

# ASEAN TAXONOMY FOR SUSTAINABLE FINANCE

VERSION 3



## FOREWORD

### Message from the Chair of the ASEAN Taxonomy Board (ATB)

The ATB is pleased to announce that the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy) Version 3 (Version 3) has taken effect, following a stakeholder consultation process from June to October 2024. ASEAN Taxonomy Version 3 was preceded by the publication of the ASEAN Taxonomy Version 2 (Version 2) in March 2023, which became effective on 19 February 2024 after incorporating feedback from stakeholder consultation.

The ASEAN Taxonomy is science-based, while being inclusive to cater to the different development stages of Association of Southeast Asian Nations (ASEAN) Member States (AMS). Version 1 served to provide the overall framework of the ASEAN Taxonomy. The ASEAN Taxonomy is being developed progressively and will be periodically reviewed to keep abreast with the global sustainability agenda and technological advancements for continued relevance and effectiveness. Since the establishment of the ATB under the auspices of the ASEAN Finance Ministers and Central Bank Governors' Meeting in March 2021, efforts to grow the sustainable finance ecosystem have accelerated commendably. Since June 2023, the Thailand Taxonomy Phase 1, Singapore-Asia Taxonomy, Indonesia Taxonomy for Sustainable Finance (ITSF) and Philippine Sustainable Finance Taxonomy Guidelines (SFTG) have been released by the respective AMS. Meanwhile, the Thailand Taxonomy Phase 2 is undergoing stakeholder consultation as at December 2024. Significant effort has been expended to ensure key design elements are aligned including thresholds for relevant Activities between the ASEAN Taxonomy and these national taxonomies, thus reinforcing the ASEAN Taxonomy's role as the common language for sustainable finance in the region and the importance of an inclusive, overarching guide for the region. At the same time, the transition imperative advocated in the ASEAN Taxonomy has gained significant traction globally, and all AMS taxonomies released to date have incorporated transition activities and guidance in their respective documents. Such efforts collectively support an orderly and just transition in our ASEAN region.

The ATB is cognisant of the need for the ASEAN Taxonomy to facilitate equivalence amongst AMS taxonomies and to ensure interoperability with other widely used and relevant international taxonomies. Great care was taken to obtain and incorporate useful input from stakeholders in 2024, which contributed to the finalisation of ASEAN Taxonomy Version 3. Input from stakeholders included the need for additional guidance on usability and implementation, particularly in clarifying definitions and terms. The ASEAN Taxonomy's multi-tier approach comprising the principles-based Foundation Framework (FF) and the Plus Standard (PS), facilitates inclusion among AMS, allowing for different levels of adoption depending on individual AMS' readiness. The approach to setting the Technical Screening Criteria (TSC) for the PS addresses both the principles of credibility and inclusiveness, where the 'Green' tier is benchmarked to the 1.5°C Paris Agreement target and the 'Amber' tiers promote inclusivity. ASEAN Taxonomy Version 3 now includes the TSC for focus sectors, namely Transportation and Storage as well as Construction and Real Estate that has incorporated input from stakeholder consultation. This means that the ASEAN Taxonomy now covers the completed Foundation Framework, the TSC for the Energy<sup>1</sup> Sector as well as the Carbon Capture, Utilisation and

---

<sup>1</sup> Referring to Activities under Electricity, Gas, Steam and Air Conditioning Supply in Annex 1 to the ASEAN Taxonomy.

Storage (CCUS) enabling sector, in addition to Transportation and Storage, and Construction and Real Estate, across all four Environmental Objectives (EOs). The completed FF allows any AMS to apply the framework to immediately commence their sustainability journey in a consistent and structured manner.

The concept of emissions reduction has been clearly set out in ASEAN Taxonomy Version 1 and Version 2 and is consistent with the First Global Stocktake<sup>1</sup> released on 13 December 2023 that called for a common but differentiated approach. Specifically, the First Global Stocktake recognised the need for rapid reductions in global emissions and to consider different national circumstances, pathways and approaches. One of the approaches highlighted was transitioning away from fossil fuels in energy systems in order to achieve net zero by 2050, in keeping with the science. The ASEAN Taxonomy Version 3 reinforces this approach where, the 'Green' tier of the ASEAN Taxonomy generally makes reference to widely used international taxonomies such as the EU Taxonomy and where relevant, will be tailored according to ASEAN's unique circumstances. As ASEAN considers economic recovery and resilience, climate action and sustainability, the need to manage energy security through clean energy investments becomes more pressing. The ASEAN Centre for Energy, in its 7<sup>th</sup> ASEAN Energy Outlook report, projects that ASEAN will become a net importer of natural gas and coal in 2025 and 2039 respectively and assumes continuous utilisation of fossil fuels based on its baseline scenario (ASEAN Centre for Energy, 2022). In response, the ASEAN Taxonomy Version 2 included guidance on coal phase-out (CPO) TSC, which was a global first for a regional taxonomy. Since then, two AMS have also provided CPO guidance in their respective taxonomies. The ATB hopes that this will provide additional impetus for taxonomies to play a significant role in encouraging early action to reduce the region's reliance on coal as a major energy source. When approached correctly, the CPO guidance can serve as a powerful tool for a just and orderly transition and the ATB looks forward to continuing further dialogue with the international community and other stakeholders on the CPO criteria of the ASEAN Taxonomy.

The ATB is encouraged by the international and regional discussions on the ASEAN Taxonomy, including how it can provide a versatile model for addressing constituents with varying starting points and circumstances. The ATB also notes that the ASEAN Taxonomy has been used in various Second Party Opinion assessments from June to October 2024 by companies that have raised sustainable financing in Thailand and Malaysia. The ATB's mission continues as we consider regional and international advancements in the development of TSC for other focus and enabling sectors, as well as to raise awareness and encourage use of the ASEAN Taxonomy.

The ATB is grateful to the members of ASEAN Capital Markets Forum, the ASEAN Insurance Regulators Meeting, the ASEAN Senior Level Committee on Financial Integration, and the ASEAN Working Committee on Capital Market Development, other stakeholders and all who have contributed towards the finalisation of ASEAN Taxonomy Version 3. We look forward to continued engagement with stakeholders during the development of the ASEAN Taxonomy Version 4 to ensure that the needs of financial institutions and the real economy continue to be considered. In so doing, the ATB aims to achieve our mandate of developing, maintaining and promoting an ASEAN Taxonomy that meaningfully and effectively helps to orientate capital towards a

---

<sup>2</sup> Paragraph 28(d) of the First Global Stocktake of the Conference of Parties serving as the meeting of the Parties to the Paris Agreement

sustainable ASEAN, and enables each AMS to commence its transition journey immediately, consistent with ASEAN's sustainability ambition.

Mardini Eddie  
Chair  
ATB

# CONTENTS

- FOREWORD** ..... 2
- CONTENTS** ..... 5
- ABBREVIATIONS AND DEFINITIONS** ..... 8
- EXECUTIVE SUMMARY** .....15
- 1. INTRODUCTION** .....17
  - 1.1. General Lead-in.....17
  - 1.2. ASEAN Taxonomy Updates .....18
    - 1.2.1. Stakeholder Consultation .....18
    - 1.2.2. National Taxonomy Development and Alignment .....20
    - 1.2.3. Syndication Exercise .....21
    - 1.2.4. Interoperability with International Taxonomies .....22
  - 1.3. Coal Phase-out.....23
- 2. PRINCIPLES FOR THE ASEAN TAXONOMY** .....24
  - 2.1. Scope and Application.....24
  - 2.2. Rationale for ASEAN Taxonomy Design.....24
  - 2.3. Selection of Focus Sectors for the PS .....25
- 3. ASEAN TAXONOMY CONCEPTS AND ELEMENTS** .....28
  - 3.1. Environmental Objectives.....28
    - 3.1.1. EO1: Climate Change Mitigation .....28
    - 3.1.2. EO2: Climate Change Adaptation.....29
    - 3.1.3. EO3: Protection of Healthy Ecosystems and Biodiversity .....30
    - 3.1.4. EO4: Resource Resilience and the Transition to a Circular Economy.....31
  - 3.2. Essential Criteria .....33
    - 3.2.1. EC1: Do No Significant Harm .....33
    - 3.2.2. EC2: Remedial Measures to Transition .....33
    - 3.2.3. EC3: Social Aspects.....33
  - 3.3. Assessment Approaches.....35
    - 3.3.1. Foundation Framework.....35

3.3.2. Plus Standard.....	35
3.4. Activities.....	35
3.5. Technical Screening Criteria.....	35
3.6. Classification System .....	36
3.6.1. Classification for the FF and PS .....	37
3.6.2. Tiers for the PS .....	37
3.6.3. Impact of DNSH and RMT on Classification status.....	38
<b>4. GUIDELINES FOR THE MAINTENANCE OF THE ASEAN TAXONOMY .....</b>	<b>39</b>
4.1. General Concepts .....	39
4.1.1. Actions by the ASEAN Taxonomy Board.....	39
4.1.2. Actions by the ASEAN Member States.....	40
4.2. Maintenance of Tiers and TSC .....	41
4.2.1. TSC Review and Adjustment.....	41
4.2.2. Establishment and Role of TSC Review Body .....	41
4.2.3. Tiers and TSC Maintenance Tasks.....	42
4.2.4. Tiers and TSC Maintenance Cycle .....	42
4.2.5. Considerations in TSC Setting.....	44
4.2.6. Sunsetting .....	44
4.2.7. Future pathway of the Tiers within TSC Activities .....	44
4.3. Process and Maintenance of other Components .....	45
4.3.1. Review and Updating of Components .....	45
4.3.2. Migration from the FF to the PS.....	45
<b>5. GUIDANCE FOR THE ASSESSMENT OF ACTIVITIES.....</b>	<b>46</b>
5.1. Assessment Approach.....	46
5.1.1. Generic Assessment of an Activity .....	46
5.1.2. Selecting Assessment Approaches .....	46
5.1.3. Primacy of AMS in Setting of Policy.....	48
5.2. User Entry Point .....	48
5.3. Assessment using the FF .....	49
5.3.1. Illustrative end-to-end process assessment of an Activity using the FF .....	49
5.3.2. EO1 Assessment under the FF .....	49
5.3.3. EO2 Assessment under the FF .....	51
5.3.4. EO3 Assessment under the FF .....	53

5.3.5. EO4 Assessment under the FF .....	55
5.3.6. Assessment of Essential Criteria .....	58
5.4. Assessment using the PS.....	63
5.4.1. Applicability of TSC .....	63
5.4.2. Assessment of the contribution of the Activity to the EO.....	64
5.4.3. Assessment of DNSH.....	64
5.4.4. Remedial Measures to Transition .....	64
5.5. Assessment of Social Aspects.....	64
<b>6. CONCLUSIONS AND WAY FORWARD .....</b>	<b>69</b>
6.1. Expansion of Activities and EOs in the PS.....	69
6.2. Taxonomy Applications .....	69
6.3. Classification of entities, portfolios, and financial instruments.....	72
6.3.1. Assessment procedures other than Use of Proceeds .....	73
6.3.2. Grandfathering .....	73
6.3.2.1. Grandfathering of Bonds.....	73
6.3.2.2. Grandfathering of Other Financial Instruments.....	75
<b>REFERENCES .....</b>	<b>76</b>
<b>APPENDIX A1: VERSION 1 STAKEHOLDER CONSULTATION .....</b>	<b>79</b>
<b>APPENDIX A2: VERSION 2 STAKEHOLDER CONSULTATION .....</b>	<b>83</b>
<b>APPENDIX A3: VERSION 3 STAKEHOLDER CONSULTATION .....</b>	<b>87</b>
<b>APPENDIX B: COAL PHASE-OUT .....</b>	<b>90</b>
<b>APPENDIX C: USER ENTRY POINT WORKED EXAMPLE .....</b>	<b>92</b>
<b>APPENDIX D: FF – EO ASSESSMENT USE CASES.....</b>	<b>95</b>
<b>APPENDIX E: PS – TSC APPLICABILITY USE CASE.....</b>	<b>111</b>
<b>APPENDIX F: PS ASSESSMENT USE CASE .....</b>	<b>113</b>
<b>APPENDIX G: ACTIVITIES CLASSIFIED RED.....</b>	<b>116</b>
<b>LIST OF ANNEXES.....</b>	<b>117</b>

## ABBREVIATIONS AND DEFINITIONS

Term	Abbreviation	Definition
Activity	-	An Activity which may be assessed for classification under the ASEAN Taxonomy. An Activity takes place when resources such as capital, goods, labour, manufacturing techniques or intermediary products are combined to produce specific goods or services. It is characterised by an input of resources, a production process and an output of products (goods or services). For the purposes of assessment, an Activity may be defined as an expansion or significant upgrade of an existing Activity.
Activity Code	AC	A code used by the ASEAN Taxonomy to define individual Activities within an ISIC Group.
ASEAN Capital Markets Forum	ACMF	A high-level grouping of capital market regulators from all 10 ASEAN jurisdictions.
ASEAN Finance and Central Bank Deputies' Meeting	AFCDM	Meeting of ASEAN Finance and Central Bank Deputies.
ASEAN Finance Ministers' and Central Bank Governors' Meeting	AFMGM	Meeting of ASEAN Finance Ministers and Central Bank Governors.
ASEAN Insurance Regulators' Meeting	AIRM	Platform to strengthen the insurance cooperation in the developments of insurance regulatory and supervisory frameworks and research and capacity building.
ASEAN Member State	AMS	In reference to one or more of the 10 members of the Association of Southeast Asian Nations.
ASEAN Taxonomy Board	ATB	A body set up under the auspices of the AFMGM to develop, maintain and promote a multi-tiered ASEAN Taxonomy.
Assessor	-	Person or organisation which assesses an Activity and assigns a classification on this basis.
Assessment	-	Process by which the applicability of a classification to an Activity is ascertained.
Association of Southeast Asian Nations	ASEAN	Association of 10 member states in Southeast Asia, which promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration between its members and countries in the Asia-Pacific.



Building Research Establishment Environmental Assessment Method	BREEAM	A sustainability assessment methodology recognised and used worldwide, for masterplan projects, infrastructure, and buildings. It aims to set standards for the environmental performance of buildings through the design, specification, construction, and operation phases; and can be applied for both new developments as well as refurbishments.
Carbon Capture, Utilisation and Storage	CCUS	The capture of CO <sub>2</sub> from large point sources, such as power generation or industrial facilities. If not being used on-site, the CO <sub>2</sub> is compressed and transported to be used in a range of applications or injected into deep geological formations.
Carbon lock-in		Carbon lock-in occurs when transitioning to cleaner and more sustainable energy sources is more difficult due to the existing infrastructure and economic systems being built around the use of carbon-based fuels.
Carbon Risk Real Estate Monitor	CRREM	Tool that helps the real estate industry reduce climate risks by aligning with decarbonisation goals.
Classification		<p>Colour-coded system used in the ASEAN Taxonomy for identifying the degree to which an Activity is sustainable through its contribution to an EO. Classification levels are 'Green', 'Amber' and 'Red'. To be classified as 'Green' or 'Amber', an Activity must:</p> <ol style="list-style-type: none"> <li>1. Result in a positive benefit to one or more EOs; or</li> <li>2. Create some form of utility whilst displacing another provider of that utility which detracts from an EO or EOs.</li> </ol> <p>A 'Red' classification means that an Activity is not aligned with the ASEAN Taxonomy.</p>
Climate Bonds Standard	CBS	Labelling scheme with criteria allowing certification of bonds and loans as consistent with a 2°C warming limit.
Coal phase-out	CPO	An Activity whereby processes involving combustion of coal, such as coal powered generation of electricity, are shut down over time in line with aims to reduce GHG emissions. Coal phase-out is considered an Activity which may receive classification under the ASEAN Taxonomy.
Coal-fired Power Plant	CFPP	A power station which generates electricity from the combustion of coal.
Commencement		Unless otherwise stated, 'Commencement' of an Activity refers to:

		<p>1. <u>Where Activity requires significant infrastructure</u>: the start of the on-site construction, upgrade or expansion of the facilities required to conduct the Activity. For a large construction project, Commencement shall normally mean the same as NTP; or</p> <p>2. <u>Where Activity does not require significant infrastructure</u>: the start of operations and the provision of the utility intended by that Activity.</p> <p>For the purposes of assessment, Commencement may also be defined as an expansion or significant upgrade of an existing Activity.</p>
Common Ground Taxonomy	CGT	A list of green and sustainable economic activities recognised bilaterally by China and the European Union (EU); the CGT shows how the two taxonomies map with each other.
Contribution		Contribution made by an Activity towards achieving an EO.
Company		In the context of ASEAN Taxonomy, the term 'Company' means the organisation seeking classification of an Activity.
Do No Significant Harm	DNSH	The principle by which Activities may not be classified as 'Green' or 'Amber' by the ASEAN Taxonomy if they have resulted in will result in unremedied significant harm which has been caused or will be caused to one or more of the EOs by an Activity, or any actions required to implement the Activity.
Economic Research Institute for ASEAN and East Asia	ERIA	International organisation established to conduct research activities and make policy recommendations for further economic integration in the East Asia.
Electric Vehicle	EV	A vehicle that uses electric motors for propulsion.
Environmental Impact Assessment / Environmental and Social Impact Assessment	EIA / ESIA	A comprehensive document of a project's potential environmental (and social risks) and impacts.
Environmental Objectives	EO	Environmental Objectives which the ASEAN Taxonomy is intended to facilitate.
Environmental, Social and Governance	ESG	Factors that are considered in decision making that incorporate sustainability considerations.
Essential Criteria	EC	Minimum criteria which must be fulfilled when implementing an Activity. The EC are DNSH, RMT and SA.

Energy Use Intensity	EUI	A metric used to measure a building's annual energy use, often used to benchmark a building by expressing its energy use as a function of its size or other characteristics.
European Commission	EC	Executive branch of the EU.
European Union	EU	Supranational political and economic union of 27 member states.
Financial Close	FC	Financial Close refers to the completion of the financial arrangements and agreements necessary for a project's funding and commencement of construction or operation.
Foundation Framework	FF	Approach for assessing the contribution of Activities which is based on Guiding Principles.
Free and Prior Informed Consent	FPIC	Specific right that pertains to indigenous peoples which allows them to give or withhold consent to a project that may affect them or their territories.
Grandfathering		The basis of the classification of a financial instrument after the TSC has changed or the Activity Tier to which it applies has been sunset.
Greenhouse Gases	GHG	Gases that absorb and emit radiant energy within the thermal infrared range, causing the greenhouse effect.
Indonesia Taxonomy for Sustainable Finance	ITSF	Classifies economic activities to guide financing towards Indonesia's sustainability goals and net zero target.
Information and Communications Technology	ICT	Technology related to unified communications and the integration of telecommunications and computers, and necessary enterprise software, middleware, storage and audio-visual, that enable users to access, store, transmit, understand and manipulate information.
Insurance Commission Philippines	ICP	Government agency that regulates and supervises the insurance, pre-need, and health maintenance organisation sectors in the Philippines.
International Capital Market Association	ICMA	Self-regulatory organisation and trade association for participants in international capital markets.
International Standard Industrial Classification	ISIC	Standard United Nations Statistics Division (UNSD) classification of economic activities.
Island System		A collection of grid-connected power generation, electrical distribution, storage, control assets and loads, which have the ability to operate together independently of a wider electrical network. Note that an Island System in this context does not need to be a literal island surrounded by water.

Leadership in Energy and Environmental Design	LEED	A green building certification program used worldwide and is environmentally oriented with aims to improve building and construction performance across seven key areas of environmental and human health.
Life-cycle Emissions		The total amount of emissions associated with a product, service, or Activity over its entire lifecycle, from the extraction of raw materials to the disposal of waste. This could be associated with the construction, operation, and decommissioning of a specific development. More information can be referenced in in ISO 14067:2018.
Nationally Determined Contribution	NDC	National climate action plan to cut emissions and adapt to climate impacts.
Network of Central Banks and Supervisors for Greening the Financial System	NGFS	Network of 121 central banks and financial supervisors and 19 observers that aims to accelerate the scaling up of green finance and develop recommendations for central banks' role for climate change.
Nomenclature generale des Activities economiques dans les Communautes europeennes	NACE	Statistical classification of economic activities in the European Community.
Notice to Proceed	NTP	The point in time signalling the start of construction process for an infrastructure project.
Paris Agreement		Paris Agreement under the United Nations Framework Convention on Climate Change.
Photovoltaic	PV	Conversion of light into electricity using semiconducting materials.
Plus Standard	PS	Approach for assessing the contribution of Activities which is based objective pre-defined TSC.
Remedial Measures to Transition	RMT	Measures taken to remediate or mitigate the impact of any significant harm resulting from an Activity, or any actions required to implement the Activity.
Renewable		Referring to a resource or energy source that can be naturally replenished or regenerated over time.
Securities and Exchange Commission, Philippines	PSEC	State agency which safeguards investors and oversees companies, securities, and capital markets in the Philippines.

Senior Level Committee on Financial Integration	SLC	ASEAN Senior Level Committee on Financial Integration comprising ASEAN central bank deputies/senior officials and Chairs/Co-Chairs of the different ASEAN working committees on financial integration.
Social Aspects	SA	EC of the ASEAN Taxonomy which relates to an obligation for Activities to avoid causing social harm.
Steering Committee on Capacity Building	SCCB	ASEAN Steering Committee on Capacity Building.
Substantial Contribution	SC	Contribution required for an Activity to be assessed as 'Green'.
Sunsetting		The process by which a Tier may be closed for any given Activity; as a result, classification of that Activity at that Tier will no longer be possible.
Sustainable Development Goals	SDG	17 UN objectives intended to serve as a "shared blueprint for peace and prosperity for people and the planet now and into the future".
Sustainable Development Scenario	SDS	International Energy Agency scenario outlining how a global pathway to net-zero emissions, aligning with goals from the Paris Agreement and UN SDG.
Sustainable Finance Taxonomy Guidelines	SFTG	A framework for the Philippines designed to classify economic activities based on their environmental and social sustainability.
Technical Expert Group on Sustainable Finance	TEG	Group established by the European Commission to develop recommendations on topics related to the EU Taxonomy, including technical screening criteria.
Technical Screening Criteria	TSC	Quantitative or qualitative criteria against which the classification of the Activity is assessed.
Threshold		Defined numerical value for a quantitative TSC.
Tier		A gradation of TSC setting for EOs. Tier 1 sets TSC which represent a higher level of contribution to an EO than Tiers 2 and 3. Tier 1 is aligned with a 'Green' classification, whilst Tiers 2 and 3 represent transitional TSC and are aligned with the 'Amber' classification.
TSC Review Body	TRB	Body responsible for reviewing and proposing enhancements to TSC.
TSC Period		Period during which a TSC is extant for the purposes of classification of an Activity.
TSC Review		Process at the end of TSC Period by which a TSC may be adjusted.
United Nations	UN	Intergovernmental organisation intended to maintain international peace and security.

United Nations Economic and Social Commission for Asia and the Pacific	UNESCAP	One of the five regional commissions under the jurisdiction of the UN Economic and Social Council.
United Nations Environment Programme	UNEP	Institution responsible for coordinating responses to environmental issues within the UN system.
Working Committee on Capital Market Development	WC-CMD	Coordinating committee which monitors initiatives and progress of ASEAN members towards building the capacity and laying the infrastructure for development of ASEAN capital markets.
Zero Direct Emissions		Pertaining to processes or systems that produce no emissions of GHG or harmful pollutants directly during operation.

## EXECUTIVE SUMMARY

Rapid industrialisation in ASEAN has led to social and environmental challenges, including climate change impacts, poor air quality, and waste management. The ATB was established in March 2021 to develop, maintain, and promote an ASEAN Taxonomy to be a science-based, inclusive method of classifying Activities according to their contribution to the environment in the region.

Version 1 of the ASEAN Taxonomy was published in November 2021. The ATB called for stakeholder consultation after publication of Version 1. Over 80% of respondents emphasised the need for a common language. The lack of standardised and credible data was seen as the greatest challenge to successful implementation. International investors want ASEAN to align with international green investment standards, but the process is complex and tailoring the ASEAN Taxonomy to individual countries is beneficial. National taxonomies in ASEAN have also been developed. These national taxonomies have varying scopes and approaches, with some establishing defined criteria and others emphasising a principles-based approach.

The ASEAN Taxonomy is a guide designed to enable a just transition towards sustainable finance adoption by AMS. It provides alignment on underlying principles and helps harmonise the classification of sustainable activities and assets across ASEAN. The ASEAN Taxonomy was conceived based on five principles and offers two assessment approaches - the FF and PS - to cater to diverse potential users across the AMS. Six Focus Sectors and three Enabling Sectors have been identified as being particularly important in the ASEAN sustainability journey and are covered under the PS.

The ASEAN Taxonomy is based on four EOs: Climate Change Mitigation, Climate Change Adaptation, Protection of Healthy Ecosystems and Biodiversity, and Resource Resilience and the Transition to a Circular Economy. To be classified under the ASEAN Taxonomy, any Activity must demonstrate that it contributes to at least one of these EOs and does not have any adverse effects to other EOs. EO1 focuses on decarbonisation pathways for Activities, requiring them to align with decarbonisation trajectories in line with the Paris Agreement. EO2 concentrates on reducing the negative effects of climate change and increasing resilience through implementing processes or actions. EO3 concentrates on protecting the natural ecosystem and biodiversity, promoting sustainable use of natural resources, and minimising adverse impacts on the environment. EO4 focuses on promoting resource resilience and the transition to a circular economy through principles such as minimising resource use, optimising resource yield, and closing resource loops through effective waste management, which can be achieved by adjusting business operations and implementing circular economy principles via adapted products, production, technologies, and processes.

The ASEAN Taxonomy requires any Activity to fulfil three Essential Criteria (EC) for classification: Do No Significant Harm (DNSH), Remedial Measures to Transition (RMT), and Social Aspects (SA). DNSH ensures that an Activity that contributes to one EO does not cause significant harm to another objective. RMT ensures that any significant harm is either removed or rendered insignificant. SA focuses on social aspects that could be harmed by an Activity, such as human rights, labour rights, and impact on people living close to investments.

The ASEAN Taxonomy Version 2 and subsequent versions centre around the classification of Activities. An Activity takes place when resources such as capital, goods, labour, manufacturing

techniques or intermediary products are combined to produce specific goods or services. An Activity is not the same as the facilities used to conduct the Activity.

TSC classify Activities based on their contributions to EOs using quantitative, qualitative (e.g., process-based), or nature of Activity-based criteria. Under the ASEAN Taxonomy, 'classification' refers to an Activity's contribution to an EO, while 'Tier' refers to the different levels of TSC. PS has Tiers 1-3 aligned with 'Green', 'Amber Tier 2', and 'Amber Tier 3' classifications, while the FF does not use the Tier system and only has 'Green' and 'Amber' classifications. In all cases, a 'Red' classification means that an Activity is not aligned with the ASEAN Taxonomy.

The ATB is responsible for maintaining the ASEAN Taxonomy, including consultation with representatives from AMS, delegation of tasks, and approval of any changes to the ASEAN Taxonomy. The ATB also sets TSC for each Tier of each defined Activity in a manner that will allow flexibility for individual AMS while representing a decarbonisation framework for ASEAN that balances ambition for sustainability with economic and technical realities. AMS are responsible for setting policies for Activities that occur within their own territory and aligning themselves with Tiers that reflect their own transition policies within their own territory on an Activity-by-Activity basis.

The assessment methodology for Activities seeks to determine if the Activity meets the principles of at least one of the EOs, avoids significant harm to other EOs, remediates any harm caused, meets all social aspects criteria, and the appropriate assessment approach is selected based on AMS policy and country-level preference. The process for assessing an Activity using the FF involves using principles-based guiding questions and a decision tree which determine the fulfilment of EO and EC. To assess an Activity using the PS, evidence is also required of fulfilment of the EO and EC. However, in this case, specific criteria are laid out in Annexes.

The PS, in subsequent versions of the ASEAN Taxonomy will expand its coverage to a wider list of Activities across all focus sectors identified in Version 1, incorporating quantitative and/or qualitative criteria. The ASEAN Taxonomy has diverse potential users including member states, regulators, banking institutions, users of capital, and rating agencies. Users may also assess entities and portfolios by aggregating Activity assessments, which will be discussed in subsequent versions of the ASEAN Taxonomy.



# 1. INTRODUCTION

## 1.1. General Lead-in

In November 2021, Version 1 of the ASEAN Taxonomy was published to focus on climate change and act as a map to help guide capital towards activities that can promote the transition of the real economy onto a more sustainable footing. Version 1 was intended to provide a framework for discussions with stakeholders. It was designed to be credible and science-based, while being inclusive and catering to the different development stages of AMS. It was also intended to be periodically reviewed to keep pace with global sustainability goals and technological advancements, thereby remaining relevant and effective.

ASEAN is an association comprising ten member states in Southeast Asia, with an eleventh member state (Timor-Leste) currently under discussion for inclusion (ASEAN, 2022). ASEAN presently has a population of approximately 680 million people covering roughly 4.5 million square-kilometres across 20,000 islands and landmasses. The region boasts significant diversity in every dimension with an immense range of populations, histories, languages, religions, and cultures. This diversity not only exists between the AMS, but also within the individual member states. The economic situations of the AMS also differ significantly, with varying stages of development and economic structures. The GDP per capita ranges from low- to middle-income developing states – which includes most of the AMS – to high-income developed states such as Brunei Darussalam and Singapore. The inherent diversity throughout the regions necessitates an inclusive approach to development, regional progress, and cooperation. The usability of the ASEAN Taxonomy also considers the range of financial sector maturity which exists across the region.

As of 2023, the ASEAN economy was the 5<sup>th</sup> largest in the world and 3<sup>rd</sup> largest in all of Asia, valued at USD \$3.6 trillion (ASEANstats, 2024). The growing number of services-related (e.g., tourism, processing, transport) and industrial (e.g., oil and gas, mining, electronics) activities have supported AMS to grow, evolve and converge, while maintaining economic development as the region's foci and objectives (von Kameke, 2022).

This rapid growth in industrialisation in ASEAN has brought with it a range of social and environmental issues. Poor air quality, water pollution, inadequate waste management, over-extraction of natural resources, and poor sanitation are just some of the challenges that AMS are experiencing to varying degrees. ASEAN is increasingly a contributor to and is becoming a victim of the global environmental challenges of climate change. Climate change is projected to have disproportionate impacts on the AMS, with significant threats to welfare, livelihood, and economic activity.

Aside from greenhouse gas (GHG) emissions, other environmental aspects such as urban air quality, waste management, and conservation of natural resources also impact the ASEAN region. Seven out of ten AMS are among the top 50 most PM2.5 polluted countries in the world (IQAir, 2022). Air pollution is endemic in the region. With growing populations and increasing urbanisation, the volume of waste in ASEAN has been increasing rapidly, reaching about 150

million tonnes in 2016. The volume of waste is estimated to double by 2030 (ASEAN, 2020). Although well-established traditions and informal work sectors are available for handling organic and recyclable waste, waste-dumping and burning are still common practices across most AMS. Considering all these challenges and vulnerabilities to climate change in the region, financing can play a key role in enabling ASEAN to advance its sustainability agenda.

