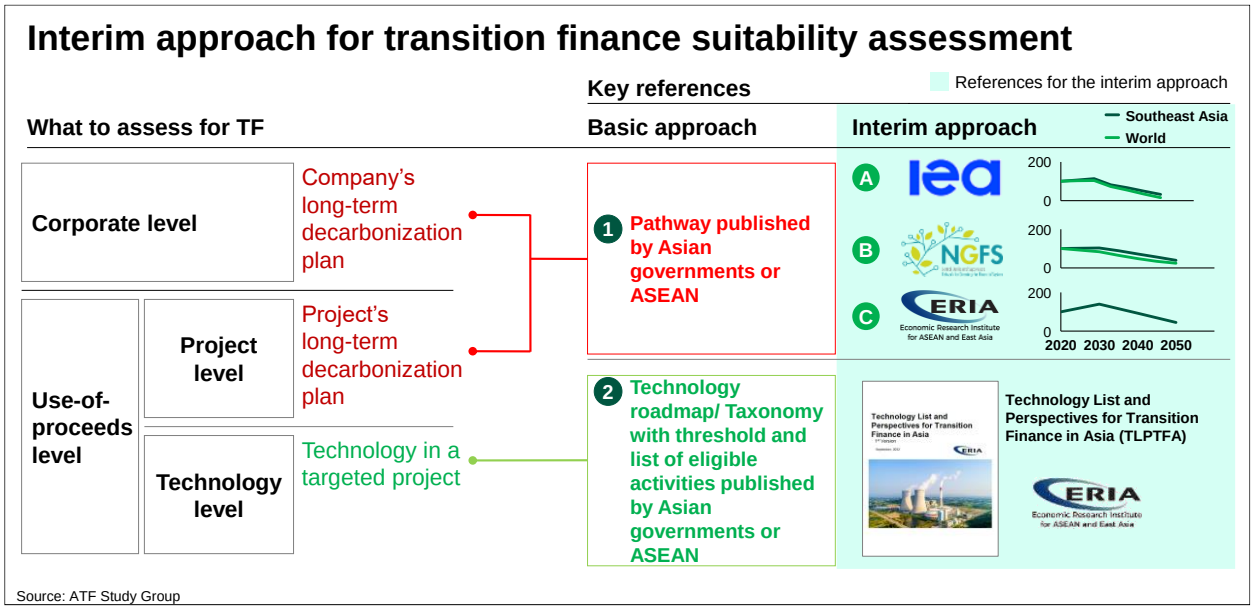
1. Climate (carbon) neutral/net zero
2. Even if both project plan and corporate strategy are aligned with a Paris-compliant pathway, project plan may not necessarily be aligned with corporate strategy

Source: ATF Study Group

4.4.2 Interim approach

As explained, the ideal reference point for FIs should be pathways published by Asian governments. However, not every Asian government has published one, while some state-owned companies and many private ones in Asia have not yet developed a decarbonization plan or published a climate strategy. Collecting the relevant information is therefore not always easy. With reference pathways and technology roadmaps still scarce in Asia, an interim approach, using a wider set of sources, is needed to evaluate requests for transition finance. The interim approach allows FIs to assess transition finance suitability when there are no official pathways and technology roadmaps. This approach complements the basic approach. Where no country or sector-specific pathway has been compiled by the relevant government, FIs could use pathways issued by outside parties, such as the IEA, NGFS, and ERIA. If there are no technology roadmaps or taxonomies with thresholds and activity lists, FIs could consult reference sources such as the *Technology List and Perspectives for Transition Finance in Asia* devised by the ERIA. More detail on the interim approach appears in the next two chapters (Chapter 5 and Chapter 6).

Exhibit 15



Source: ATF Study Group

5 CHAPTER 5 ASSESSING CORPORATE STRATEGY

As described in Chapter 4, there are two possible types of financing: General Corporate Purposes financing and UoP financing. This chapter helps FIs assess whether a General Corporate Purposes financing they are evaluating is suitable as transition finance.

The *ATF Guidelines* has already discussed the ICMA's four elements that FIs should review – the fundraiser's decarbonization strategy, the materiality of its strategy with respect to the fundraiser's core activities, the existence of science-based targets and pathways, and implementation transparency. It is noted that the hardest of these to assess are the strategy and the science-based targets and pathways.

This section shows how a FI can make these assessments and more, even when some of the information they need is not readily available.

Use of Government-issued country-level pathway

For a General Corporate Purposes financing, the most relevant criteria are whether the targeted company has a long-term decarbonization plan in line with the Paris-aligned country and/or sector pathway, or in other words, a pathway to climate (carbon) neutral/net zero, with a medium-term target included. In the basic approach introduced below, pathways published by local governments or ASEAN are encouraged for usage as discussed in Chapter 4.

5.1 STEP 2-A. BASIC APPROACH FOR ASSESSING CORPORATE STRATEGY

Different countries have made different commitments as part of the Paris Agreement. These different agreements, called Nationally Determined Contributions (NDCs), consist of interim plans. In deciding whether to treat a fundraiser's proposed corporate-purposes financing as transition finance, FIs are encouraged to evaluate the fundraiser's long-term, medium-term, and short-term emissions reduction plans against the pathway to climate (carbon) neutral/net zero (could be NDCs or other decarbonization targets) of the country where the fundraiser has its headquarters or operations (see BOX for details). Plans should be in place to achieve each step on the short-, mid- and long-term pathway toward emissions reductions.

BOX: further details on climate target timeframes:

- **Long-term plan:** According to the Paris Agreement, many Asian countries have committed to achieving climate (carbon) neutral/net zero emissions by 2050, 2060, or 2070, with the expected date of achievement depending on its overall climate ambition. Here, the question is whether the corporate strategy has a long-term climate (carbon) neutral/net zero plan in line with the net zero time frame of the country where the fundraiser has its headquarters or operations.
- **Mid-term plan:** This is the interim emissions reduction goal for the period between now and usually 2030. A prospective fundraiser's mid-term goal for emissions reduction should align with the 2030 goal of the country where the fundraiser has its headquarters or operations.
- **Short-term:** This is another relevant data point for the FI to consider. In the fundraiser's emissions plan for the next three to five years—what most businesses would consider "short term"—the FI should be able to see a set of well-thought-out ideas for moving toward the mid- and long-term pathways. The alignment and feasibility of the short-term plan against the longer-term goals can be important to the FI.

Although there is no one single definitive definition of climate target time frames, the above is an example of what seems to be commonly understood and used among relevant stakeholders.

As for the corporation's decarbonization plan, this should be broken down in the following ways so that the FI can make a proper assessment.

- **Additional detail about emissions:** What are the corporation's historical and projected GHG emissions, whether measured on an absolute basis or based on emission intensity? And besides the long-term targets, what are the mid-term and short-term targets?
- **Additional detail about measures**: The FI considering transition financing can seek information about how its client will achieve climate (carbon) neutral/net zero and its mid-term and short-term targets. The measures explained could include a timeline of technology changes and investments, and other planned activities that will have a material impact on emissions.

In theory, such information would allow the FI to compare the plan with science-based pathways to climate (carbon) neutral/net zero for the relevant sector and country.

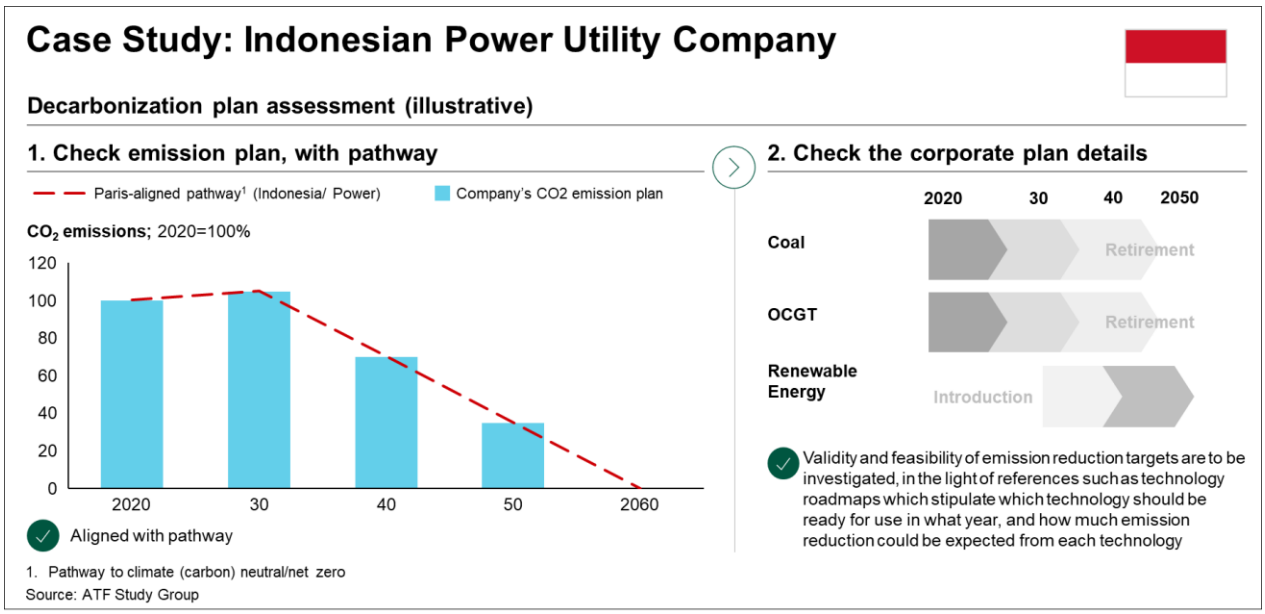
Case example: Indonesian Power Utility Company

Let's consider the steps that a FI would take if it were assessing the long-term decarbonization plan of a power utility company in Indonesia (Exhibit 16). First, the FI would need to check if the power utility company's GHG emissions reduction plan was aligned with the pathway of the power sector in Indonesia which in line with the Paris Agreement.

Moreover, FIs can take technology-level assessment even for GCP financing when such information is available. In this case, the FI might analyze the details underlying the power utility's plan. The details could include the planned dates for transitioning away from traditional technologies, such as coal or open cycle gas turbine (OCGT),[30] to transition or green technologies.

30 Combustion turbine plant fired by liquid fuel to turn a generator rotor that produces electricity

Exhibit 16



A dearth of government-created pathways in Asia

For FIs assessing the transition finance potential of Asian corporations, one big challenge is the absence to date of fully developed government-published pathways. Many Asian governments are working on pathways that would show their movement toward climate (carbon) neutral/net zero by 2050, 2060, or 2070, but those pathways are almost all still under development. FIs therefore may consider using an interim approach to evaluate transition finance requests by Asian corporations, at least until government-published pathway information becomes more available in Asia.

5.2 STEP 2-B. INTERIM APPROACH FOR ASSESSING CORPORATE STRATEGY

In the interim approach, the FI still makes its assessments using Paris-aligned pathways to climate (carbon) neutral/net zero emissions of the country where the fundraiser has its headquarters or operations. What's different is the source of the pathway information. Indonesia, Malaysia, Singapore, and many other countries in Asia are still working on their pathways and have not published them yet, but the pathways for these countries—and many others in Asia—are available from other sources. These alternative pathways have been published by organizations that include, among others, the IEA, NGFS, and ERIA. Some pathways published by these organizations are sector/regional-level and in line with the Paris Agreement so they could be used as an interim approach for FIs during the absence of government-published pathways (Exhibit 17). Each alternative source has its own strengths as outlined below. Overviews of each scenario are available below.

Exhibit 17

Pathways as potential references for project and corporate assessments

Completed · Partially completed · N/A

Southeast Asia — World

	Publisher	Paris-aligned pathway / pathway to climate (carbon) neutral/net zero scenarios; 2020=100		Sector coverage	Region/country coverage: ASEAN[1]	Singapore[2]	Indonesia[2]	Malaysia[2]	Thailand[2]	Vietnam[2]	Philippines
References in principle	Government/ Association				—	—	—	—	—	—	—
Potential references for use in the interim	A IEA	Sustainable development scenario	**2050:** 1.6C **NZ[4]:** AEs[5] by 2050, China around 2060, others by 2070	Energy, Industry, Transport, Buildings	✓	—	—	—	—	—	—
	B NGFS	Delayed transition scenario	**2050:** 1.8C **NZ:** N.A. (6.4 Gt CO_2 in 2050)	AFOLU[3], Chemicals, Buildings, Electricity, Transport, Cement, Steel	✓	✓	✓	✓	✓	✓	✓
	C ERIA	CN2050/2060 scenario in ASEAN	**2050:** Below 2.0C **NZ:** by 2060	Energy, Industry, Transport, LULUCF[6]	✓	Not yet publicly launched					

1 ASEAN has begun work on its taxonomy, 2. Net zero target exists, 3. Agriculture, Forestry, and Other Land Use, 4. Net zero, 5. Advanced Economies, 6. Land use, land-use change and forestry

Source: Based on IEA data from IEA (2021) World Energy Outlook, www.iea.org/statistics, All rights reserved; as modified by The Asia Transition Finance Study Group., Based on IEA data from IEA (2020) Energy Technology Perspectives 2020, https://www.iea.org/reports/energy-technology-perspectives-2020, All rights reserved; as modified by The Asia Transition Finance Study Group., NGFS, NGFS Climate Scenarios for central banks and supervisors, June 2021, https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf, ERIA, Decarbonization of ASEAN Energy Systems: Optimum Technology Selection Model Analysis up to 2060, 2022, https://www.eria.org/publications/decarbonisation-of-asean-energy-systems-optimum-technology-electionmodel-analysis-up-to-2060/

IEA. One of the key relevant reference points in the IEA pathway is the sustainable development scenario (SDS). In this scenario, the IEA takes the Paris Agreement—specifically the goal of limiting global temperature increases to well below 2°C, preferably to 1.5°C —and uses that baseline to estimate when many of the world's countries will reach climate (carbon) neutral/net zero emissions. The IEA's SDS scenario shows advanced economies, China and all other countries achieving such emissions by 2050, 2060, and 2070, respectively. Sectors covered include energy, industry, transport and buildings. The IEA's estimates for Southeast Asia are done on a regional basis as opposed to a country basis but could be used as reference scenarios to assess Paris-alignment of the corporate strategy (Exhibit 18).