The role of sustainable finance was recognised by the ASEAN Finance Ministers and Central Bank Governors' Meeting (AFMGM) in 2019. This found that a common understanding of what is sustainable is essential for ASEAN to attract and orient capital towards sustainable investments and away from non-sustainable activities. For this reason, a credible regional sustainable finance taxonomy, which is interoperable with other regional and international taxonomies, is needed.

The ATB was established in March 2021 to develop, maintain, and promote the ASEAN Taxonomy. Endorsed by the AFMGM, the four ASEAN financial sector workstreams - the ACMF, AIRM, SLC, and WC-CMD - came together to drive this effort.

## **1.2. ASEAN Taxonomy Updates**

### **1.2.1. Stakeholder Consultation**

After publication of Version 1 of the ASEAN Taxonomy, the ATB called for comments from stakeholders through a consultation exercise. This was conducted through various methods between May to July 2022. Participants from all AMS, industries and organisation types were involved in the stakeholder consultation. Key findings from the consultation process included:

- More than 80% of the respondents commented on the importance of the ASEAN Taxonomy in providing a common language.
- Access to credible and standardised data for criteria setting, conducting assessments and reporting is a challenge for the ASEAN Taxonomy, as it has been with other taxonomies. Most stakeholders felt that availability, access, transparency and/or quality of data is regarded as the single greatest barrier to successful implementation of the ASEAN Taxonomy.
- Some stakeholders suggested that the term 'Sustainable Finance' implied the ASEAN Taxonomy should have 'social', as well as 'environmental' or 'green' objectives, although this was not a universal opinion. Others felt that Social Aspects should be seen as essential minimum criteria for environmental Activities but should not be seen as an explicit objective of the ASEAN Taxonomy.
- Some stakeholders shared feedback on the aspect of the ASEAN Taxonomy being linked to the EU Taxonomy and expressed a desire for less restrictive screening criteria thresholds to be set in ASEAN than might be the case in the EU. On the other hand, some stakeholders pointed out that a lack of similar and/or strict screening criteria thresholds could result in investors seeking to invest in countries with the most lenient criteria, resulting in a 'race for the bottom'.

- 53% of the responses regarded simplicity and clarity in the design of the taxonomy assessment as the best way to convince their organisation to adopt or align their activities with the ASEAN Taxonomy.

Further details and information about the stakeholder consultation and results obtained from this exercise can be referenced in Appendix A1.

Following the publication of Version 2 of the ASEAN Taxonomy, the ATB requested further input from stakeholders through a consultation. This was conducted through various methods including an online survey, roundtables and interviews between June to November 2023. Participants from all AMS, industry groups, official and private sector stakeholders as well as various organisation types were involved in the stakeholder consultation. Key findings from the consultation process included:

- Stakeholders welcomed the Taxonomy's inclusive approach in accommodating companies at various stages of development with the sector-agnostic principles-based FF and TSC-based PS. They also commended the ASEAN Taxonomy as a credible, science-based tool and the Taxonomy's emphasis on interoperability, in particular, the alignment of the PS 'Green' Tier with the EU Taxonomy.
- There was largely positive feedback on the TSC for the Energy sector and consensus on the usage of the IEA Southeast Asia Sustainable Development Scenario (SEA SDS) pathway as the reference in developing the TSC for the Energy sector as part of the PS, given its granularity.
- Furthermore, the inclusion of CPO as an activity in the PS was commended as a powerful tool for transition and was one of the first for a sustainable finance taxonomy. The CPO criteria would help to encourage decarbonisation by reducing dependence on coal power in the region.
- The bulk of the feedback received pertained to suggestions to improve clarity in definitions and usability of Version 2 of the ASEAN Taxonomy. The more immediate points of clarification have been incorporated in the updated iteration of Version 2, made effective on 19 February 2024. This includes clarification of the definitions and criteria for EOs and EC under the FF, updated guiding principles for all EOs, inclusion of a red list of activities from Version 1, future TSC for Energy activities as indicative thresholds, finalised criteria for CPO, updated DNSH guiding principles, streamlined DNSH criteria and guidance on grandfathering.

Other enhancements will be rolled out in tandem with the release of subsequent versions of the ASEAN Taxonomy.

Further details and information about the stakeholder consultation exercises for Version 1, Version 2 and Version 3, and the respective results can be referenced in Appendixes A1 to A3.

### 1.2.2. National Taxonomy Development and Alignment

The ASEAN Taxonomy has drawn on learning from and intends to be interoperable with the EU Taxonomy, as well as other taxonomies (i.e., national taxonomies in ASEAN). These respective taxonomies have also been under development prior to and in parallel with development of the ASEAN Taxonomy.

National AMS taxonomies vary in scope and approaches based on the different priorities, tolerances, and pathways in their own respective jurisdictions, but all also need to reflect the expectations of international investors.

Bank Negara Malaysia's Climate Change and Principle-based Taxonomy (BNM, 2021) utilises a principles-based approach and considers the state of economic development of the country and their nascent stage of climate risk management at which businesses and other economic agents operate. Although this Taxonomy mainly aims to address climate change, there are some biodiversity considerations that are also integrated within the Guiding Principles. Malaysia's capital market regulator, the Securities Commission Malaysia, also developed the Sustainable and Responsible Investment (SRI) Taxonomy (SC, 2022), to enable capital market participants to identify economic activities that are aligned with the environment, social, and sustainability objectives. The intention of this is to facilitate a more informed and efficient decision-making process for fundraising and investing.

The Indonesia Green Taxonomy Edition 1.0 (IGT) (OJK, 2022) is structured around the Indonesia Standard Industrial Classification (KBLI)<sup>2</sup>. The focus sectors of the IGT are based on Indonesia's Nationally Determined Contributions (NDCs) and other relevant sectors. The IGT considered other international taxonomies in its development, such as the EU Taxonomy and China's Green Bond Endorsed Projects Catalogue, as well as the ASEAN Taxonomy. In the initial focus, the IGT had two (2) EOs consisting of climate change mitigation and adaptation efforts. To identify the economic sector thresholds, the IGT referenced established government policies. On 20 February 2024, OJK launched the ITSF (OJK, 2024) which was described as a transformation of the IGT. The ITSF categorises Activities into 'Green' and Transition, and includes two frameworks, similar to the ASEAN Taxonomy. The TSC-based framework currently includes criteria for the Energy sector and refers to the ASEAN Taxonomy in setting its thresholds.

The Singapore-Asia Taxonomy for Sustainable Finance (Singapore Taxonomy) (MAS, 2023), considers a wide range of sectors under a 'traffic light' classification system, and adopts EOs that propose Activity-level criteria and thresholds for its focus sectors (e.g., Energy, Transport, Real Estate/Construction, Forestry, Waste, Water and Agriculture) under climate change mitigation. This Taxonomy is intended to provide a common framework for the classification of economic Activities, to enable stakeholders in gathering information related to green financing, funding, and investment; as well as to gain an understanding of risk management and promoting investments that meet robust sustainability goals. Its classification systems strictly highlight that Activities which are deemed to cause significant harm to other EOs, should not be considered green.

The Thailand Taxonomy Board, jointly lead by the Bank of Thailand (BOT) and the Securities Exchange Commission, Thailand (SECT) published the Thailand Taxonomy Phase 1 in June

---

<sup>2</sup> KBLI is the basis for classifying economic activities in Indonesia and has been mapped to ISIC.

2023 (BOT, 2023) covering two focus sectors (e.g., Energy and Transportation) and primarily focusing on climate change mitigation. In February 2024, the Thailand Taxonomy Board initiated the development of the Thailand Taxonomy Phase 2 which was co-led by BOT, SECT, the Stock Exchange of Thailand (SET) and the Department of Climate Change and Environment (DCCE). Phase 2 will cover four focus sectors (e.g. Manufacturing, Agriculture, Construction and Real Estate and Waste Management) and take other EOs, including climate adaptation, pollution and circular economy, into consideration. A consultation period for Phase 2 commenced in October 2024 (BOT, 2024). It is expected to be published in 2025. Similar to the ASEAN Taxonomy, the Thailand Taxonomy uses a traffic light system to classify Activities and take into account DNSH principles and social aspect consideration. The development of TSC is drawn from reference to international taxonomies, including the ASEAN Taxonomy, EU Taxonomy and CBI Taxonomy, as well as national policies regarding climate change and sustainability.

On 14 February 2024, the Bangko Sentral ng Pilipinas (BSP) adopted the use of the sustainable finance guidelines for banks and financial institutions/regulators in the country (BSP, 2024). The Philippine SFTG was formulated through collaborative efforts between BSP, Securities and Exchange Commission, Philippines (PSEC), and Insurance Commission Philippines (ICP). The SFTG is intended to act as an intermediary assessment for Activities until a full taxonomy is developed, providing a set of guiding questions and decision trees to support regulated entities' assessment. The STFG uses a traffic light system, similar to the ASEAN Taxonomy and other AMS national taxonomies, and also incorporates guidelines for DNSH assessments and minimum social safeguards. Currently, the SFTG uses a principles-based approach and where relevant, refers to the ASEAN Taxonomy.

The second consultation for the Australian Sustainable Finance Taxonomy V0.1 was launched in October 2024. This consultation covers TSC for Agriculture and Land, Manufacturing and Industry, Electricity Generation and Supply and Construction and Buildings (ASFI, 2024).

### 1.2.3. Syndication Exercise

The usability of the ASEAN Taxonomy needs to take into consideration the diverse situations that each AMS faces and the range of financial sector maturity levels that exist across the region. Therefore, the ASEAN Taxonomy needs to be aligned with AMS national taxonomies, which have been developed or are in the process of being developed by Indonesia, Malaysia, the Philippines, Singapore, Thailand and Viet Nam. These national taxonomies are, or will be, consistent with the ASEAN Taxonomy, thus reinforcing the ASEAN Taxonomy's role as the common language for sustainable finance in the region as well as the importance of an inclusive, overarching guide for the region.

A syndication exercise was conducted during the development of Version 2 from September 2022 to January 2023 and Version 3 from January 2024 to March 2024. This was done through an online survey and country-level interviews. Participants included AMS national taxonomy developers. The objective of the syndication exercise was to assess alignment in the key design elements and TSC between the ASEAN Taxonomy and national taxonomies, in order to foster interoperability. The syndication exercise was also intended to establish a neutral platform for knowledge sharing. The syndication exercise enabled national taxonomy developers to explore

the range of TSC for specific focus sectors in a discreet and systematic manner whilst considering national priorities.

The responses received from the online survey were compiled and the findings used in the development of the respective versions of the ASEAN Taxonomy. As agreed in the terms of reference of the syndication exercise, the findings were consolidated without direct attribution to any individual country respondent.

The syndication exercise found that for a comparable set of Activities, the ASEAN Taxonomy thresholds which were independently developed were able to encapsulate thresholds of the national taxonomies. This is consistent with the ASEAN Taxonomy's inclusivity development principle to consider the diverse circumstances of AMS and the different starting points. The EOs in the ASEAN Taxonomy and national taxonomies were found to be highly comparable, giving rise to additional interoperability. Whilst the list of Activities for the Energy, Transportation and Storage, and Construction and Real Estate focus sectors were not fully comparable, there were significant overlaps. Where similar activities have been defined, the 'Green' TSC for EO1 were, for the most part, fully or partially interoperable across the national taxonomies. There were greater variances between the definition of 'Amber' across the taxonomies and may reflect technical, economic and developmental differences across AMS which resulted in varying perceptions of what may be considered a transitional Activity.

Similar to the ASEAN Taxonomy, two national taxonomies addressed the managed phase-out of coal plants as transition Activities, and provided the related criteria. One of the taxonomies made reference to the ASEAN Taxonomy for its CPO criteria.

There were also several differences highlighted during the syndication exercise. There was a difference in the way CPO was classified by the AMS, with a range of possible classifications from 'Green', 'Amber' to Activities which were not included. The general outcomes of the syndication exercises in 2023 and 2024 indicated that the ASEAN Taxonomy and national taxonomies were generally aligned but additional data points need to be compared once the TSC of outstanding Activities are developed.

#### 1.2.4. Interoperability with International Taxonomies

International investors have expressed a wish to see alignment with international standards to make green investment comparable in ASEAN. However, alignment of the ASEAN Taxonomy with international standards is not straightforward and investors understand the benefit of the ASEAN Taxonomy being tailored to individual AMS. There is a view that if the objective of the ASEAN Taxonomy is to share and standardise best practices, alignment with the other international taxonomies would provide potential benefits for bridging between the AMS and international investors. The ASEAN Taxonomy has been developed in parallel with other taxonomies in other parts of the world, including but not limited to, taxonomies which have been developed by the European Union, Australia, Canada, and South Africa. All of these taxonomies are seeking to address similar EOs to the ASEAN Taxonomy. Due to the increasingly international nature of sustainable finance, all of these taxonomies have recognised the importance of interoperability across regions.

### 1.3. Coal Phase-out

GHG emissions are set to peak in 2030, with some GHG projections expecting net zero by 2050 (IEA, 2022). ASEAN is set to realise net-zero GHG emissions as early as in the latter half of the 21<sup>st</sup> Century, committed through ambitious NDCs as well as national-level regulations to cut emissions from high-emitting sectors (such as energy generation, transportation, and manufacturing). Initiatives and work programs are being developed which aim to promote the phase out of coal-fired power plants (CFPP) in Asia, with proposed phase-outs already planned in ASEAN (ADB, 2022). These initiatives and work programs include, but are not limited to:

- The Energy Transition Mechanism (ETM), which is a scalable, collaborative initiative developed by the ADB and in partnership with developing member countries to leverage a market-based approach to accelerate the transition from fossil fuels to clean energy (ADB, n.d.). This initiative is focused on both public and private investments, geared towards financing the retirement of coal power assets on an earlier schedule than if they remained with their current owners.
- The Just Energy Transition Partnership (JETP) for Indonesia, which is a program recently launched by Indonesia with international partnerships, focused on increasing the share of renewables and transitioning away from coal power. International partners include the US, EU, Japan, and Canada. The program covers various key objectives under the concept of just energy transitions; with two of these consisting of accelerated early retirement of coal-fired power plants and restricting the development of captive coal-fired power plants (Dezan Shira, 2023).
- The Managed Phaseout program, which was developed by the Glasgow Financial Alliance for Net Zero (GFANZ). GFANZ is a global coalition of financial institutions committed to accelerating the transition to a net-zero global economy. The Managed Phaseout program is a stakeholder-engaged, net-zero aligned strategy for the early retirement of high-emitting assets (GFANZ, 2022). Among these assets are coal-fired power plants, which are the largest emitters of GHG emissions and one of the key considerations to having a just transition for energy in the future. The intention of the program is to engage the financial institutions (i.e., stakeholders) into financing the early retirement of these high-emitting assets.

In addition to the initiatives developed by international stakeholders, reports have been developed referencing specific science-based targets for the early retirement of coal-fired power plants. A joint report by the Rocky Mountain Institute (RMI), Carbon Tracker, and Sierra Club presented an analysis of nearly 2,500 coal-fired power plants globally. The report primarily highlights accelerated retirement of CFPPs by encouraging government and public finance institutions to follow an integrated three-part approach, which are to (RMI, 2020):

- Refinance to fund coal transition and save customers money on day one;
- Reinvest funds into clean energy; and
- Provide transition financing for workers and communities.

In support of these initiatives and reports developed by various international stakeholders, the ASEAN Taxonomy introduced CPO as an Activity which may be classified as ‘Green’ or ‘Amber’ under the PS framework in Version 2 of the ASEAN Taxonomy in March 2023.

The approach to CPO in the ASEAN Taxonomy can be referenced in Appendix B. The TSC for assessment and classification of CPO can be found in Annex 1.

## 2. PRINCIPLES FOR THE ASEAN TAXONOMY

### 2.1. Scope and Application

The ASEAN Taxonomy is the overarching guide and acts as a common building block to enable an orderly and just transition and foster sustainable finance adoption by AMS. It is designed to cater to the different ASEAN economies, financial systems, and transition paths. It provides alignment on underlying principles and serves to inform AMS policy makers and financial sector as well as real economy stakeholders. The ASEAN Taxonomy will help to harmonise the classification of sustainable Activities and assets across ASEAN.

The ASEAN Taxonomy was conceived based on 5 Principles (Table 1), and it has been designed to be, as much as possible, interoperable with taxonomies used in other jurisdictions.

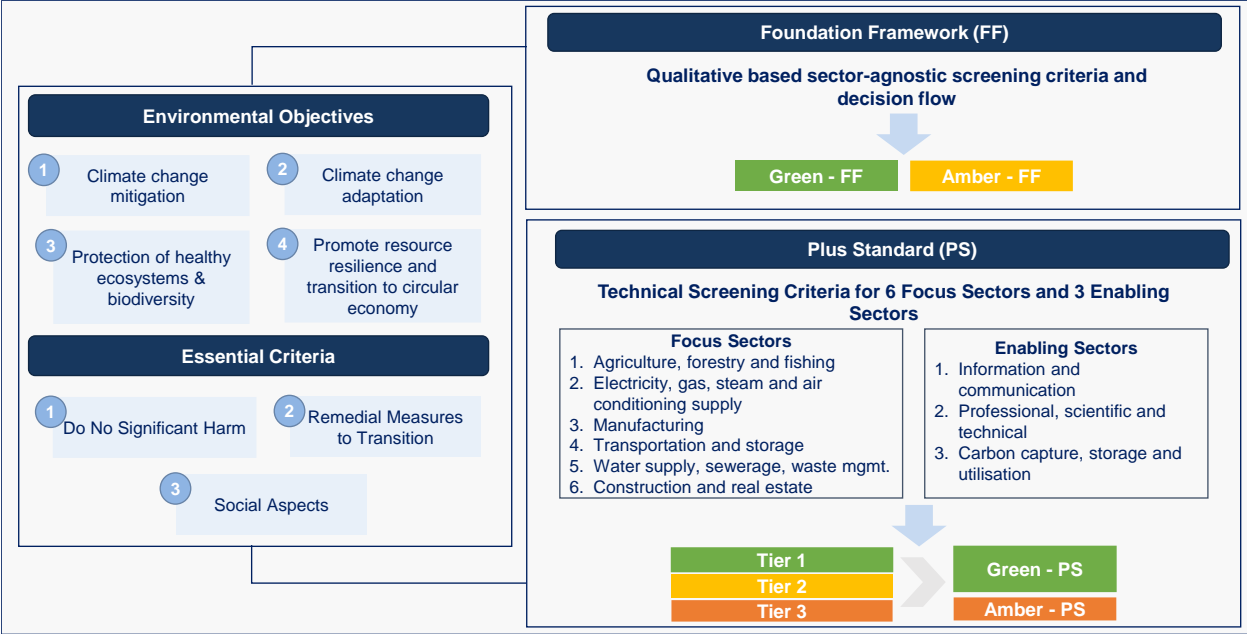
**Table 1: Five Principles of the ASEAN Taxonomy**

<b>PRINCIPLE 1</b>
<i>The ASEAN Taxonomy will be the overarching guide for all AMS, providing a common language and complementing their respective national sustainability initiatives.</i>
<b>PRINCIPLE 2</b>
<i>The ASEAN Taxonomy will take into consideration widely used taxonomies and other relevant taxonomies, as appropriate, and shall be contextualised to facilitate an orderly transition towards a sustainable ASEAN.</i>
<b>PRINCIPLE 3</b>
<i>The ASEAN Taxonomy shall be inclusive and beneficial to all AMS.</i>
<b>PRINCIPLE 4</b>
<i>The ASEAN Taxonomy shall provide a credible framework, including definitions, and where appropriate, be science-based.</i>
<b>PRINCIPLE 5</b>
<i>The ASEAN Taxonomy will be aligned with the sustainability initiatives taken by the capital market, banking, and insurance sectors, or at least not in conflict.</i>

### 2.2. Rationale for ASEAN Taxonomy Design

The ASEAN Taxonomy offers two assessment approaches, which are the FF and the PS. These approaches are illustrated in Figure 1.





**Figure 1: Structure of the ASEAN Taxonomy**

This design recognises a diverse range of potential users (i.e., companies, investors, and governments) across the ten AMS. A ‘one-size-fits-all’ Taxonomy will not provide an inclusive solution for ASEAN. The FF and PS were developed to ensure the inclusive treatment of users from diverse economic backgrounds.

The FF was developed based on the principles of inclusivity and is intended as a ‘starter’ assessment approach for AMS. The principles-based assessment approach of the FF allows Activities to be assessed and classified using qualitative guiding questions.

The PS was developed as an advanced form of assessment approach with defined TSC. The Tier concept (elaborated in Section 3.6) is developed to accommodate different levels of development and varied economic activities, which results in different starting points for AMS.

The ASEAN Taxonomy provides direction on the classification at the Activity level and does not, at this juncture, provide any direction as to how to classify portfolios, entities, or financial instruments.

**2.3. Selection of Focus Sectors for the PS**

Six Focus Sectors and three Enabling Sectors (Figure 2) have been identified as being particularly important to the ASEAN sustainability journey given their significant contributions to both GHG emissions and the economy of Southeast Asia. These sectors are covered under the PS.



**Figure 2: Focus sectors and enabling sectors**

The importance of the focus sectors to ASEAN are illustrated in Figure 3 and Figure 4.

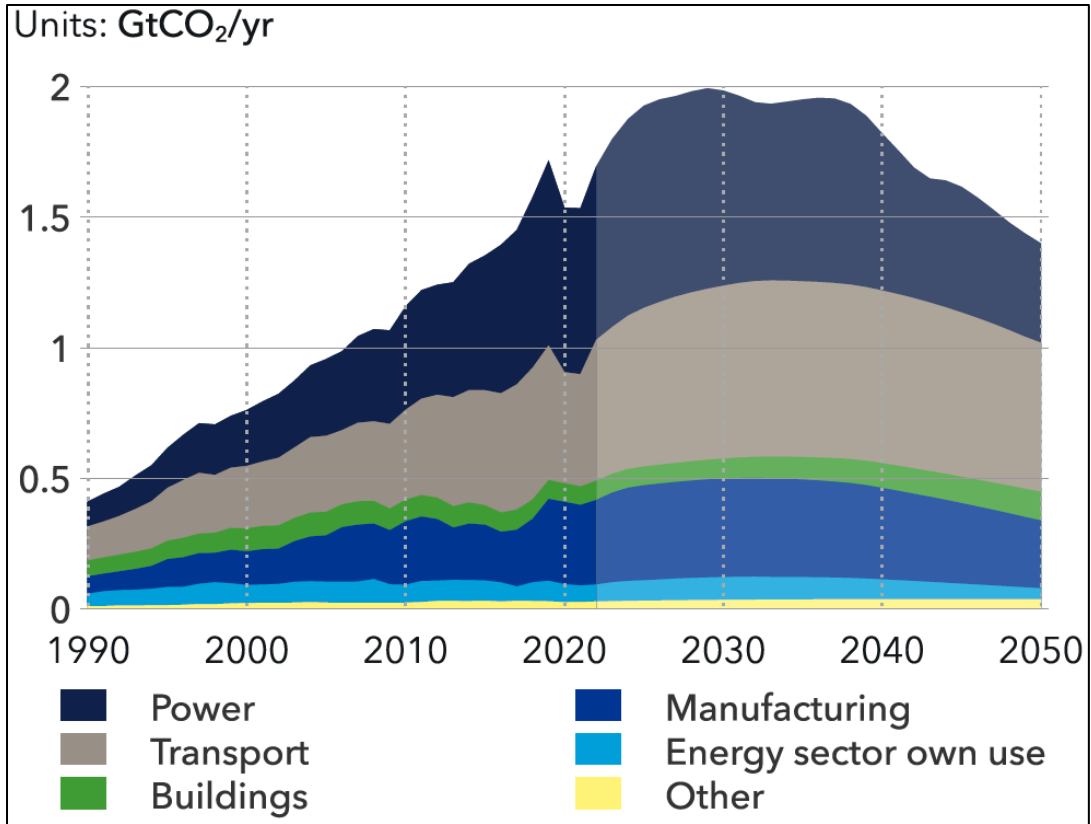


Figure 3: Southeast Asia Energy Related Emissions by Sector (DNV, 2023)<sup>3 4</sup>

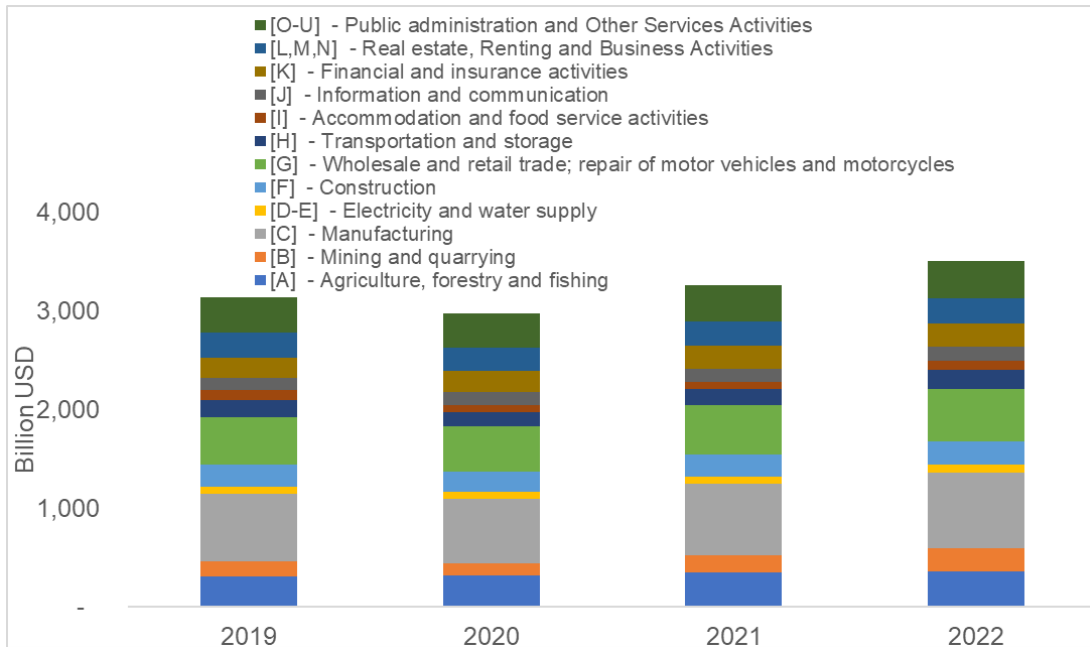


Figure 4: ASEAN GDP by Sector (ASEANstats, n.d.)

<sup>3</sup> Note that sectors other than 'Energy sector own-use' include energy consumed by those sectors.

<sup>4</sup> Does not include emissions resulting from agricultural practices, which represents up to 16% of total SE Asian GHG emissions.

## 3. ASEAN TAXONOMY CONCEPTS AND ELEMENTS

### 3.1. Environmental Objectives

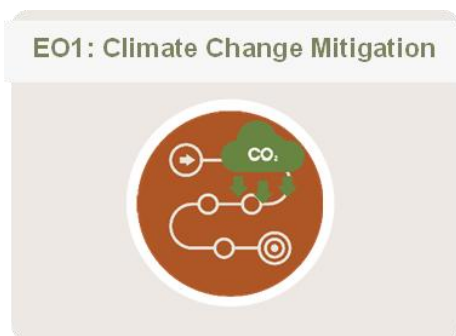
The ASEAN Taxonomy was created to facilitate four EOs:

- EO1: Climate Change Mitigation.
- EO2: Climate Change Adaptation.
- EO3: Protection of Healthy Ecosystems and Biodiversity.
- EO4: Resource Resilience and the Transition to a Circular Economy.

Any Activity seeking classification under the ASEAN Taxonomy must demonstrate that it is contributing to a least one of these EOs. The Activity may also not detract from the EO to which it is intended to contribute due to direct or indirect effects caused by the Activity to that EO.

The EOs are explained in more detail in the following sections.

#### 3.1.1. EO1: Climate Change Mitigation



Climate Change Mitigation focuses on decarbonisation pathways for Activities.

Activities shall be assessed in alignment with AMS specific decarbonisation pathways. Where possible, Activities shall be aligned to the decarbonisation trajectories that aims to meet the 1.5°C target under the Paris Agreement which were ratified by all AMS in 2017.

Decarbonisation pathways vary across AMS due to different economic structure and dependencies. These are reflected under their respective NDCs and Long-term Low Emission Development Strategies. Activities implemented may vary due to industrial, political, or cost barriers (e.g., availability and affordability of feasible low carbon technologies).

An Activity shall be considered as fulfilling the objective of Climate Change Mitigation if it contributes in one or more of the following:

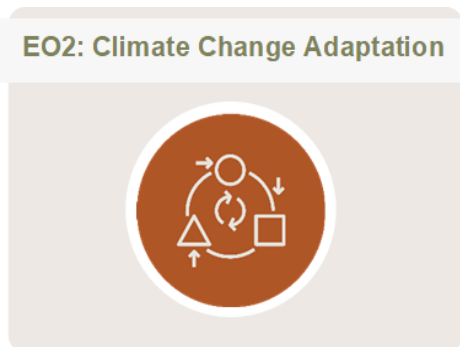
1. Avoids GHG emissions;
2. Reduces GHG emissions; or
3. Enables others to avoid or reduce GHG emissions.

Common climate change mitigation Activities include, but are not limited to; renewable energy generation, rehabilitation, retrofitting and/or replacement of energy-inefficient technology, production of energy-efficient technologies, as well as maintenance and strengthening of land-based carbon stock and sinks, above and below ground.

**Table 2: Guiding Principles EO1 Criteria**

Guiding Principles for EO1
<ol style="list-style-type: none"><li>1. Activity is in line with limiting global temperature rise to no more than 1.5°C in alignment with the Paris Agreement; or</li><li>2. Activity which is not already low- or zero-emissions, may be required to demonstrate the capability of avoiding or reducing GHG emissions in line with relevant best practices compared to the baseline scenario without the mitigating action.</li></ol>

### 3.1.2. EO2: Climate Change Adaptation



Climate Change Adaptation focuses on managing expected negative effects of climate change, through identifying evidence and relevant information with regards to the impacts of climate change.

The objective of this EO is to lower the negative effects caused by climate change and increase resilience to withstand adverse physical impact of current and future climate change, through implementation of processes or actions.

Activities must demonstrate resilience to identified negative impacts, and must also not adversely affect the adaptation efforts, or increase the physical risk, of other stakeholders. Under the context of climate change adaptation, implementation of an Activity can positively promote resilience in the face of changing climates. Resilience is defined as the ability of the Activity to provide utility over time in the face of potential climate disruption.