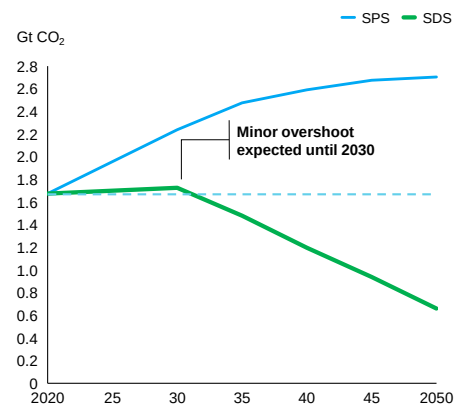
Exhibit 18

Overview of IEA scenarios

Potential reference · Fully covered · Partially covered · Not covered

IEA scenarios[1]	Region level granularity	Paris alignment
Stated Policies Scenario (SPS) Reflects the impact of existing policy frameworks and today's announced policy intentions	SEA regional level coverage	✗
Sustainable Development Scenario (SDS) Holds the rise in global temperatures to "well below 2°C (…) and pursuing efforts to limit it to 1.5°C" Climate (carbon) neutral/net zero emissions achieved by advanced economies by 2050, by China around 2060, and by all other countries by 2070 at the latest	SEA regional level coverage	✓
Net Zero Emissions by 2050 Need beyond SDS over the next ten years to put global CO_2 emissions on a pathway to climate (carbon) neutral/net zero by 2050 Must be in line with pathways used by the IPCC for the Special Report on Global Warming of 1.5 °C	✗	✓

SEA CO_2 emissions in IEA scenarios



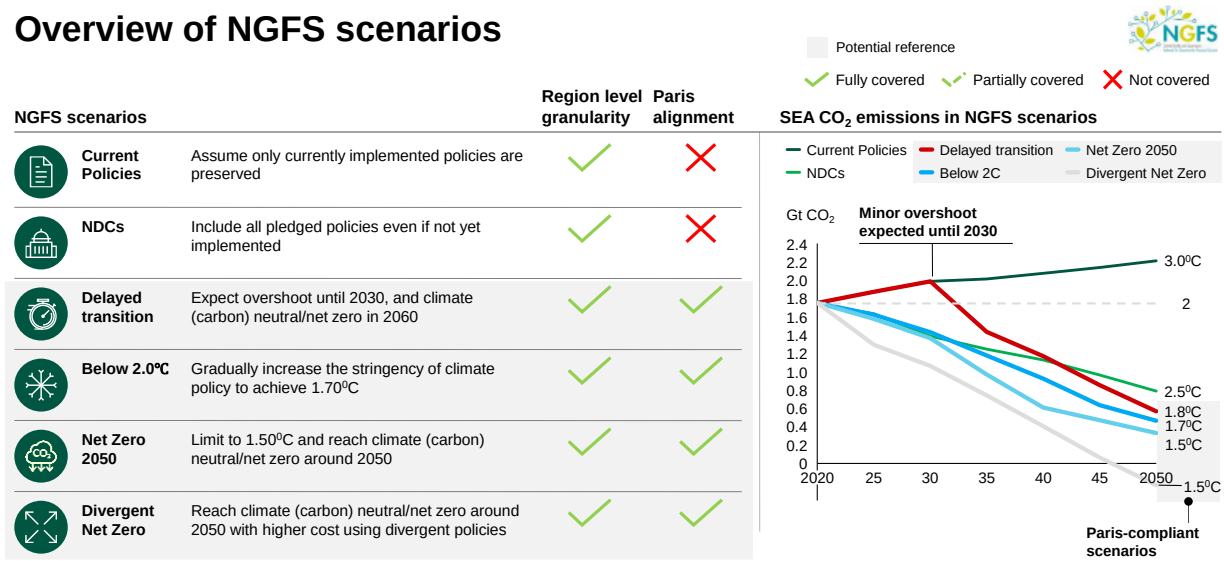
1. Based on IEA's models combined with the IIASA's Global Biosphere Management Model (GLOBIOM)

Source: Based on IEA data from IEA (2021) World Energy Outlook, www.iea.org/statistics, All rights reserved; as modified by The Asia Transition Finance Study Group., Based on IEA data from IEA (2020) Energy Technology Perspectives 2020, https://www.iea.org/reports/energy-technology-perspectives-2020, All rights reserved; as modified by The Asia Transition Finance Study Group., International Institute for Applied System Analytics, Global Biosphere Management Model (GLOBIOM), 2018, https://iiasa.github.io/GLOBIOM/toc.html#

NGFS. NGFS (as of September 2022) tracks six scenarios, four of which are climate (carbon) neutral/net zero scenarios.[31] The four scenarios are Delayed transition, Below 2°C, Net Zero, and Divergent Net Zero. These scenarios are available for individual countries and sectors in Southeast Asia. The ASEAN region is covered, as well as Indonesia, Malaysia, Philippines, Singapore, Thailand, and Vietnam, individually. Sectors covered include agriculture, forestry, and other land use, buildings, cement, chemicals, electricity, steel, and transport. The granular nature of the estimates, including emissions by year under each of the four scenarios, make the estimates useful for the FI conducting a transition finance assessment (Exhibit 19).

Exhibit 19

Overview of NGFS scenarios



Source: NGFS, NGFS Climate Scenarios for central banks and supervisors, June 2021, https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf

ERIA. In collaboration with the Institute for Energy Economics, Japan, ERIA published a set of scenarios in May 2022, including a baseline case and pathways for achieving climate (carbon) neutral/net zero by 2050 or 2060. The focus is on ASEAN at a regional level. Sectors covered include energy, industry, land-use change, forestry, and transport. As some of them are climate (carbon) neutral/net zero scenarios and have ASEAN-level regional granularity, they could be used as reference scenarios to assess Paris alignment of the corporate strategy. Moreover, ERIA has recently published a study that aims to describe in quantitative terms the energy transition pathway necessary to achieve carbon neutrality across 10 ASEAN countries through model analysis (Exhibit 20).

31 Further technical details are available in its technical documentation published by NGFS https://www.ngfs.net/ngfs-scenarios-portal/

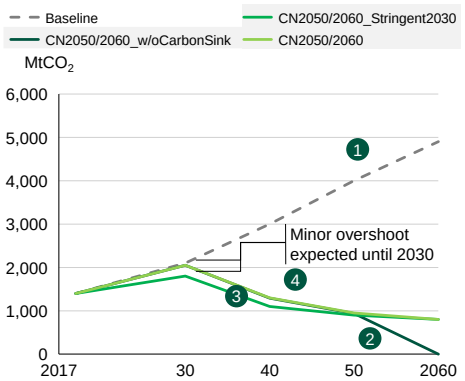
Exhibit 20

Overview of ERIA scenarios

Potential reference ✓ Fully covered ✓ Partially covered ✗ Not covered

ERIA scenarios for ASEAN	Region level granularity	Paris alignment
1 **Baseline** Does not assume any emission constraints by 2060	Country-level pathways not yet published	✗
2 **CN2050/2060 w/o Carbon Sink** Assume climate (carbon) neutral/net zero by 2050 in BRN and SGP, and by 2060 in the rest of ASEAN	Country-level pathways not yet published	✓
3 **CN2050/2060 Stringent 2030** Apply stringent emission constraints by 2030, consistent with IEA SDS	Country-level pathways not yet published	✓
4 **CN2050/2060** Achieve climate (carbon) neutral/net zero with natural carbon sink by 2060 in ASEAN	Country-level pathways not yet published	✓

SEA CO_2 emissions in ERIA scenarios



ERIA already discussed and aligned with each of the ASEAN members when crafting a pathway

Source: ERIA, Decarbonization of ASEAN Energy Systems: Optimum Technology Selection Model Analysis up to 2060, 2022, https://www.eria.org/publications/decarbonisation-of-asean-energy-systems-optimum-technology-selection-model-analysis-up-to-2060/

When prospective fundraisers do not have well-developed decarbonization strategies

As discussed, the lack of government-published pathways in Asia is one part of the assessment challenge that FIs face in Asia. The second challenge is the lack of climate strategies from many Asian corporations themselves. Many Asian companies that would like to put a "transition finance" label on a corporate purpose financing do not yet have a public decarbonization strategy or plan. This is sometimes observed among state-owned companies in Asia.

Under this situation, FIs can help Asian companies develop their own climate (carbon) neutral/net zero strategy or plan. One source to use in developing such strategy or plan is the January 2022 report, *Leadership Strategies for Client Engagement: Advancing Climate-Related Assessments*, published by the United Nations Environment Programme Finance Initiative.[32] As part of its engagement, FIs can help the fundraising company develop a strategy or plan that meets the transition finance criteria.

However, some cases require exceptional measures. For example, state-owned companies may typically struggle in forming a climate strategy, given it may be developed along with government policy and may be limited to short- or mid-term targets. As such, although it may not ultimately become fully compliant with ICMA's four elements, FIs could start by checking first whether a government has a climate (carbon) neutral/net zero strategy, and then confirming that the company's activity is aligned with the government's strategy. Separately, FIs could conduct a technology assessment for targeted projects, which is detailed in Chapter 6.

5.3 INTRODUCTION TO CASE STUDIES

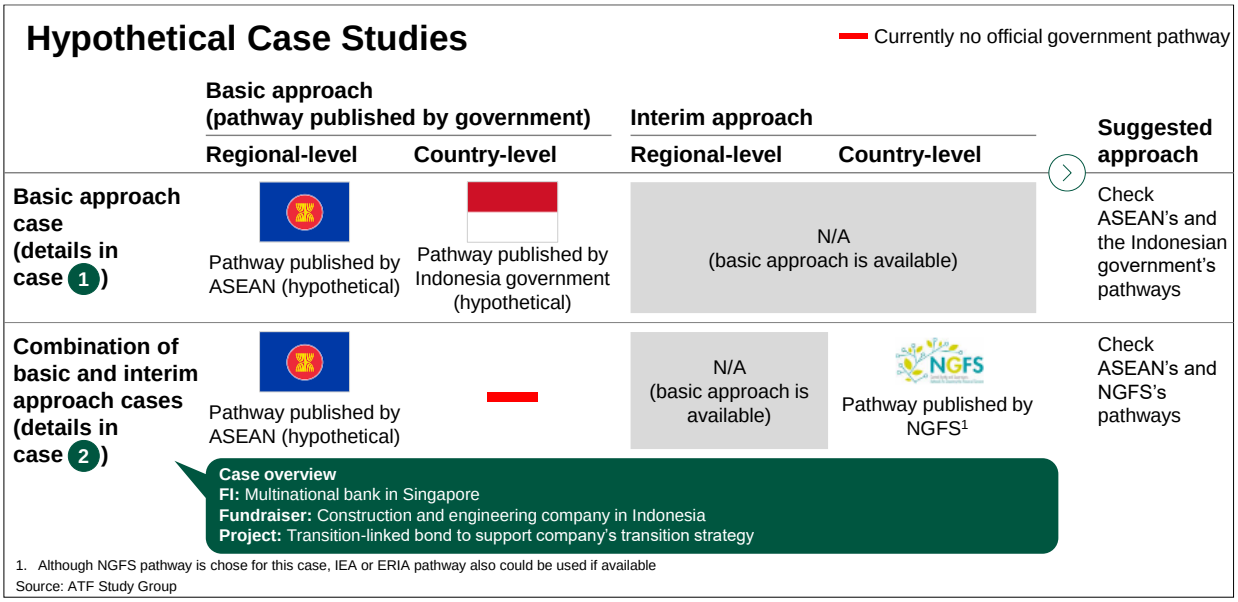
Chapter 4 to 5.2 have provided initial guidance on how transition finance suitability assessments could be done in practice, including methodologies for reference to different pathways scenarios. This section discusses practical questions that transition finance practitioners may encounter, providing several

32 United Nations Environment Programme Finance Initiative, Leadership Strategies for Client Engagement: Advancing Climate-Related Assessments, January 2022, https://www.unepfi.org/publications/leadership-strategies-for-client-engagement-advancing-climate-related-assessments/

hypothetical case examples. This section also introduces a real-case example to explain how a transition finance assessment was and could be done in practice.

Key question: Which reference pathways can be used: the regional pathway (for example, ASEAN pathway) or country pathway? To answer this question, here are two hypothetical case studies to illustrate suggested approaches (see Exhibit 21 for the overview of case studies).

Exhibit 21



Hypothetical case 1: Both regional and country-specific pathways are available

- **Case overview:** The FI in this case is a global bank headquartered in Singapore, while the fundraiser is a construction and engineering company based in Indonesia. The project involves a transition-linked bond to support the company's global transition strategy. Namely, in this case, a €500 million inaugural sustainability-linked bond[33] will be applied to address the company's Scope 1 and 2 emissions for operationally controlled assets and entities. The bank has two pathways available for reference: ASEAN's regional sector-specific pathway (hypothetical) and the Indonesia government's country-specific and sector-level pathway (hypothetical). Under the circumstances, the bank is unclear about which pathway it should use to assess the application for transition finance assessment.
- **Suggested approach:** The bank is advised to use both references to check whether the construction company's decarbonization plan is aligned with both pathways – namely, ASEAN's regional sector-specific pathway (hypothetical) and the Indonesia government's country-specific and sector-level pathway (hypothetical).

Hypothetical case 2: No country-specific pathways issued by local governments or ASEAN are available

- **Case overview:** The overview itself is similar to Case 1 (above) and involves the same parties: the FI is a global bank headquartered in Singapore, while the fundraiser is a construction and engineering company based in Indonesia seeking a transition-linked bond to support the company's transition strategy. However, in this case, the Indonesia government has not issued a country- and sector-level pathway, while ASEAN has issued a regional pathway that does not cover country and sector levels (hypothetical). On the other hand, NGFS has published country-level pathways to climate (carbon) neutral/net zero for carbon heavy sectors in Indonesia. Although the basic recommended approach is pathways published by governmental organizations, the NGFS pathway has sufficient detail under the current circumstances.