**Table 3: Guiding Principles EO2 Criteria**

Guiding Principles for EO2
<ol style="list-style-type: none"><li>1. Activity shall positively contribute to a reduction in material physical climate risk and/or shall reasonably reduce material physical risk from current and future climate change. This can include obvious physical risks, such as flooding, but also less immediately visible effects, such as impact on health from higher temperatures.</li><li>2. Impact assessments under a broad range of climate scenarios shall be conducted to provide better understanding and insights on the effectiveness and benefits of the Activity.</li><li>3. Activity that enables adaptation of other Activities should reduce the impact of material physical risk from other Activities and/or reduce barriers to adaptation through technology, services or products.</li><li>4. Activity must not adversely affect the adaptation efforts, or increase the physical risk, of other stakeholders.</li><li>5. Adaptation solutions should be location-specific and context-specific and shall be assessed and ranked in order of priority using the best available climate projections in order to prevent and/or reduce the adverse impact on people, nature or assets.</li></ol>

### 3.1.3. EO3: Protection of Healthy Ecosystems and Biodiversity



Protection of Healthy Ecosystems and Biodiversity focuses on the incorporation of conservation, restoration, and protection mechanisms of the natural ecosystem and biodiversity. This is location and context specific, and typically relevant for Activities related to agriculture, forestry and fishing, real estate, and industry.

The objective of this EO is to promote positive effects and to minimise or eliminate negative effects on the natural ecosystem and biodiversity.

Activities must promote or enable restoration, conservation, and facilitate protection mechanisms of the ecosystem and biodiversity, and promote the sustainable use and protection of water and marine resources (see Annex 2).

**Table 4: Guiding Principles EO3 Criteria**

Guiding Principles for EO3
<p>An Activity intended to promote EO3 shall conform with the following principles while simultaneously minimising or eliminating any <i>direct or indirect</i> adverse effects on the natural ecosystem and biodiversity:</p> <ol style="list-style-type: none"><li>1. Enable ecosystem restoration and/or facilitate the protection of ecosystems.</li><li>2. Implement necessary measures to protect ecosystems and biodiversity, including but not limited to actions such as the adoption of sustainable logging practices and ensuring timber products are sourced from sustainably managed forests.</li><li>3. Enforce and empower existing policies related to the protection of natural areas.</li><li>4. Take into consideration the sustainable and equitable use of biodiversity and ecosystem services.</li><li>5. Substantially contribute to environmental protection from pollution by improving levels of air, water, and/or land quality, including the cleaning up of litter and other pollution.</li><li>6. Substantially contribute to achieving good environmental status of bodies of water, through protection, preservation, or restoration mechanisms; including improving water management and efficiency activities, as well as promoting the sustainable use of water through the long-term protection of available water resources.</li></ol>

### 3.1.4. EO4: Resource Resilience and the Transition to a Circular Economy

#### EO4: Resource Resilience and the Transition to a Circular Economy



Resource Resilience and the Transition to a Circular Economy focuses on the materiality of Activities, and their impacts to business operations, through adoption of the following principles of circularity:

1. Minimising resource use;
2. Optimising resource yield; and
3. Closing resource loops through effective waste management.

An Activity may be considered as meeting this EO through one or both of the following:

1. Adjusting business operations to conserve raw materials, energy, water, and other natural resources; or
2. Implementing circular economy principles via adapted products, production, technologies, and processes.

**Table 5: Guiding Principles EO4 Criteria**

#### Guiding Principles for EO4

An Activity intended to promote EO4 shall fulfil some or all the principles:

#### **Strategy & Operations, Adjusting Business Models:**

1. Uses renewable energy, bio-based resources, or other recovered materials to reduce rate of resource extraction.
2. Uses future-proof, sustainable considerations and specifications to design and produce products, assets or process technologies that enable circular economy strategies through:
  - a. Designing for longevity, resource efficiency, durability, functionality, modularity, upgradability, easy disassembly, and repair.
  - b. Using recyclable or biodegradable materials.
  - c. Substitutes substances in materials and products throughout their lifecycle by replacing such substances, where relevant, with safer alternatives and promoting traceability.
3. Optimises waste management, including the management and reduction of waste from (i) the extraction of minerals, and (ii) the construction and demolition of buildings.
4. Optimises resource use and/or extends product use, including through:
  - a. Replacement of virgin materials with secondary raw materials or by-products, either fully or partially;
  - b. Repair, reuse, donation, resale, upcycling activities or on-site composting;
  - c. Repurposing, refurbishing, remanufacturing, disassembling, upgrading and repairing, and sharing of products.

5. Offers product as a service based on, inter alia, leasing, pay-per-use, subscription, or deposit return schemes to reduce the demand for new products and their embedded raw materials.
6. Provides for cleaner and more efficient options for waste disposal, including minimising waste incineration and disposal to landfills.

**Enablers: Facilitating the Transition**

1. Develops and/or improves resource optimisation / waste management infrastructure needed for re-use and recycling to increase resource efficiency and ensure recovered materials are recycled as high-quality secondary raw material.
2. Invests in the creation of a research and development (R&D) and knowledge sharing platform to increase expertise in circular economy and/or execute circular economy-related pilot projects.

Note that recycling and the informal sector are among the largest contributors to EO4 in ASEAN. Activities within these sectors can be classified under EO4 if they meet the principles of the ASEAN Taxonomy.

ASEAN has published a Framework for Circular Economy for the ASEAN Economic Community (ASEAN, 2021). This document stated five strategic priorities, three strategic goals and six principles which are shown in Table 6. Activities intended to be classified under EO4 should be aligned with these priorities, goals and principles.

**Table 6: Strategic priorities, goals and principles for ASEAN**

Strategic goals	Strategic principles	Strategic priorities
<ol style="list-style-type: none"> <li>1. Resilient Economy</li> <li>2. Resource Efficiency</li> <li>3. Sustainable and Inclusive Growth</li> </ol>	<ol style="list-style-type: none"> <li>1. Promote ASEAN integration and the development of regional value chains.</li> <li>2. Take into consideration the broader impact on the economy, sectors, and society.</li> <li>3. Recognise the unique circumstances of each AMS whilst supporting long-term growth prospects of the region.</li> <li>4. Encourage ASEAN-wide coordination on knowledge, technology transfer, and capacity building.</li> <li>5. Evaluate financial and institutional feasibility and sustainability, including practical applications, prior to implementation.</li> <li>6. Function within the reality of international production networks and linkages.</li> </ol>	<ol style="list-style-type: none"> <li>1. Standard Harmonisation and Mutual Recognition of Circular Products and Services.</li> <li>2. Trade Openness and Trade Facilitation in Circular Goods and Services.</li> <li>3. Enhanced Role of Innovation, Digitalisation, and Emerging/Green Technologies.</li> <li>4. Competitive Sustainable Finance and Innovative ESG Investments.</li> <li>5. Efficient Use of Energy and Other Resources.</li> </ol>



### 3.2. Essential Criteria

Any Activity which is to be classified under the ASEAN Taxonomy must also fulfil the minimum requirements of three EC, as follows:

- EC1: Do No Significant Harm (DNSH)
- EC2: Remedial Measures to Transition (RMT)
- EC3: Social Aspects (SA)

#### 3.2.1. EC1: Do No Significant Harm

An Activity interacts directly or indirectly with the surrounding environment. While the Activity may contribute towards an EO, it may cause unintended significant harm to the broader environment.

DNSH refers to the principle that an Activity which contributes to one EO, shall also not significantly cause any harm. Assessment of DNSH to other EOs forms part of the classification assessment of an Activity and is undertaken after ascertaining the contribution of an Activity against EO-specific objectives.

Note that, an Activity may also be rejected for 'Green' or 'Amber' classification if it causes direct or indirect harm which impacts the positive contribution to the main EO under consideration.

For Activities to be assessed under the PS, criteria for significant harm are described in Annex 2. Guiding questions have been provided to address the DNSH aspect in the FF. However, Annex 2 can also be a useful reference for FF assessments of DNSH.

#### 3.2.2. EC2: Remedial Measures to Transition

RMT are measures which ensure that any actual or potential significant harm is removed or rendered not significant.

If it has been assessed that an Activity may cause significant harm to an EO, RMT must be put in place. Implementation of RMT needs to be planned which will effectively remove all significant harm within 5 years from the assessment date. Comprehensive and realistic plans for RMT must be presented as part of the assessment. If significant harm is occurring or will occur, and RMT is not planned to be completed within the specified timeframe (i.e., within 5 years), the Activity is automatically classified as 'Red'.

In both the FF and the PS, if an assessment shows that an Activity is causing or may cause significant harm, the classification will be downgraded to 'Amber' (FF) or 'Amber' Tier 3 (PS) pending effective remediation, as described in Section 3.6.3.




#### 3.2.3. EC3: Social Aspects

SA relates to social conditions which could potentially be harmed by an Activity.

An Activity may contribute to EOs, but during its lifecycle, may result in negative impacts towards its employees or the surrounding communities. Therefore, it is important that taxonomy-alignment also involves the adherence of the Activity to the ASEAN Taxonomy social aspects. Within the ASEAN Taxonomy, there are three key Social Aspects (Table 7). Assessment of Social Aspects

is undertaken at the Company level, as opposed to at an Activity level, as social policies are usually crafted at the Company level.

**Table 7: Key Social Aspects**

Social Aspects		Definition
	Promotion and Protection of Human Rights	Promotion of human rights and fundamental freedoms, in line with the ASEAN Human Rights Declaration (AHRD) and the Phnom Penh Statement on the Adoption of the AHRD (ASEAN, 2012).
	Prevention of Forced Labour and Protection of Children's Rights	Promotion of labour rights and prohibition of forced labour, including but not limited to exploitation, trafficking in persons, violence and abuse, in line with the ASEAN Declaration on the Protection of the Rights of Migrant Workers and the ASEAN Consensus on the Protection and Promotion of Rights of Migrant Workers (ASEAN, 2012).
	Impact on People living Close to Investments	Management of investment-related impacts to people (including children) living in at-risk areas by encouraging inclusive and targeted measures to reduce the impact of investments on vulnerable populations and strengthen institutional capacity to address the needs of people affected, in line with the ASEAN Declaration on Strengthening Social Protection (ASEAN, 2013).

Other Social Aspects, including but not limited to poverty reduction, job creation, and human capital development, will be considered in future versions of the ASEAN Taxonomy.

An Activity intended to achieve an EO shall not inflict harm on Social Aspects. Activities should be assessed for appropriate avoidance and mitigation of potentially exploitative practices. As a minimum, Companies carrying out the Activities and any subsidiaries or branches required for the conduct of those Activities, must meet the legal social requirements of the AMS in which they are located, with due consideration of any locally specific nuances (see Annex 5).

For example, in terms of respecting labour rights; in Viet Nam, there is a legal provision that specifically recognises the right of senior employees who are in their final year prior to retirement to reduce the number of working hours in a day or to request casual or part-time employment (Socialist Republic of Viet Nam, 1994). There are also specific legislations and regulations that cater to the employment of industrial homeworkers in Thailand (Government of Thailand, 2010) and the Philippines (DOLE, 1974).

In terms of prevention of forced and child labour, Companies must set out measures against confiscation of identity documents (e.g., passports) of their migrant workers. These measures are implied in the legislations and regulations of Cambodia, Myanmar and the Philippines while explicitly stated in other AMS (ASEAN, 2020).

In managing the impact to people living close to their Activities, Companies in the Philippines carrying out Activities within ancestral domains/lands are required to undergo a free and prior

informed consent (FPIC) process with indigenous cultural communities/indigenous peoples as part of the meaningful stakeholder consultation requirements (FAO, 2006).

It is the assessor's responsibility to account for these nuances to uphold a complete assessment of Social Aspects across AMS. Guidance on the assessment of Social Aspects is further explored in Section 5.5.

### **3.3. Assessment Approaches**

The approaches for assessment under the ASEAN Taxonomy are the principles-based FF that allows for a qualitative assessment on Activities, and the PS which uses TSC to classify Activities as either 'Green' or 'Amber'.

#### **3.3.1. Foundation Framework**

The FF uses a principles-based assessment of Activities, assisted by guiding questions. An illustrative example of assessments under the ASEAN Taxonomy is provided in Section 5.3. The principles-based nature of the FF allows for assessment and classification of Activities to be performed despite challenges in availability and accessibility of data.

#### **3.3.2. Plus Standard**

The PS approach was designed to be more robust, using both threshold-based (quantitative) and process- or practice-based (qualitative) TSC. The TSC, as relevant, allow for the classification of Activities into three Tiers, which represent the respective green policies of different AMS and consider the current state of technology and development across ASEAN. An illustrative example of assessments using the PS approach is provided in Appendix F.

### **3.4. Activities**

As stated in Section 2.2, the ASEAN Taxonomy does not provide specific instructions on the classification of entities, portfolios, or financial instruments, as this document is intended to focus on the classification of Activities.

An Activity is defined in the ASEAN Taxonomy as an action and not as the assets used to perform that action. For an Activity to be classified under the ASEAN Taxonomy, it must be demonstrated that the assets are used only for an Activity which meets the TSC of the intended classification. If the assets are also used for another purpose which does not meet the relevant TSC, the Activity may not receive that classification. For instance, for power generation, the Activity is the generation of electricity and not the equipment/assets installed to generate the electricity. Similarly, classification depends on achievement of TSC based on the output of the power generation facility.

A list of all Activities for which Tiers and TSC have been defined for assessment under the PS is shown in Annex 1. Any Activity can be assessed under the FF, even if it is not listed in Annex 1.

### **3.5. Technical Screening Criteria**

TSC are used in the PS to assess and classify Activities as 'Green' or 'Amber' based on their contributions to EOs. The ASEAN Taxonomy has defined TSC for a range of Activities.

The Activities and their associated TSC are set out in Annex 1. Annex 1 is not exhaustive and will be expanded with new Activities over time as the ATB continues to develop TSC for Activities in other focus sectors.

There are three main methods by which TSC are defined (Table 8).

**Table 8: Details on the different methods of defining TSC for Activities**

Method	Description / Definition
Quantitative	<ul style="list-style-type: none"> <li>• Impact based: minimum requirements for the impact (effect) on the environment of carrying out the Activity (e.g., GHG emissions savings).</li> <li>• Performance in relation with the environmental target: minimum threshold for the environmental performance of the Activity (e.g., a level of GHG emissions per unit of Activity aligned with a climate neutral economy).</li> <li>• Best in class performance: minimum threshold (best in class) for the environmental performance of the Activity (e.g., a level of GHG emissions per unit of activity that only the best 10% markets players achieve).</li> <li>• Relative improvement: minimum improvement threshold for the environmental performance of the Activity (e.g., reduction of GHG emissions per unit of Activity).</li> <li>• Note that, in the ASEAN Taxonomy, ‘threshold’ relates to quantitative TSC only.</li> </ul>
Qualitative	<ul style="list-style-type: none"> <li>• Practice Based: a set of practices (best practice) for the Activity (e.g., compliance with a set of qualitative criteria, code of conduct etc.).</li> <li>• Process based: a set of process-based steps (e.g., a set of actions or points of focus that need to be addressed).</li> </ul>
Nature of the Activity	<ul style="list-style-type: none"> <li>• An Activity that is automatically considered to be aligned with the respective classification due to the proven contribution of that Activity (e.g., Activity that would always meet TSC, such as solar and wind energy).</li> </ul>

The method for TSC setting may vary across Activities and EOs and certain Activities may be more naturally suited to certain types of TSC.

### 3.6. Classification System

The terms ‘classification’ and ‘Tier’ have different meanings under the ASEAN Taxonomy:

- ‘Classification’ relates to an Activity; where the classification of an Activity is an indication of its contribution to an EO;
- ‘Tiers’ relates to the different levels of TSC defined by the PS (Tiers are not used in the FF).

However, the concepts are closely linked under the PS in that:

- An Activity which meets Tier 1 TSC may be classified 'Green' under the PS; and
- An Activity which meets Tier 2 or Tier 3 TSC may be classified 'Amber' under the PS (referred to as either 'Amber Tier 2' or 'Amber Tier 3', respectively).

### 3.6.1. Classification for the FF and PS

The FF and the PS both use colour-coded classification systems that represent different levels of contribution to an EO by an Activity. Classifications are divided into 'Green', 'Amber', and 'Red'.

A 'Green' classification means that the Activity is making a substantial contribution to the EO.

The 'Amber' classification is present in both approaches. In the PS, it is used to denote 'transitional' Activities. 'Amber' Activities, while not meeting 'Green' classification criteria, represent a progressive movement on the path to a more sustainable ASEAN with due consideration to the practicalities of implementing sustainable Activities. AMS may opt to begin with lower Tiers (2 or 3) for a limited period before progressing to Tier 1. Therefore, 'transitional' tiers i.e., Tiers 2 and 3 encourage continued progression towards a sustainable future.

In both the PS and the FF, an 'Amber' classification may also be used to temporarily classify an Activity for which some remediation of harm is outstanding (see Section 3.6.3.).

A 'Red' classification means that the Activity is not aligned to any of the EOs or causing significant harm to any of the EOs. There is no Tier aligned with 'Red' classification under the PS.

A summary of classification options is shown in Table 9.

**Table 9: Summary of Classification**

For the FF
<ul style="list-style-type: none"> <li>• There are no defined Tiers or TSC.</li> <li>• An Activity may be assessed as 'Green' in line with principles-based guiding questions.</li> <li>• An Activity which does not meet the principles for 'Green' must be classified as 'Red'.</li> <li>• An Activity which meets the principles for 'Green' classification may be temporarily classified as 'Amber' if there is outstanding un-remediated harm.</li> </ul>
For the PS
<ul style="list-style-type: none"> <li>• TSC for Tier 1 are aligned with the 'Green' classification.</li> <li>• TSC for Tier 2 and Tier 3 are aligned with the 'Amber' classification; this effectively results in two levels of 'Amber' classification: 'Amber Tier 2' and 'Amber Tier 3'.</li> <li>• An Activity which does not meet TSC for 'Green', 'Amber Tier 2' or 'Amber Tier 3', must be assessed as 'Red'.</li> <li>• An Activity which meets the TSC for 'Green' or 'Amber' classification may be temporarily classified as 'Amber Tier 3' if there is outstanding un-remediated harm.</li> </ul>

### 3.6.2. Tiers for the PS

Note that the ASEAN Taxonomy does not necessarily set TSC for all three Tiers for every Activity. If TSC are not defined for an Activity Tier, that Activity cannot be classified in alignment with that

Tier under the PS. For example, if TSC has been defined for Tier 1 of an Activity, but not for Tier 2 and Tier 3, that Activity can be classified as 'Green', but not as 'Amber'.

It is foreseen that Tiers 2 and 3 will be gradually sunset over time for all Activities, and that the aim of the ASEAN Taxonomy is to migrate all Activities to Tier 1. Guidelines related to the sunsetting of Activity Tiers are described in Section 4.2.

General guidelines for Tier setting and detailed TSC for each Activity within each Tier can be found in Annex 1.

### 3.6.3. Impact of DNSH and RMT on Classification status

Classification of Activities can also be affected by the DNSH and RMT status of the proposed Activities. This applies to both the FF and the PS.

An Activity will be classified as 'Amber' (or 'Amber Tier 3' in the PS) if the Activity is causing or may cause significant harm. Comprehensive and realistic plans showing how the harm will be effectively remediated within 5 years must be presented. If no such plans are available, the Activity will be classified as 'Red'. In this case, the Activity will remain classified as 'Amber' (or 'Amber Tier 3' in the PS) until the significant harm has been effectively remediated, or 5 years have passed from the assessment date. If the significant harm has not been effectively remediated within 5 years of assessment, the Activity will be re-classified as 'Red'.

## 4. GUIDELINES FOR THE MAINTENANCE OF THE ASEAN TAXONOMY

### 4.1. General Concepts

#### 4.1.1. Actions by the ASEAN Taxonomy Board

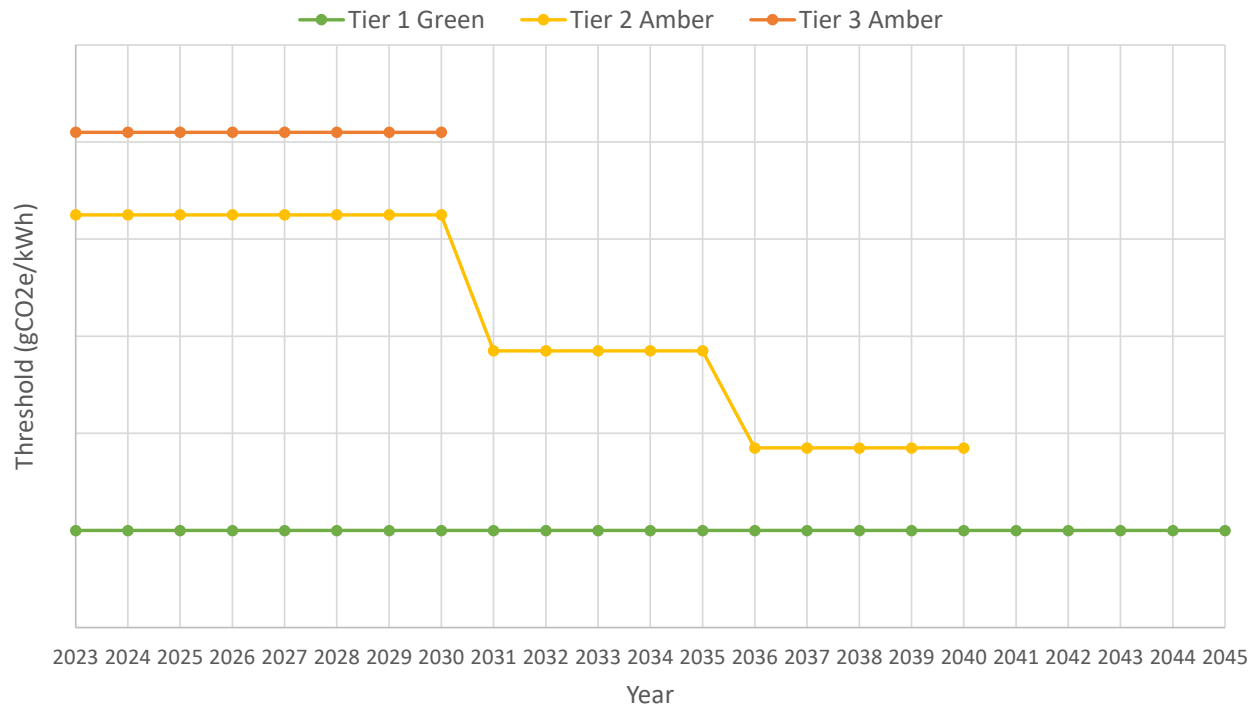
The ATB is responsible for ensuring proper maintenance of the ASEAN Taxonomy, including:

- Consultation with representative bodies and relevant stakeholders from the AMS;
- Delegation of tasks as appropriate to competent bodies; and
- Approval of any changes to the ASEAN Taxonomy or any of its parts.

The ATB is the ultimate approval body for Activities, Tiers, TSC, and TSC Review.

TSC will be adjusted over time, in line with technological developments within AMS. This is particularly the case for 'Amber' Tiers (Tier 2 and Tier 3), as it is expected that the TSC of these Tiers will progressively become more stringent and will ultimately be phased out. The phasing out of Tiers in this context is referred to as 'sunsetting'.

Figure 5 shows an example of Tier setting for a representative Activity in which TSC for Tiers 2 and 3 are tightened over time and eventually sunset. This Figure is **for example purposes only**; refer to Annex 1 for planned TSC by Activity.



**Figure 5: TSC Setting for each Activity Tier<sup>5</sup>**

#### 4.1.2. Actions by the ASEAN Member States

Whilst the setting of TSC for each Activity Tier is the responsibility of the ATB (see Section 4.1.1), AMS can set the following policies for Activities conducted within their jurisdictions:

1. The applicable assessment methodologies (either the FF or PS, or both) for specific Activities;
2. For the PS, an AMS needs to decide which Tier(s) may be used as a basis for classification; and
3. Where an AMS has discontinued the use of the FF and moved to the PS, the AMS to clearly outline the treatment of residual classifications which were previously made under the FF.

With respect to item (1), whilst the choice to allow continued use of the FF for each Activity lies with the AMS, the ATB encourages adoption of the PS for each Activity where feasible.

Item (2) above is a particularly significant policy choice as it effectively represents the pace of transition of individual AMS. AMS should align themselves with Tiers which reflect their national goals and/or transition policies on an Activity-by-Activity basis. Once AMS have selected the PS Tier as a baseline, Activities may no longer be classified under Tier(s) lower<sup>6</sup> than the Tier selected by the AMS. In this way, AMS may effectively exclude Tiers which have nominally still not been sunset by the ATB. For example, if an AMS has selected Tier 2 as baseline for an

<sup>5</sup> Figure shown is for example purposes only – refer to Annex 1 for planned TSC by Activity

<sup>6</sup> In the ASEAN Taxonomy, Tier 1 is the highest Tier and Tier 3 is the lowest Tier.



Activity, that Activity may be classified based on the Tier 1 or Tier 2 TSC, but not on the Tier 3 TSC, even if Tier 3 has not yet been sunset by the ATB.

Detailed explanation of item (3) can be found in Section 4.3.2.

Each AMS has the prerogative to decide on the application of the ASEAN Taxonomy in their own respective territory. Details of policies set by AMS will be published in Annex 4.

## **4.2. Maintenance of Tiers and TSC**

### **4.2.1. TSC Review and Adjustment**

In order to promote continued sustainability enhancement across ASEAN, Activities and their respective TSC may undergo periods of review and adjustment to ensure they remain relevant in their contribution toward sustainability. As technologies enabling the enhanced sustainability of an Activity develop, TSC for that Activity may become more restrictive.

The ATB may establish a TSC Review Body (TRB), which may propose setting, review, adjustment and sunset of TSC. The TRB will normally simultaneously review the TSC for Activities within the same ISIC industry group.

### **4.2.2. Establishment and Role of TSC Review Body**

The TRB is responsible for reviewing and proposing enhancements to TSC. The TRB is set up based on industry sectors and will typically conduct TSC Reviews for a number of Activities within the same ISIC industry group. The establishment of the TRB will be in accordance with the timeline shown in Section 4.2.4 to allow adequate time for the TSC requirements to be reviewed by each AMS.

The TRB should aim to ensure a high level of expertise and geographical balance, as well as a balanced representation of relevant know-how, taking into account specific tasks of the TRB. The TRB should consist of representatives from public and private sectors. Additionally, it should include experts from civil society, such as experts in the fields of environment, society, and labour.

The ATB is responsible for ensuring that any conflicts of interest are evaluated and resolved when establishing the TRB.

### 4.2.3. Tiers and TSC Maintenance Tasks

A summary of the tasks for the maintenance of TSC is shown in Table 10.

**Table 10: Summary of Setting, Review, Adjustment and Sunsetting of TSC**

Type	Description / Definition
TSC Setting	<ul style="list-style-type: none"> <li>• TSC will be set for each Tier applicable to an Activity.</li> <li>• Future TSC for subsequent TSC Periods will also be set until the Tier is sunset for that Activity.</li> <li>• The extant TSC at the time of assessment must be used as the basis of classification of an Activity under the PS.</li> <li>• TSC are considered extant until an adjusted TSC has been approved and published by the ATB.</li> </ul>
TSC Period	<ul style="list-style-type: none"> <li>• The TSC Period is the period between the setting of a TSC and the subsequent adjustment of that TSC.</li> <li>• A TSC Period of 5-years is recommended as standard but may vary by Activity at the discretion of the ATB, in line with expected developments in technology in the coming years.</li> <li>• The TSC for all Tiers of the same Activity may be adjusted at the end of each TSC Period, normally in line with future TSC.</li> <li>• The TSC Period ends when an adjusted TSC come into force.</li> <li>• At this point, a new TSC Period commences, except when the Tier is sunset (see below).</li> </ul>
Sunsetting	<ul style="list-style-type: none"> <li>• Sunset date must be confirmed 12 months before sunset, after which time no change may be made to the sunset date.</li> <li>• The sunsetting recommendation must be approved by the ATB and the decision published.</li> <li>• When a Tier has been sunset, all TSC related to that Tier can no longer be used as the basis for classification of Activities.</li> </ul>

### 4.2.4. Tiers and TSC Maintenance Cycle

With respect to the tasks described in Table 10 of Section 4.2.3, the maintenance of Tiers and TSC shall follow a standard cycle. The cycle may be adjusted with the approval of the ATB where warranted.

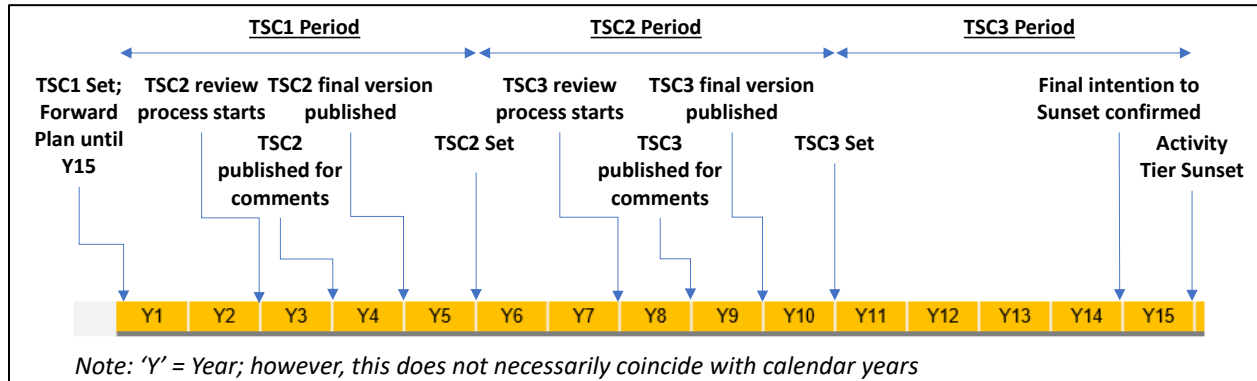
The cycle shown in Table 11 will only apply where the ATB decides to make changes to proposed future TSC. Where no such adjustments are made, TSC shall follow the originally proposed future TSC (see Annex 1). All revisions to TSC must be published in accordance with the timeline shown in Table 11.

It is expected that, assuming the ATB requests such a review, the TRB will be engaged to review an entire industry group. In this context, the term ‘Activity’ in Table 11 may relate to all Activities within that industry group.

**Table 11: Tier and TSC Maintenance Cycle for an Activity**

#	Task Cycle	Description	Time
1	TSC1 Set	The first TSC are established for Activity and become applicable. At this time, the duration of the first TSC Period (TSC1 Period) is set. Future TSC will be set for each Activity Tier until sunset date.	Start of Tier / TSC.
2	Start of TSC2 Review	The TRB commences review of TSC.	30-36 months before end of TSC1 Period.
3	TSC2 published for comments	TRB proposes adjustments to TSC1 (i.e., the proposed TSC2). With ATB approval, the proposed adjustments are published for stakeholder consultation.	24 months before end of TSC1 Period.
4	TSC2 final version published	TSC2 are published following ATB approval.	12 months before end of TSC1 Period.
5	TSC2 becomes extant	TSC1 is no longer extant and has been replaced by TSC2.	Normally 5 years (i.e., the TSC Period) after the date at which TSC1 became extant.
6	For subsequent TSC periods, repeat steps 2 – 5.		

Figure 6 illustrates the Setting, Review and Sunsetting cycle for an Activity.



**Figure 6: Setting, Review and Sunsetting cycle for an Activity**

Note that Figure 6 is for illustration purposes only. The number of TSC Review Periods may vary from Activity to Activity at the discretion of the ATB.

Any adjusted TSC will be published for stakeholder comments and the finalised TSC will be adopted and published within the timeline shown in Figure 6.

#### 4.2.5. Considerations in TSC Setting

The generic Guiding Principles for TSC setting are covered in Section 3.1. The bases behind the setting of TSC for each individual sector are described in detail in Annex 1.

When reviewing and setting TSC, the following items will be considered:

1. Existing environmental indicators and assessment frameworks;
2. Specificities of the infrastructure sector; and
3. Environmental, social, and economic externalities.

Setting of TSC must also consider whether the establishment of those TSC would:

1. Give rise to stranded assets, and lock-ins; or
2. Would result in inconsistent incentives; or
3. Would have any other adverse impact on financial markets.

TSC should ensure that relevant Activities within a specific sector can demonstrate that they are making a contribution to at least one EO. To avoid overly burdensome compliance costs on users, TSC should be clear, practical, and easy to apply. Compliance can be verified within reasonable cost-of-compliance boundaries.

#### 4.2.6. Sunsetting

The ASEAN Taxonomy is designed to have Tiers 2 and 3 ('Amber' Tiers) gradually phased-out over time and that all Activities in all AMS which are assessed under the PS will eventually use the Tier 1 (i.e., 'Green') TSC. The process of phasing out a Tier for an Activity, and therefore the TSC associated with that Tier, is known as 'sunsetting'.

The decision to sunset a Tier must also be approved, adopted, and published by the ATB and will normally occur at the end of a TSC Period, which will effectively become the last TSC Period for that TSC.

Sunsetting of an Activity Tier does not necessarily mean that all Tiers for that Activity must be sunset; e.g., sunsetting Tier 3 for an Activity does not necessarily mean that Tier 2 will be sunset at the same time. Also, sunsetting of a Tier for one Activity does not necessarily have an impact on the same Tier for a different Activity. For example, sunsetting of a Tier 3 for a power generation Activity does not mean that Tier 3 could not exist for a transportation Activity.

#### 4.2.7. Future pathway of the Tiers within TSC Activities

When each Activity Tier is initially established by the ASEAN Taxonomy, TSC become applicable. Future TSC will also be set for each Activity for each Tier. Future TSC represent proposed changes in TSC for that Activity by Tier until sunset date and intended to be indicative. It may change depending on technical advancement.

Whilst it is possible that qualitative TSC may change over time, it is not possible to provide future indications for such changes. It is assumed that Activities will adapt to any changes to qualitative

TSC over time. For avoidance of doubt, an Activity classified according to its nature (e.g., wind and solar power generation) will continue to be classified in this way in the future.

### **4.3. Process and Maintenance of other Components**

#### **4.3.1. Review and Updating of Components**

The ATB will review other components of the ASEAN Taxonomy over time. The timeline and period of review will be streamlined with the schedule for reviewing and updating the TSC for Activities under the PS.

Components that will be subjected for review may also include, but are not limited to the following:

- EO and EC guiding questions: Improve the guiding questions in response to future feedback and changes (e.g., technological advancements that affect the way Activities meet the EOs), to provide better guidance to future users;
- Social Aspects: Review the extent and scope of assessments in line with developments at the regional and international level.

#### **4.3.2. Migration from the FF to the PS**

Migration of an Activity from the FF to the PS can be determined by individual AMS in line with their respective national policies and other strategic priorities. AMS may require Activities being conducted to be assessed using TSC of the PS.

AMS may choose to allow an Activity previously classified under the FF to retain its classification when the AMS has changed its policy such that this Activity must now be classified under the PS.

Upon determining the effective date of migration of Activities from the FF to the PS, the AMS should consider establishing the following precedents:

1. New Activities need to be assessed according to the PS.
2. Activities that have been previously assessed according to the FF:
  - a. Can retain their classification according to the FF until the point when the Activities need to be reassessed, of which Activities will then be assessed by the PS; or
  - b. Need to be assessed according to the PS.

The ATB recommends that Companies may be allowed to continue to use the FF in cases where its continued use can be justified in specific circumstances (see Section 5.1.2). However, as stated in Section 5.1.3, the AMS holds ultimate decision-making authority regarding policies concerning the application of the ASEAN Taxonomy to Activities conducted on their own territories.

## 5. GUIDANCE FOR THE ASSESSMENT OF ACTIVITIES

### 5.1. Assessment Approach

#### 5.1.1. Generic Assessment of an Activity

The FF and the PS assessment approaches seek to address the following questions:

- Does the Activity meet the principles of at least one of the EOs?
- Does the Activity avoid actual or potential significant harm to any of the other EOs?
- Where the Activity causes or may cause significant harm, was the harm remediated?
- If the harm has not yet been remediated, will it be remediated within a defined period?
- Will the Activity meet all the criteria under Social Aspects?

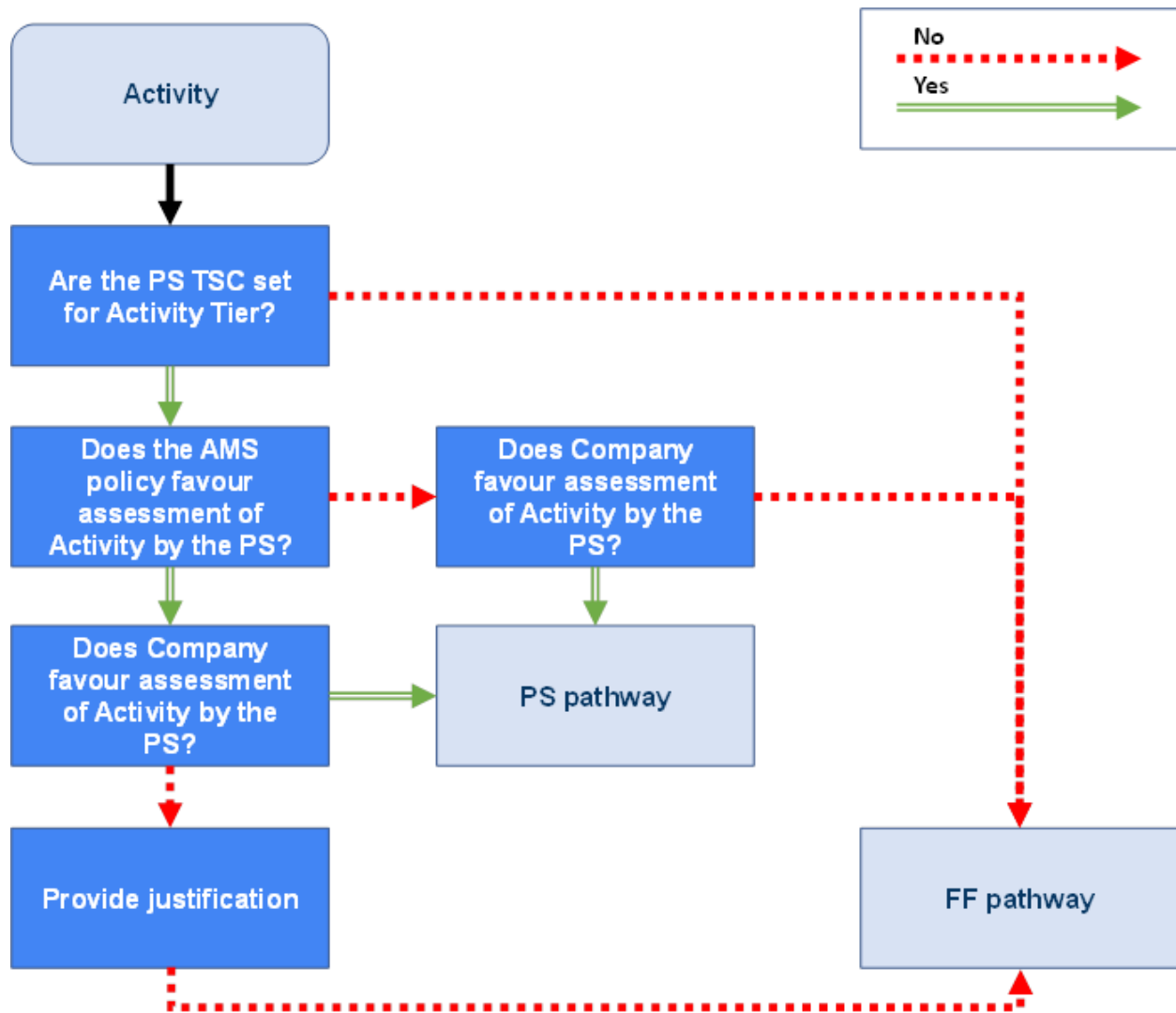
#### 5.1.2. Selecting Assessment Approaches

The ATB does not provide direction as to which approach should be used for assessment. However, if an Activity does not have TSC defined under the PS, that Activity can by default only be assessed under the FF.

For Activities where there are TSC defined in the PS, the Company needs to decide on the appropriate assessment approach with due consideration of country-level preference.

Each AMS may state or establish as policy its preference for the PS to be used as the primary assessment approach, in which each AMS has the prerogative to decide on the application of the ASEAN Taxonomy and the AMS approach will be published in Annex 4 in the future. Where an Activity takes place in more than one AMS, the more restrictive AMS policy will apply, e.g., where one AMS has stated it prefers to use the PS, but another AMS has not, the PS will normally be used.

If TSC have not been set for an Activity, it may only be assessed under the FF. Individual AMS may choose to set a policy which establish the PS as the primary assessment approach. Nevertheless, if the AMS has not established the PS as the primary assessment approach, the Company may still choose to undergo an assessment under the PS. However, if an AMS policy has established the use of the PS, but the Company wishes to use the FF, the Company must provide justification for using the FF. A recommended process is illustrated in Figure 7.



**Figure 7: Recommended process for Choice of the FF or the PS**

If the AMS policy has established the PS as the primary assessment approach, assessment of Activities may only be conducted using the FF in exceptional circumstances and where an assessment using the PS would be effectively impossible. In this case, the Company must present justification for using the FF to assess the Activity, which must include one of the following:

- The data required to perform an assessment under the PS cannot be obtained in the respective AMS after all reasonable attempts are made to secure such data.
- The data to perform an assessment under the PS cannot be verified or certified in accordance with regional and/or international standards.

In these circumstances, the assessor will take a position as to whether the justifications provided by the Company for using the FF, are legitimate and proceed accordingly.

### 5.1.3. Primacy of AMS in Setting of Policy

The ATB recognises the primacy of AMS in the setting of policy which affect their own territories. Notwithstanding all of the above, it is incumbent on the Company to ensure that any proposed Activity to be conducted in ASEAN is aligned with the strategic interests of the AMS in which the Activity takes place, as well as considering any technical, permitting and other requirements. Annex 4 will contain any information available to the ATB with respect to the expectations and requirements of the respective AMS in relation to the application of the ASEAN Taxonomy.

## 5.2. User Entry Point

Some Activities may in principle be aligned with more than one EO. In such cases, the assessment may cite all applicable EOs. However, one EO must be stated as the primary EO against which the Activity is assessed. The Company should state which EO is to be regarded as primary at the time of assessment with due consideration to the recommendation of the assessor.

In determining the primary EO, Companies may consider various viewpoints such as alignment of the Activity with the Company as well as with national priorities. Companies should also consider the strategic priorities of other user groups of the Taxonomy.

Table 12 outlines three common viewpoints accompanied with relevant guiding questions to support the identification of the most relevant EO. Companies may use one or more of the viewpoints and consider one or more EO according to their strategic priority.

**Table 12: User Viewpoints**

1. Activity Relevance and Strategic Alignment	2. Investors / Financial Institutions' Priority	3. Government and Industry Guidance
<ul style="list-style-type: none"> <li>• Which EO is most relevant to the nature of the Activity?</li> <li>• What is the strategic focus of the Company?</li> <li>• Which EO(s) is most aligned to the Company's strategic focus?</li> </ul>	<ul style="list-style-type: none"> <li>• What is the investors' priority and investment strategy?</li> <li>• Which EO(s) is most aligned to the investors' priority and strategy?</li> </ul>	<ul style="list-style-type: none"> <li>• Has the government issued any guidance (including policies, roadmaps and guidelines) which indicates that this Activity contributes to a specific EO under their NDC or national plan?</li> <li>• Is there guidance (including policies, roadmaps and guidelines) from the sectoral bodies which indicates that this Activity contributes to a specific EO under their sectoral plan?</li> </ul>
<ul style="list-style-type: none"> <li>• Companies should use their judgement, given the responses to the questions, to determine which EO is the most relevant to the Activity being assessed.</li> </ul>		



- Companies can refer to the guiding questions and narrative for each EO to better understand its relevance.

Illustrative examples of applying the guiding questions for user entry point can be referenced under Appendix C.

### 5.3. Assessment using the FF

#### 5.3.1. Illustrative end-to-end process assessment of an Activity using the FF

Based on the primary EO identified at the user entry point (see Section 5.2), the Company can identify the corresponding decision tree (of the primary EO) to proceed with assessment of Activities.

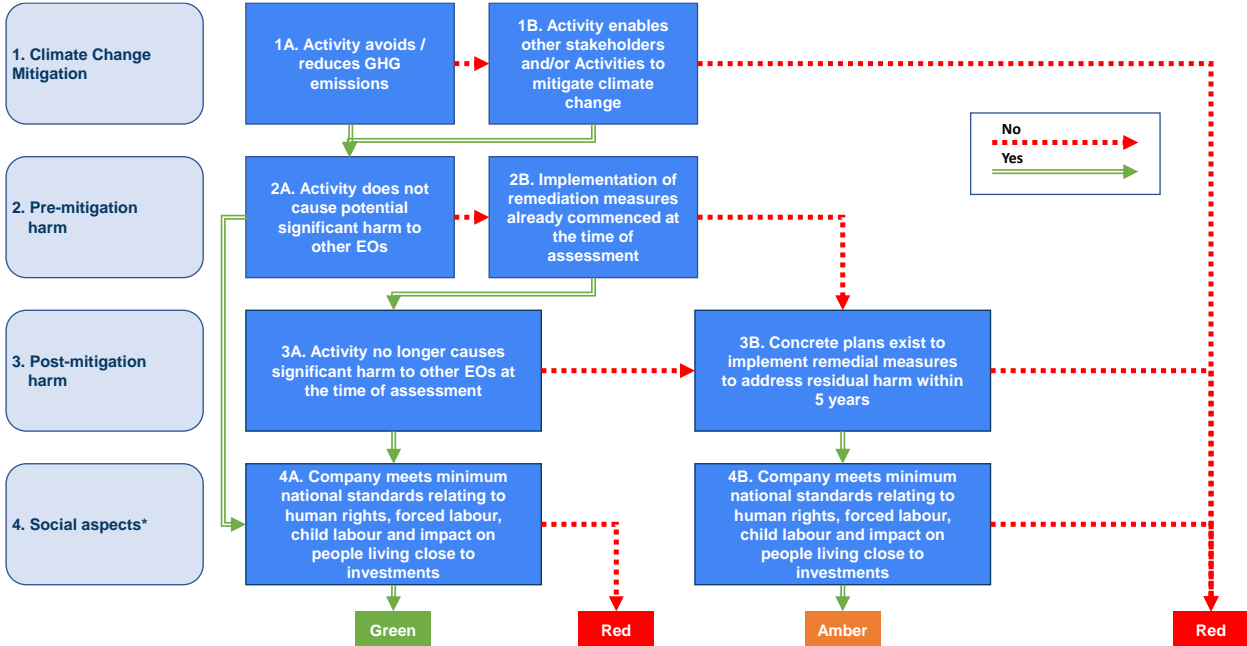
In total, there are four decision trees, and each decision tree is developed based on specific criteria of the EO elaborated in Sections 3.1.1 to 3.1.4.

The Company assesses the Activity beginning with Question 1A and with reference to respective guiding questions, which serve to guide the Company. Implementation of guiding questions for the EOs and ECs need to suit the local environment and circumstances.

Details of the individual decision trees along with guiding questions are in Sections 5.3.2 to 5.3.5.

Refer to Appendix D for examples of assessment of Activities using the FF.

#### 5.3.2. EO1 Assessment under the FF



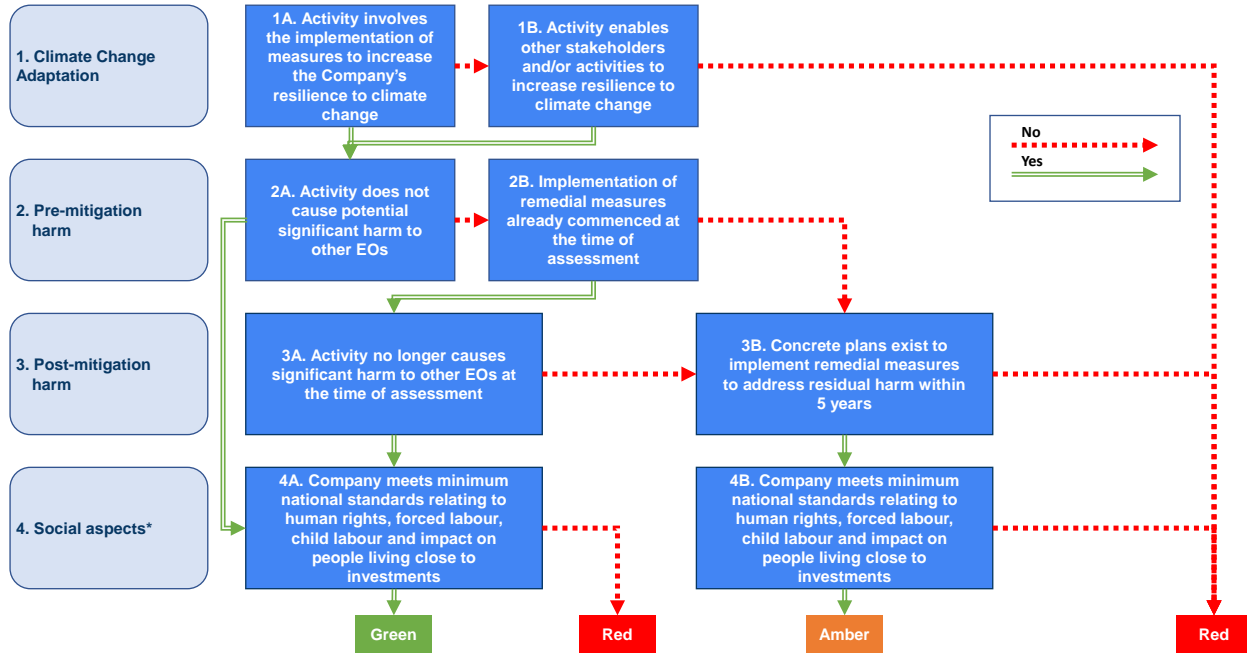
\* Social Aspects (4) assessment is done at Company-level, while all other assessments (1 – 3) are conducted at Activity level.

Figure 8: The EO1 Decision Tree

**Table 13: Guiding Questions for EO1**

S/N	Guiding questions – EO1 (Climate Change Mitigation)
1A	<p>Does the Activity avoid / reduce GHG emissions?</p> <ol style="list-style-type: none"> <li>1. How does the Activity avoid or help reduce emissions? (e.g., generation of electricity through renewables.)               <ul style="list-style-type: none"> <li>○ Does the Activity avoid locking in high-carbon activity? (i.e., delaying or preventing the transition towards low carbon alternatives.)</li> <li>○ Does the Activity avoid leading to significant GHG emissions, including CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, NF<sub>3</sub> and/or HFCs?</li> <li>○ Does the Activity avoid leading to or causing extensive deforestation practices?</li> </ul> </li> <li>2. Do the Company's policies and business strategy generally avoid contradicting or impeding alignment with the specified EO1 principles?</li> <li>3. Where applicable and relevant, is a 3rd party certification or verification of alignment of Activity with EO1 available?</li> <li>4. Does the Activity fulfil relevant environmental law(s) applicable to EO1?</li> <li>5. Are the effects of climate change mitigation efforts measurable and observable? (e.g., data on amount of carbon emissions avoided.)</li> </ol>
1B	<p>Does the Activity enable other stakeholders and/or other Activities to mitigate climate change?</p> <ol style="list-style-type: none"> <li>1. Does the Activity help other stakeholders (including the community) to mitigate climate change? (e.g., construction of a building that facilitates urban planting.)               <ul style="list-style-type: none"> <li>○ Does the Activity avoid impeding upstream and/or downstream stakeholders from reducing their GHG emissions?</li> </ul> </li> <li>2. Does the Activity promote intersectoral collaborations for climate change mitigation without negatively affecting other sectors?</li> <li>3. How does the Activity enable other Activities to mitigate climate change? (e.g., operation of power transmission and distribution equipment that enables the incorporation of solar power.)</li> <li>4. Are the effects of climate change mitigation efforts by the enabled Activity measurable and observable? (e.g., data on amount of carbon emissions avoided.)</li> </ol>
	<ul style="list-style-type: none"> <li>• Once evaluation is complete, proceed to Section 5.3.6 to evaluate the Activity under DNSH and RMT.</li> </ul>

### 5.3.3. EO2 Assessment under the FF



\* Social Aspects (4) assessment is done at Company-level, while all other assessments (1 – 3) are conducted at Activity level.

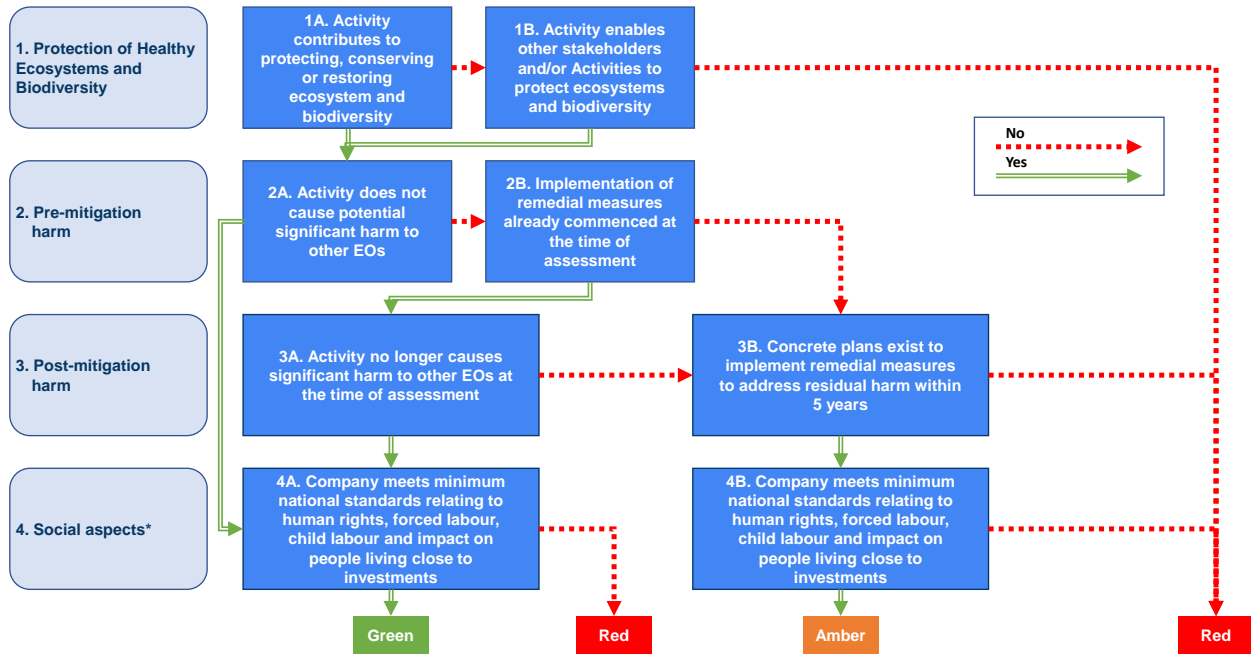
**Figure 9: The EO2 Decision Tree**

**Table 14: Guiding Questions for EO2**

S/N	Guiding questions - EO2 (Climate Change Adaptation)
1A	<p>Does the Activity implement measures to increase the Company's resilience to climate change?</p> <p>1. How does the Activity contribute to Company's resilience against adverse physical impacts of current and future climate change? (e.g., refurbishing infrastructure for greater resilience to impacts of sea level rise, building flood protection infrastructure to protect facilities, operation of road and rail adapted to current and future heatwaves through the use of more heat-resistant materials during its construction.)</p> <ul style="list-style-type: none"> <li>○ Has a climate risk assessment been conducted to establish the Activity's risk exposure towards physical climate risks?</li> <li>○ Has robust and recent climate data, projections and scenarios been used for the assessment?</li> <li>○ Do the results of the climate risk assessment showcase the impacts of climate change on the Activity? Is it a positive or negative impact?</li> <li>○ Does the Activity align with entity or national level climate adaptation plans?</li> <li>○ Does the Activity consider the expected future climate in its current and planned practices?</li> <li>○ Does the Activity avoid leading to an increase in the vulnerability of human or natural systems due to the effects of climate change and climate variability-related risks?</li> </ul> <p>2. Does the Activity avoid leading to an increased adverse impact of the current</p>

	<p>climate and the expected future climate, on the Activity itself or on people, nature or assets?</p> <ol style="list-style-type: none"> <li>3. Does the Activity avoid impeding the adjustment to actual and expected climate change and its impacts?</li> <li>4. Do the Company's policies and business strategy generally avoid contradicting or impeding alignment with the specified EO2 principles?</li> <li>5. Where applicable and relevant, is a 3rd party certification or verification of alignment of Activity with EO2 available?</li> <li>6. Does the Activity fulfil relevant environmental law(s) applicable to EO2?</li> <li>7. Is the reduction and/or prevention of increase in climate physical risks measurable and observable? (e.g., data on monthly transport accidents caused by natural disasters against maintenance activities delivered, data on houses repaired due to floods against budget increase for building safeguards.)</li> </ol>
<b>1B</b>	<p>Does the Activity enable other stakeholders and/or Activities to increase resilience to climate change?</p> <ol style="list-style-type: none"> <li>1. Does the Activity help other stakeholders (including the community) to reduce/manage physical risks? (e.g., provision of infrastructure to facilitate climate change adaptation of stakeholders.) <ul style="list-style-type: none"> <li>○ Does the Activity avoid impeding upstream and/or downstream stakeholders from increasing their resilience to climate change?</li> </ul> </li> <li>2. Does it promote intersectoral collaborations for climate change adaptation without negatively affecting other sectors?</li> <li>3. How does the Activity enable other Activities to reduce material physical risks? (e.g., removal of technological barriers to adaptation, Activity which primarily provides installation of irrigation systems and improved land drainage measures that lead to reduced exposure to physical climate risks.)</li> <li>4. Has a climate risk assessment been conducted on the enabled Activity's risk exposure towards physical climate risks? <ul style="list-style-type: none"> <li>○ Has robust and recent climate data, projections and scenarios been used for the assessment?</li> <li>○ Do the results of the climate risk assessment showcase the impacts of climate change on the enabled Activity? Is it a positive or negative impact?</li> </ul> </li> </ol>
	<ul style="list-style-type: none"> <li>• Once evaluation is complete, proceed to the Section 5.3.6 to evaluate the Activity under DNSH and RMT.</li> </ul>

### 5.3.4. EO3 Assessment under the FF



\* Social Aspects (4) assessment is done at Company-level, while all other assessments (1 – 3) are conducted at Activity level.

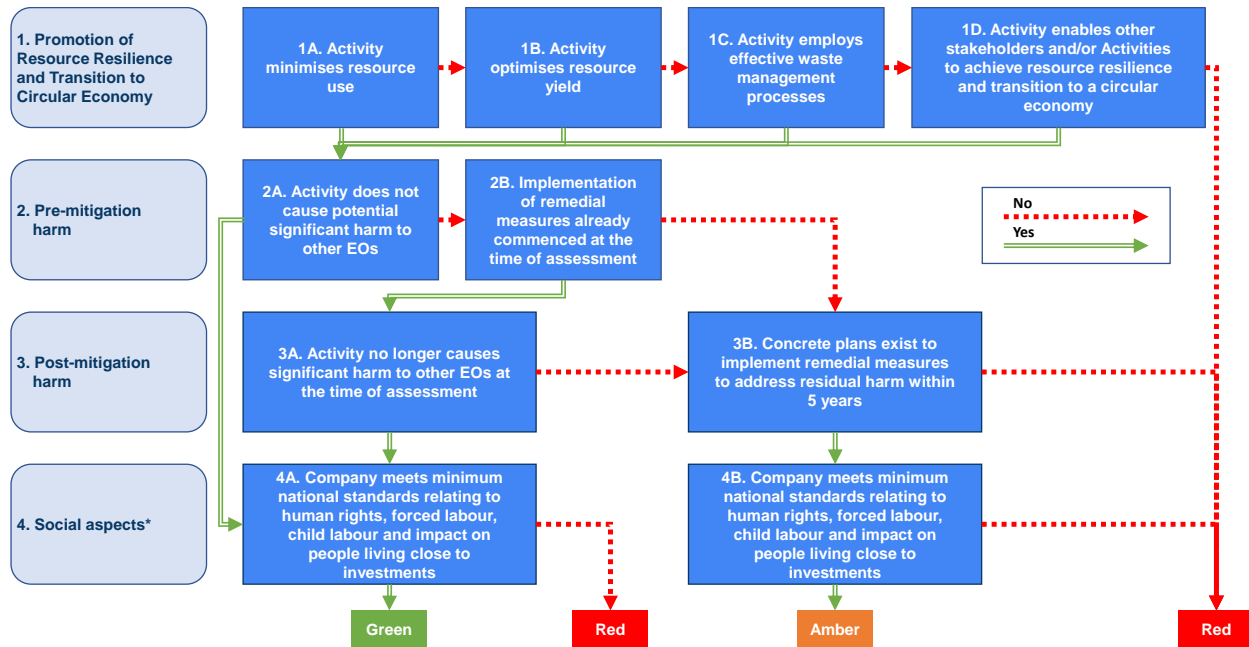
**Figure 10: The EO3 Decision Tree**

**Table 15: Guiding Questions for EO3**

S/N	Guiding questions - EO3 (Protection of Healthy Ecosystems and Biodiversity)
<b>1A</b>	<p>Does the Activity contribute to protecting, conserving, or restoring ecosystems and biodiversity?</p> <ol style="list-style-type: none"> <li>Which specific principles under EO3 does the Activity meet or contribute to? <ul style="list-style-type: none"> <li>How does the Activity contribute to these principles?</li> </ul> </li> <li>Does the Activity minimise or eliminate negative effects of operations on the natural ecosystem and biodiversity? <ul style="list-style-type: none"> <li>Is the Activity significantly detrimental to the good condition and resilience of ecosystems?</li> <li>Does the Activity avoid leading to a significant increase in pollutant emissions into the air, land and/or natural bodies of water?</li> <li>Does the Activity avoid involving the over-exploitation of natural resources?</li> <li>Does the Activity avoid involving prohibited land use?</li> <li>Is the Activity detrimental to the natural ecosystem’s physical, chemical and biological quality, thus impeding self-reproduction and self-restoration capability of the occupying species?</li> <li>Does the Activity avoid impairing natural species composition, ecosystem structure and ecological functions?</li> <li>Is the Activity detrimental to the conservation status of habitats and species within the natural ecosystem? (e.g., inhibitions to the dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.)</li> </ul> </li> </ol>

	<p>3. Do the Company's policies and business strategy generally avoid contradicting or impeding alignment with the specified EO3 principles? (e.g., employment of services from subcontractors, suppliers and/or third-parties with practices detrimental to the natural ecosystem and biodiversity.)</p> <p>4. Is a 3rd party certification or verification of alignment of Activity with EO3 available?</p> <p>5. Does the Activity fulfil relevant environmental law(s) applicable to the specified EO3 principles?</p> <p>6. Is the protection of ecosystems and biodiversity measurable and observable? (e.g., number of trees reforested, land area of habitats protected.)</p>
<b>1B</b>	<p>Does the Activity enable other stakeholders and/or other Activities to protect ecosystems and biodiversity?</p> <p>1. Does the Activity help other stakeholders (including the community) to protect ecosystems and biodiversity?</p> <ul style="list-style-type: none"> <li>○ Does the Activity avoid impeding upstream and/or downstream stakeholders from protecting ecosystems and biodiversity?</li> </ul> <p>2. Does the Activity promote intersectoral collaborations for protecting biodiversity and ecosystems without negatively affecting other sectors?</p> <p>3. How does the Activity enable other Activities to protect ecosystems and biodiversity?</p> <p>4. Is the protection of ecosystems and biodiversity by enabled Activity measurable and observable? (e.g., number of trees reforested, land area of habitats protected.)</p>
	<ul style="list-style-type: none"> <li>• Once evaluation is complete, proceed to the Section 5.3.6 to evaluate the Activity under DNSH and RMT.</li> </ul>

### 5.3.5. EO4 Assessment under the FF



\* Social Aspects (4) assessment is done at Company-level, while all other assessments (1 – 3) are conducted at Activity level.