33 The *ATF Guidelines* does not detail the specific requirements that may be followed to issue sustainability-linked bonds. Refer to the ICMA's Sustainability-Linked Bond Principles for instructions on issuing these bonds

Suggested approach: The bank could use NGFS's pathway as an interim approach during the absence of a government-published pathway in Indonesia, as it offers an Indonesia-specific sectoral pathway. In this case, the bank could use both references (ASEAN regional pathway (hypothetical) and country-specific pathway published by NGFS) and check whether the construction company's decarbonization plan is aligned with both.

The case study below and Chapter 6 introduce some real-case examples to illustrate how a transition finance assessment unfolded. FIs are advised to obtain an SPO to determine the suitability of transition finance, as well as to gain positive acceptance from stakeholders, including investors.

Case study 1: ENEOS transition-linked bond

This is an example where the company issued transition-linked bonds as part of its transition strategy. It commissioned a second-party opinion to ensure its framework was aligned with the transition principle. The company used ICMA's four elements from the *ICMA Handbook* to determine its transition finance eligibility.

Fundraiser	ENEOS Holdings (ENEOS)
Financial Institution	MUMSS (lead manager, structuring agent), Mizuho Securities/Daiwa Securities/Nomura Securities (lead manager)
Issue Date	June 2022
Value and Tenor	JPY 85 billion 10-year bond and a JPY 15 billion 20-year bond
KPIs and SPT (Sustainability Performance Target)	46% reduction compared with FY2013 in Scope 1 and 2 net CO2 emissions of the ENEOS Group by FY2030, and zero net Scope 1 and 2 CO2 emissions of the ENEOS Group by FY2040

Assessment: The transition finance assessment was based on four elements in the *ICMA Handbook:*

- **Element 1 (climate transition strategy and governance).** The company announced a long-term vision for 2040, showing a measurable medium- to long-term CO_2-reduction target together with a measurable plan for renewable energy use at its refineries, manufacturing plants, and smelters, as well as carbon capture and storage (CCS), carbon capture, utilization and storage (CCUS), and forest absorption. The strategy was developed based on scenario analysis aligned with the TCFD and shown to be Paris Agreement–aligned based on the SDS in the IEA's World Energy Outlook and 2018 New Policies Scenario.
- **Element 2 (business model environmental materiality).** From an energy-security viewpoint, the petroleum industry's most important task in advancing climate transition is to promote efforts to achieve carbon neutrality while also maintaining energy security and a stable supply of oil (as an essential energy source for people's daily lives and economic activities). Under its Long-Term Vision for 2040, the company has positioned its Materials Business[34] as a growth business—its policy is to invest further to flex around rapidly expanding demand and to contribute to the decarbonization of society through the provision of materials. Equally, the company believes decarbonization initiatives are crucial to the materials manufacturing supply chain.

34 While its current core business lies in petroleum refining and sales, ENEOS positions its Material Business as a growing entity in which functional materials such as polymers, monomers and elastomers are produced for high-tech industries.

- **Element 3 (science-based targets and pathways).** The company's transition roadmap indicates that the company will work toward achieving net-zero Scope 1 and 2 by FY2040 and carbon neutrality of Scope 3 by FY2050. The company's transition roadmap covers Scope 1, 2, and 3. The company's goal to reduce net CO_2 emissions of Scope 1 and 2 by 46 percent by FY2030 compared with FY2013 (16 million tons of CO_2 per year on a net CO_2 emissions basis) is consistent with Japan's 2030 CO_2 Emissions Reduction Target. The company's targets are considered consistent with the policies of Japan in the context of the Paris Agreement and the roadmap for transition finance in the oil sector published by the Ministry of Economy, Trade and Industry (METI).
- **Element 4 (implementation transparency).** Under the Second Medium-Term Management Plan (FY2020 to FY2022), the company has announced plans to allocate 960 billion of its 1.6 trillion capital expenditures for strategic investments in growth businesses, such as next-generation energy supplies and regional services, and environmentally friendly businesses. The company also plans to disclose future investment plans in line with Medium-Term Management Plans for FY2023 and beyond.

6 CHAPTER 6 ASSESSING USE-OF-PROCEEDS

This chapter moves on to another type of transition finance in Asia, involving specific UoP financing. As outlined in Chapter 4, UoP financing involves assessments of both corporate-level and project-level factors. The FI that is evaluating a possible UoP project also should assess the technology that would be used.

6.1 STEP 2-A. BASIC APPROACH FOR ASSESSING UOP

The basic approach to assessing a UoP financing proposal, laid out in the *ICMA Handbook* (discussed previously) highlights several prerequisites for transition financing, starting with the credibility of the fundraiser's overall decarbonization strategy, particularly with respect to science-based targets and pathways.

To determine whether a UoP is suitable for transition financing, the FI should look at four dimensions:

1. **Corporate-level: Whether the project sponsor itself is on a Paris-aligned pathway, that is a pathway to climate (carbon) neutral/net zero**. First, the FI is encouraged to check if the project sponsor's decarbonization plan is aligned with the Paris Agreement. The approach itself is consistent with the one outlined in Chapter 5. To do this, the FI would need to find a reference country pathway, typically the headquarters of the project sponsor. However, one thing that could complicate the assessment of this dimension for the case of UoP is if a project has multiple owners or sponsors, especially from different countries. In the case of a transition finance project that has sponsors in multiple countries—for example, Indonesia, Japan, and the U.S.—the FI needs to decide which sponsor's corporate strategy would be the right reference point, in addition to the country's decarbonization pathway where the project is based in. FIs might be able to consult with an external party such as an SPO provider if their views are available.[35]
2. **UoP-level (project): Whether the project's proposed strategy is Paris-aligned**. After conducting a corporate-level assessment, the FI can also consider a UoP-level assessment. The FI could start by comparing the project decarbonization plan with the goals of the Paris Agreement. The FI should find a reference country/sector-level pathway in line with the Paris Agreement. Let's take the example of a FI trying to assess a transition bond project in Vietnam for transforming coal into ammonia co-firing (Exhibit 22). The FI would need to check the project emission plan, namely the projected emissions of the plants, against a sector/region pathway to assess the plan's alignment with the Paris Agreement.

   If the project's plan lags behind the pathway to climate (carbon) neutral/net zero, the project plan may not be considered suitable as transition finance. The details on which pathways to choose are outlined in Chapter 4 and Chapter 5. In short, if government published pathways are available, the FI is encouraged to use them as a basic approach. During the absence of such pathways, the interim approach to use other pathways (for instance, IEA, NGFS, ERIA) could also be considered.
3. **UoP-level (technology): The technology's suitability for a transition finance project**. Either of two factors can be taken as evidence that the technology in a targeted project could be suitable as transition finance. One factor is if the technology is part of a country technology roadmap that is in line with the country's decarbonization strategy. The other factor is if the technology can be considered as suitable for transition based on the thresholds and lists of eligible activities listed in a country or region taxonomy.
4. **UoP-level (project): Whether the project's proposed strategy is aligned with the corporate strategy**. Finally, the project's decarbonization plan is expected to align with the corporation's strategy of the project sponsor. Even if both the project plan and corporate strategy are in line with a pathway to climate (carbon) neutral/net zero, the project plan may not necessarily be aligned with corporate strategy. That necessitates the FI confirming whether the project's decarbonization plan is also aligned with the corporate (for the main sponsor if available) strategy.

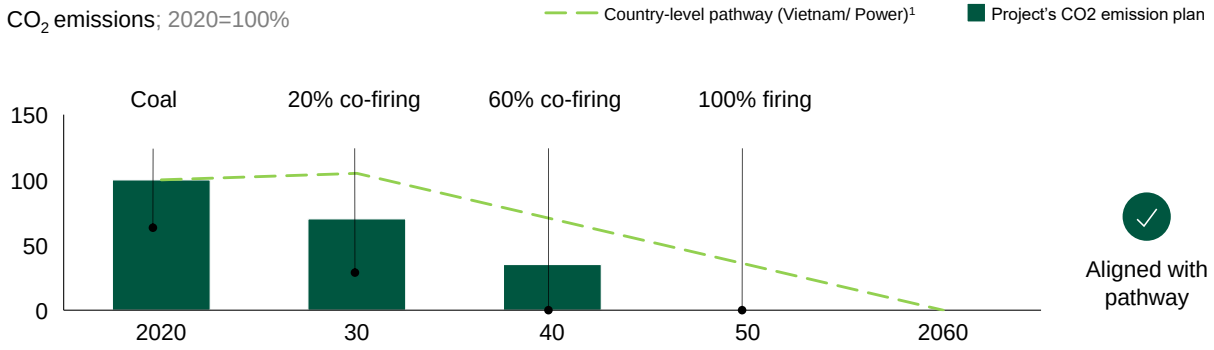
35 It is not necessary for a project to be aligned with country's pathway of the sponsors to be recognized as transition finance.

Exhibit 22

Case Study: Vietnamese Power Utility Company

Transition bond project for transforming Coal into ammonia in Vietnam

Project-level assessment



1. The scenario on this chart is illustrative

Source: ATF Study Group

More on taxonomies and technology roadmaps

Taxonomies are reference points that FIs can use to make technology assessments. Some taxonomies include pathways, or thresholds and lists of eligible activities. In the case of a taxonomy that has a pathway, the FI can use the pathway as a reference point to assess a project. In the case of a taxonomy that shows thresholds and lists of eligible activities, the FI can use those to assess the proposed technology. One of the key taxonomies under development in Southeast Asia is being created by ASEAN. ASEAN's taxonomy will provide an overarching taxonomy for the whole region. However, ASEAN's regional-level taxonomy isn't the only taxonomy in the works in Asia. There are also taxonomies underway by individual governments for their countries (Exhibit 23). And this makes it important for FIs to check both regional- and country-level taxonomies before deciding if a project they're considering might be suitable for transition finance.

Exhibit 23

Some taxonomies may include pathways, thresholds and a list of eligible activities, which could be useful for TF suitability assessment

Potentially used for TF assessment | Developed | Under development | Include | Partially include | N/A

	ASEAN	Singapore	Indonesia	Malaysia	Thailand	Vietnam	EU
Development status	November 2021 (Version 1)	May 2022 (2nd draft)	January 2022 (Published)	April 2021 (Published)			February 2022 (Complementary Act)
Principle	✓	✓	✓	✓	TBD	TBD	✓
Country/sector-pathway	TBD	TBD	✗	✗	TBD	TBD	✗
Threshold	TBD	✓ 3 sectors preliminary developed	✗	✗	TBD	TBD	✓
List of eligible activities	TBD	✓	✓	✗	TBD	TBD	✓

Alignment with only taxonomies usually may not be enough for transition finance suitability assessment

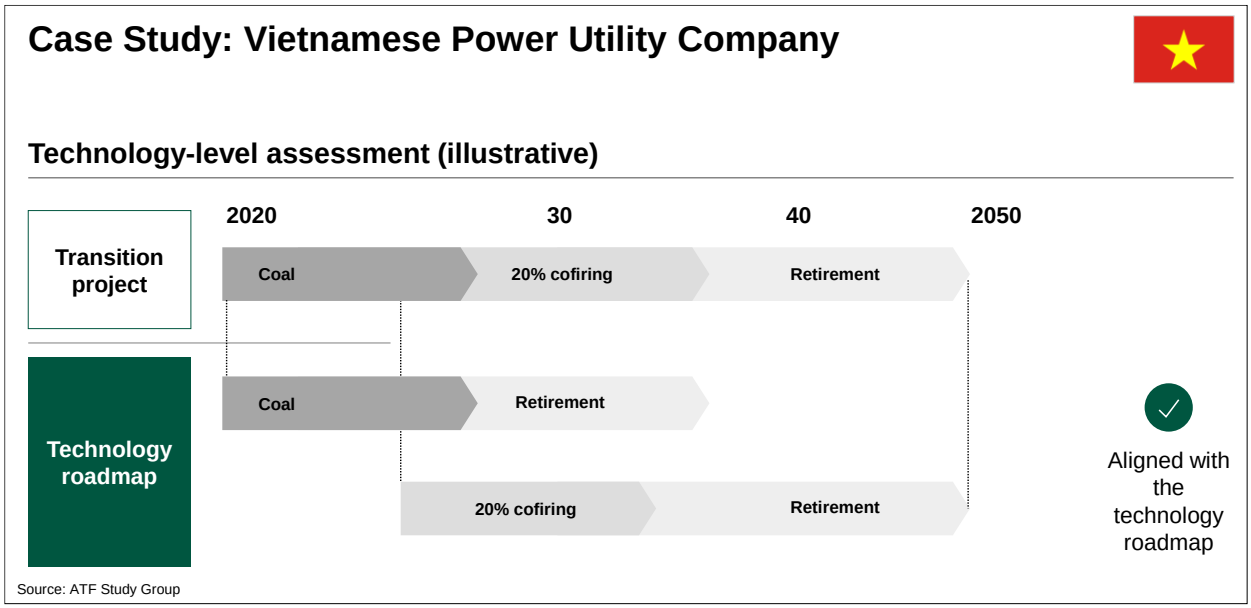
1. The Securities Commission Malaysia is currently developing the principles-based SRI Taxonomy for the capital market, which is targeted to be released by end of 2022. The SRI Taxonomy will provide more clarity and guidance for the market in identifying sustainable investment assets or activities.

Source: Press release

Technology roadmaps developed by Japanese government[36] are another reference point that FIs can use. These roadmaps outline the technologies expected to be necessary to make specific industry sectors climate (carbon) neutral/net zero, showing which technology would be ready for use in what year. They include expected future innovations alongside tried-and-tested low-carbon technologies available today (for example, energy conservation and transition). For instance, if the FI was trying to assess a transition bond project in Vietnam for transforming coal into ammonia co-firing, the FI would need to check the project details against a sector technology roadmap to assess the alignment (Exhibit 24).

If the sector technology roadmap assumes the same level of transition as what the fundraiser is planning (or the fundraiser's plan has a more aggressive timeline), the technology would be assessed suitable. If the project's plan lags that of the country technology roadmap, the technology plan may not be assessed as suitable for transition finance.

Exhibit 24



Source: ATF Study Group

A dearth of government-created technology roadmaps and taxonomies in Asia

Although technology roadmaps and taxonomies are useful for transition finance suitability assessment, in Asia today, there are few completed taxonomies and technology roadmaps. It's therefore necessary for FIs to have an alternative assessment method until these government-developed reference points have been published (Exhibit 25).

36 Japan-specific technology roadmaps became available in September 2022

Exhibit 25

No Asia-specific references for basic approach exist yet

Potential references for technology assessment (as of September 2022)

Completed · Partially completed · N.A.

Types of Reference	Reference	ASEAN[1]	Singapore	Indonesia	Malaysia	Thailand	Vietnam	Philippines	Japan[3] Ref.
References for basic approach	Technology roadmap	—	—	—	—	—	—	—	✓
	Taxonomy with threshold and list of eligible activities	—	✓	—	—	—	—	—	—
		Not yet completed	Available for three sectors[2]	Not yet completed; Existing taxonomies do not include thresholds					
Potential references for use in the interim	Technology list and perspectives for transition finance in Asia[4]	✓ Published by ERIA in September 2022							—

1. ASEAN started working on its own taxonomy, 2. Energy, Transport, and Real estate, 3. Sector coverage is Iron and Steel, Chemical, Power, Gas, Oil, Pulp and Paper, Cement sector
4. Sector coverage for the 1st edition is the power sector and its upstream

Source: Literature search

6.2 STEP 2–B. INTERIM APPROACH FOR ASSESSING UOP

The basic approach described in Chapter 6.1 assumes the existence of government-compiled country- and sector-specific pathways, technology roadmaps and taxonomies. With such references still scarce in Asia, FIs that want to support transition finance for specific projects (UoP) could consider other interim approaches. As outlined in the interim approach for pathways in Chapter 5, this chapter details the interim approach for technology assessment using taxonomies and technology roadmaps.

Using 'Just and Orderly' Factors to Enable the Interim Approach

If no official or alternative technology roadmaps exist, the FI is encouraged to determine if the technology being proposed by a fundraiser meets the requirements of a "just and orderly" transition. The ATF Study Group discussions identified four factors of a just and orderly transition broken down as follows, with the first one (sustainability) having three sub-components. These factors are all relevant in assessing transition finance suitability of a technology (Exhibit 26):

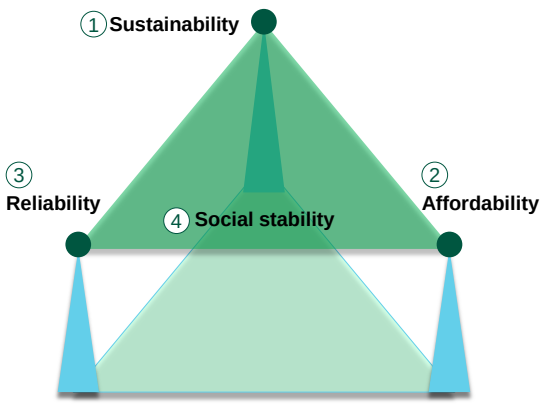
- **Sustainability:**
  - **Emissions impact:** This is the fundamental requirement. The technology should have adequate emission-reduction potential.
  - **Lock-in prevention consideration:** This component is unique and critical to transition finance. Transition technologies, by definition, may still produce emissions today, but are evolving to help a company move toward climate (carbon) neutral/net zero in the years ahead. To do so, the technology should be free of potential built-in roadblocks (or lock-ins) that would prevent a just and orderly transition. The fundraiser should consider what paths exist for a proposed technology to be climate (carbon) neutral/net zero in the future, as well as what obstacles in the way of those paths need to be cleared along the way. For example, there should be no contractual commitments that assume the business runs without change. If a fundraiser proposes its gas-fired power plant will shift to 100 percent hydrogen co-firing in 2035, it should not have a fuel gas purchase agreement that runs beyond 2035.

  - **DNSH considerations:** Technologies that contribute to a climate (carbon) neutral/net zero future can sometimes impede other environmental objectives, such as protecting healthy ecosystems and biodiversity, preventing pollutants (besides GHG) into the air, water or land, or promoting the transition to a circular economy. Care should be taken to avoid this kind of collateral damage.
- **Affordability:** The fundraiser should have reason to believe that the targeted technology will be economically competitive or at least commercially viable—compared to existing technology—at some point in the future.
- **Reliability:** There should be reasonable belief that the technology will be developed and reliable within the proposed timeline. For example, if a project uses an ammonia-fired power plant and is planning to increase the co-firing ratio to meet emissions reduction expectations, the fundraiser needs to assess whether the higher co-firing technology will be ready and operable in the proposed timeline.
- **Social considerations:** Some of the trends related to climate (carbon) neutral/net zero emissions could affect existing social structures or local economies—for example, key considerations could include whether the technology will lead to a loss of job opportunities or result in a negative change in working environments. These are the risks that developing countries acutely understand.

Exhibit 26

Technology Assessment for a Just and Orderly Transition

Important factors for a just and orderly transition



6 key framework dimensions

1. Emissions impact
1. Lock-in prevention considerations
1. DNSH considerations
2. Affordability
3. Reliability/maturity
4. Social considerations

Source: ATF Study Group

As introduced in Chapter 3, the *Technology List and Perspectives for Transition Finance in Asia* is an alternative outside reference point when technology roadmaps do not exist. The list is available from ERIA. As of September 2022, it covers major potential transition technologies in the power (electricity generation) sector and in the upstream (fuel production) sector within the energy sector (such as exploration, drilling, and extraction). The list could be used to interpolate the impacts of these technologies on GHG emissions, and to track fundraisers' progress against the other goals of a just and orderly transition (for instance, six dimensions mentioned above). Chapter 6.3 uses a case study to outline how a technology assessment could be done in practice using the six dimensions.

6.3 INTRODUCTION TO CASE STUDIES

Chapter 4 and 6.1 - 6.2 have provided initial guidance on how transition finance suitability assessments could be done in practice, including methodologies for reference to different pathways, taxonomies and technology roadmaps. This section discusses practical questions that transition finance practitioners may face in reality, providing several hypothetical case examples. Several real case examples are also introduced to explain how transition finance assessments have been conducted already.

Here are hypothetical case studies to help illustrate suggested approaches to the key questions FIs may have when they use these guidelines (Exhibit 27)

Exhibit 27

Hypothetical Case Studies Overview

— Currently no official government pathway/ taxonomy

	Fundraiser	Project operation	Assessment: Corporate-level – Basic approach	Assessment: Corporate-level – Interim approach	Assessment: Project-level – Basic approach	Assessment: Project-level – Interim approach	Assessment: Technology-level – Basic approach	Assessment: Technology-level – Interim approach
1 Single-country case (details in case 1)	Power utility company in Vietnam	Vietnam	—	Pathway published by NGFS[1]	—	Pathway published by NGFS[1]	—	*Technology list and perspectives for transition finance in Asia* published by ERIA
2 Multi-country case (details in case 2)	Power utility company in Japan		Pathway by Japan gov.	N/A (basic approach is available)				
3 SPC case	SPC with several sponsors		On a case-by-case basis (recommended to consult with SPOs)					

1. Although NGFS pathway is chose for this case, IEA or ERIA pathway also could be used

Source: ATF Study Group

Key question 1: What pathways and other supporting checklists can FIs use for the purposes of assessment as **an interim approach in the absence of government-published pathways**?

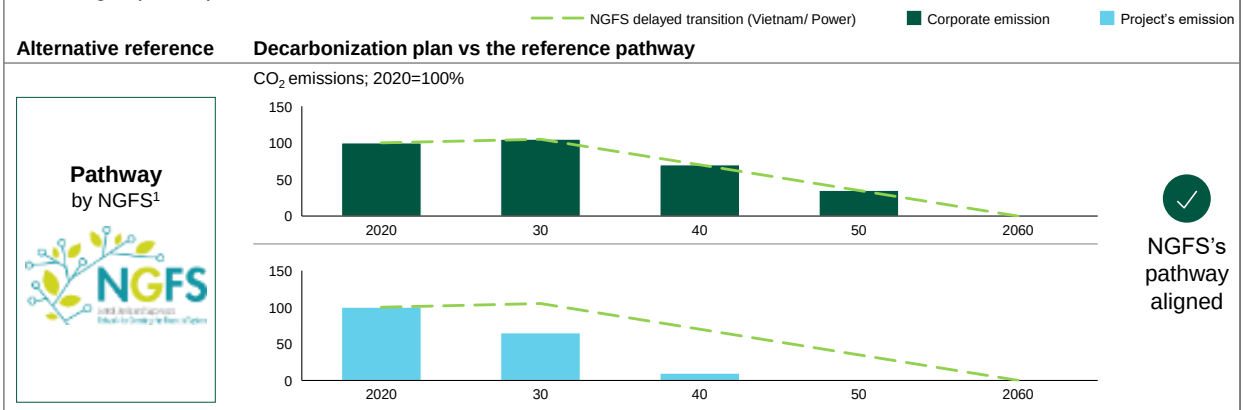
Hypothetical case 1: Project and the headquarters in Vietnam where there are yet no references published by government

- **Case overview:** The FI in this hypothetical case is a local bank in Vietnam, while the fundraiser is a power utility company in Vietnam working on a new gas power plant project incorporating a combined-cycle gas turbine (CCGT). The project is in Vietnam where there is yet no government-published pathway and taxonomy with thresholds and list of eligible activities. However, NGFS has published a relevant country- and sector-level pathway, while ERIA has published the *Technology List and Perspectives for Transition Finance in Asia* (albeit not official government-published documents).
- **Practically recommended approach:** The bank could use NGFS's pathway for corporate-level and project-level assessments and ERIA's *Technology List and Perspectives for Transition Finance in Asia* for the technology assessment until Vietnam's government publishes the requisite country- and sector-level pathway and taxonomy with thresholds and list of eligible activities:
  - **Corporate-level and project-level assessment:** The bank is advised to check pathways published by non-government organizations such as ERIA, IEA, and NGFS. In this case, to assess both the corporate and the project long-term decarbonization plans, the bank can compare each plan with the NGFS pathways (or others) until country-specific pathways for Vietnam become available. If both decarbonization plans are aligned with the NGFS pathway, it would mean that they are aligned with pathways to climate (carbon) neutral/net zero. An assessment example is illustrated in Exhibit 28. In this example, the corporate and project emission trajectories based on its plans are in line with the NFGS delayed transition pathway for the Vietnam/power sector. As such, the assessment result would be aligned with pathways to climate (carbon) neutral/net zero.

Exhibit 28

[Corporate-/Project-level] FI can Assess Corporate and Project Decarbonization Plans by Referring to NGFS's Pathway

A new gas power plant with CCGT in Vietnam



1. Although NGFS pathway is chose for this case, IEA or ERIA pathway could also be used

Source: ATF Study Group

– **Technology-level assessment:** To assess the technology to be used for the project, as an interim approach, the bank can check the *Technology List and Perspectives for Transition Finance in Asia* issued by ERIA and assess the CCGT technology based on the six framework dimensions outlined in Chapter 6.2. The example assessment result is shown in Exhibit 29. Based on the assessment using the *Technology List and Perspectives for Transition Finance in Asia*, although the CCGT technology could cover five dimensions (emissions impact, reliability, affordability, DNSH considerations, and social considerations), it is not clear whether the technology covers lock-in prevention, because the company has not publicly announced plans around technology requirements to achieve climate (carbon) neutral/net zero by 2060.

Thus, in this case, the bank would be well-advised to ask the company to create a lock-in prevention plan. Then a new assessment would be meaningful. To do this, the bank needs to refer to the taxonomy with threshold and the list of eligible activities, technology roadmap, or the *Technology List and Perspectives for Transition Finance in Asia*,[37] then assess that plan[38], and finally reassess the whole project prior to moving ahead with transition finance.

37 For instance, the *Technology List and Perspectives for Transition Finance in Asia* mentions pathways such as transition to co-firing/full-firing with low-carbon fuels, retrofitting with CCUS, retirement and shift to peaking/reserve use within largely decarbonized power systems in order to achieve long term climate (carbon) neutral/net zero

38 It is important for FIs to check whether the plan calculates and includes the costs of necessary prevention plans

Exhibit 29

[Technology level] FI can assess the target technology using the six framework dimensions compliant with just and orderly transition

A new gas power plant with CCGT in Vietnam

Alternative reference	Assessment of target technology		
TLPTFA[1]	Emissions impact	Emission intensity of CCGT is lower than that of coal, which is the major source of electricity in Vietnam	✓
	Reliability/maturity	CCGT has already been commercialized at scale and there are other ongoing cases in Vietnam	✓
	Affordability	The cost would be acceptable relative to that of other options	✓
	Lock-in prevention considerations	The company has not publicly announced plans on technology to achieve climate (carbon) neutral/net zero by 2060	?
	DNSH considerations	Project complies with environmental rules and regulations, including global standards	✓
	Social considerations	Project will result in additional employment / contribution to the local economy	✓

Assessment considerations:

- Lock-in prevention plans are unclear, becaue potential future shift to lower emission by the corporate entity is uncertain (e.g., hydrogen co-firing, CCUS)
- There is a lack of clarity in lock-in prevention considerations, which makes it difficult to assess TF eligibility

1. Technology list and perspectives for transition finance in Asia

Source: ATF Study Group

Key question 2: What pathways and other supporting checklists can the bank use for the purposes of assessment when dual locations are involved (for example, project located in Vietnam and company headquarters in Japan)?

Hypothetical case 2: Project in Vietnam and HQ in Japan

- **Case overview:** The FI in this hypothetical case is a local bank in Vietnam, while the fundraiser is a power utility company in Japan. The project relates to conversion of an existing coal power plant to ammonia co-firing. However, the project is in Vietnam, where the government has yet to publish its country-level pathway and taxonomy with thresholds and list of eligible activities. However, NGFS has published a country- and sector-level pathway for Vietnam. Additionally, the fundraiser's headquarters is in Japan, where the government has published its official pathway.
- **Practically recommended approach:** The bank could use the Japanese government's pathway in combination with NGFS's pathway for its assessment of the company's long-term decarbonization plan. For the technology assessment, ERIA's *Technology List and Perspectives for Transition Finance in Asia* could be used:
  - **Corporate-level and Project-level assessment:** FIs are advised to check both the Japan specific pathway and Vietnam specific pathway. For the Japan specific pathway, FIs could assess the company's long-term decarbonization plan against the Japanese government pathway where the corporate headquarters is located. For the Vietnam specific pathway, it is advised to use NGFS's Vietnam-specific pathway (or others) as an interim approach to check if the targeted project has a long-term decarbonization plan in line with the pathway to climate (carbon) neutral/net zero specific to Vietnam where the project operation is expected to occur (see Exhibit 30).