**Figure 11: The EO4 Decision Tree**

**Table 16: Guiding Questions for EO4**

S/N	Guiding questions - EO4 (Promotion of Resource Resilience and Transition to Circular Economy)	
<b>1A</b>	<p>Does the Activity minimise resource use? (e.g., operation of a manufacturing plant that uses alternative fuels from waste material.)</p> <ol style="list-style-type: none"> <li>Does the Activity use renewable energy, bio-based resources or other recovered materials to reduce the rate of resource extraction?</li> <li>Is the building of resource resilience and transition to circular economy measurable and observable?</li> </ol>	<p>Questions applicable to 1A, 1B and 1C:</p> <ol style="list-style-type: none"> <li>Do the Company's policies and business strategy generally avoid contradicting or impeding alignment with the specified EO4 principle?</li> <li>Is a 3rd party certification or verification of alignment of Activity with EO4 available?</li> <li>Does the Activity fulfil relevant environmental law(s) applicable to the specified EO4 principle?</li> <li>Does the Activity avoid inhibiting the maintenance of value,</li> </ol>
<b>1B</b>	<p>Does the Activity optimise resource yield? (e.g., operation of a plantation that employs fertiliser application techniques to optimise crop yield.)</p> <ol style="list-style-type: none"> <li>Does the Activity extend the use of products through reuse, repurposing, refurbishing, remanufacturing, disassembly, upgrades and repair, and/or sharing of products?</li> <li>Does the Activity increase resource efficiency by ensuring recovered materials are recycled as high-quality secondary raw material?</li> <li>Is the Activity made available as product-as-a-</li> </ol>	

	<p>service to reduce the demand for new products and their embedded raw materials? (e.g., inter alia, leasing, pay-per-use, subscription or deposit return schemes.)</p> <p>4. Does the Activity involve the use of products, assets or process technologies designed and produced based on circular economy principles? (e.g., designing for longevity, resource efficiency, durability, functionality, modularity, upgradability, easy disassembly and repair, using recyclable or biodegradable materials.)</p> <p>5. Does the Activity avoid leading to significant inefficiencies in the use of materials or in the direct or indirect use of natural resources at one or more stages of the product lifecycle?</p> <p>6. Is the building of resource resilience and transition to circular economy measurable and observable?</p>	<p>the efficient use in production and consumption, the reduction of environmental impact and the minimising of waste of products, materials and other resources in the economy?</p> <p>5. Does the Activity avoid involving the release of hazardous substances at all stages of their lifecycle?</p>
<b>1C</b>	<p>Does the Activity employ effective waste management processes? (e.g., operation of a manufacturing plant with systems that minimise the leaching out of nutrients from the production system into the environment, refurbishment and recycling features.)</p> <p>1. Does the Activity reduce waste generation, including through:</p> <ul style="list-style-type: none"> <li>○ replacement of virgin materials with secondary raw materials or by-products, either fully or partially?</li> <li>○ repair, reuse, donation, resale, upcycling activities or on-site composting?</li> </ul> <p>2. Is the building of resource resilience and transition to circular economy measurable and observable?</p> <p>3. Does the Activity apply the waste hierarchy of priority orders in the prevention and management of waste material?</p> <ul style="list-style-type: none"> <li>○ Prevention</li> <li>○ Preparing for re-use</li> <li>○ Recycling</li> <li>○ Other forms of recovery, e.g., energy recovery</li> <li>○ Disposal</li> </ul> <p>4. Does the Activity avoid leading to a significant increase in the generation, incineration or disposal of waste?</p> <p>5. Does the long-term disposal of waste resulting</p>	



	from the Activity avoid causing significant and long-term harm to the environment?	
<b>1D</b>	<p>Does the Activity enable other stakeholders and/or Activities to achieve resource resilience and transition to a circular economy?</p> <p>6. Does the Activity help other stakeholders (including the community) to build resource resilience and transition to a circular economy?</p> <ul style="list-style-type: none"> <li>○ Does the Activity avoid impeding upstream and/or downstream stakeholders from building resource resilience and transition to a circular economy?</li> </ul> <p>7. Does it promote intersectoral collaborations for resource resilience and circular economy transitions without negatively affecting other sectors?</p> <p>8. How does the Activity enable other Activities to build resource resilience and transition to a circular economy?</p> <p>9. Is the building of resource resilience and transition to circular economy of the enabled Activity measurable and observable? (e.g., recovery, reuse and recycle rates.)</p>	
	<ul style="list-style-type: none"> <li>• Once evaluation is complete, proceed to Section 5.3.6 to evaluate the Activity under DNSH and RMT.</li> </ul>	

### 5.3.6. Assessment of Essential Criteria

Following the EO assessment (Sections 5.3.2 to 5.3.5), the assessor proceeds to the next layer of the decision tree and assesses the Activity against EC1 – as shown in decision boxes 2A and 3A, EC2 – as shown in decision boxes 2B and 3B, and EC3 – as shown in decision boxes 4A and 4B; with reference to the respective guiding questions (Table 17).

Similar to assessment of EO, where readily available, 3rd party certification or verification can be used to justify eligibility in meeting the EC.

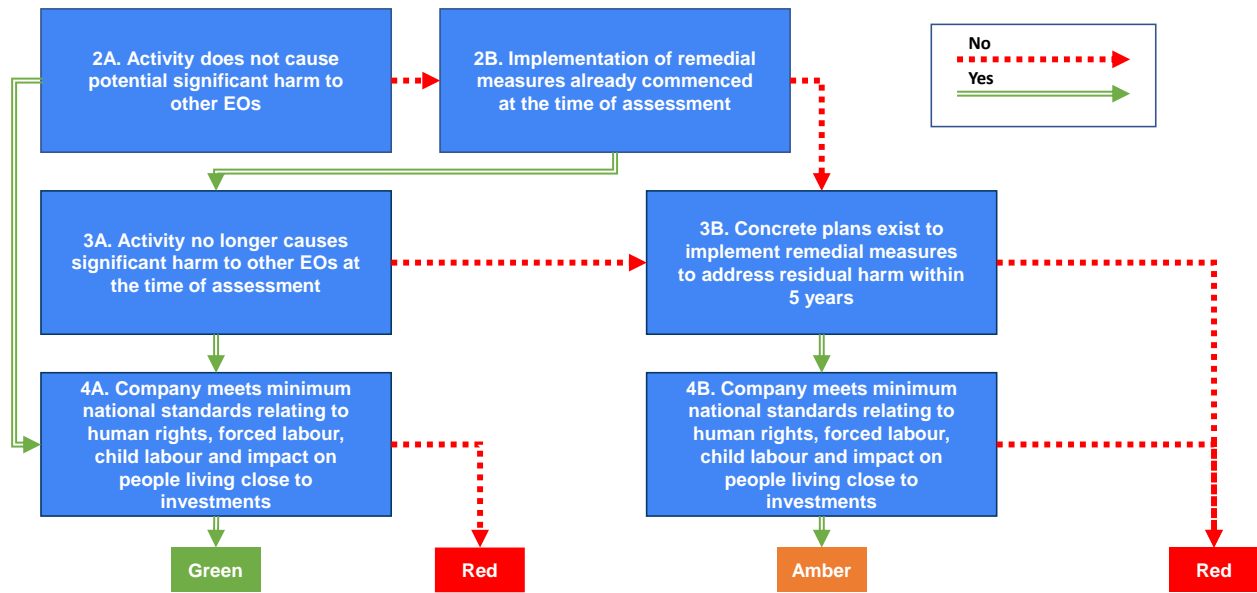


Figure 12: The logic flow and decision-tree diagram for assessing essential criteria

**Table 17: Guiding details to the decision box in the flow diagram**

Decision Box	Details to Guide Decision
2A. Activity does not cause potential significant harm to other EOs.	The Activity potentially causes harm to EOs other than the one it is being assessed against. It is important to understand the significance of the harm caused by the Activity based on the materiality of the harm to each EO. The assessor should consider whether the degree (i.e., severity) of the harm and scale of the harm when the Activity commences (i.e., the date of the notice to proceed) would reasonably indicate that the harm is material.
2B. Implementation of remedial measures already commenced at the time of assessment.	The Company implementing the Activity has recognised the potential for, or the occurrence of significant harm, and has already started to implement remedial measures to reduce harm at the time of assessment.
3A. Activity no longer causes significant harm to other EOs at the time of assessment.	The implementation of remedial measures adequately mitigates/addresses the harm caused and the Activity no longer causes significant harm to other EOs.
3B. Concrete plan exists to implement remedial measures to address residual harm within 5 years.	The implementation of remedial measures does not adequately mitigate or address the harm caused and as such, the Company has established concrete plans for additional remedial measures to address remaining harm within 5 years.
4A/4B. The Company meets minimum national standards relating to human rights, forced labour, child labour and impact on people living close to investments.	The Company has recognised the impacts of its Activity on its employees and surrounding communities, and has met national standards relating to human rights, forced labour, child labour and impact on people living close to investments.

Each decision box within the decision tree (Figure 12) contains a binary question, that the assessor will need to answer. The assessor answers 'Yes' or 'No' to the binary question based on information pertaining to the Activity being assessed.

Table 18 shows generic guiding questions which may relate to any EO.

**Table 18: General guiding questions for EC1 (DNSH)**

S/N	Guiding questions - Essential Criteria 1 (Do No Significant Harm)
2A	<p>Does the Activity avoid causing potential significant harm to other EOs?</p> <ol style="list-style-type: none"> <li>1. Has an Environmental Impact Assessment (EIA) been conducted and approved on the Activity?</li> <li>2. What are the results of the EIA and where do the impact of the Activity lie?</li> <li>3. Have the remedial measures recommended within the EIA been implemented?</li> <li>4. Regardless of whether an EIA has been conducted or not, is there any evidence or consideration that suggests the Activity could cause potential significant harm to other EOs?</li> </ol>

The assessor must determine which of the three remaining EOs (other than the one to which it contributes) will experience significant harm because of the Activity. The assessor must then refer to the guiding questions in Table 19 to assess whether significant harm has been caused. associated with the specific EO(s).

**Table 19: EO Specific guiding questions for EC1 (DNSH)**

EO	Guiding questions - Essential Criteria 1 (Do No Significant Harm)
2A EO1	<ol style="list-style-type: none"> <li>1. Does the Activity avoid significant GHG emissions, including CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, SF<sub>6</sub>, NF<sub>3</sub> and/or HFCs?</li> <li>2. Does the Activity avoid leading to or causing extensive deforestation practices?</li> <li>3. Does the Activity avoid impeding upstream and/or downstream stakeholders from reducing their GHG emissions?</li> </ol>
2A EO2	<ol style="list-style-type: none"> <li>1. Does the Activity avoid leading to an increase in the vulnerability of human or natural systems due to the effects of climate change and climate variability-related risks?</li> <li>2. Does the Activity avoid impeding upstream and/or downstream stakeholders from increasing their resilience to climate change?</li> <li>3. Does the Activity avoid an increased adverse impact of the current climate and the expected future climate, on the Activity itself or on people, nature or assets?</li> <li>4. Does the Activity avoid impeding the adjustment to actual and expected climate change and its impacts?</li> <li>5. Does the Activity consider the expected future climate in its current and planned practices?</li> </ol>
2A EO3	<ol style="list-style-type: none"> <li>1. Is the Activity significantly detrimental to the good condition and resilience of ecosystems?</li> <li>2. Does the Activity avoid leading to a significant increase in pollutant emissions into the air, land and/or natural bodies of water, relative to the situation before the commencement of said economic Activity?</li> <li>3. Does the Activity avoid involving the over-exploitation of natural resources?</li> <li>4. Does the Activity avoid involving prohibited land use?</li> <li>5. Is the Activity detrimental to the natural ecosystem's physical, chemical and biological quality, thus impeding self-reproduction and self-restoration capability of the occupying species?</li> </ol>

	<ol style="list-style-type: none"> <li>6. Does the Activity avoid impairing natural species composition, ecosystem structure and ecological functions?</li> <li>7. Is the Activity detrimental to the conservation status of habitats and species within the natural ecosystem? (i.e., inhibitions to the dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.)</li> <li>8. Does the Activity avoid impeding upstream and/or downstream stakeholders from protecting ecosystems and biodiversity?</li> </ol>
<p>2A EO4</p>	<ol style="list-style-type: none"> <li>1. Does the Activity avoid inhibiting the maintenance of value, the efficient use in production and consumption, the reduction of environmental impact and the minimising of waste of products, materials and other resources in the economy?</li> <li>2. Does the Activity avoid releasing hazardous substances at all stages of its lifecycle?</li> <li>3. Does the Activity apply the waste hierarchy of priority orders in the prevention and management of waste material? <ul style="list-style-type: none"> <li>○ Prevention</li> <li>○ Preparing for re-use</li> <li>○ Recycling</li> <li>○ Other forms of recovery, e.g., energy recovery</li> <li>○ Disposal</li> </ul> </li> <li>4. Does the Activity avoid significant inefficiencies in the use of materials or the direct or indirect use of natural resources at one or more stages of the product lifecycle?</li> <li>5. Does the Activity avoid leading to a significant increase in the generation, incineration or disposal of waste?</li> <li>6. Does the long-term disposal of waste resulting from the Activity avoid causing significant and long-term harm to the environment?</li> <li>7. Does the Activity avoid impeding upstream and/or downstream stakeholders from building resource resilience and transition to a circular economy?</li> </ol>

**Table 20: Guiding questions for EC2 (RMT)**

S/N	Guiding questions - Essential Criteria 2 (Remedial Measures to Transition)
2B	<p>Have remedial measures already started to be implemented at the time of assessment?</p> <ol style="list-style-type: none"> <li>1. Does the Activity remediate risk and impacts through e.g., compliance with relevant (national) environmental law(s), internal policies and processes, implementation of additional measures that reduce harm?</li> <li>2. What are these proposed actions and their contributions to remediation (e.g., avoidance, minimisation, reduction)?</li> <li>3. Is there available technology for this Activity in place for compliant risk management measures against the adverse effects of climate change?</li> <li>4. If the Activity is new and has yet to commence, consider whether there are planned remedial measures already in place to address the potential harm.</li> </ol>
3A	<p>Does the Activity no longer cause significant harm to other EOs at the time of assessment?</p> <ol style="list-style-type: none"> <li>1. 'Residual harm' refers to any harm that remains even after compliance with the relevant environmental laws and Company's processes and policies, as well as implementation of any other measures on top of compliance.</li> </ol>
3B	<p>Are there concrete plans established for remedial measures to address the residual harm within a defined timeframe (i.e., within 5 years)?</p> <ol style="list-style-type: none"> <li>1. Do the planned remedial measures fall within the defined timeframe?</li> <li>2. What is the expected output for results of tracking and monitoring (e.g., annual reports, sustainability reports, other publications)?</li> <li>3. Are the remedial measures and assessments done appropriate/proportionate to the business' scale of operations and industry benchmarks?</li> <li>4. Who are the direct stakeholders involved in the Activity's supply chain? What are these proposed actions and their contributions to remediation (e.g., avoidance, minimisation, reduction)?</li> </ol>

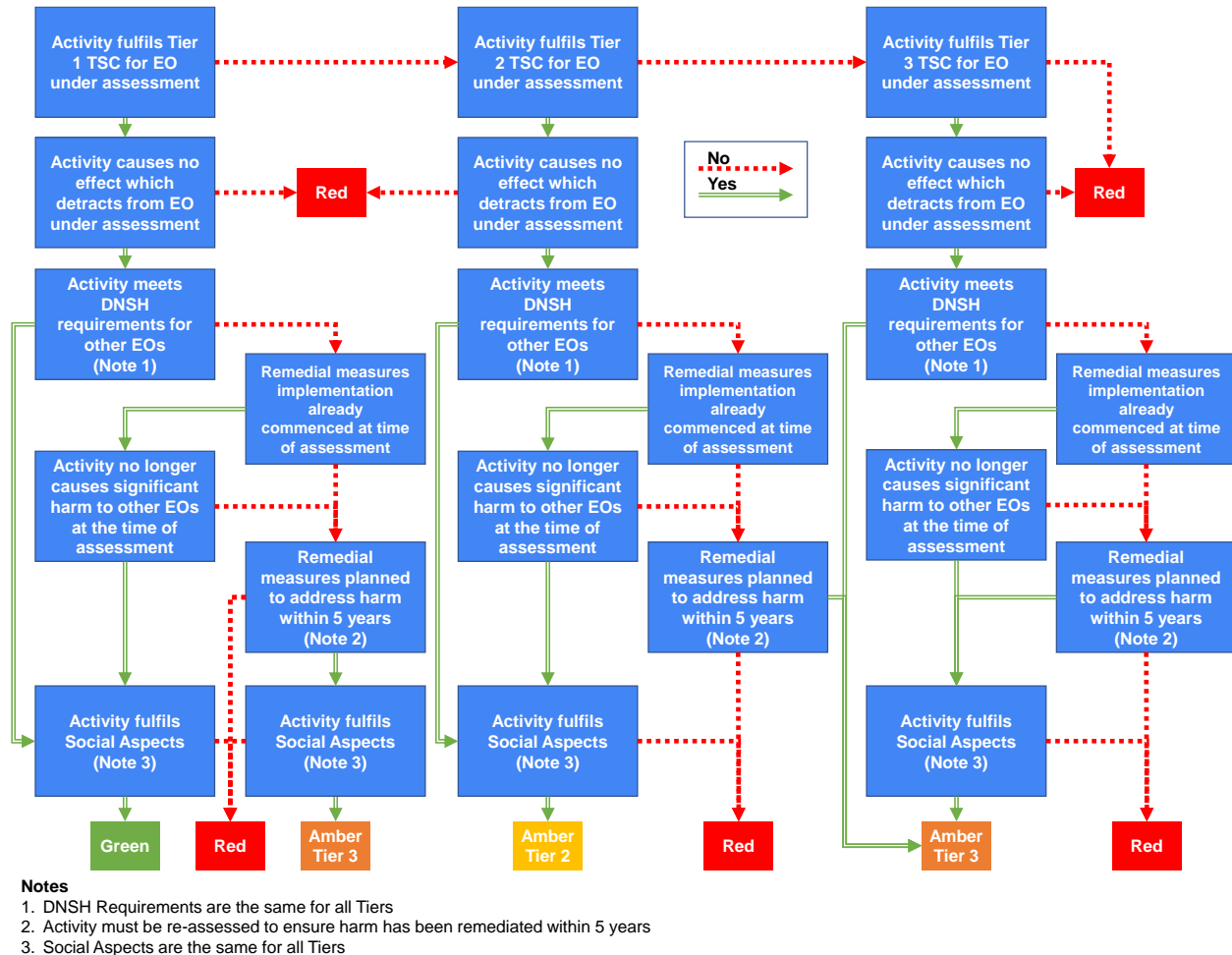
The assessor is required to answer all relevant guiding questions with 'yes' to pass the EC1 and EC2 assessment.

The assessor can first determine which of the three remaining EOs (other than the one to which it contributes) will experience significant harm because of the Activity. The assessor can then refer to the guiding questions associated with the specific EO(s) to assess whether significant harm has been caused.

Details on the assessment of Social Aspects, which is applicable for both the PS and the FF, is in Section 5.5.

## 5.4. Assessment using the PS

If an Activity is to be assessed by the PS, the Company is required to provide evidence of the fulfilment of the terms of the EO (or EOs), DNSH (if material), RMT (if applicable) and Social Aspects under the terms of the ASEAN Taxonomy (see Figure 13).



**Figure 13: PS Assessment Tree**

### 5.4.1. Applicability of TSC

Activities are 'normally' assessed according to the TSC which is extant at the time of the assessment. However, if the Activity has not yet commenced:

- The Activity should be assessed according to the TSC which will apply at commencement if this is known at the time of assessment.
- If the TSC at commencement is not known, the Activity should be assessed according to the TSC extant at the time of assessment; if TSC changes before commencement, an updated assessment should be conducted.

TSC extant at the time of assessment will be subject to the rules set out in Section 4.2. An example of this application is shown in Appendix E.

#### 5.4.2. Assessment of the contribution of the Activity to the EO

The contribution of the Activity to the EO is determined by contribution to the respective 'Green' (Tier 1), 'Amber' (Tier 2), or 'Amber' (Tier 3) TSC. These TSC are listed and described in Annex 1. Note that an Activity which directly or indirectly causes an effect which detracts from the EO for which the Activity is seeking classification will be classified as 'Red'.

#### 5.4.3. Assessment of DNSH

Specific criteria and approaches for identifying and assessing the harm caused by Activities are set out in Annex 2. Companies and assessors should refer to the categories of potential significant harm which may be caused by Activities and evaluate the harm caused by the Activity based on the guidance provided in Annex 2.

#### 5.4.4. Remedial Measures to Transition

Where it has been assessed that significant harm is occurring, or will occur, the Company must demonstrate that a realistic and comprehensive plan is in place to mitigate the harm to a level which it is no longer significant. In this case, a remediation plan must be submitted. This plan must demonstrate that there will be no significant harm occurring within 5 years after assessment of the Activity. Activities for which RMT is outstanding shall be provisionally classified as 'Amber Tier 3' until the RMT is complete and significant harm has effectively been remediated.

The Activity shall be subject to a new assessment, which shall be conducted at the expense of the Company:

- If the new assessment shows that harm has been remediated, the Activity shall be classified appropriately according to the achievement of the TSC;
- If it cannot be shown that harm can be remediated within 5 years, the Activity shall be assessed as 'Red'.

Refer also to Section 3.6.3.

### 5.5. Assessment of Social Aspects

Social Aspects assessments are applicable for both the FF and the PS.

The key requirement of Social Aspects assessment is to meet relevant social regulations and legislations in the relevant AMS.

There are three Social Aspects that need to be considered under the EC3 assessment:

- Promotion and protection of human rights.
- Prevention of forced labour and protection of children's rights.
- Impact on people living close to investments.

Unlike EC1 and EC2, EC3 assessment is performed at a Company-level as opposed to at an Activity-level. This is because social policies are usually crafted at the Company level.



**Table 21: Guiding questions through the decision tree for the EC3 Assessment**

S/N	Guiding questions - Essential Criteria 3 (Social Aspects)
4A	Does the Company meet minimum national standards relating to human rights,
4B	<p>forced labour, child labour and impact on people living close to investments? In the absence of minimum standards established through national regulations or legislations, the following guiding questions will be used:</p> <ol style="list-style-type: none"> <li><b>1. Promotion and protection of human rights</b> <ol style="list-style-type: none"> <li>a. Does the Company have policies or guidelines that uphold an individual’s right to enjoy just, decent and favourable working conditions?</li> <li>b. Does the Company have a clear and transparent policy that sets out measures to create a positive environment in overcoming discrimination?</li> <li>c. Does the Company have a policy that provides decent wages to all workers, taking into account adequate standards of living?</li> </ol> </li> <li><b>2. Prevention of forced labour and protection of children’s rights</b> <ol style="list-style-type: none"> <li>a. Does the Company employ occupational health and safety practices?</li> <li>b. Does the Company have a clear and transparent policy that sets out measures taken to prevent and eliminate all forms of exploitation, trafficking, violence and abuse in its entire supply chain?</li> <li>c. Do all workers have the right to enter into, and leave, employment voluntarily and freely?</li> <li>d. If the Company employs migrant workers, are the migrant workers treated fairly?</li> <li>e. Does the Company ensure all its workers free access to their documentation?</li> <li>f. If the Company employs private employment agencies, do they conduct measures to ensure that such agencies are not involved in any form of exploitation, trafficking, violence and abuse?</li> </ol> </li> <li><b>3. Impact on people living close to investments</b> <ol style="list-style-type: none"> <li>a. Does the Company conduct risk and vulnerability assessments to ensure targeted response measures that would contribute to the progressive implementation, effective monitoring and evaluation, as well as optimum impact of social protection?</li> <li>b. Does the Company engage and strengthen the capacity of the community for the better responsiveness, coordination and effectiveness of risk reduction and management policies?</li> <li>c. Does the Company promote public awareness of their exposure and vulnerability and establish platforms to empower people to meet their basic needs?</li> </ol> </li> </ol>

The boundary of Social Aspects coverage is as follows:

1. The Social Aspects assessment will cover the immediate Company carrying out the Activity as well as branches/subsidiaries (if any) that are directly involved in carrying out the Activity, without which the Activity cannot be carried out.




2. The adherence of suppliers and subcontractors directly involved in carrying out the Activity, without which the Activity cannot be carried out, to the Social Aspects must also be exhibited; e.g., through signing a Code of Conduct.
3. The Company should refer to national legislations and regulations of the respective country in which the organisation (e.g., corporate or branch/subsidiary) is based.

For example, if the immediate Company carrying out the Activity is based in Singapore, but its subsidiary is based in Indonesia, then the assessment will be done with reference to Singapore legislations and regulations for the Company, while Indonesia legislations and regulations will be referenced for the subsidiary.

Passing the Social Aspects assessment requires adherence to the relevant AMS legislations and regulations for each Social Aspects. Not meeting national legislations and thus failing the Social Aspects assessment leads to 'Red' classification. Please refer to the use case in Appendix F.

In AMS where legislations and regulations pertinent to any of the Social Aspects are absent, the assessor shall utilise the guiding questions instead. The Activity will pass the Social Aspects assessment if all the guiding questions are at least satisfactorily met. The guiding questions on Social Aspects are shown in Table 22.

**Table 22: Guiding questions Social Aspects in the absence of relevant legislations and regulations**

Social Aspects	Guiding Questions
 <p>Promotion and Protection of Human Rights</p>	<ol style="list-style-type: none"> <li>1. Does the Company have policies or guidelines that uphold an individual’s right to enjoy just, decent and favourable conditions of work?</li> <li>2. Does the Company have a clear and transparent policy that sets out measures to create a positive environment in overcoming discrimination?</li> <li>3. Does the Company have a policy that provides decent wages to all workers, taking into account adequate standards of living?</li> </ol>
 <p>Prevention of Forced Labour and Protection of Children’s Rights</p>	<ol style="list-style-type: none"> <li>1. Does the Company employ occupational health and safety practices?</li> <li>2. Does the Company have a clear and transparent policy that sets out measures taken to prevent and eliminate all forms of exploitation, trafficking, violence and abuse in its entire supply chain?</li> <li>3. Do all workers have the right to enter into, and leave, employment voluntarily and freely?</li> <li>4. If the Company employs migrant workers, are the migrant workers treated fairly?</li> <li>5. Does the Company ensure all its workers free access to their documentation?</li> <li>6. If the Company employs private employment agencies, do they conduct measures to ensure that such agencies are not involved in any form of exploitation, trafficking, violence and abuse?</li> </ol>
 <p>Impact on People Living Close to Investments</p>	<ol style="list-style-type: none"> <li>1. Does the Company conduct risk and vulnerability assessments to ensure targeted response measures that would contribute to the progressive implementation, effective monitoring and evaluation, as well as optimum impact of social protection?</li> <li>2. Does the Company engage and strengthen the capacity of the community for the better responsiveness, coordination and effectiveness of risk reduction and management policies?</li> <li>3. Does the Company promote public awareness of their exposure and vulnerability and establish platforms to empower people to meet their basic needs?</li> </ol>

If a Company is found or known to have an unsatisfactory track record (due to violations or breaches) in at least one of the Social Aspects, the said Company will still be allowed to undergo the Social Aspects assessment; but as an additional requirement, it has to prove that its relevant

processes (where violations or breaches have occurred) have improved and remediation processes were implemented to prevent a repeat of violation or breach.

Data on a Company's violations and breaches of the Social Aspects may be collected through publicly available sources, but it is ultimately up to the Company's discretion to voluntarily disclose such violations or breaches.

## 6. CONCLUSIONS AND WAY FORWARD

### 6.1. Expansion of Activities and EOs in the PS

In Version 2 of the ASEAN Taxonomy, the PS primarily establishes TSC for Activities under ISIC Sector D: Electricity, Gas, Steam and Air Conditioning Supply as well as the CCUS criteria for all EOs, where possible. In Version 3 of the ASEAN Taxonomy, TSC for the Construction and Real Estate and Transportation and Storage focus sectors have been developed. The PS will develop TSC for more Activities across all focus and enabling sectors in the subsequent versions of the ASEAN Taxonomy.