Exhibit 30

[Company-/Project-level] FI can Assess Corporate/Project Decarbonization Plans by Checking Japanese and Vietnamese Pathways

Low-carbon ammonia 20% co-firing coal-fired power plant case in Vietnam (Corporate HQ in Japan)

Assessed decarbonization plan	Alternative reference	Decarbonization plan vs. reference
Corporate level	**N/A** (Japanese Government issued pathway available[1])	CO_2 emissions; 2020=100% 200 100 0 2020 30 40 50 2060 Japan Gov. Pathway (Power) Corporate's emission Japan Gov. pathway aligned
Project level	**NGFS pathway**[2]	CO_2 emissions; 2020=100% Coal 20% cofiring 60% cofiring 100% cofiring 200 100 0 2020 30 40 50 2060 NGFS delayed transition (Vietnam/ Power) Project's emission NGFS pathway aligned

1. Based on Strategic Energy Plan 2022 and Technology Roadmap 2022; 2. Although NGFS pathway is chose for this case, IEA or ERIA pathway could also be used

Source: ATF Study Group

– **Technology level assessment:** To assess the technology to be used for the project, as an interim approach, the bank can check the *Technology List and Perspectives for Transition Finance in Asia* issued by ERIA and assess the CCGT technology based on the six elements (same process as Hypothetical case 1 in this chapter)

Here are real-case examples to illustrate how a transition finance assessment was done or could be done in practice.

CASE STUDY 1: SUMITOMO CHEMICAL TRANSITION LOAN

This is an example where a company issued a transition loan for the construction of LNG-fired power generation facilities in the Chiba and Ehime districts of Japan. The Chiba project will convert petroleum coke into natural gas with CO_2 emission reduction of 240k tons/year. The Ehime project will convert oil and heavy oil into natural gas with CO_2 emission reduction of 650k tons/year. The ICMA's four elements are used to determine its transition finance eligibility.

Fundraiser	Sumitomo Chemical Company, Limited and Sumitomo Joint Electric Power Co., Ltd.
Financial Institution	SMBC (arranger & structuring agent)
Issue Date	2022
Value and Tenor	JPY 10 billion and JPY 8 billion

Assessment: The transition finance assessment was based on four elements in the *ICMA Handbook*:

- **Element 1 (climate transition strategy and governance).** The company has established concrete measures to achieve an ambitious target of 50 percent reduction by 2030 in its Scope 1 and 2 emissions, compared to the level of the emissions in 2013, and net zero by 2050. It is also striving for rapid social implementation of products and technology that contribute to global GHG reduction. On top of these efforts, a Carbon Neutral Strategy Council was set up with the purpose of promoting carbon neutrality within the company.

- **Element 2 (business model environmental materiality).** Mitigating climate change is the principal way of reducing environmental impact and building social value. The Use-of-Proceeds for the loan is aligned with the company's carbon neutral strategy, which is aligned with the Paris Agreement and Japan's technology roadmap. In addition, the LNG gas turbines can also be expected to utilize hydrogen by the future progress in technological development, further contributing to the mitigation of climate change.
- **Element 3 (science-based targets and pathways).** The company's targets and strategy are in alignment with the chemical sector roadmap. Medium- and long-term targets have been set for Scopes 1, 2, and 3. The interim target for 2030 including all Scopes 1, 2, and 3 has obtained SBTi certification[39]. Targets are also in alignment with the METI's Technology Roadmap for "Transition Finance" in the chemical sector. The construction of the funded LNG-fired power plant is positioned as one of the main measures to realize the company's 2030 ambitions and will contribute to the transition strategy over the medium- to long-term.
- **Element 4 (implementation transparency).** From 2013 to now, the company has invested and made decisions to invest JPY 80 billion to reduce GHG emissions. In addition, the company expects to invest JPY 120 billion by 2030, aiming at becoming carbon neutral. These investments include plant energy conservation measures, fuel conversions, production equipment upgrades at plants, chemical recycling of plastic resources, technologies such as CO_2 separation and CCU, etc. The company has introduced an internal carbon pricing system for investment decision making that reflects a carbon price of JPY 10,000 per ton since 2019.

CASE STUDY 2: IHI CORPORATION TRANSITION BOND

This is an example in which IHI Corporation issued a transition bond for JPY 20 billion to fund initiatives for Zero Emission Mobility, ammonia exclusive-firing solutions, build an ammonia value chain at its facilities, and to perform carbon recycling on site. The company developed its framework in accordance with roadmaps and guidelines from the METI, the Ministry of Land, Infrastructure, Transport and Tourism (MLITT), and the International Air Transport Association (IATA). The company used ICMA's four elements to determine its transition finance eligibility.

Fundraiser	IHI Corporation
Financial Institution	Mizuho Securities (structuring agent, lead manager) Nomura Securities (lead manager)
Issue Date	June, 2022
Value and Tenor	JPY 11 billion 5-year bond and JPY 9 billion 10-year bond

Assessment: The transition finance assessment was based on four criteria from the *ICMA Handbook*:

- **Element 1 (strategy and governance**). The company has set a long-term goal of achieving 2050 carbon neutrality across the entire value chain. The company's transition strategy is based on the results of risk scenario analyses with guidance from the TCFD and will be a key part of the company's business model transition. The IHI Group established the ESG (environment, social, and corporate governance) Management Promotion Committee in FY21 to examine basic policy and measures for ESG management, and to evaluate and improve the implementation status. The Environment Committee and the Carbon Neutral Task Force are under the umbrella of the ESG Management Promotion Committee to implement and follow up on group-wide measures.

39 GHG Emission Reduction Targets Certified under the Science Based Targets initiative are as follows. Scope 1 and 2: A reduction of 36% by 2030 (vs. FY2020), which equals to a reduction of 50% (vs. FY2013), and Scope 3: A reduction of 14% by 2030 (vs. FY2020)

- **Element 2 (materiality).** The company cites climate change, circular economy, and environmental protection as critical issues. The Project Change management policy clarifies the social issues the company should address (becoming carbon-free, disaster prevention and disaster mitigation, fulfilling lifestyles), the values that it can provide (create a world where nature and technology work in unity) and re-examines important issues.
- **Element 3 (science-based targets and pathways).** The company has set mid-term targets of 46% emissions reduction by 2030 in Scope 1 and 2, and 50% reduction by 2035 (in the Resources, Energy, and Environment Business Area that account for the majority of Scope 3). The number of emission-intensive businesses are expected to shrink by 2030, and the market for technologies related to renewable energy, hydrogen, ammonia, etc. are expected to grow. The company aims to develop these businesses into their core activities by expanding to new market segments (carbon neutral related businesses, hydrogen, ammonia, etc.) that will contribute to carbon neutrality. In the long term, their goal is to become carbon neutral by 2050 by riding the transition to an economy reliant on hydrogen, ammonia, and renewable energy. The company is implementing developing power generation technology using ammonia and verification projects for the social implementation of domestically produced engine-equipped vessels with ammonia fuels. In addition, in the future, anticipating a society in which ammonia use is expanding, the company aims to contribute to the construction of a value chain from the production to the use of ammonia. It also plans to implement CCUS and carbon dioxide monetization to streamline the transition from a hydrocarbon-centric economy.
- **Element 4 (transparency).** The company plans to invest JPY 380 billion over three years to create growth businesses set forth in its medium-term management plan. Over 30% of this amount will be allocated to hydrogen and ammonia-related technology development and electrification technologies. These growth businesses will address social issues by “Prevent and mitigate disasters,” “Become carbon-free,” and “Materialize fulfilling lifestyles” through air transportation systems, carbon solutions and maintenance and disaster prevention and mitigation. These goals will be achieved through a combination of stronger R&D efforts and measures such as electrification, new materials, advanced manufacturing technology, digital tools, and strategic acquisitions. The progress of R&D projects and the status of fund appropriations and their intended effects will be reported to the extent possible for disclosure.

APPENDIX

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1. GLOSSARY

Glossary of Terms

Carbon credits	Certificate representing carbon dioxide equivalent (CO_2e) that is either prevented from being emitted into the atmosphere or removed from the atmosphere
CCUS	The technological process of capturing carbon dioxide (CO_2) from or before it enters the atmosphere, and then transporting and storing it (carbon sequestration) permanently
Climate (carbon) neutral/net zero emissions	Cutting greenhouse gas emissions to close to zero, with any remaining emissions absorbed by forests and oceans
Climate Finance	Local, national or transnational financing – which can come from public, private and alternative sources– that is used to reduce emissions and support mitigation efforts to address climate change
Decarbonization	Reducing or removing carbon dioxide emissions, usually by using low carbon power sources
ERIA (Economic Research Institute for ASEAN and East Asia)	An international economic research and policy organization established in Jakarta, Indonesia in 2008 by a formal agreement among leaders of 16 countries in the East Asian region
General Corporate Purposes financing	Financing instrument to support a corporation's overall decarbonization strategy
GHG emissions	Also known as greenhouse gas emissions, these are gases (particularly CO_2) that trap heat in the atmosphere, causing climate change
Green Finance	Any financing that is created to benefit sustainable development
Green Bond / Loan	Any type of bond or loan instrument whose proceeds are used in part to fund projects that make a substantial contribution to an environmental objective (Green Projects), and that align with the core components of the *Green Bond Principles* / *Green Loan Principles*
IEA (International Energy Agency)	An autonomous intergovernmental body established in the framework of the Organisation for Economic Co-operation and Development (OECD) whose mission is to shape global energy policies for a secure and sustainable future
IPCC (Intergovernmental Panel on Climate Change)	An intergovernmental body of the United Nations that assesses the science related to climate change so that policymakers can use the information for mitigation efforts. It produces special reports requested by its members, as well as assessments on the state of scientific, technological and socio-economic climate change knowledge.
Just and orderly transition	Concept of moving toward decarbonization and climate sustainability while weighing the reliability of the energy supply and affordability of energy, avoiding social instability

Glossary of Terms

Nationally Determined Contributions	Climate action plans that are required by signers to the Paris Agreement. The plans, which are updated every five years, must include how countries will reach their emission reduction targets and what steps, systems, and financing they will use to ensure that their goals are met.
NGFS (Network for Greening the Financial System)	A global coalition of central banks and financial supervisors that formed to help ensure that the Paris Agreement goals would be met. It seeks to enhance the role of the financial system in managing climate risk and mobilizing capital for green and low-carbon investments.
The Paris Agreement	A legally binding international climate change treaty that sets a global framework for how countries should reduce greenhouse gas emissions. Its goal is to limit global warming to well below 2°C, preferably to 1.5°C, compared to pre-industrial levels. Article 4, paragraph 2 requires each county to document how it will achieve its reductions in plans known as nationally determined contributions (NDCs).
Pathway	A process or roadmap for how a country or company will reach its stipulated emissions targets. Also referred as climate (carbon) neutral/net zero pathways.
Science Based Target	Targets that are in line with the scale of reductions required to keep the global temperature increase below 2°C above pre-industrial temperatures
Social Finance	A type of financial services that manages investments to deliver both a social dividend and an economic return. It is often used to describe the lending and investment into social enterprises, charities, co-operatives, non-profits and other impact-focused organizations that address societal and environmental challenges.
Social Bond	Any type of bond instrument whose proceeds are used to fund projects that address or mitigate a social issue and/or seek to achieve positive social outcomes (Social Projects), and are aligned with the ICMA's four core components of *Social Bond Principles*
Sustainable Finance	While some organizations say this is when investment decisions consider environmental, social and governance issues, ICMA has a broader definition. It considers sustainable finance to include climate, green and social finance that also weighs the economic sustainability of the organizations being funded, as well as the stability of the overall financial system in which they operate (refer to *Sustainable Finance High-level definitions* for further details)
Sustainable Bond	Bond instruments whose proceeds are used to finance a combination of both Green and Social Projects (refer to *Sustainability Bond Guidelines* for further details)

Glossary of Terms

Sustainability-linked bond	Bond instruments in which the financial and/or structural characteristics are tied to whether the issuer achieves predefined sustainability/environmental, social, and governance objectives (refer to *Sustainability-Linked Bond Principles* for further details)
Sustainability-linked loan	Loan instruments and/or contingent facilities (such as bonding lines, guarantee lines or letters of credit) that are used to help the borrower achieve predetermined sustainability performance objectives (refer to the *Sustainability-Linked Loan Principles* for further details)
Taxonomies	Classification system that provides businesses with a common language and the means to identify whether or not a given economic activity is environmentally sustainable
Technology roadmaps	Roadmaps that outline the technologies that will be necessary to get specific industry sectors aligned with the Paris Agreement, showing which technology should be ready for use in what year
Transition activities	Activities that support a just and orderly transition to low-carbon economies by lowering rather than eliminating GHG emissions
Transition Finance	Financial support that helps companies in their long-term strategic efforts to reduce greenhouse gas emissions on the path to climate (carbon) neutral/net zero
Use-of-Proceeds financing	Financing instrument to support specific projects contributing to decarbonization

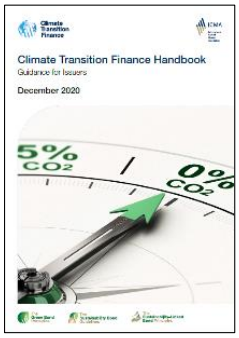
2. GUIDELINES: ICMA HANDBOOK 2020

As outlined in Chapter 3, *The Climate Transition Finance Handbook* (*ICMA Handbook*) published by ICMA is targeted at corporations seeking to raise finance in carbon-intensive sectors that have committed to reduce emissions in line with the Paris Agreement. However, companies in many different sectors wishing to raise debt that can be labelled as transitional finance often reference the *ICMA Handbook*. It recommends that transition-labeled debt instruments meet certain requirements in four elements, and it suggests the data and verification processes that should be used to gauge whether these requirements are met (Exhibit A1). The following descriptions of the four elements are from the *ICMA Handbook*.