### 6.2. Taxonomy Applications

Figure 14 showcases the different potential uses for the ASEAN Taxonomy based on the following user groups (non-exhaustive):

- AMS / governments;
- Regulators (including but not limited to central banks, securities commissions, stock exchanges, etc.);
- Financial institutions;
- Providers of capital (including but not limited to investors, shareholders, asset/fund managers, companies, insurance providers etc.);
- Rating agencies.

## User: ASEAN Member States

Taxonomy applied when setting requirements for green bonds and issuance of green sovereigns.

Taxonomy referred to when setting requirements for "sustainable" investment funds.

Taxonomy referred to when setting requirements for green loans in the country. Taxonomy also used when designing government sustainable loan programs, including via provision of loan guarantees.

Taxonomy referred to when setting requirements for ESG benchmarks.

Taxonomy used as a reference for setting rules on corporate sustainability disclosures and ESG risk management practices.

Taxonomy used as reference when setting rules for the financial market participant sustainability reporting disclosures at portfolio and product level.

Taxonomy used as reference for fiscal benefits, policy incentives, economic growth, and climate change mitigation.

## Uses

**Bond issuance**

**Identifying sustainable investees**

**Developing sustainable lending products or identifying eligible borrowers**

**Definition of ESG benchmarks / indices and identification of constituents**

**Corporate sustainability reporting**

**Financial market participant sustainability reporting**

**Transition finance**

## User: Regulators

Taxonomy applied when setting requirements for green bonds.

Taxonomy referred to when setting requirements for "sustainable" investment funds.

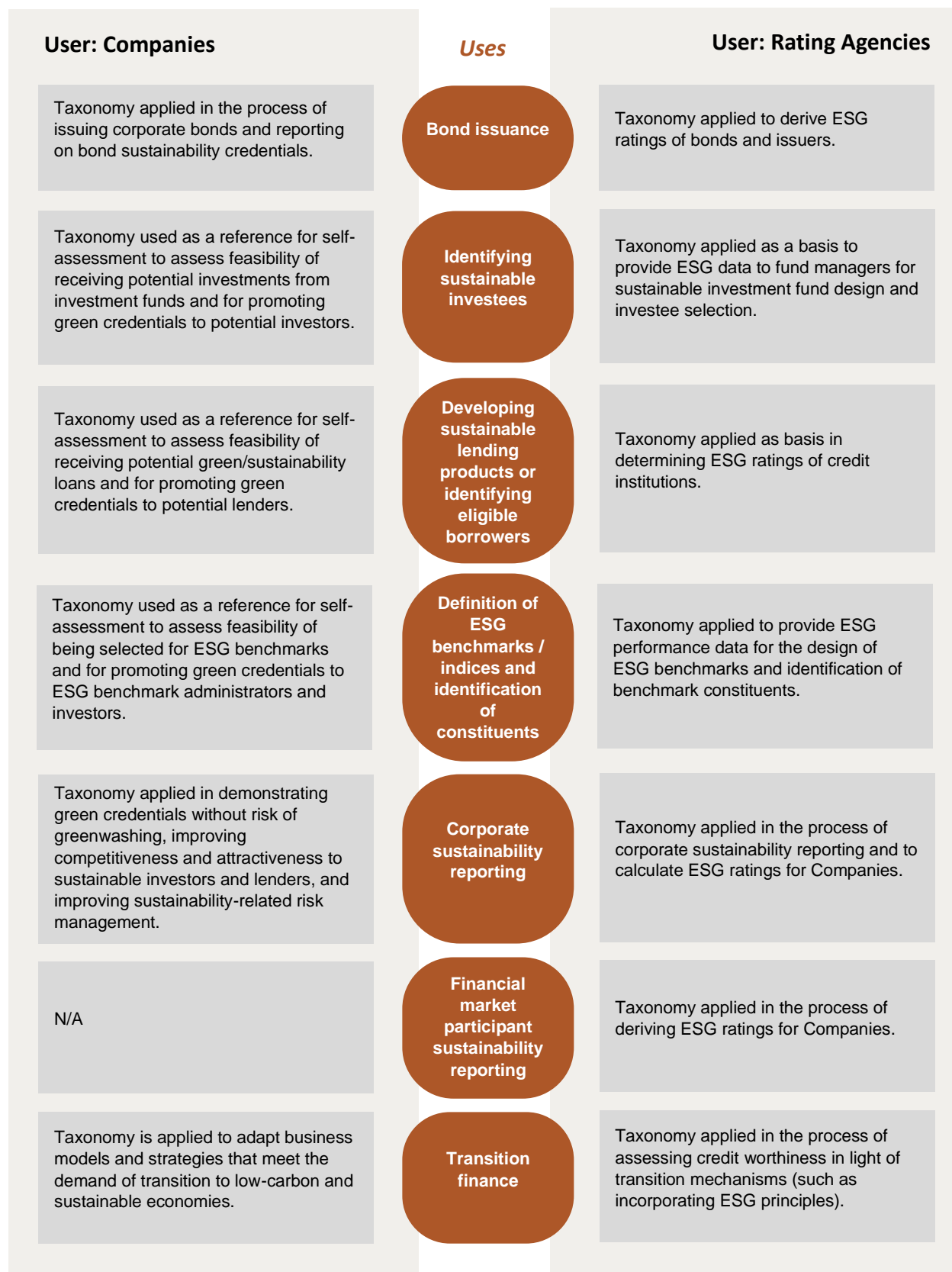
Taxonomy referred to when setting requirements for green loans in the member state.

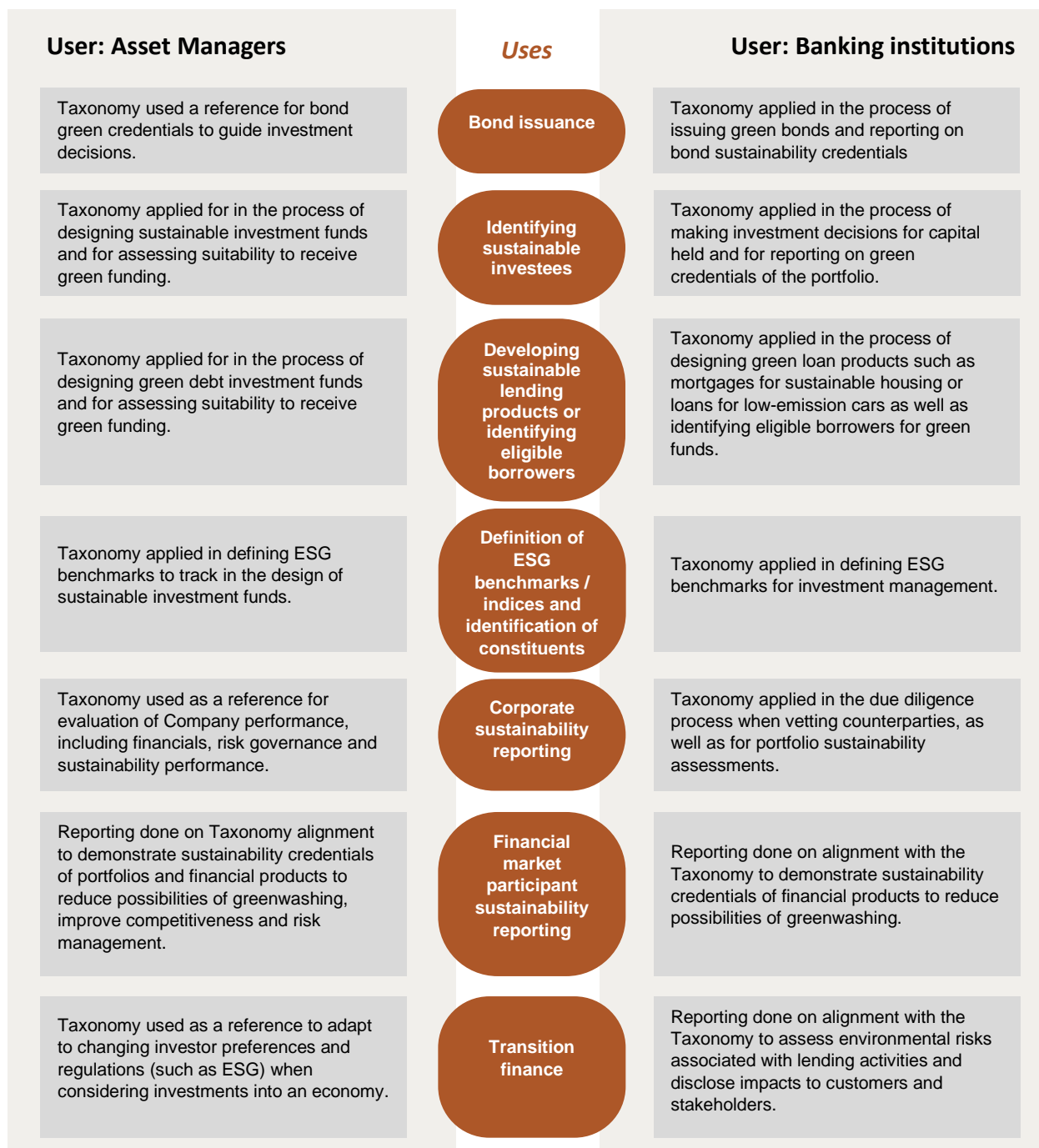
Taxonomy referred to when setting requirements for ESG benchmarks.

Taxonomy used as a reference for setting rules on corporate sustainability disclosures and ESG risk management practices.

Taxonomy used as reference when setting rules for the financial market participant sustainability reporting disclosures at portfolio and product level.

Taxonomy referred to in order to ensure accurate reporting on the environmental impact of transition finance activities and adherence to relevant regulatory requirements.





**Figure 14: Potential Uses and Users of the ASEAN Taxonomy**

### 6.3. Classification of entities, portfolios, and financial instruments

The ASEAN Taxonomy currently only provides guidance on how to assess individual Activities. Notwithstanding, the ASEAN Taxonomy aims to facilitate classification of entities and portfolios through aggregation of Activities. Further guidance on the assessment of entities and portfolios will be provided in future Versions of the ASEAN Taxonomy.



### 6.3.1. Assessment procedures other than Use of Proceeds

For the avoidance of doubt, the ASEAN Taxonomy does not propose any changes to ASEAN Green Bond Standards (GBS), ASEAN Social Bond Standards (SBS), and ASEAN Sustainability Bond Standards (SUS) themselves. It is anticipated that assessments of financial instruments may make use of similar procedures as described in the ASEAN GBS, ASEAN SBS, and ASEAN SUS (ACMF, 2018) in as much as it applies to aspects other than Use of Proceeds, i.e.:

- Process for Project Evaluation and Selection.
- Management of Proceeds.
- Reporting.

### 6.3.2. Grandfathering

The ASEAN Taxonomy includes provisions for financial products and portfolios to be classified according to a TSC which may be subject to change over time. The rules contained within this section relate to the grandfathering of TSC for all forms of financial instruments. A grandfathering period starts from the date a change is applied to a TSC related to Activities or related assets. During the grandfathering period, the classification of instruments created with the purpose of financing Activities or related assets according to their alignment with TSC shall retain the status quo extant before the change in TSC.

Section 6.3.2.1 relates specifically to grandfathering of TSC as they pertain to bonds. Section 6.3.2.2 relates to all other financial instruments. The rules have been developed to ensure consistency in the classification of Activities or related assets that are funded by multiple financial instruments. The goal is to encourage a more effective flow of capital to support the decarbonisation agenda of ASEAN and ease the monitoring of classification of financial instruments throughout the duration of the instruments.

This may include:

- Green financial instruments, where all funds are allocated to investments where all underlying Activities or related assets are aligned with the ASEAN Taxonomy Tier 1; or
- Financial instruments, where funds may be allocated to a mixture of:
  - Investments where underlying Activities or related assets are aligned with the ASEAN Taxonomy Tier 1; and
  - Investments related to a social objective.

Other financial products and portfolios including other tiers will be covered in subsequent versions of the ASEAN Taxonomy, as explained in Annex 1, Section 4.

#### 6.3.2.1. Grandfathering of Bonds

This subsection pertains to grandfathering rules for bonds for which the use of proceeds are to be allocated to Activities or related assets which align with Tier 1 TSC of the ASEAN Taxonomy.

The rules described in this section have been set for compatibility with grandfathering rules applied by the EU Green Bond Standard (EU-GBS)<sup>7</sup>.

The rules apply to bonds, the proceeds of which are allocated, in part or in their entirety, to one or more of the following:

- Fixed assets that are not financial assets;
- Capital expenditure;<sup>8</sup>
- Operating expenditure that was incurred no more than 3 years before the issuance of the bond;<sup>9</sup>
- Financial assets, the proceeds of which are allocated to one of the uses listed above and which were created no more than 5 years after the issuance of the bond.

Proceeds of the bond must be allocated in alignment with TSC applicable at the time of issuance of the green bond.

#### ***Where bond proceeds have been allocated to specific Activities or related assets***

Proceeds that have been allocated to specific Activities or related assets prior to any changes to the TSC will not be affected, and the classification of the related financial instruments will remain status quo, in line with the originally applied TSC. In this instance, the use of proceeds will be classified in alignment with the original TSC until the end of the originally stated term of the bond.

For the avoidance of doubt, allocation of proceeds applies to all cases where a bond issuance programme with identified utilisation for specific Activities or related assets has been approved, and for which the issuer has made a commitment to disburse funds, regardless of whether disbursement be made via a single issuance (tranche) or multi-issuances (tranches).

#### ***Where bond proceeds have not been allocated***

If TSC changes occur after the bond issuance but before the allocation to specific Activities or related assets, then the unallocated proceeds can be allocated based on the TSC which applied before the change during the 7-year grandfathering period.

Where issuers' proceeds are allocated in accordance with a portfolio approach, issuers shall include in their portfolio only those assets whose underlying Activity is aligned with any TSC which were applicable at any point during the 7 years prior to the date of publication of any allocation report.

---

<sup>7</sup> Regulation 2023/2631 on European Green Bonds and optional disclosures for bonds marketed as environmentally sustainable and for sustainability-linked bonds, Article 8, 22 November 2023 [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L\\_202302631](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L_202302631)

<sup>8</sup> Related to assets or processes that are associated with the ASEAN Taxonomy-aligned Activities; part of a plan to expand ASEAN Taxonomy-aligned Activities or to allow Activities to become ASEAN Taxonomy-aligned; or related to the purchase of output from ASEAN Taxonomy-aligned Activities and individual measures enabling the target Activities to become low-carbon or to lead to GHG reductions.

<sup>9</sup> Ibid.

### 6.3.2.2. Grandfathering of Other Financial Instruments

This subsection relates to the ASEAN Taxonomy Tier 1 TSC which are applied to financial instruments other than those described in Section 6.3.2.1.

For Activities or related assets aligned with Tier 1 TSC, the length of the grandfathering period shall be 7 years after the TSC amendment.

In addition to ensuring consistent treatment, as explained in 6.3.2, this grandfathering period was set with due consideration to developments in financial markets where new financial structures could be introduced (e.g., blended finance instruments and fixed income securities with equity features).

## REFERENCES

- ACMF. (2018, October). *ASEAN Green Bond Standards*. Retrieved from ASEAN Capital Markets Forum: <https://www.theacmf.org/initiatives/sustainable-finance/asean-green-bond-standards>
- ADB. (2022, November 14). *ADB and Indonesia Partners Sign Landmark MOU on Early Retirement Plan for First Coal Power Plant Under Energy Transition Mechanism*. Retrieved from Asian Development Bank: <https://www.adb.org/news/adb-indonesia-partners-sign-landmark-mou-early-retirement-plan-first-coal-power-plant-etm>
- ADB. (n.d.). *Energy Transition Mechanism*. Retrieved March 2023, from Asian Development Bank: <https://www.adb.org/what-we-do/energy-transition-mechanism-etm>
- ASEAN. (2012, May 10). *ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers*. Retrieved from Association of Southeast Asian Nations: <https://asean.org/asean-declaration-on-the-protection-and-promotion-of-the-rights-of-migrant-workers/>
- ASEAN. (2012, November 19). *ASEAN Human Rights Declaration*. Retrieved from Association of Southeast Asian Nations: <https://asean.org/asean-human-rights-declaration/>
- ASEAN. (2013). *ASEAN Declaration on Strengthening Social Protection*. Retrieved from Association of South East Asian Nations: [https://www.asean.org/wp-content/uploads/images/archive/23rdASEANSummit/5.%20asean%20declaration%20on%20social%20protection\\_final.pdf](https://www.asean.org/wp-content/uploads/images/archive/23rdASEANSummit/5.%20asean%20declaration%20on%20social%20protection_final.pdf)
- ASEAN. (2020, September 28). *Comparative Study on Laws and Policies in the Management of Migrant Workers in ASEAN*. Retrieved from Enhanced Regional EU-ASEAN Dialogue Instrument: [https://asean.org/wp-content/uploads/2022/01/National%20Report\\_Lao%20PDR\\_endorsed%2028%20Sep%202020.pdf](https://asean.org/wp-content/uploads/2022/01/National%20Report_Lao%20PDR_endorsed%2028%20Sep%202020.pdf)
- ASEAN. (2020, July 1). *Trashing it out: waste management in Asia*. Retrieved from Association of Southeast Asian Nations: <https://connectivity.asean.org/resource/trashing-it-out-waste-management-in-asia/>
- ASEAN. (2021, October 21). *Framework for Circular Economy for the ASEAN Economic Community*. Retrieved from Association of Southeast Asian Nations: [https://asean.org/wp-content/uploads/2021/10/Framework-for-Circular-Economy-for-the-AEC\\_Final.pdf](https://asean.org/wp-content/uploads/2021/10/Framework-for-Circular-Economy-for-the-AEC_Final.pdf)
- ASEAN. (2022, November 11). *ASEAN Leaders' Statement on the Application of Timor-Leste for ASEAN Membership*. Retrieved from Association of Southeast Asian Nations: <https://asean.org/asean-leaders-statement-on-the-application-of-timor-leste-for-asean-membership/>
- ASEAN Centre for Energy. (2022, September 15). *The 7th ASEAN Energy Outlook*. Retrieved from Association of Southeast Asian Nations: <https://aseanenergy.org/the-7th-asean-energy-outlook/>
- ASEANstats. (2022). *ASEAN Statistical Highlights 2022*. Retrieved from Association of Southeast Asian Nations: <https://www.aseanstats.org/publication/asean-statistical-highlights-2022/>

- ASEANstats. (n.d.). *ASEAN Gross Domestic Product (GDP)*. Retrieved April 09, 2024, from Association of Southeast Asian Nations: <https://data.aseanstats.org/macroeconomics/gdp-asean>
- ASFI. (2024, October). *Australian Sustainable Finance Taxonomy V0.1; Public Consultation Paper; Second Consultation*. Retrieved from Australian Sustainable Finance Institute: [https://static1.squarespace.com/static/6182172c8c1fdb1d7425fd0d/t/67215bed26393f0fba80320b/1730239496752/ASFI\\_Australian-Sustainable-Finance-Taxonomy.pdf](https://static1.squarespace.com/static/6182172c8c1fdb1d7425fd0d/t/67215bed26393f0fba80320b/1730239496752/ASFI_Australian-Sustainable-Finance-Taxonomy.pdf)
- BNM. (2021, April 30). *Climate Change and Principle-based Taxonomy*. Retrieved from Bank Negara Malaysia: <https://www.bnm.gov.my/-/climate-change-principle-based-taxonomy>
- BOT. (2023, June 30). *คณะกรรมการ Thailand Taxonomy*  
 เปิดรับฟังความเห็นต่อร่างมาตรฐานการจัดกลุ่มกิจกรรมทางเศรษฐกิจที่คำนึงถึงสิ่งแวดล้อม (Thailand Taxonomy). Retrieved from Bank of Thailand: <https://www.bot.or.th/en/news-and-media/news/news-20230630-2.html#:~:text=The%20Thailand%20Taxonomy%20Phase%20I,highest%20proportion%20of%20carbon%20emissions>.
- BOT. (2024, October). *Thailand Taxonomy Working Group opens for public hearing on draft of environmentally friendly economic activity classification standards (Thailand Taxonomy) Phase 2*. Retrieved from Bank of Thailand: <https://www.bot.or.th/th/financial-innovation/sustainable-finance/green/Thailand-Taxonomy/public-hearing-thailand-taxonomy-phase2.html>
- BSP, C. B. (2024, February 23). *Proposed Philippine Sustainable Finance Taxonomy Guidelines*. Retrieved from Securities and Exchange Commission Philippines: [https://www.sec.gov.ph/wp-content/uploads/2024/02/2024MC\\_SEC-MC-No.-5,-S.-of-2024-Guidelines-on-the-Philippine-Sustainable-Finance-Taxonomy.pdf](https://www.sec.gov.ph/wp-content/uploads/2024/02/2024MC_SEC-MC-No.-5,-S.-of-2024-Guidelines-on-the-Philippine-Sustainable-Finance-Taxonomy.pdf)
- CBD. (2022, December 16). *The Convention on Biological Diversity*. Retrieved from UN Convention on Biological Diversity: <https://www.cbd.int/convention/>
- Dezan Shira. (2023, January 3). *Indonesia's Just Energy Transition Partnership: Impacts for the Green Economy*. Retrieved from ASEAN Briefing: <https://www.aseanbriefing.com/news/indonesias-just-energy-transition-partnership/>
- DNV. (2023). *Energy Transition Outlook*. Retrieved from <https://www.dnv.com/energy-transition-outlook/special-reports/>
- DOLE. (1974). *Labor Code of the Philippines*. Retrieved from Department of Labor and Employment, Republic of the Philippines: <https://blr.dole.gov.ph/2014/12/11/labor-code-of-the-philippines/>
- FAO. (2006). *Free Prior and Informed Consent*. Retrieved from Food and Agriculture Organisation of the United Nations: <https://www.fao.org/3/i6190e/i6190e.pdf>
- GEM. (2022, July). *Global Coal Plant Tracker*. Retrieved from Global Energy Monitor: <https://globalenergymonitor.org/projects/global-coal-plant-tracker/>
- GFANZ. (2022, June). *The Managed Phaseout of High-emitting Assets*. Retrieved from Glasgow Financial Alliance for Net Zero: [https://assets.bbhub.io/company/sites/63/2022/06/GFANZ\\_-\\_Managed-Phaseout-of-High-emitting-Assets\\_June2022.pdf](https://assets.bbhub.io/company/sites/63/2022/06/GFANZ_-_Managed-Phaseout-of-High-emitting-Assets_June2022.pdf)

- Government of Thailand. (2010). *Homeworkers Protection Act, B.E. 2553*. Retrieved from International Labour Organisation: [https://www.ilo.org/dyn/natlex/natlex4.detail?p\\_isn=93545](https://www.ilo.org/dyn/natlex/natlex4.detail?p_isn=93545)
- IEA. (2020, December). *Electricity Market Report - December 2020*. Retrieved from International Energy Agency: <https://www.iea.org/reports/electricity-market-report-december-2020>
- IEA. (2022). *World Energy Outlook 2022*. Retrieved from International Energy Agency: <https://iea.blob.core.windows.net/assets/830fe099-5530-48f2-a7c1-11f35d510983/WorldEnergyOutlook2022.pdf>
- IQAir. (2022). Retrieved from Empowering the world to breathe cleaner air: <https://www.iqair.com/>
- MAS. (2023). *Singapore-Asia Taxonomy for Sustainable Finance*. Retrieved from Monetary Authority of Singapore: <https://www.mas.gov.sg/news/media-releases/2023/mas-launches-worlds-first-multi-sector-transition-taxonomy>
- OJK. (2022). *Indonesia Green Taxonomy Edition 1.0 - 2022*. Retrieved from Otoritas Jasa Keuangan: <https://www.ojk.go.id/keuanganberkelanjutan/en/publication/detailsflibrary/2352/taksonomi-hijau-indonesia-edisi-1-0-2022>
- OJK. (2024, February). *Buku Taksonomi untuk Keuangan Berkelanjutan Indonesia*. Retrieved from Otoritas Jasa Keuangan: <https://www.ojk.go.id/keuanganberkelanjutan/en/publication/detailsflibrary/2352/taksonomi-hijau-indonesia-edisi-1-0-2022>
- RMI. (2020, June 30). *How to Retire Early: Making Accelerated Coal Phaseout Feasible and Just*. Retrieved from Rocky Mountain Institute: <https://rmi.org/how-to-retire-early-making-accelerated-coal-phaseout-feasible-and-just/>
- SC. (2022, December 12). *SC unveils principles-based sustainable and responsible investment taxonomy for the Malaysian capital market*. Retrieved from Securities Commission Malaysia: <https://www.sc.com.my/resources/media/media-release/sc-unveils-principles-based-sustainable-and-responsible-investment-taxonomy-for-the-malaysian-capital-market>
- Socialist Republic of Viet Nam. (1994, June 23). *Labour Code of the Socialist Republic of Viet Nam*. Retrieved from ASEAN: [https://asean.org/wp-content/uploads/2016/08/Doc-9\\_Vietnam60.pdf](https://asean.org/wp-content/uploads/2016/08/Doc-9_Vietnam60.pdf)
- von Kameke, L. (2022, May 11). Retrieved from Statista: <https://www.statista.com/statistics/1307304/asean-main-economic-sectors-gdp-share/>

# APPENDIX A1: VERSION 1 STAKEHOLDER CONSULTATION

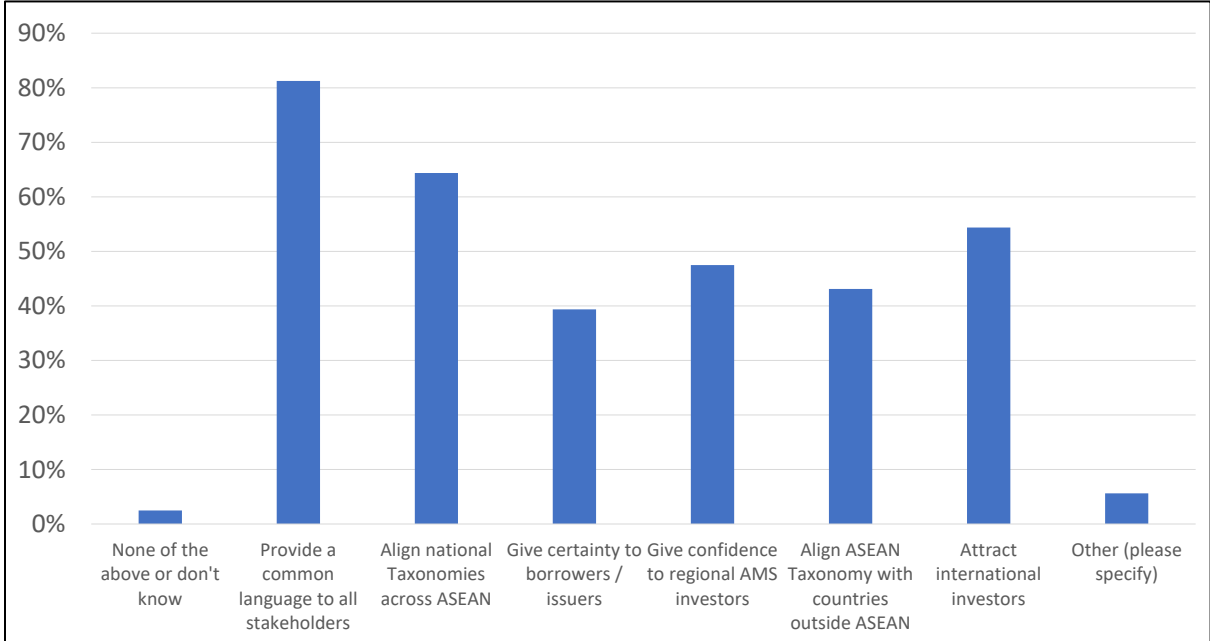
After publishing Version 1 of the ASEAN Taxonomy, the ATB held a stakeholder consultation to seek feedback on the conceptual framework of the ASEAN Taxonomy. Online surveys, webinars, roundtable discussions and individual interviews were organised between May to July 2022.

The consultation covers a wide range of institutions with an interest in the ASEAN Taxonomy. Survey responses were gleaned from 181 individuals representing 160 different organisations – covering all AMS and stakeholders beyond the ASEAN region. The consultations were conducted with approximately 393 registrants across 20 roundtables (of various sectors/industries), and 27 independent/individual interviews with organisations.

Generally, stakeholders are supportive of the ASEAN Taxonomy initiative and highlighted several challenges to be addressed, including:

- Clarity of definitions;
- Design of the ASEAN Taxonomy for simplicity and ease of use;
- Transparency of reporting;
- Interoperability and recognition (within ASEAN and across other regions in the world); and
- Access to usable and consistent data.

More than 80% of the stakeholders commented on the importance of the ASEAN Taxonomy providing a common language. The commonality of language was an issue raised particularly by those stakeholders whose operations are transitional by nature; such as airlines, maritime operators, and international development banks.



**Figure 15: Stakeholder feedback on the role of the ASEAN Taxonomy**

### *Clarity of definitions*

Some stakeholders suggested that the term 'Sustainable Finance' implied the ASEAN Taxonomy should have 'social', as well as 'environmental' objectives. Others were of the opinion that Social Aspects should be seen as essential minimum criteria for environmental Activities but should not be seen as an explicit objective of the ASEAN Taxonomy.

Stakeholders also highlight the need for further clarity in the concept of an 'Amber' classification. While 'Amber' classification is positively received in principle by stakeholders, it was not necessarily clear that the function of the 'Amber' classification was understood uniformly. This confusion is compounded by the fact that Version 1 of the ASEAN Taxonomy has differing definitions of the 'Amber' classification under the FF and the PS. It was widely recognised by stakeholders that economic development is a key priority in ASEAN thus requiring a transition phase as the region approaches a 'pure green' future. Several stakeholders also stated that the 'Amber' classification could be a useful tool for investors to assess the relative 'greenness' of a portfolio as well as for assessing sustainability-linked bonds. On the other hand, some stakeholders believed that the 'Amber' classification could represent a potential investment signal which might be relevant at the Company or portfolio level.

### *Design of the ASEAN Taxonomy for simplicity and ease of use*

While the Tier system was generally regarded as appropriate for ASEAN, there were concerns about its implementation. There was a perception that, while the same EOs and ECs are applied across ASEAN, assessment results will differ as each AMS faces different contexts. Some stakeholders also highlighted the difficulty to assess EOs 2-4 given that they seek to address an impact which may be specific to certain areas, as opposed to EO1, which is more global in nature.

Although thresholds might need to be adjusted to meet the needs of the specific AMS, it must be possible to compare projects and to track environmental performance over time. Stakeholders suggested that instead of defining thresholds, for some industries it might be easier to define the kind of technology that can be categorised as 'Green', 'Amber', or 'Red'.

Finally, there were mixed opinions on 'what should be done with investments which fulfilled conditions of a Tier which has since been retired?'. Some participants saw dangers in grandfathering as it could pose the risk of gaming the system. New long-term projects could be implemented just before the criteria becomes stricter to avoid the need to meet higher standards. The opposing view to this was that it might be difficult to develop projects in the knowledge that future refinancing might be limited by requirements to meet newer and higher standards. In this case, a ban on grandfathering would mean that such projects could find themselves outside the ASEAN Taxonomy 'Green' or 'Amber' classification.

### *Transparency of reporting*

During the stakeholder consultation process, there was considerable interest in the setting, review, and eventual retirement of metrics and tiers. Many stakeholders also highlighted the issue of information transparency by issuers which is critical to assess potential investments. Therefore, the ASEAN taxonomy should consider useful and relevant metrics and thresholds and set minimum requirements that can help facilitate data transparency.



### *Interoperability and recognition (within ASEAN and across other regions in the world)*

Some stakeholders shared feedback on the ASEAN Taxonomy being linked to the EU Taxonomy and expressed a desire for less restrictive thresholds to be set in ASEAN than might be the case in the EU. On the other hand, this could result in investors seeking to invest in countries with the most lenient criteria, resulting in a 'race to the bottom'. The practicality and usability of the ASEAN Taxonomy is key in ensuring its uptake. Consultations showed consensus in the necessity for clear definitions and guidance, with 53% of responses regarded that simplicity and clarity enables them to convince their organisations to adopt or align with the ASEAN Taxonomy.

There was a consensus across stakeholder interactions that commonality between national taxonomies and the ASEAN Taxonomy is desirable, as having different taxonomies could lead to a fragmented landscape, creating competition instead of cooperation. It was felt that the ASEAN Taxonomy should provide an overarching flexible framework for national taxonomies. However, it was recognised that uniting national taxonomies is not a simple expectation due to differing national priorities, tolerances, and pathways. Interoperability is thus necessary to ensure the end goal can be achieved under the various national pathways.

International investors also expressed a wish to see alignment of the ASEAN Taxonomy with international standards to make green investment easier in ASEAN. However, this is not straightforward, and investors can understand the benefit of the ASEAN Taxonomy being tailored to ASEAN circumstances. There is an opinion that if the objective of the ASEAN Taxonomy is to share and standardise best practices, alignment with the EU Taxonomy could provide potential benefits for bridging these differences between AMS and international investors. On the other hand, many stakeholders also made comparisons of the proposed ASEAN Taxonomy with the Climate Bond Standards (CBS) and associated Climate Bonds Initiative Taxonomy, as well as the Green Bond Principles (GBP), to determine interoperability with international standards and applications.

### *Access to usable and consistent data*

Most stakeholders felt that data issues were the single greatest barrier to successful implementation of the ASEAN Taxonomy, as it has been in other taxonomies. The mismatch in different understandings of data may result in Technical Screening Criteria being applied inconsistently. Some AMS and private entities evidently already collect and store data, but there is a perceived unwillingness to share data for confidentiality and competition reasons. Globally, governments already hold credible data but are not willing to disclose said data as it may have reputational implications. Continued self-reporting, which is currently the norm, could result in different organisations interpreting screening criteria thresholds differently even when applying the same taxonomy.

### *Conclusion*

While the stakeholder consultation process demonstrated a level of success in engaging stakeholders from a diverse range of organisations (i.e., financial institutions, government agencies, NGOs, and industries from all ASEAN Member States), it was recognised that more

work would need to be done to raise awareness of the ASEAN Taxonomy and increase recognition to its value to potential users.

## APPENDIX A2: VERSION 2 STAKEHOLDER CONSULTATION

The ASEAN Taxonomy for Sustainable Finance Version 1 was published in November 2021, followed by Version 2 on 27 March 2023 which was subsequently updated on 9 June 2023 with TSC for additional activities. Upon its release, the ATB commenced a stakeholder consultation to gather feedback from a wide range of stakeholders on Version 2, including but not limited to the following:



Usability of the ASEAN Taxonomy, and interoperability of the ASEAN Taxonomy considering taxonomies from other jurisdictions (where relevant)



Fundamental principles of the Environmental Objectives and Essential Criteria



Usability and implementability of the Foundation Framework



Usability and implementability of the Plus Standard



Technical Screening Criteria set for the first focus sector 'Electricity, gas, steam and air conditioning supply (Energy)'



Development of the Technical Screening Criteria for the 'Transportation and storage' and 'Construction and real estate' focus sectors

The ASEAN Taxonomy Consultation comprised three phases: a written feedback survey, roundtable discussions and stakeholder interviews. The survey garnered 132 responses from 1,303 survey recipients, forming the basis of findings. Roundtables delved into technical topics, with ten sessions held. Stakeholder interviews targeted specific groups. Additionally, consultation sessions were conducted and offline feedback was analysed for insights.

### Summary of Key Findings

There were no significant issues raised on the ASEAN Taxonomy Version 2. Significant issues were defined as major drawbacks which require immediate action by the ATB, and raised by a notable proportion of stakeholders.

However, the key findings arising from the stakeholder consultation have been consolidated into the following focus areas:

1	Usability and Interoperability of the ASEAN Taxonomy
2	Transition Effort
3	Environmental Objectives and Essential Criteria
4	Entity / Portfolio Assessment
5	Foundation Framework
6	Plus Standard
6A	TSC for the Energy Sector
6B	Coal Phase Out
6C	TSC Governance
6D	Future TSC Development
6E	Grandfathering
7	Market and Stakeholder Consultation Process

The key findings are summarised as follows:

### **Focus Area 1 Usability and Interoperability of the ASEAN Taxonomy**

The ASEAN Taxonomy is seen as valuable for guiding stakeholders who lack their own transition pathways. However, achieving compatibility with national taxonomies across the region is crucial, necessitating a common framework and understanding. There is uncertainty surrounding the application of national and regional taxonomies, especially for activities spanning multiple AMS. Conducting mapping and comparison exercises between the ASEAN Taxonomy, the EU Taxonomy, and national taxonomies could aid in identifying similarities and differences, enhancing clarity and credibility in transition efforts.

### **Focus Area 2 Transition Effort**

There is a necessity to evaluate real transition pathways in ASEAN by examining NDCs and individual country pathways. Investors in the region remain cautious about the credibility of transition financing due to concerns about greenwashing and the absence of consistent guidelines. Addressing this may entail significant support in understanding the concept and its execution.

### **Focus Area 3 Environmental Objectives and Essential Criteria**

The ASEAN Taxonomy's guidance on both EOs and EC is broad enough for application, but this leads to varied interpretations, hindering result comparability. Alignment with international standards is necessary to meet social aspect requirements for international investors. Emphasising a just transition was identified as crucial for future Taxonomy versions, underlining its significance among social aspects to be incorporated.

#### **Focus Area 4 Entity/Portfolio Assessment**

ATB guidance on entity/portfolio assessment methodology is preferred, although some financial institutions may opt to stick with their existing internal methods. Aligning this methodology with the EU Taxonomy is also favoured, despite adjustments needed for 'Amber' tiers. The complexity of calculations and data availability pose significant challenges in these assessments, underscoring the importance of validation to ensure accuracy.

#### **Focus Area 5 Foundation Framework**

There is ambiguity regarding how to assess an activity's significant contribution to an EO. This can be addressed either by determining positive contributions or through a scoring system, but challenges may arise with the latter potentially conflicting with the principles-based nature of the FF. In a weighted scoring assessment, consistency within industries is preferred, but differences across industries are acknowledged due to varying GHG emissions. Balancing this for a sector-agnostic FF poses a challenge.

#### **Focus Area 6 Plus Standard**

Stakeholders require more guidance on the implications of decreasing thresholds and sunset dates on the classification of activities already assessed under the ASEAN Taxonomy, considering companies' readiness to transition and technological availability. Disclosure regulations are necessary to improve data availability, but credibility requires verification, substantiation, and standardised reporting. Stakeholders view the ATB's role as crucial in resolving technical issues, such as the applicability of an 'Amber' Tier under EO2 and the segregation of activities like heating/cooling production from bioenergy exclusively, expecting thorough and robust assessments.

#### **Focus Area 6A TSC for the Energy Sector**

National policies and regulations, such as NDCs and energy accounting, serve as primary references for companies when determining TSC in the energy sector. TSC are viewed as credible and achievable, but their specific feasibility varies based on factors like national context, required investment, and technological maturity. The IEA SEA SDS is considered highly relevant due to its granularity and alignment with the region's circumstances, unlike global pathways. Some stakeholders also suggested alternative sources for consideration.

#### **Focus Area 6B Coal Phase-Out**

Financing CPO projects in the region has been challenging due to stakeholder complexity and disagreement over criteria. While various views on CPO criteria were shared, there is a consensus on the need to test and refine them in the market. Specific terminologies like "built" and "best-in-class" technology need clarification. Suggestions include using "financial close" instead of "built" and aligning with the Glasgow Pact's timeline. Tier 1 criteria for CPO are agreeable, but Tier 2 and Tier 3 criteria, particularly 'Amber Tier 3', are subject to debate. Stakeholders propose extending the operation duration for 'Amber Tier 3' to incentivise phase-out of older plants. Some suggest not defining timelines for phase-out, instead relying on strategic outlooks like the ASEAN Energy Outlook for guidance.

### **Focus Area 6C TSC Governance**

The TSC validity period is suggested to be set at 5 years, with considerations for technological advancements and other developments. However, a minority of stakeholders argue for a longer lead time (up to 10 years) for any future tightening of TSC for the energy sector due to the lengthy development cycle of large power plant projects. It is also emphasised that subsequent TSC should be published at least 12 months before the current ones expire to allow industries to adapt and plan effectively.

### **Focus Area 6D Future TSC Development**

Sector-specific transition or decarbonisation pathways and levers, like sustainable aviation fuel for aviation and Carbon Risk Real Estate Monitor (CRREM) decarbonisation pathways for construction and real estate, could be taken into account when establishing TSC.

### **Focus Area 6E Grandfathering**

Some stakeholders favour market-led grandfathering rules, acknowledging that various users may have differing perspectives on the specifics. However, there is a preference for the ASEAN Taxonomy to define grandfathering rules to some extent. These rules should be principles-based rather than prescriptive, aligning with market principles.

### **Focus Area 7 Market and Stakeholder Consultation Process**

The written feedback for the consultation had a 10% response rate, slightly lower than the previous year, likely due to the technicality and depth of questions. Stakeholders expressed feeling overwhelmed by the proliferation of ESG-related standards and guidelines. Awareness levels varied across organisations, with financial institutions showing greater awareness compared to others. Responses lacked detailed information on challenges and suggestions for refinement areas, particularly in technical aspects like grandfathering and TSC governance. Financial institutions emerged as the most interested stakeholders. Language barriers may have hindered stakeholder participation, though countries with advanced national taxonomies showed more interest. Many respondents chose "don't know / no opinion," indicating a need for more time to understand the ASEAN Taxonomy, but expert feedback was received from sector experts and stakeholders with in-depth knowledge. Feedback during roundtables was limited due to participant hesitance in sharing opinions.

## APPENDIX A3: VERSION 3 STAKEHOLDER CONSULTATION

The stakeholder consultation for the ASEAN Taxonomy Version 3, conducted from June to October 2024, engaged 109 stakeholders from 94 organisations across various sectors. Stakeholders validated the ASEAN Taxonomy's robustness, structure and alignment with international sustainability standards. The ASEAN Taxonomy was generally praised for its structured approach, offering clear classification through Green and Amber Tiers which support the gradual transition to low-carbon economies, accommodating industries at different sustainability development stages. No critical flaws were identified.

Some areas were highlighted for enhancement, particularly in the practical application and specificity of sector criteria. Clarifications were requested in TSC where stakeholders felt there was a lack of detailed explanations and examples for effective implementation. Terminology also presented challenges, in certain cases, and there were requests to clarify those terms. Stakeholders further noted the need for clearer guidelines on how to transition from one Tier to the next Tier, particularly from Amber 2 to Green, to enhance the ASEAN Taxonomy's practical usability.

Beyond these specific suggested improvements, there was a call for broader market engagement through awareness campaigns, training, and capacity building to boost understanding and adoption, especially among SMEs. Additionally, with the growing number of taxonomies internationally, ensuring interoperability with global standards is vital for facilitating broader adoption.

Some of the specific issues raised are summarised below.

### **Useability and Implementation**

Key points discussed included improving the ASEAN Taxonomy's clarity, overcoming barriers to implementation, and navigating the proliferation of taxonomies globally. Whilst on the whole, stakeholders viewed the ASEAN Taxonomy positively, noting its simplicity and accessibility, there were respondents who use it as a reference rather than their primary tool or a central framework. There was a strong call for increased awareness, capacity building and clearer communication of its benefits to enhance adoption. Interoperability with other taxonomies was highlighted to align green finance initiatives regionally or globally, with suggestions for a comprehensive document on the equivalence of the different frameworks. There was a preference for digital accessibility, with stakeholders advocating for an online, searchable version of the ASEAN Taxonomy.

### **Transition Efforts**

Stakeholders acknowledged the value of Amber Tiers in assessing environmental impacts and accommodating regional differences but highlighted challenges such as the need for clearer benchmarks in general, difficulties in attracting funding and technological constraints in specific sectors like aviation. Consultation outcomes confirmed broad support for the inclusion of Amber Tiers, with suggestions on refining distinctions between Amber subcategories and integrating external guidelines, such as those from the various Green Building Certification (GBC) schemes,

for better alignment and interoperability with global standards. Sunset dates for the Amber Tiers were proposed to align with national policies and technological capacities.

### **TSC for Construction and Real Estate**

While stakeholders generally viewed the TSC as rigorous and credible, they raised concerns about varying feasibility for implementation across AMS, the clarity of scope for Activities, and the adequacy of local standards. Specific suggestions included incorporating embodied emissions, differentiating construction from building operations and improving guidance for ASEAN Taxonomy users. Challenges related to implementation were highlighted, especially for emerging markets with limited resources, data and expertise.

Feedback also emphasised the need for clearer alignment between international standards like LEED and local certifications, addressing regional climatic and material differences. Stakeholders suggested pathways for recognising GBCs aligned with climate change adaptation and proposed additional criteria for renovations, such as eliminating gas infrastructure and demonstrating performance improvements. Future updates to the TSC were recommended to align with objectives like the IEA's 'zero-carbon-ready' buildings, focusing on reducing emissions from fuels, refrigerants and materials. Expanding inclusivity and practicality in the TSC could help foster broader adoption and enhance sustainability transitions in the region.

### **TSC for Transportation and Storage**

Stakeholders highlighted the need for clearer definitions, particularly for terms like 'technologically and economically feasible', which could lead to inconsistent application.

Questions about fuel classification were raised, including the definitions of 'renewable' and 'fossil fuels', with calls for specific examples to avoid ambiguity. Stakeholders from the water transport industry also suggested a shift from tank-to-wake to well-to-wake emissions for water transportation to better reflect life-cycle impacts. The scope of TSC for infrastructure, including distinctions between essential and non-essential facilities, were also discussed.

Technological gaps, such as the feasibility of hydrogen-powered aircraft and unclear criteria like 'dedicated to fossil fuels', present implementation challenges. Regional disparities further complicate TSC application, with different nations having differing states of readiness.

Sector-specific challenges include the high costs of electrification for land transport, limited adoption of alternative fuels in maritime, and a supply shortage of sustainable aviation fuel for air transport. Stakeholders provided suggestions for future developments, such as electric taxiing criteria, TSC for renewable energy-ready ships, and expanding air transport coverage.

### **Do No Significant Harm**

Discussions on DNSH focused on its appropriateness, clarity and practicality. Stakeholders highlighted challenges in implementing DNSH due to varying local regulations, underdeveloped infrastructure, and sectoral differences, which complicate alignment with global sustainability goals. Practical application also requires balancing circular economy principles with procurement realities, as these may conflict in certain contexts.



The need for clearer guidance on applying the LCA and CRVA checklists was also raised, as interpretations of 'significant harm' vary. To address this, stakeholders recommended frequently asked question (FAQ) sheets, case studies, and clarifications.

### **Grandfathering**

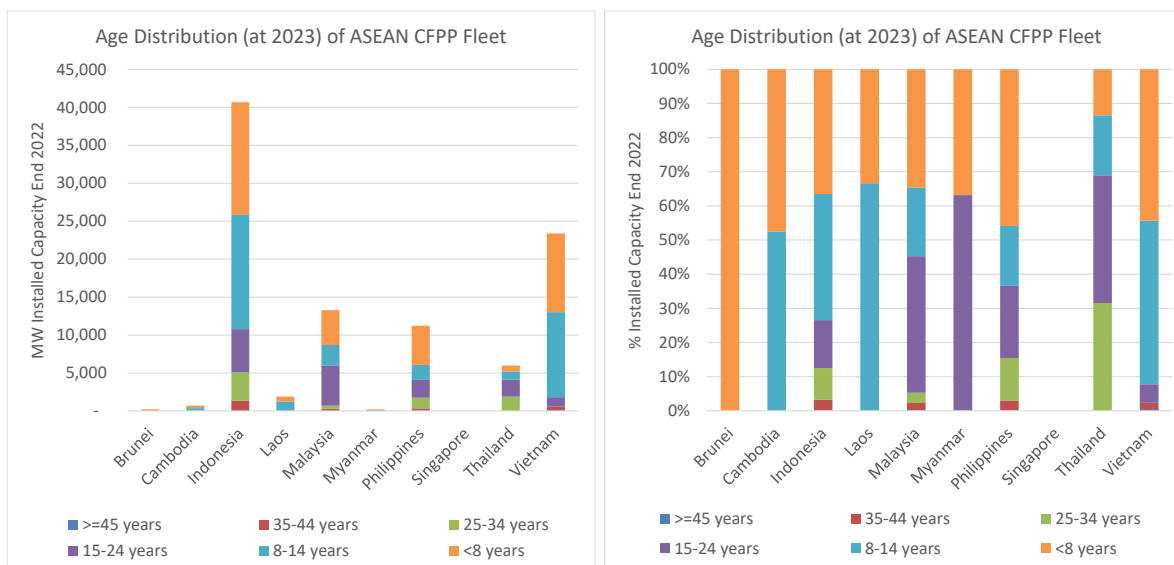
Discussions addressed the appropriateness of Green Tier grandfathering rules and potential development for Amber Tiers. Stakeholders emphasised stability and reassurance for investors while ensuring grandfathering does not hinder transitions. There was broad agreement on the 7-year grandfathering period for Green Tier TSC but flexibility may be required for certain sectors. For example, building certifications typically renew every 3 years, but airlines or shipping may need longer periods due to unique asset cycles. Clear timelines for phasing out grandfathered assets are needed to balance stability and progress. While stakeholders supported the Amber Tier grandfathering rules, specific suggestions were limited, and stakeholders looked to the ATB to develop clear guidance for these transitional categories.

### **Future TSC**

Activities proposed for the future version include crop cultivation, regenerative farming, water management, and sustainable land management in agriculture. In manufacturing, focus areas include energy management in sectors like iron, steel, and cement. Water supply and waste management suggestions include methane avoidance and plastic recycling. Additionally, ICT for agriculture and energy efficiency in data centres are considered critical for future updates.

## APPENDIX B: COAL PHASE-OUT

Coal-fired power plants (CFPP) are amongst the largest emitters of GHG in the region, where unlike the rest of the world, coal-fired generation has been expanding among the AMS. There is roughly 20GW of new coal-fired generating capacity currently under construction and slated for construction over the next few years; mostly in Indonesia, Viet Nam, and the Philippines (IEA, 2020). Considering that a significant portion of the capacity is at the pre-construction stage, emphasis is being placed on alternative sources such as transitional fuels (i.e., natural gas, biowaste, etc.) and renewables.



**Figure 16: Average age of CFPPs in Southeast Asia (GEM, 2022)**

Inclusion of this Activity assumes that early phase-out of a CFPP could be seen as a sustainable Activity. However, this leads to the question of '*what can be classified as an early phase-out?*'

As at 2023, 38% of existing CFPPs across the AMS were less than 8 years old, and close to 90% of them were less than 35 years old. CFPPs typically have a useful life of about 40 years, although some operate for much longer with refurbishment. For the ASEAN Taxonomy, specific calendar dates and ages of plants are preferred over emissions calculations for reasons including:

- Age may be seen as a proxy for emissions factor – generally, older and less advanced CFPPs are heavier emitters while younger CFPPs are more efficient and emit less. However, this should not omit the fact that some newer CFPPs may also be high emitters depending on their design and the fuel used.
- Calendar dates provide a hard deadline for the operation of all CFPPs and do not allow operations to carry on indefinitely (which can also be the case for emissions-based calculations in phase-out). This is necessary for achieving sustainability and net-zero targets set out in the Taxonomy.

Early phase-out based on the age of CFPPs is a simpler way of assessment. On the other hand, using emissions-based calculations is complex and it is difficult to balance robustness of the calculation formula and ease of usability of the Taxonomy.

## APPENDIX C: USER ENTRY POINT WORKED EXAMPLE

### Example 1: Assessing a dairy producer with one user entry point

#### Background

Dairy producer proposes a sustainability strategy to offset the environmental impacts of cow rearing. Part of this strategy includes adopting circular farming principles, which entails the following practices, among others:

- Composting animal waste into organic fertiliser;
- Removing effluents from liquid waste and recycling treated liquid waste to irrigate farmland and wash barns; and
- Using recyclable packaging.

Additionally, as part of its effort to mitigate climate change, the dairy producer has established the following initiatives to reduce GHG emissions from its production activities:

- Livestock manure management to reduce the production of methane and nitrous oxide;
- Using renewable energy to power dairy farms and production line.

#### User entry point assessment

Activity	
Dairy producer is opening another farm based on the company sustainability practices; or is seeking funds to support and further expand or improve the operations of the existing farm.	
User Entry Point 1: Activity Relevance and Strategic Alignment	
<p>a) Which EO is most relevant to the nature of the Activity?</p> <ul style="list-style-type: none"> <li>• Given that the proposed farm is to be constructed based on a circular farming strategy (including facilities for recycling farm waste to meet various agricultural needs, like pasture irrigation and farmland fertilisation), EO4 is most relevant.</li> </ul>	
<p>b) What is the strategic focus of the company?</p> <ul style="list-style-type: none"> <li>• Achieving sustainability through circularity (recycling agricultural resources and packaging) and mitigating climate change (reducing GHG emissions through animal waste management and adopting renewable energy).</li> </ul>	
<p>c) Which EO(s) is most aligned to the company's strategic focus?</p> <ul style="list-style-type: none"> <li>• Given the materiality assessment from the company, where circular agriculture (i.e., regenerative agriculture and responsible water stewardship) are high priority items, EO4 is most aligned.</li> </ul>	
<p><b>Based on the answers to the questions above, the assessor should be able to determine that EO4 is the primary EO.</b></p>	

## Example 2: Assessing a land developer with two user entry points

### Background

A land developer, to green their portfolio has developed and implemented a sustainability strategy to mitigate the impacts of construction on the climate and the environment. Part of this strategy includes:

- Construction of low-carbon developments and the decarbonisation of their existing development portfolio:
  - Measures include the use of renewable energy and carbon capture and storage technologies.
- Pollution and waste reduction across the supply chain:
  - Revised resource management plans.
  - Application of the waste management hierarchy.
  - Closing resource loops where possible.

### User entry point assessment

Activity	
The developer is looking to construct a complex of new office buildings which are in line with its sustainability strategy and is looking to see if this latest development is taxonomy-aligned.	
User Entry Point 1: Activity Relevance and Strategic Alignment	User Entry Point 2: Government and Industry Guidance
<p>d) Which EO is most relevant to the nature of the Activity?</p> <ul style="list-style-type: none"> <li>○ EO1 (proposed complex will meet green building standards and will partially run on renewable energy), EO3 (assessments on the environmental impact of developments on ecosystem conservation and efficient land use), and EO4 (use of recovered materials and responsible waste management practices).</li> </ul> <p>e) What is the strategic focus of the company?</p> <ul style="list-style-type: none"> <li>○ Achieving sustainability through circularity (recycling construction materials), protecting biodiversity and ecosystems (monitoring, conservation and rehabilitation) and mitigating climate change (reducing GHG emissions through green building best practices).</li> </ul> <p>f) Which EO(s) is most aligned to the company's strategic focus?</p> <ul style="list-style-type: none"> <li>○ Since the Company aims to mitigate climate change and achieve resource</li> </ul>	<p>a) Has the government issued guidance indicating that this Activity contributes to a specific EO under their NDC or national plan?</p> <ul style="list-style-type: none"> <li>○ Part of the country's NDCs are focused on reducing the carbon intensity of all sectors across the country, i.e., climate change mitigation (EO1). The NDCs are also committed to the resilience of infrastructure and cities, which fall under EO2.</li> </ul> <p>b) Is there guidance from the sectoral bodies which indicates that this Activity contributes to a specific EO under their sectoral plan?</p> <ul style="list-style-type: none"> <li>○ There is a government-initiated certification system for green buildings, and much of it focuses on buildings that reduce GHG emissions and mitigate climate change, which contributes to EO1.</li> </ul>

resilience, EO1, EO3 and EO4 are aligned.	
---	--

<b>Given the focus of User Entry Point 1 and 2 on EO1, the assessor decides that this Activity is best evaluated with EO1. Therefore, EO1 is primary EO.</b>
--

## APPENDIX D: FF – EO ASSESSMENT USE CASES

### Use Case 1 – Renewable Energy

<b>Company introduction</b>	The Company is a major solar farm operator, with a global presence and multiple farms mainly located within Malaysia.	
<b>Case context</b>	<p>The Company is looking to expand their operations and advance the field of renewable energy. As such, they are seeking new project financing for the construction of a new solar farm in Malaysia.</p> <p>The solar panels utilised in the solar farm are sourced from its subsidiary based in Singapore.</p>	
<b>Sustainability efforts</b>	<ul style="list-style-type: none"> <li>• Achieving net-zero before 2050.</li> <li>• Avoiding and enhancing critical habitats (e.g., forests, wetlands).</li> <li>• Ensuring that human and labour rights are protected.</li> <li>• Alignment of operations to internationally-recognised standards i.e., ISO 45001:2018 (Occupational Safety and Health Management) &amp; ISO 14001:2015 (Environmental and Social Management Systems).</li> </ul>	
<b>User entry point</b>	Which EO is the nature of the Activity most relevant to?	Given that the Activity involves the expansion of solar farm operations, which enables carbon emissions reduction and hence climate change mitigation, the Activity is most relevant to EO1.
	Which EO(s) is most aligned to the company's strategic focus?	Considering the company's Net Zero 2050 target and focus on expanding its solar farm operations, the Activity is most relevant to EO1.
	<b>EO1 (Climate Change Mitigation) is the primary EO</b>	
<b>EO1 Assessment</b>	<b>1A. Does the Activity avoid / reduce GHG emissions?</b>	
	How does the Activity avoid or help reduce emissions?	While the raw material extraction and panel production and transportation yields GHG emissions, the embodied and lifecycle emissions of solar energy generation are still lower than that of conventional energy generation.
	Does the Activity avoid locking in high-carbon activity?	Yes, because increasing the capacity for solar energy enables increased renewable energy generation, allowing for more low-carbon power generation. It does not delay or prevent the transition to low carbon alternatives but supports it at the core. The entity also envisions future possibilities in reducing GHG emissions in its supply chain, and thus is not locked-in to dependency on equipment with high lifecycle emissions.
	Do the Company's policies and business strategy	Yes, because as a solar farm operator, the Company's business strategy involves

	generally avoid contradicting or impeding alignment with the specified EO1 principles?	expanding their solar farm footprint across Malaysia, which is in line with EO1 principles, as an increase of solar energy production will enable more low-carbon energy and hence climate change mitigation.
	<b>Yes, the Activity avoids/reduces GHG emissions.</b>	
<b>DNSH / RMT Assessment</b>	<b>2A. Does the Activity avoid causing potential significant harm to other EOs?</b>	
	Has an EIA been conducted and approved on the Activity?	Yes.
	What are the results of the EIA, where do the impact of the Activity lie?	The results of the EIA indicate that the new solar farm, due to its proximity to an unprotected forest, will adversely affect the habitats and biodiversity surrounding it, because of land disturbance, habitat loss and pollution to soil and water resources.
	(EO3) Is the Activity detrimental to the conservation status of habitats and species within the natural ecosystem? ( <i>i.e., inhibitions to the dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.</i> )	Yes. Solar farms require large areas of land which interfere with existing uses of land e.g., grazing, natural functioning of the ecosystem. The solar farms operations will also encroach on forests, while unprotected under local legislation, are still habitats for endangered species, who might be threatened by the intrusion into their habitats. Solar farms may also contain hazardous substances and chemicals which results in the contamination of soil and groundwater.
	<b>No. The Activity causes potential significant harm to EO3.</b>	
<b>2B. Has the implementation of remedial measures already commenced at the time of assessment?</b>	Yes. To mitigate this harm, the mitigation hierarchy for biodiversity protection has been applied. Further expansion towards forested areas that are home to endangered species will be prohibited. Additionally, any loss of habitat will be restored or replanted to ensure no net loss of natural habitat. Proper management and disposal of hazardous substances is also considered to avoid/reduce the contamination of soil and water resources. These processes are ISO14001-certified, which indicates that the company has in place an effective and	



		international-standard environmental management system that manages harms that might arise from any operational processes that interact with the environment. Beyond ensuring legal compliance, the environmental management system also involves other measures to minimise environmental footprint.
	<b>3A. Does the Activity no longer cause significant harm to other EOs at the time of assessment?</b>	Yes. Harm has been mitigated, as critical habitat will remain untouched, contamination of soil/water reduced significantly, and any other loss of natural habitat will be replaced.
<b>Initial Classification</b>	<b>Green</b>	
<b>Social aspect Assessment</b>	<b>4A. Does the Company meet minimum national standards relating to human rights, forced labour, child labour and impact on people living close to investments?</b>	<p>The Activity is carried out by the Company based in Malaysia. A subsidiary based in Singapore is also involved by supplying the solar panels without which the Activity cannot be carried out. Therefore, the social aspect assessment will cover both the Company and the subsidiary. Both organisations will be assessed according to the national legislations and regulations in their respective location.</p> <ul style="list-style-type: none"> <li>• The Company’s operations meet the relevant Malaysian legislations and regulations on: <ul style="list-style-type: none"> <li>○ Respect human rights (main references: Federal Constitution of Malaysia).</li> <li>○ Prevention of forced and child labour (National Action Plan on Forced Labour &amp; Child Act 2001).</li> <li>○ Impact on people living close to investments (Environmental Quality Act 1974 &amp; Town and Country Planning Act 1976).</li> </ul> </li> <li>• The subsidiary’s operations meet the relevant Singaporean legislations and regulations on: <ul style="list-style-type: none"> <li>○ Respect human rights (Constitution of the Republic of Singapore).</li> <li>○ Prevention of forced and child labour (Prevention of Human Trafficking Act 2014).</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>○ Impact on people living close to investments (Environmental Protection and Management Act 2002).</li> <li>● Both organisations uphold the rights and principles indicated in the ASEAN Human Rights Declaration (AHRD), ASEAN Consensus on the Protection and Promotion of the Rights of Migrant Workers (ACPPRMW), and ASEAN Declaration on Strengthening Social Protection (ADSSP) such as but not limited to the following: <ul style="list-style-type: none"> <li>○ Provision of minimum wage and normal hours of work in line with Paragraph 27(1) of the AHRD on “just, decent and favourable conditions of work”.</li> <li>○ Employment of policies and guidelines regarding occupational health and safety for all workers in line with Paragraph 40(b) of the ACPPRMW on “occupational safety and health protection”.</li> <li>○ Implementation of a stakeholder engagement plan in line with Paragraph 8 of the ADSSP on “inclusive and participatory approach”.</li> </ul> </li> </ul> <p><b>Yes, the Company and its subsidiary meet minimum national standards relating to human rights, forced labour, child labour and impact on people living close to investments.</b></p>
Final Classification	Green	

## Use Case 2 - Agriculture

<b>Company introduction</b>	The Company cultivates and produces palm oil. It has operations across multiple Southeast Asian countries, owning both oil palm plantations and on-site processing facilities.	
<b>Case context</b>	The Company is hoping to expand their cultivation footprint within Indonesia, by <b>seeking new project financing for palm oil plantation expansion</b> . The expansion involves reclaiming previously degraded soil and planting new oil palm trees on the restored land.	
<b>Sustainability efforts</b>	<ul style="list-style-type: none"> <li>• Adherence to Indonesian Sustainable Palm Oil (ISPO) standards.</li> <li>• Development of water control structures to regulate plantation water levels for the protection of peatlands.</li> <li>• Water categorisation and optimisation, as well as conservation efforts.</li> <li>• Monitoring and disclosure of carbon emissions, in line with the Carbon Disclosure Project (CDP).</li> </ul>	
<b>User entry point</b>	Which EO is the nature of the Activity most relevant to?	Assessment of the Company's sustainability strategy and disclosures showed that the Company's environmental principles include peatland protection, soil health maintenance, water accountability and emissions reduction. Both EO1 Climate Change Mitigation and EO3 Protection of Healthy Ecosystems and Biodiversity are applicable.
	Which EO(s) is most aligned to the Company's strategic focus?	Given the heavy focus on ecosystem protection (i.e., peatland protection, soil health maintenance and water accountability), EO3 was selected as the primary EO for assessment.
<b>EO3 Assessment</b>	<b>1A. Does the Activity contribute to protecting, conserving or restoring ecosystems and biodiversity?</b>	
	Which specific principles under EO3 does the Activity meet or contribute to?	'Implementation of necessary measures to protect ecosystems and biodiversity'. While the Activity conventionally involves extensive deforestation and loss of biodiversity, several policies are already in place, including measures that prevent soil erosion and runoff into watercourses. An internal policy prohibiting peatland conversion is also in place. The expansion will involve reclaiming previously degraded soil and planting new oil palm trees on the restored land, which has less significant impact on the biodiversity of the area, relative to clearing of peatlands and forests. The clearing and reclamation of the degraded soil area will not involve land burning practices.