Exhibit A1:

Transition Finance Issuance guidelines are available globally by ICMA – involving 4 key elements of requirements

Overview of ICMA Transition Finance Handbook…



- Objective is to provide issuer-level disclosures to finance the transaction, particularly for hard-to-abate sectors
- Designated guidelines when issuing green bonds, social bonds, sustainability bonds or sustainability-linked-bonds.

… which shows four key requirements for transition finance suitability

1. **Strategy**
   Financing purpose should be for enabling an issuer's climate change strategy
2. **Materiality**
   Climate trajectory should be materially relevant to business model
3. **Science-based**
   Science-based target and pathways
4. **Transparency**
   Transparency of underlying investment program

Source: ICMA, Climate Transition Finance Handbook 2020, 2020, https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Climate-Transition-Finance-Handbook-December-2020-091220.pdf

ELEMENT 1) CLIMATE TRANSITION STRATEGY AND GOVERNANCE

The ICMA recommends that the finance should support the implementation of an issuer's decarbonization strategy, which should be based upon credible commitments and changes in practices. The strategy should therefore also make clear how the business model will be adapted to assist a transition to a low-carbon economy.

Data. The information and indicators required to demonstrate an issuer's strategy are:

- A long-term target aligned with the goals of the Paris Agreement
- Applicable interim targets
- Information on the decarbonization levers that will be used, and strategic planning toward a long-term target to align with the goals of the Paris Agreement
- Clear oversight and governance of the decarbonization strategy
- Proof of a broader sustainability strategy

Verification. An independent technical review of an issuer's strategy can help ascertain whether the strategy is credible. It should include:

- Evidence that long- and short-term targets are aligned with the overall scenario
- Confirmation that the issuer's strategy to reach the targets is credible

ELEMENT 2) BUSINESS MODEL ENVIRONMENTAL MATERIALITY

The strategy and its decarbonization trajectory should be relevant to the material parts of the issuer's business model – that is, to its core activities, as these account for most of the issuer's carbon emissions. The issuer should also consider how the trajectory will affect the environment and society and attempt to mitigate any negative impact.

Data. Discussions of the issuer's transition trajectory should include consideration of materiality. Issuers can use market guidance from accounting standards bodies such as the Sustainability Accounting Standards Board.

Verification. An external review of an issuer's considerations regarding materiality may not always be appropriate. Issuers should turn to accountants for additional guidance.

ELEMENT 3) SCIENCE-BASED TARGETS AND PATHWAYS

The issuer's decarbonization strategy should include science-based targets and transition pathways. The planned decarbonization trajectory should be:

- Quantitatively measurable (using a consistent measurement methodology)
- Aligned with, measured against, or otherwise referenced to recognized, science-based trajectories
- Publicly disclosed (in financing filings) with interim benchmarks
- Supported by independent assessments or verification

Data. The ICMA notes that issuers can rely on several frameworks to help disclose their decarbonization plans. It suggests the following information and indicators be included:

- Short-, mid-, and long-term carbon-reduction targets aligned with the Paris Agreement
- Baseline carbon emissions
- Scenario utilized, and methodology applied (for example, ACT or SBTi)
- Carbon objectives covering all three scopes
- Targets calculated in both intensity and absolute terms

Verification. The independent review of an issuer's decarbonization strategy can include a technical review of an issuer's proposed decarbonization trajectory to assess its alignment with science-based trajectories. However, in the context of the accompanying debt instrument (for example, a Use-of-Proceeds bond in alignment with the Green Bond Principles), the issuer may opt for an external review that also addresses the issuer's overall trajectory.

ELEMENT 4) IMPLEMENTATION TRANSPARENCY

A decarbonization strategy requires the long-term, internal allocation of capital by the company along with governance and process changes. Both are crucial if future operations are to support the strategy. Market communication of an issuer's strategy should therefore provide transparency on the intended underlying investment program and its expected impact, including planned capital and operational expenditure, where feasible.

In addition, where a transition might negatively affect workers and communities, issuers should outline how they have incorporated consideration of a just transition and its social implications. This means balancing the positive and negative impacts of their strategy, ensuring that the substantial benefits of a green economy transition are shared widely, while also supporting those who stand to lose economically – whether they are countries, regions, industries, communities, workers or consumers.

Data. The suggested disclosures are:

- Information on the percentage of assets/revenues/expenditures/divestments aligned to the various levers of the issuer's transition strategy
- CAPEX roll-out plan consistent with the overall strategy and climate science
- Disclosure of CAPEX and OPEX plans and other financial metrics relevant to the decarbonization strategy. These can be made in a company's annual report, a sustainability report, or on its website.

Verification. Assurance or verification of CAPEX and OPEX plans is unlikely to be appropriate given the difficulty in predicting forward-looking expenditures. The issuer may consider providing an analysis of the extent to which outcomes matched the original plans, with explanations for variances on items such as spending.

3. ASSESSMENT CHECKLIST FOR TRANSITION FINANCE

Chapter 4 outlined four key questions FIs could ask to understand the baseline of fundraisers against the four ICMA elements. This section includes the consolidated checklist for FIs (Exhibit A2). This checklist could be used for FIs to conduct initial transition finance suitability assessments.

Exhibit A2:

Assessment checklist for Transition Finance

ICMA's key elements	Key questions	Sub questions	Check
1 Climate transition strategy and governance	What is a fundraiser's climate strategy?	Does the fundraiser's long-term climate ambition include net zero, climate (carbon) neutrality or is it Paris-aligned? (Namely, the objective of limiting global warming ideally to 1.5°C and, at the very least, to well below 2°C)	☐
		Has the fundraiser disclosed relevant interim targets?	☐
		Does the fundraiser disclose measurable levers toward decarbonization and strategic planning toward long-term targets to align with the goals of the Paris Agreement?	☐
		Does the fundraiser have clear oversight and governance in place to implement its climate strategy? For example, is there an organizational structure for the board of directors and/or an oversight committee to supervise climate change activities, as well as clearly defined roles for management to assess and run the climate-related initiatives?	☐
		Does the fundraiser have evidence of a broader sustainability strategy to mitigate relevant environmental and social externalities and to follow the 17 UN Sustainable Development Goals?	☐
		Is the transition strategy based on the risks and opportunities identified through the categorization framework of the Task Force on Climate-related Financial Disclosure (TCFD)?	☐
		Is the fundraiser's pathway to transition broadly in line with the respective region's pathway and sector roadmap? Also, is the fundraiser's transition strategy based on its own starting point?	☐
		Is the fundraiser's transition strategy disclosed in advance in the company's integrated report, sustainability report, statutory documents and other materials for investors and FIs?	☐
2 Business model environmental materiality	Is the climate strategy material to its overall business model?	Is the fundraiser's decarbonization strategy outlined in its business plan or annual report?	☐
		Is climate awareness evident in the operations of the company's core businesses?	☐
		Do the initiatives for achieving the transition strategy contribute to transforming core business activities that are environmentally material parts of the company today and in the future?	☐
3 Science-based targets and pathways	Is the climate strategy in line with Science-based targets and pathways?	Does the fundraiser state that its strategy, project, and short-, medium-, and long-term targets are aligned with a science-based, Paris-aligned pathway, that is a pathway to climate (carbon) neutral/net zero?	☐
		Does the fundraiser's short-, medium-, and long-term emissions reduction targets have a clear emission baseline — for the baseline year and the business-as-usual (BAU) trajectory — and formulate both in intensity and absolute terms?	☐
		Does the fundraiser refer to any scenarios used, methodologies applied and the GHG scope (Scope 1, 2, and 3) covered regarding their targets (for example, ACT, Science Based Targets initiatives (SBTi), etc.)?	☐
4 Implementation transparency	How transparent is the underlying investment program for the climate strategy?	Does the fundraiser have a published investment plan for achieving its specified climate goals in and/or related to its transition finance application that the FI can review?	☐
		If so, does the fundraiser disclose the percentage of assets/ revenues/ expenditures/ divestments aligned to its the climate goals?	☐
		Does the fundraiser have a capex roll-out plan consistent with the climate goals and science?	☐
		Does the investment plan outline the assumed climate-related outcomes and impacts with quantitative data where possible, along with the calculation methods and prerequisites?	☐

Source: ATF Study Group

4. CLIMATE BOND INITIATIVES: "FINANCING CREDIBLE TRANSITIONS"

In addition to the *ICMA Handbook*, other guidelines have been published, most notably *Financing Credible Transitions* by the Climate Bond Initiatives, an international organization working to mobilize global capital for climate action. FIs can credibly refer to this paper for guidance when assessing transition finance proposals. Aimed at investors, issuers, scientists, policymakers, and market analysts, Climate Bond Initiatives' white paper has two purposes:

- To define transition as a concept by presenting a starting point for the market to see a credible brown-to-green transition as ambitious, inclusive, and aligned with the Paris Agreement
- To propose a framework for proper use of the transition label and lay out clear roles for both a green and a transition label, with the understanding that transition differs for different entities

The paper aims to engage different stakeholder groups in helping establish what it calls "transition with impact."

- **Investors** – to work with the sell-side for a common definition of transition finance and encourage future transactions to be aligned with those principles.
- **Issuers** – to issue securities in line with the benchmarks proposed to ensure faster emission reductions.
- **Scientists, subject experts, and academia** – to help use the best available science and research to refine the definitions of transition pathways and fill in the gaps where needed.
- **Policymakers** – work to enact regulation that could assist in incentivizing this market to scale.
- **Market analysts** – test and use the transition concept to assess real transactions and financial products.

To ascertain eligibility for the transition label, the paper proposes five principles as well as categorization frameworks for activities and entities:

- **In line with 1.5°C trajectory** – all goals and pathways need to align with zero carbon by 2050, while also nearly halving emissions by 2030.
- **Established by science** – all goals and pathways must be led by scientific experts and be consistent globally.
- **Offsets don't count** – credible transition goals and pathways don't count offsets but should include upstream Scope 3 emissions.
- **Technological viability trumps economic competitiveness** – pathways must include an assessment of current and expected technologies. Even expensive technology, if viable, should be used to determine the decarbonization pathway for that economic activity.
- **Action, not pledges** – a credible transition is backed by operating metrics rather than future commitments.

In line with its principles, the paper addresses categories across a range of activities:

- **Near zero** – activities already at or near climate (carbon) neutral/net zero emissions that may require some further decarbonization but not a significant transition (for example, wind power generation).
- **Pathway to zero** – activities needed beyond 2050 and have a clear 1.5°C decarbonization pathway such as shipping.
- **No pathway to zero** – activities that are needed beyond 2050 but at present do not have a clear 1.5°C decarbonization pathway to 2050 (for example, long-haul passenger aviation).
- **Interim** – activities currently needed but that should be phased out by 2050 (for example, gas power generation with CCS, gas production for heavy industry).
- **Stranded** – activities that cannot be brought into line with global warming targets and have an alternative, low-emissions substitute (for example, electricity generation from coal).
- **No label** – activities that do not meet the principles and are not eligible for a label.

5. EXAMPLE PATHWAY

Current situation in Asia

For FIs assessing the transition finance potential of Asian corporations, one big challenge is the absence, to date, of fully developed government-published pathways. Many Asian governments are working on pathways that would show their movement toward climate (carbon) neutral/net zero by 2050, 2060, or 2070, but those pathways are almost all still under development (Exhibit A3). FIs therefore need to use an interim approach to evaluate transition finance requests by Asian corporations, at least until government-published pathway information becomes more available in Asia.

Exhibit A3:

Pathways as potential references for project and corporate assessments

Completed | Partially completed | N/A

Southeast Asia — World

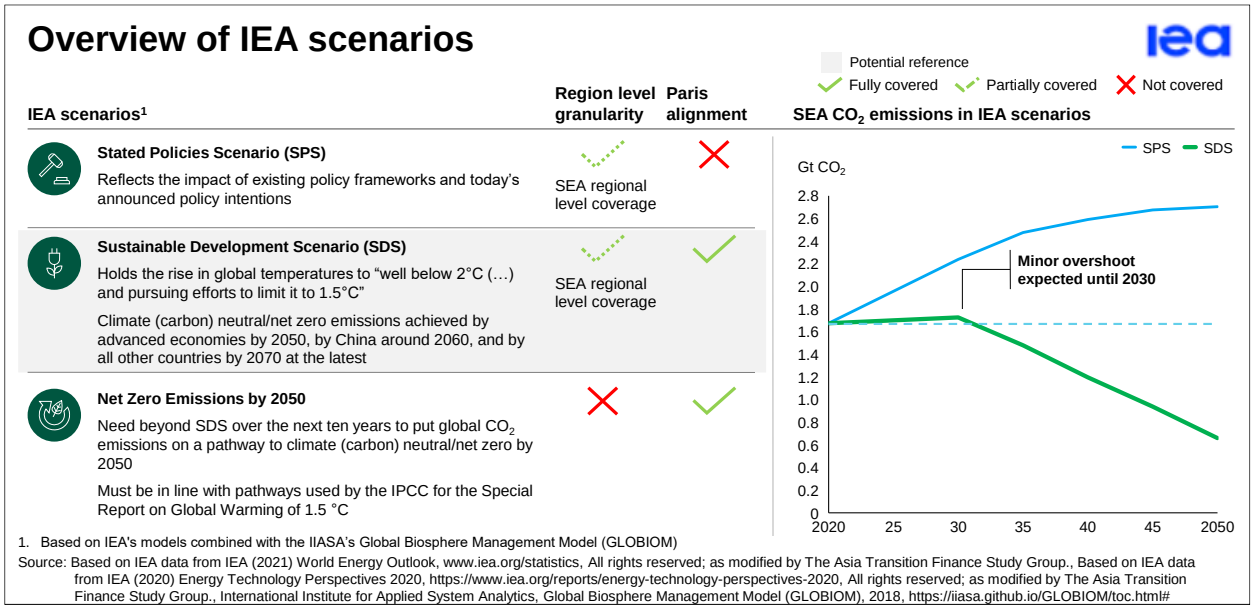
	Publisher	Paris-aligned pathway / pathway to climate (carbon) neutral/net zero scenarios; 2020=100		Sector coverage	Region/country coverage: ASEAN[1]	Singapore[2]	Indonesia[2]	Malaysia[2]	Thailand[2]	Vietnam[2]	Philippines
References in principle	Government/ Association				—	—	—	—	—	—	—
Potential references for use in the interim	A IEA	Sustainable development scenario	**2050:** 1.6C **NZ[4]:** AEs[5] by 2050, China around 2060, others by 2070	Energy, Industry, Transport, Buildings	✓	—	—	—	—	—	—
	B NGFS	Delayed transition scenario	**2050:** 1.8C **NZ:** N.A. (6.4 Gt CO_2 in 2050)	AFOLU[3], Chemicals, Buildings, Electricity, Transport, Cement, Steel	✓	✓	✓	✓	✓	✓	✓
	C ERIA	CN2050/2060 scenario in ASEAN	**2050:** Below 2.0C **NZ:** by 2060	Energy, Industry, Transport, LULUCF[6]	✓	Not yet publicly launched					

1 ASEAN has begun work on its taxonomy, 2. Net zero target exists, 3. Agriculture, Forestry, and Other Land Use, 4. Net zero, 5. Advanced Economies, 6. Land use, land-use change and forestry

Source: Based on IEA data from IEA (2021) World Energy Outlook, www.iea.org/statistics, All rights reserved; as modified by The Asia Transition Finance Study Group., Based on IEA data from IEA (2020) Energy Technology Perspectives 2020, https://www.iea.org/reports/energy-technology-perspectives-2020, All rights reserved; as modified by The Asia Transition Finance Study Group., NGFS, NGFS Climate Scenarios for central banks and supervisors, June 2021, https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf, ERIA, Decarbonization of ASEAN Energy Systems: Optimum Technology Selection Model Analysis up to 2060, 2022, https://www.eria.org/publications/decarbonisation-of-asean-energy-systems-optimum-technology-electionmodel-analysis-up-to-2060/

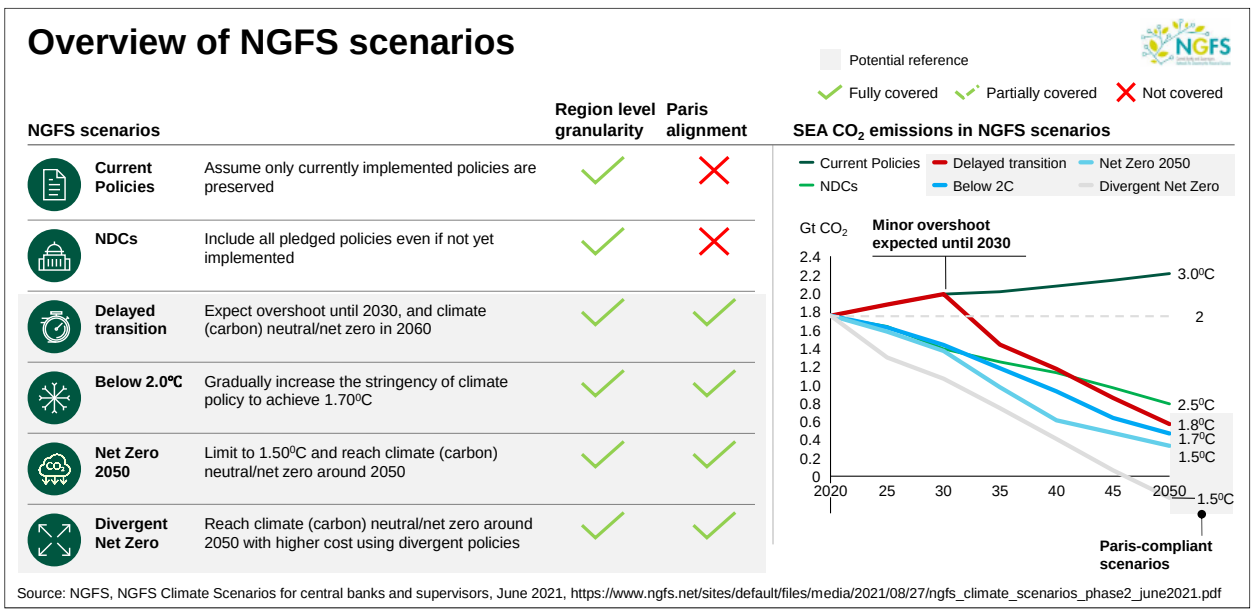
IEA. Published in May 2021, *Net zero by 2050: A roadmap for the global energy sector* is a comprehensive study of how to transition to a climate (carbon) neutral/net zero energy system by 2050, while ensuring stable and affordable energy supplies, providing universal energy access, and enabling robust economic growth. The report sets out a cost-effective and economically productive pathway that would result in a clean, dynamic, and resilient energy economy dominated by renewables. It also examines key uncertainties, such as the roles of bioenergy, carbon capture, and behavioral changes in reaching climate (carbon) neutral/net zero. However, the Net Zero Emissions scenario from IEA is a global scenario and does not cover a regional view. Another climate (carbon) neutral/net zero scenario from IEA is its Sustainable Development Scenario (SDS), which achieves climate (carbon) neutral/net zero emissions for advanced economies by 2050, for China around 2060, and for all other countries by 2070. Since SDS covers ASEAN on a regional-level (not a country-level) it is the only IEA scenario to understand regional-level granularity and the Paris-alignment in the ASEAN region as of September 2022 (Exhibit A4).

Exhibit A4:



NGFS. Developed a set of six emission scenarios (June 2021 edition) out of which four are climate (carbon) neutral/net zero scenarios to provide a common starting point for analyzing climate risks to the economy and financial system. Each scenario includes estimated temperatures in 2050 – Current policies (3.0°C), NDCs (2.5°C), Delayed transition (1.8°C), Below 2.0°C (1.7°C), Net Zero 2050 (1.5°C), and Divergent Net Zero (1.5°C). But only four, Delayed transition, Below 2°C, Net Zero 2050, and Divergent Net Zero, are climate (carbon) neutral/net zero scenarios. Since the four scenarios cover the ASEAN region as well as individual countries, FIs could reference them, as they have both regional-level granularity and are aligned with the Paris Agreement. Sectors covered include AFOLU (agriculture, forestry, and other land use); buildings; cement; chemicals; electricity; steel; and transport (Exhibit A5).

Exhibit A5:



ERIA. In collaboration with the Institute for Energy Economics, Japan, ERIA published a set of scenarios in May 2022, including a baseline case and pathways for achieving climate (carbon) neutral/net zero by 2050 or 2060. The focus is on ASEAN at a regional level. Sectors covered include energy, industry, land-use change, forestry, and transport. As some of them are climate (carbon) neutral/net zero and have ASEAN-level regional granularity, they could be used as reference scenarios to assess Paris alignment of the corporate strategy. Moreover, ERIA has recently published a study that aims to describe in quantitative terms the energy transition pathway necessary to achieve climate (carbon) neutral/net zero across 10 ASEAN countries through model analysis.

The model represents a long-term energy transition from 2020 to 2050 or 2060 and analyzes the relationship between energy consumption and CO_2 emissions. There are four scenarios: Baseline, CN2050/2060 without Carbon Sink, CN2050/2060 Stringent 2030, and CN2050/2060. Except for Baseline, these scenarios cover ASEAN regional-level granularity and are aligned with the Paris Agreement (Exhibit A6).

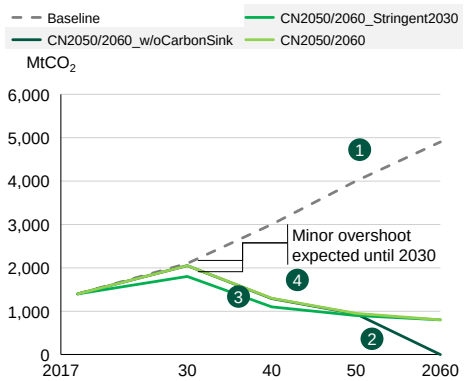
Exhibit A6:

Overview of ERIA scenarios

Potential reference | Fully covered | Partially covered | Not covered

ERIA scenarios for ASEAN	Region level granularity	Paris alignment
1 **Baseline** Does not assume any emission constraints by 2060	Country-level pathways not yet published	✗
2 **CN2050/2060 w/o Carbon Sink** Assume climate (carbon) neutral/net zero by 2050 in BRN and SGP, and by 2060 in the rest of ASEAN	Country-level pathways not yet published	✓
3 **CN2050/2060 Stringent 2030** Apply stringent emission constraints by 2030, consistent with IEA SDS	Country-level pathways not yet published	✓
4 **CN2050/2060** Achieve climate (carbon) neutral/net zero with natural carbon sink by 2060 in ASEAN	Country-level pathways not yet published	✓

SEA CO_2 emissions in ERIA scenarios



ERIA already discussed and aligned with each of the ASEAN members when crafting a pathway

Source: ERIA, Decarbonization of ASEAN Energy Systems: Optimum Technology Selection Model Analysis up to 2060, 2022, https://www.eria.org/publications/decarbonisation-of-asean-energy-systems-optimum-technology-selection-model-analysis-up-to-2060/

6. ICMA CLIMATE TECHNOLOGY FINANCE METHODOLOGIES REGISTRY

Released in June 2022, ICMA's *Climate Technology Finance Methodologies registry* is a list of tools to help issuers, investors, or financial intermediaries validate that their emission-reduction trajectories/pathways are science-based, specifically in the context of Element 3 of the *ICMA Handbook*. ICMA emphasizes that a multitude of initiatives can be used to support efforts to reach a climate (carbon) neutral/net zero economy, noting that many tools, methods, scenarios, and plans are available, with each playing a role tailored toward different audiences. Usually, these resources complement each other and can be combined. This list is for the validation of specific emission-reduction trajectories/pathways and is not comprehensive. As of September 2022, the suggested list includes, for example, SBTi and the United Nations Framework Convention on Climate Change – NDCs. More details can be found on the webpage of ICMA's Methodologies Registry.[40]

40 ICMA, Climate Transition Finance Handbook, December 2020, https://www.icmagroup.org/sustainable-finance/the principles-guidelines-and-handbooks/climate-transition-finance-handbook/

7. ASEAN TAXONOMIES

A taxonomy is a classification system that provides businesses with a common language and the means to identify whether a given economic activity is environmentally sustainable or not. Across Asia, multiple countries have produced national taxonomies (for example, Indonesia, Malaysia and Singapore). alongside a regional taxonomy formulated by ASEAN.

Current situation in Asia

Regional and national taxonomies published to date vary in their scope (with the EU Taxonomy being the most comprehensive), covering principles, country/sector pathways, and a list of eligible activities (Exhibit A7). By comparison, the Indonesia and Singapore (draft) taxonomies comprise both principles and lists of eligible activities, while the Malaysia and ASEAN taxonomies currently focus solely on principles and do not cover list of eligible activities (as of September 2022).

Exhibit A7:

Some taxonomies may include pathways, thresholds and a list of eligible activities, which could be useful for TF suitability assessment

Potentially used for TF assessment ○ Developed △ Under development ✓ Include ✓ Partially include ⊗ N/A

	ASEAN	Singapore	Indonesia	Malaysia	Thailand	Vietnam	EU
Development status	△ November 2021 (Version 1)	△ May 2022 (2nd draft)	○ January 2022 (Published)	○ April 2021 (Published)	△	△	○ February 2022 (Complementary Act)
Principle	✓	✓	✓	✓	TBD	TBD	✓
Country/sector-pathway	TBD	TBD	⊗	⊗	TBD	TBD	⊗
Threshold	TBD	✓ 3 sectors preliminary developed	⊗	⊗	TBD	TBD	✓
List of eligible activities	TBD	✓	✓	⊗	TBD	TBD	✓

Alignment with only taxonomies usually may not be enough for transition finance suitability assessment

1. The Securities Commission Malaysia is currently developing the principles-based SRI Taxonomy for the capital market, which is targeted to be released by end of 2022. The SRI Taxonomy will provide more clarity and guidance for the market in identifying sustainable investment assets or activities.

Source: Press release

Some taxonomies include pathways, list of activities, and thresholds, which can be useful for transition finance suitability assessment. However, countries vary in their compliance requirements, so the taxonomies that organizations need to check vary by country and also depend on whether they are ASEAN member states. Thus, it may be important to check both country and regional-level taxonomies for projects to be recognized for transition purposes in some countries (Exhibit A8): that is, depending on the specific country, either a country-level or regional taxonomy, or both, may need to be checked. One way to boost interoperability between taxonomies would be to ensure continuous dialogue between the ASEAN Taxonomy Board (ATB) and ASEAN countries on the interoperability of diverse country-level taxonomies within the ASEAN taxonomy.

Exhibit A8:

Both/either of country and regional taxonomies may need to be checked for transition finance

	Country A	Country B	Country C
Taxonomy development status	Regional taxonomy Country A taxonomy		Country C taxonomy
Application for TF	**Both regional and country** level taxonomy may need to be checked	**Only regional** level taxonomy may need to be checked as a temporary approach until country level taxonomy being in place	**Only country level** taxonomy may need to be checked
Examples Countries with country-level/regional taxonomy			

Source: ASEAN's and each region's taxonomy and press release

ASEAN

ATB published its first version of Taxonomy in 2021, and it might be updated in the future. The aim of creating its own taxonomy was that a common taxonomy for sustainable activities was critical for sustainable finance to succeed across the ASEAN region. The ASEAN taxonomy initiative was developed under the auspices of ASEAN finance ministers and central bank governors to drive the region's sustainability agenda by promoting sustainable activities and investments. It represents a major contribution to the region's sustainability efforts by consolidating efforts, providing consistency, and importantly, adding an ASEAN voice. The taxonomy seeks to foster credibility and secure global acceptance, while facilitating better allocation of capital as part of the climate (carbon) neutral/net zero transition. However, it does not yet include thresholds and the list of eligible activities that could be used for a transition finance suitability assessment to see if a technology in a targeted project is aligned with the Paris Agreement.

Five principles underpin the development and implementation of the ASEAN taxonomy:

- **Principle 1.** The ASEAN Taxonomy will be the overarching guide for all ASEAN member states, by providing a common language and complementing their respective sustainability initiatives.
- **Principle 2.** It will take into consideration widely used and other relevant taxonomies as appropriate and will be contextualized to facilitate an orderly transition toward a sustainable ASEAN.
- **Principle 3.** It is inclusive and beneficial to all member states.
- **Principle 4.** It sets out to provide a credible framework, including definitions, and where appropriate, is science-based.
- **Principle 5.** The ASEAN taxonomy will be aligned with the sustainability initiatives taken by the capital market, banking, and insurance sectors—or at least will not conflict with them.

The ASEAN taxonomy is based on a green, amber, red traffic-light system and designed around a tiered framework that builds on common principles as a foundation. Subsequent tiers comprise more layered definitions and criteria to cater to different states of readiness across ASEAN. The Foundation Framework is underpinned by environmental objectives and essential criteria to guide ASEAN member states in classifying economic activities. The Plus Standard offers additional guidance and scope for member states to further qualify and benchmark eligible green activities and investments.

The taxonomy is focused on a series of environmental objectives—climate-change mitigation, climate-change adaptation, protection of healthy ecosystems and biodiversity, and promoting resource resilience and transition to a circular economy—plus two essential criteria: "DNSH" and "Remedial measures to transition."

Singapore

With initial consultation in January 2021 and final consultation due in 2023, the Singapore taxonomy has been led by the Monetary Authority of Singapore through the Green Finance Industry Taskforce (GFIT). The taxonomy, which focuses on Singapore FIs operating in ASEAN, includes a list of technologies with strict CO_2 emission thresholds and associated timelines, although it only covers thresholds for three sectors: energy, transport, and real estate (Exhibit A9). It has been produced in conjunction with representatives of large banks and insurance companies, rating companies, and the Singapore Exchange.

Targeting green activities and transition activities, it focuses on eight sectors underpinned by two guiding principles: contribution to environmental objectives and DNSH. Its approach is a traffic-light classification (with "green" for energy activities benchmarked against the EU standard, for example) and a pre-determined list of technologies. The threshold ratchets down with the model for average emissions.

Exhibit A9:

Singapore taxonomy includes a list of technologies with strict CO_2 emission thresholds and their timeline

Overview

Led by: Monetary Authority of Singapore through the Green Finance Industry Taskforce (GFIT)

Published

- 1st Consultation on taxonomy in January 2021
- White Paper with initial list of transition activities in May 2021
- 2nd Consultation on taxonomy in May 2022
- Final consultation will be in 2023

Participants to standard making

- Representatives of large banks and insurance companies, rating companies, the Singapore Exchange

A Scope

- **Activity type**
  - — Green activities
  - — Transition activities
- **Geography**: Singapore (Aiming to expand to ASEAN countries)
- **Sector**: 8 focus sectors

B Guiding principles

- Contribution to environmental objectives
- DNSH

C Approach to classification

- **Pre-determined list of technologies by classification into "traffic light" based on**
  - – Thresholds for each sector (energy/transport/real estate have been developed)

Thresholds for energy activities; CO_2/kWh (life cycle emission)

	2022-25	2025-30	2030-35	2035-40	2040-50	Justification
Green	100g	100g	100g	50g	50g	EU threshold applied
Amber	350g	250g	150g	N/A	N/A	Starting point is based on current average of electricity generation Threshold ratchets down with the model for average emissions intensity of the grid
Red	>350g	>250g	>150g	>50g	>50g	…

  - – Do no significant harm (e.g. environmental damage associated with the development of a hydropower project). (to be developed)

Source: Green Finance Industry Taskforce, Identifying a Green Taxonomy and Relevant Standards for Singapore and ASEAN, 2022, https://abs.org.sg/docs/library/gfit-taxonomy-consultation-paper

Indonesia

Led by the Indonesian Financial Services Authority (OJK), this traffic-light-based taxonomy, published in January 2022, focuses on green and transition activities within the archipelago (Exhibit A10). It targets 17 sectors including energy from a perspective of "contribution to environmental objectives" and DNSH. It includes a list of eligible activities, but it does not have classification thresholds.

Participants in the standard-making include the financial services industry (especially members of the Sustainable Finance Task Force), the academic and research community, research and development institutions, international institutions such as USAID, IFC, OECD, NGOs such as WWF and YIDH, and relevant ministries.

Under the traffic-light system, activities are classified as follows:

Green (DNSH, applies minimum safeguard, provides positive impact to the environment, and aligns with the environmental objective of the taxonomy). Business activities that protect, restore, and improve the quality of environmental protection and management, as well as climate-change mitigation and adaptation, comply with the governance standards by government, and apply best practices at both the national and international level.

Yellow (DNSH). Determination of business benefits for environmental protection and management should still be conducted through measurement and support of other best practices.

Red (harmful activities). The business activities do not meet the yellow or green criteria.

Exhibit A10:

Indonesia taxonomy is a predetermined list of activities with various conditions

Overview

Led by: the Indonesian Financial Services Authority (OJK)

Published: January 2022

Participants to standard making

- Financial Services Industry (FSI), especially members of the Sustainable Finance Task Force
- Academic/research and development institutions
- International institutions: USAID, IFC, OECD
- NGOs: e.g., WWF, YIDH
- Relevant ministries

A Scope

- **Activity type**
  - Green activities
  - Transition activities
- **Geography**: Indonesia
- **Sector**: 17 sectors including energy

B Guiding principles

- Contribution to environmental objectives
- DNSH

C Approach to classification

- Activities of Green/Yellow need to meet multiple conditions based on the following concept

Green (DNSH, applies minimum safeguard, provides positive impact to the environment, and aligns with the environmental objective of the taxonomy	Business activities that protect, restore, and improve the quality of environmental protection and management, as well as climate change mitigation and adaption, and comply with the governance standards by government, and apply best practices at both the national and international level
Yellow (DNSH)	Determination of business benefits for environmental protection and management must still be conducted through measurement and support of other best practices
Red (Harmful activities)	The business activities do not meet the yellow and/or Green criteria threshold

Source: Financial Services Authority, Indonesia Green Taxonomy, 2022, https://www.ojk.go.id/keuanganberkelanjutan/Uploads/Content/Regulasi/Regulasi_22012011321251.pdf

Malaysia

Malaysia's taxonomy initiative was led by the government, through the Malaysian Central Bank (Bank Negara Malaysia). Published in April 2021 (Exhibit A11), participants included Bank Negara Malaysia, the Risk Management sub-committee of the Joint Committee on Climate Change (JC3), representatives of large banks and insurance companies, as well as WWF for Nature (Malaysia and Singapore offices).

Covering green and transition activities, the taxonomy focuses on Malaysia across all sectors with "contribution to environmental objectives," DNSH, and "remedial measures to transition" as guiding principles. Its classification system is based around; 1) A positive impact on climate change objectives (that is, mitigation (GP1) and adaptation (GP2); 2) Potential negative effects to the broader environment (GP3); and 3) Measures taken (or not taken) to reduce harmful practices (GP4). However, it does not include thresholds and the list of eligible activities.[41]

41 The Securities Commission Malaysia is currently developing the principles-based SRI Taxonomy for the capital market, which is targeted to be released by end of 2022. The SRI Taxonomy will provide more clarity and guidance for the market in identifying sustainable investment assets or activities.

Exhibit A11:

Malaysia taxonomy is a principle-based taxonomy, which can accommodate various types of transition technologies

Overview

Led by: Government through the Malaysian Central Bank (Bank Negara Malaysia)

Published: April 2021

Participants to standard making

- Bank Negara Malaysia
- Risk Management sub-committee of the Joint Committee on Climate Change (JC3) : composed by representatives of large banks and insurances
- The World Wide Fund for Nature (Malaysia and Singapore offices) also provided substantial inputs

A Scope

- **Activity type**
  - Green activities
  - Transition activities
- **Geography**: Malaysia
- **Sector**: Not limited

B Guiding principles

- Contribution to environmental objectives
- DNSH
- Remedial measures to transition

C Approach to classification

- Classification system is constructed based on the following considerations
  - (a) Positive impact on climate change objectives i.e. mitigation (GP1) and adaptation (GP2);
  - (b) Potential negative effects to the broader environment (GP3); and
  - (c) Measures taken (or not taken) to reduce harmful practices (GP4).

		Economic activity (transaction level)		Overall business	
		GP1 Climate change mitigation	GP2 Climate change adaptation	GP3 No significant harm to environment	GP4 Remedial efforts to promote transition
Classification					
Climate supporting	**C1**	GP1 or GP2 or both		✓	
Transitioning	**C2**	GP1 or GP2 or both		×	✓
	C3	×		×	✓
Watchlist	**C4**	GP1 or GP2 or both		×	×
	C5	×		×	×

Source: Central Bank of Malaysia, Climate Change and Principle-based Taxonomy, April 2021, https://www.bnm.gov.my/documents/20124/938039/Climate+Change+and+Principle-based+Taxonomy.pdf

8. TECHNOLOGY ROADMAPS: JAPAN EXAMPLE

The Japanese government has published sample technology roadmaps[42] for promoting transition finance for several sectors: cement, chemicals, gas, iron and steel, oil, power, and pulp and paper. The roadmaps, which were crafted by a collaboration of industry representatives, technology and finance experts, academics and government officials, provide a concrete direction to achieve climate (carbon) neutral/net zero by 2050 for carbon-intensive industries. Companies can refer to the roadmap examples when considering climate-change measures using transition finance. The roadmaps are designed to assist FIs in determining whether a company's strategies and initiatives toward decarbonization qualify for transition finance when the company raises funds.

9. CARBON CREDIT

What is a carbon credit?

A carbon credit is a certificate representing a CO_2e that is either prevented from being emitted into the atmosphere or removed from the atmosphere. In this context, carbon offsetting refers to the use of carbon credits to compensate or neutralize GHG emissions emitted elsewhere.

High-quality carbon credits are certified to a reputable standard by an independent third-party to verify that their impact is:

- Real
- Enforceable
- Measurable /verifiable
- Legally attributable (avoids double counting)
- Permanent
- Additional

42 METI, Basic Guidelines on Climate Transition Finance, May 2021, https://www.meti.go.jp/english/policy/energy_environment/transition_finance/index.html

What systems are in the market?

Carbon credits based on three main types of standards (UNFCC, domestic, independent) are traded across different carbon markets and systems—voluntary (led by the private sector), compliance, and country-to-country transfer of mitigation outcomes (both led by governments). There are three current market systems in place:

1. **Voluntary carbon market.** Under this system a developer voluntarily sets up a project that either avoids certain emissions or removes emissions. Projects are registered under a standard and verified by an independent body. Carbon credits equivalent to the mitigation achieved are issued to the project. The developer then sells the carbon credits to companies, governments, or individuals. This system comprises diverse carbon credits which vary based on key characteristics. Certification is required to issue voluntary carbon credits with transactions conducted over the counter or via exchange.
2. **Compliance carbon market.** The regulator sets a fixed limit on emissions ("cap") and auctions allowances (typically one allowance grants the right to emit one metric ton of CO_2e). Regulated firms can choose to reduce emissions or buy allowances from other firms on a secondary market. This system is based around standardized allowances with many compliance systems around the world accepting carbon credits. In Asia, compliance systems vary in structure and development stage by jurisdiction.
3. **Country-to-country trading.** Article 6 of the Paris Agreement facilitates transfer of mitigation outcomes (emissions reductions) internationally for use toward individual countries' NDCs. Countries agree (via bilateral agreement) on transferring these internationally transferred mitigation outcomes (ITMOs), but they cannot be double counted by both countries in the transaction. Participating countries authorize accounting towards their NDCs. Details still under negotiation.

How relevant is carbon credits to transition finance?

In general, carbon credits are considered to contribute to direct carbon emission reduction, and often are included in corporate/project decarbonization plans. Nevertheless, as the standard for carbon credits for decarbonization pathways is under development, it is important to be aware of different arguments over their use. Broadly, carbon credits are regarded either as a driver for decarbonization or a complement of decarbonization. Organizations like Voluntary Carbon Markets Integrity Initiative (VCMI) are believers in the role of carbon credits as an enabler to promote private investment in climate mitigation efforts. Organizations like the Integrity Council consider carbon credits as an important yet complementary means rather than a main driver for decarbonization. But there are also detractors. Some organizations refer to carbon credits as "a license to pollute" because they allow companies to continue their carbon emissions and unsustainable behaviors.

Despite such perceived association with direct carbon emission reduction, global climate finance standards and taxonomies do not presently stipulate the relevancy between carbon credits and transition finance. Some organizations expressly oppose carbon credits for transition finance, while others do not mention the use of carbon credits in their guidelines or taxonomy. Although the ATF Study Group recognizes the challenges of doing so, given divergent views among stakeholders, creation of practical guidelines for the use of carbon credits in assessing transition finance eligibility may be needed (Exhibit A12).

Exhibit A12:

Global standards for climate finance and taxonomies mostly either do not support carbon credits or do not mention them

Carbon credits in global standard and other taxonomies

	Non-supportive for carbon credits	Not mentioned	Under development
Global standard	Climate Bonds Initiatives "Credible transition goals and pathways **don't count offsets" (carbon credits)**	ICMA Climate Transition Finance Handbook	
Taxonomy	EU taxonomy "Not considered suitable for climate mitigation, separate and distinct from impacting activities, **last step of the mitigation hierarchy**, after harm has taken place, not guaranteed to remediate the harm[1]"	China taxonomy Indonesia taxonomy Malaysia taxonomy	ASEAN taxonomy Singapore taxonomy

1. EU position on carbon credits is increasingly unfavorable (Certified Emission Reductions are no longer swappable with EU Allowances since 2020)

Source: ATF Study Group, press release,
Climate Bond Initiative, Financing Credible Transitions: Summary note, 2020, https://www.climatebonds.net/files/reports/transition-summary-note-092020-report-page.pdf
Platform on Sustainable Finance, Part A Methodological Report, March 2022,
https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/220330-sustainable-finance-platform-finance-report-remaining-environmental-objectives-taxonomy_en.pdf

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