	Does the Activity minimise or eliminate negative effects of operations on the natural ecosystem and biodiversity?	Yes. The Activity avoids unsustainable peatland use through its policy that prohibits planting on new peatlands regardless of depth.
	Is a 3rd party certification or verification of alignment of Activity with EO3 available?	Yes. The Company adheres to the Indonesia Sustainable Palm Oil (ISPO) standard.
	<b>Yes, the Activity contributes to protecting ecosystems and biodiversity by minimising or eliminating negative effects of its operations.</b>	
<b>DNSH / RMT Assessment</b>	<b>2A. Does the Activity avoid causing potential significant harm to other EOs?</b>	
	Has an EIA been conducted and approved on the Activity?	Yes.
	What are the results of the EIA and where do the impact of the Activity lie?	The results of the EIA highlight the following: 1) Existing plantations on peatlands and wastewater treatment of palm oil mill effluents (POME) are significant sources of emissions with no established mitigation efforts in place; 2) Lack of internal policies that prohibit deforestation practices in the pursuit of new plantation projects.
	(EO1) Does the Activity avoid leading to significant GHG emissions, incl. CO2, CH4, N2O, SF6, NF3 and/or HFCs?	No. As reflected in the EIA, emissions from peat and wastewater treatment of POME are significant sources of GHG emissions.
	(EO1) Does the Activity avoid leading to or causing extensive deforestation practices?	No. While there has not been any record of deforestation activities by the Company since 2018, a No Deforestation policy is not yet in place.
	<b>No. The Activity causes potential significant harm to EO1.</b>	
	<b>2B. Has the implementation of remedial measures already commenced at the time of assessment?</b>	Yes. A recent internal environmental review has highlighted the high emission potential of the Company's peat emissions and POME wastewater treatment, and the planning and implementation of remedial measures have just begun. These measures include offsetting carbon emissions by emission credits from the export of electricity and palm kernel shells.

	<b>3A. Does the Activity no longer cause significant harm to other EOs at the time of assessment?</b>	No. The remedial measures that have been implemented are insufficient as there is still a significant amount of emissions, so the Activity still causes significant harm to EO1.
	<b>3B. Are there concrete plans to implement remedial measures to address residual harm within 5 years?</b>	Yes. Methane capture facilities will be installed at palm oil processing facilities. The Company has also pledged to commit to 'no deforestation, no peat and no exploitation (NDPE)' within the next 3 years.
<b>Initial Classification</b>	<b>Amber</b>	
<b>Social Aspect Assessment</b>	<b>4B. Does the Company meet minimum national standards relating to human rights, forced labour, child labour and impact on people living close to investments?</b>	<p>The Activity is solely carried out by the Company. Therefore, the social aspect assessment will only cover the Company which will be assessed according to Indonesian legislations and regulations.</p> <ul style="list-style-type: none"> <li>• The Company's operations meet the relevant Indonesian legislations and regulations on: <ul style="list-style-type: none"> <li>○ Respect human rights (Constitution of the Republic of Indonesia Year 1945).</li> <li>○ Prevention of forced and child labour (Labour Law 2003).</li> <li>○ Impact on people living close to investments (Decree of Ministry of Environment No. 17/2012 on Community Participation and Information Disclosure in Environmental Impact Assessment).</li> </ul> </li> <li>• The Company also upholds the rights and principles indicated in the AHRD, ACPPRMW, and ADSSP such as but not limited to the following: <ul style="list-style-type: none"> <li>○ Employment of policies and guidelines to overcome discrimination in line with Paragraph 2 of the AHRD on entitlement of every person to rights and freedoms "without distinction of any kind, such as race, gender, age, language, religion, political or other opinion, national or social origin, economic status, birth, disability or other status".</li> <li>○ Employment of policies and guidelines that set out measures taken to prevent and eliminate violence and abuse in line</li> </ul> </li> </ul>

		<p>with Paragraph 30(b) of the ACPPRMW on preventing “abuses, exploitation and violence”.</p> <ul style="list-style-type: none"> <li>○ Implementation of social policies and guidelines on risk and vulnerability assessments and mitigation measures in line with Paragraph 11 of the ADSSP on “implementation of social protection programme, as well as effective targeting systems to ensure social protection services would go to those most in need”.</li> <li>● However, upon discovery by the assessor, it was found that there were previous credible allegations of forced labour, as workers were found to be held against their will to work on plantations. Workers were physically confined in the plantations which is a violation of Article 28I of the Constitution of the Republic of Indonesia Year 1945 and Paragraph 12 of the ACPPRMW. The Company rectified this issue by providing compensation, implementing a human rights due diligence process and workers’ grievance mechanism to ensure there is no forced labour in its operations.</li> </ul> <p><b>Yes, the Company meets minimum national standards relating to human rights, forced labour, child labour and impact on people living close to investments and has demonstrated improvement of their operations to prevent a repeat of violations.</b></p>
<b>Final Classification</b>	<b>Amber</b>	

### Use Case 3 - Manufacturing

<b>Company introduction</b>	The Company is a semiconductor manufacturer. The Company has operations across Southeast Asia, including Malaysia and the Philippines.	
<b>Case context</b>	The Company wants to take advantage of the rapid growth of semiconductor manufacturing in Viet Nam, and plans on expanding their operations there. As such, the Company is <b>seeking new project financing for the construction of a new semiconductor manufacturing factory</b> in the outskirts of Ho Chi Minh City.	
<b>Sustainability efforts</b>	<ul style="list-style-type: none"> <li>• ISO 50001 Energy Management Standard certification for all manufacturing facilities.</li> <li>• Maximum energy efficiency achieved through the use of energy efficient machinery and lighting systems, as well as regular energy audits.</li> <li>• Conservation of water used and watershed restoration.</li> <li>• Diverting manufacturing waste (e.g., sulfuric acid) from landfills by processing waste into raw materials reusable by others.</li> <li>• Stringent occupational health and safety standards.</li> </ul>	
<b>User entry point</b>	What is the investors' priority and investment strategy?	The investor, who has a history of investments in manufacturing infrastructure, recognises the semiconductor manufacturing boom in Viet Nam and wishes to capitalise on it. However, the investor is cognisant of the environmental impacts of such an expansion, as semiconductor manufacturing is a resource-intensive process. As part of their investment strategy, the investor has incorporated elements of the OECD's Sustainable Manufacturing Toolkit into its sustainable investment framework, including the de-prioritisation of infrastructure investments that do not support a circular economy. Since the Company is pursuing a circular economy strategy with their new factory, the investor is interested to assess the Activity in line with EO4, which is also in line with their strategy.
	Which EO(s) is/are most aligned to the investors' priority and strategy?	Given the heavy focus on optimising resource use, which is a key tenet within a circular economy, EO4 is the most relevant EO.
	<b>EO4 (Promotion of Resource Resilience and Transition to Circular Economy) is the primary EO.</b>	
<b>EO4 Assessment</b>	<b>1A. Does the Activity minimise resource use?</b>	
	Does the Activity use renewable energy, bio-	<ul style="list-style-type: none"> <li>• No. Given the high purity standards required of raw material inputs into the semiconductor</li> </ul>

	based resources or other recovered materials to reduce rate of resource extraction?	manufacturing process, and the high-quality standards upheld, the Company is reluctant to use recovered materials. As such, production of semiconductors in the new factory will utilise primary raw materials.
	<b>No, the economic Activity does not use renewable energy, bio-based resources or other recovered materials to reduce rate of resource extraction.</b>	
	<b>1B. Does the Activity optimise resource yield?</b>	
	Does the Activity increase resource efficiency by ensuring recovered materials are recycled as high-quality secondary raw material?	Yes, the process of semiconductor manufacturing involves a number of different solvents, which are separated and refined by a third-party. Sulfuric acid is another waste product in the process of semiconductor manufacturing, and the Company practises resource recovery by sending sulfuric acid waste to a third-party that processes it into technical grade, reusable sulfuric acid. The Company is able to recover 95% of sulfuric acid used in the facility which is refined by a third-party for resale to other companies. The percentage of recovery is comparable with the industry standard. Recovered and refined solvents, processed sulfuric acid and reclaimed precious metals are sold to other companies, supporting the continuation of a circular economy.
	Does the Activity avoid leading to significant inefficiencies in the use of materials or in the direct or indirect use of natural resources at one or more stages of the product life cycle?	Yes. The Activity avoids inefficiencies in its manufacturing processes through end-to-end digitisation and predictive maintenance.
	<b>Yes, the Activity optimises resource yield</b>	
<b>DNSH / RMT Assessment</b>	<b>2A. Does the Activity avoid causing potential significant harm to other EOs?</b>	
	Has an EIA been conducted and approved on the Activity?	Yes
	What are the results of the EIA and where do the impacts of the Activity lie?	The results of the EIA highlight that the specific manufacturing process that will be used at this plant will release significant amounts of



		greenhouse gas into the environment as a by-product.
	(EO1) Does the Activity avoid leading to significant GHG emissions, incl. CO2, CH4, N2O, SF6, NF3 and/or HFCs?	No. The process of creating the intricate circuitry patterns in semiconductors will be done using fluorinated GHGs, which enables the creation of faster and more powerful semiconductors. However, some of these GHGs will remain unreacted and escape the manufacturing chambers, potentially being released into the environment uncaptured; this process results in significant GHG emissions.
	<b>No. The Activity causes potential significant harm to EO1.</b>	
	<b>2B. Has the implementation of remedial measures already commenced at the time of assessment?</b>	No. Given the high level of precision involved in the process of semiconductor manufacturing, these manufacturing processes require significant amounts of time for designing. Changing the gases used therefore will require an overhaul of the manufacturing process, which requires significant R&D time and expenditure. As such, the Company is currently reluctant to change their longstanding manufacturing processes, and has no remedial measures implemented at the time of assessment.
	<b>3B. Are there concrete plans to implement remedial measures to address residual harm within 5 years?</b>	No. There are no remedial measures planned within 5 years due to the Company's reluctance to change their manufacturing processes.
<b>Final Classification</b>	<b>Red</b>	
	<b>No Social Aspects assessment is performed as the Activity has failed the Do No Significant Harm and Remedial Measures to Transition assessment.</b>	

## Use Case 4 - Construction

<b>Company introduction</b>	The Company is a land developer, with operations across Southeast Asia, including Philippines, Viet Nam and Cambodia.	
<b>Case context</b>	<p>The Company has recently acquired a plot of land in the Philippines, which contains a dilapidated office building and several informal settlements. The Company is seeking financing to develop the land area by demolishing the dilapidated office building and constructing a multi-towered office complex.</p> <p>The Company procures the construction materials (concrete, steel, wood, etc.) from an accredited supplier and enlists specialised services (roofing, plumbing, electricians, etc.) from a subcontractor for the Activity. Both supplier and subcontractor are based in the Philippines.</p>	
<b>Sustainability efforts</b>	<ul style="list-style-type: none"> <li>• Increasing the resilience of developments to the effects of climate change.</li> <li>• Protecting and restoring local biodiversity through native tree conservation, moving/re-planting and planting in the design.</li> <li>• Increasing resource efficiency, by reducing resource use, upcycling and recycling.</li> <li>• Ensuring the health and safety of employees in and out of work.</li> </ul>	
<b>User entry point</b>	Has the government issued any guidance (including policies, roadmaps and guidelines) which indicates that this Activity contributes to a specific EO under their NDC or national plan?	Given the vulnerability of the Philippines to the effects of climate change, including droughts, heatwaves and flooding, the Department of Environment and Natural Resources has lead the Inter-Agency Committee on Climate Change to put together the National Strategy for Climate Change Adaptation. A focus of this action plan is infrastructure, including investments in public and private buildings of all types. This will in part involve designing and constructing infrastructure according to the country's guidelines on climate resilient buildings. Therefore, EO2 is most aligned to the priorities of the government of the Philippines.
	What is the investors' priority and investment strategy? Which EO(s) is most aligned to the investors' priority and strategy?	The investor is looking into environmentally responsible investments and understanding the Philippines' vulnerability to climate change-related extreme weather conditions, is seeking investments that improve Manila's resilience to climate change, including the construction of infrastructure with climate resilient features like drainage systems and passive cooling. Therefore, EO2 is most aligned to the investors' priority and strategy.
<b>EO2 (Climate Change Adaptation) is the primary EO.</b>		

<b>EO2 Assessment</b>	<b>1A. Does the Activity implement measures to increase the Company's resilience to climate change?</b>	
	How does the Activity contribute to Company's resilience against adverse physical impacts of current and future climate change?	The office complex will use passive cooling methods, like green roofing and landscaping with native trees. This helps reduce temperatures within and around the buildings, as well as manage the Urban Heat Island Effect, hence increase resilience to extreme heat. The construction of the office complex will also involve building extensive drainage systems and a decent percentage of permeable surfaces. Given that Manila is prone to flooding, this infrastructure will enable an increase of the Company's portfolio's resilience to floods.
	Does the Activity avoid leading to an increase in the vulnerability of human or natural systems due to the effects of climate change and climate variability–related risks?	No, because the building is constructed with climate change resilience in mind, it generally does not lead to an increase in vulnerability to the effects of climate change.
	<b>Yes, the Activity implements measures that increase the Company's resilience to climate change.</b>	
<b>DNSH / RMT Assessment</b>	<b>2A. Does the Activity avoid causing potential significant harm to other EOs?</b>	
	Has an EIA been conducted and approved on the Activity?	Yes.
	What are the results of the EIA and where do the impacts of the Activity lie?	The results of the EIA highlight biodiversity protection through conservation of on-site native trees as part of the building design, moving/re-planting if incorporation to the current design is not possible, and planting native trees. However, the demolition and construction of the new office building could potentially generate vast amounts of construction waste.
	(EO4) Does the Activity avoid leading to a significant increase in the generation, incineration or disposal of waste?	Construction and demolition activities generate significant amounts of waste, including steel, wood, concrete, and asphalt. Without proper management, this will lead to the significant increase in the generation, incineration and/or disposal of waste.
<b>No. The Activity causes potential significant harm to EO4.</b>		

	<p><b>2B. Has the implementation of remedial measures already commenced at the time of assessment?</b></p>	<p>Yes. To minimise the amount of waste bound for landfills and promote the establishment of a circular economy, the Company has measures in place e.g., purchasing mostly recycled materials, and recycling any construction waste they generate. When procuring construction materials, the Company purchases a majority of their inputs from companies that upcycle construction waste to produce new construction materials. Any construction waste generated is also separated and sent to in-house or third-party recycling companies. Construction of the new building will adhere to the circular economy standards which are laid out in the Company sustainability policy.</p>
	<p><b>3A. Does the Activity no longer cause significant harm to other EOs at the time of assessment?</b></p>	<p>Yes. Harm has been mitigated, as recycled materials will be primarily used and construction waste will be recycled.</p>
<p><b>Initial Classification</b></p>	<p><b>Green</b></p>	
<p><b>Social Aspect assessment</b></p>	<p><b>4A. Does the Company meet minimum national standards relating to human rights, forced labour, child labour and impact on people living close to investments?</b></p>	<p>The Activity is carried out by the Company based in the Philippines. A supplier and a subcontractor are also involved by providing materials and services, respectively, without which the Activity cannot be carried out. Therefore, the social aspect assessment will cover the Company, supplier and subcontractor. The organisations are based in the same location, hence they will be assessed according to Philippine legislations and regulations.</p> <ul style="list-style-type: none"> <li>• The Company’s, supplier’s and subcontractor’s operations meet the relevant Philippine legislations and regulations on: <ul style="list-style-type: none"> <li>○ Respect human rights (Constitution of the Philippines).</li> <li>○ Prevention of forced and child labour (Labour Code of the Philippines, Expanded Anti-Trafficking in Persons Act of 2012, and Special Protection of Children Against Abuse, Exploitation and Discrimination Act).</li> </ul> </li> </ul>

		<ul style="list-style-type: none"> <li>• The Company, supplier and subcontractor uphold the rights and principles indicated in the AHRD and ACPPRMW such as but not limited to the following: <ul style="list-style-type: none"> <li>○ Employment of policies and guidelines that respect freedom of association and right to collective bargaining in line with Paragraph 27(2) of the AHRD on “right to form trade unions and join the trade union of his or her choice for the protection of his or her interests”.</li> <li>○ Issuance of written employment contracts that clearly stipulate the basic terms of employment in line with Paragraph 14 of the ACPPRMW on “right to be issued an employment contract or proper documentation by relevant authorities/ bodies and/or employers with clear and basic terms of employment”.</li> </ul> </li> <li>• The supplier and subcontractor have also been found to be in compliance with the Company’s Supplier’s Code of Ethics.</li> <li>• However, the Company’s operations do not meet the relevant Philippine legislations and regulations on: <ul style="list-style-type: none"> <li>○ Impact on people living close to investments (Department of Natural Resources and Environment Administrative Order No. 30 Series of 2003).</li> </ul> </li> <li>• The Company at present does not have any avenues for affected groups to raise grievances, despite the potential for social harm in land development (e.g., displacement of nearby communities) which is a violation of Paragraph 12 of the ADSSP on advocating “strategies that promote the coverage, availability, comprehensiveness, quality, equitability, affordability and sustainability of various social protection services.</li> </ul>
--	--	---

	<b>No, the Company does not meet minimum national standards relating to human rights, forced labour, child labour and impact on people living close to investments.</b>
<b>Final Classification</b>	<b>Red</b>

## APPENDIX E: PS – TSC APPLICABILITY USE CASE

**Context:** Company will build a bioenergy (rice-husk) power plant in Cambodia in 2023 (in this case – Year 0). It has an estimated emissions intensity of 350 gCO<sub>2</sub>e/kWh. The Company wishes to assess the bioenergy plant against the ASEAN Taxonomy.

Year	ASEAN Taxonomy Status <sup>10</sup>	Company Action
0	ATB has not yet defined the TSC for the Activity under the PS.	Bioenergy power plant commences. The ASEAN Taxonomy V2 has not yet been published and the PS is not yet available for assessment.
1	Bioenergy plant defined under the PS and sets the TSC (TSC1) for Tiers: <ul style="list-style-type: none"> <li>• ‘Green’: &lt; 100 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 2’: ≥ 100 and &lt; 425 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 3’: ≥ 425 and &lt; 510 gCO<sub>2</sub>e/kWh</li> </ul>	The Company <u>chooses</u> to assess the bioenergy plant under the PS. The bioenergy plant is assessed as meeting TSC for ‘Amber Tier 2’, as well as all EC, and is classified accordingly.
	<b>Classification</b>	<b>Amber Tier 2</b>
8	New TSC (TSC2) for bioenergy plants sunsets ‘Amber Tier 3’ for this Activity for bioenergy plants: <ul style="list-style-type: none"> <li>• ‘Green’: &lt; 100 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 2’: ≥ 100 and &lt; 300 gCO<sub>2</sub>e/kWh (<i>values for illustration only</i>)</li> <li>• ‘Amber Tier 3’: Sunset</li> </ul>	The bioenergy plant no longer meets TSC for ‘Amber Tier 2’. The Activity must now be re-assessed as ‘Red’. according to TSC2. Actions are commenced to re-gain ‘Amber Tier 2’ status.
	<b>Classification</b>	<b>Red</b>
9	TSC2 is still extant: <ul style="list-style-type: none"> <li>• ‘Green’: &lt; 100 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 2’: ≥ 100 and &lt; 300 gCO<sub>2</sub>e/kWh (<i>values for illustration only</i>)</li> <li>• ‘Amber Tier 3’: Sunset</li> </ul>	The Company has made the bioenergy plant more efficient, and it now has an emissions intensity of 240 gCO <sub>2</sub> e/kWh. The plant may be re-classified as ‘Amber Tier 2’.
	<b>Classification</b>	<b>Amber Tier 2</b>
13	New TSC (TSC2) for bioenergy plants sunsets ‘Amber Tier 3’ for this Activity for bioenergy plants: <ul style="list-style-type: none"> <li>• ‘Green’: &lt; 100 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 2’: ≥ 100 and &lt; 200 gCO<sub>2</sub>e/kWh (<i>values for illustration only</i>)</li> <li>• ‘Amber Tier 3’: Sunset</li> </ul>	The Company has maintained operations as usual and conducted improvements in terms of efficiency over the previous years. The bioenergy plant slightly improved in efficiency, with an emissions intensity of 220 gCO <sub>2</sub> e/kWh. However, the plant does not meet the ‘Green’ TSC or the new

<sup>10</sup> The figures represented under this table are for illustration purposes only; refer to Annex 1 for extant TSC.

		'Amber Tier 2' TSC and must now be classified as 'Red'.
	<b>Classification</b>	<b>Red</b>



## APPENDIX F: PS ASSESSMENT USE CASE

**Context:** A Company financed and commissioned a rice-husk to energy (bioenergy) plant in an AMS in 2023 and wishes to assess the Activity against the PS for classification.

### Example 1:

Step	Company / Assessor Action <sup>11</sup>	Assessment Status
1	Company chooses to assess the Activity against the PS for classification under EO1: Climate Change Mitigation.	The ATB has defined the TSC under EO1, for the Activity to be assessed under the PS.
2	Activity is assessed under the EO1 TSC. The ASEAN Taxonomy defines bioenergy plants under EO1 in the PS to have the following criteria for Tiers: <ul style="list-style-type: none"> <li>• ‘Green’: &lt; 100 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 2’: ≥ 100 and &lt; 425 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 3’: ≥ 425 and &lt; 510 gCO<sub>2</sub>e/kWh</li> </ul>	The bioenergy plant has a carbon intensity of 350 gCO <sub>2</sub> e/kWh, which means that, in principle, it could be classified as <b>‘Amber Tier 2’</b> .
3	Activity is assessed against the DNSH Requirements.	The assessment reveals that there is potential significant harm to be caused against EO3, although realistic and comprehensive plans for remediation measures have been made. The Activity cannot be classified as ‘Amber Tier 2’. It may now be classified as either ‘Amber Tier 3’ or ‘Red’, pending remediation within 5 years.
4	The Company provides supporting documentation of the potential significant harm being remediated within 3.5 years from the commissioning period (i.e., to be remediated before 2027).	Since the potential significant harm will be remediated in less than 5 years (the maximum period allowed for harm to be remediated) the Activity can now be considered as an <b>‘Amber Tier 3’</b> Activity.
5	Activity is assessed against the requirements for Social Aspects.	The assessment passes the criteria for Social Aspects. As a result, the Activity receives an interim classification of <b>‘Amber Tier 3’</b> .
<b>Interim Classification</b>		<b>Amber Tier 3</b>

<sup>11</sup> The figures represented under this table are for illustration purposes only; refer to Annex 1 for extant TSC

6	Within 3.5 years of the original assessment, the potential harm is assessed as having been remediated.	The Activity receives its final classification of ' <b>Amber Tier 2</b> '.
<b>Final Classification</b>		<b>Amber Tier 2</b>

**Example 2:**

Step	Company / Assessor Action <sup>12</sup>	Assessment Status
1	The Company chooses to assess the Activity against the PS for classification under EO1: Climate Change Mitigation.	The ATB has defined the TSC under EO1, for the Activity to be assessed under the PS.
2	Activity is assessed under the EO1 TSC. The ASEAN Taxonomy defines bioenergy plants under EO1 in the PS to have the following criteria for Tiers: <ul style="list-style-type: none"> <li>• 'Green': &lt; 100 gCO<sub>2</sub>e/kWh</li> <li>• 'Amber Tier 2': ≥ 100 and &lt; 425 gCO<sub>2</sub>e/kWh</li> <li>• 'Amber Tier 3': ≥ 425 and &lt; 510 gCO<sub>2</sub>e/kWh</li> </ul>	The bioenergy plant has a carbon intensity of 95 gCO <sub>2</sub> e/kWh meets the other criteria under EO1. It passes the assessment to be classified as a ' <b>Green</b> ' Activity.
3	Activity is assessed against the DNSH Requirements.	The assessment reveals that there is no significant harm to be caused against the other EOs.
4	Activity is assessed against the requirements for Social Aspects.	The Activity fails the Social Aspects assessment by indicating that there are non-compliances with some of the social requirements. As a result, the Activity receives a final ' <b>Red</b> ' classification.
<b>Final Classification</b>		<b>Red</b>

<sup>12</sup> The figures represented under this table are for illustration purposes only; refer to Annex 1 for extant TSC

**Example 3:**

Step	Company / Assessor Action <sup>13</sup>	Assessment Status
1	The Company chooses to assess the Activity against the PS for classification under EO1: Climate Change Mitigation.	The ATB has defined the TSC under EO1, for the Activity to be assessed under the PS.
2	Activity is assessed under the EO1 TSC. The ASEAN Taxonomy defines bioenergy plants under EO1 in the PS to have the following criteria for Tiers: <ul style="list-style-type: none"> <li>• ‘Green’: &lt; 100 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 2’: ≥ 100 and &lt; 425 gCO<sub>2</sub>e/kWh</li> <li>• ‘Amber Tier 3’: ≥ 425 and &lt; 510 gCO<sub>2</sub>e/kWh</li> </ul>	The bioenergy plant has a carbon intensity of 95 gCO <sub>2</sub> e/kWh and meets the other criteria under EO1. It passes the assessment to be classified as a ‘ <b>Green</b> ’ Activity.
3	Activity is assessed against the DNSH Requirements.	The assessment reveals that there is potential significant harm to be caused against EO3. As a result, the Activity can no longer be classified as ‘ <b>Green</b> ’. It may now be classified as either ‘ <b>Amber Tier 3</b> ’ or ‘ <b>Red</b> ’, pending an assessment on whether the potential significant harm will be remediated within 5 years.
4	The Company provides supporting documentation of the potential significant harm being remediated. Remediation will be complete 7 years from the from assessment date.	The Activity fails to remediate the harm within the five-year period. As a result, the Activity receives a final ‘ <b>Red</b> ’ classification.
<b>Final Classification</b>		<b>Red</b>

<sup>13</sup> The figures represented under this table are for illustration purposes only; refer to Annex 1 for extant TSC

## APPENDIX G: ACTIVITIES CLASSIFIED RED

The ASEAN Taxonomy aims to promote environmentally sustainable Activities. The automatic 'Red' classification of certain Activities reflects a commitment to mitigating climate change and transitioning towards cleaner, more sustainable energy sources. In this way, the ASEAN Taxonomy signals a focus on investments that align with the region's environmental goals, fostering a shift towards low-carbon and climate-resilient economies within the AMS. The following Activities may not be classified as 'Green' or 'Amber' by either the FF or the PS, and are therefore automatically classified as 'Red'.

### Energy:

- Coal or oil power generation without CCUS;
- Heat recovery from coal or oil fuelled power generation;
- Coal mining or oil extraction, refining, processing or production and associated supply chain infrastructure.

### Transport:

- New roads, road bridges, road upgrades, parking facilities, fossil fuel filling stations, etc;
- Oil tankers or other ships solely transporting coal or oil.

### Waste:

- Collection of waste that is going to landfill;
- Landfill without gas capture.

It should be noted that while abated coal is currently not included in this list, abated fossil fuels are currently technologically limited and may not yet be a viable solution in transitioning or achieving a 1.5°C outcome. Its application to subsequent versions of the ASEAN Taxonomy and inclusion in this Appendix will be further reviewed depending on technological developments.

## LIST OF ANNEXES

1. Technical Screening Criteria
2. DNSH Criteria
3. Assessment of Climate Risk
4. Alignment of the ASEAN Taxonomy with national strategies
5. Regulations pertaining to Social Aspects listed by AMS
6. Regulations pertaining to the Environment listed by AMS

# **Technical Screening Criteria (TSC) for the Plus Standard**

Updated as of 20 December 2024

## LIST OF REVISIONS

The following table provides a summary of key revisions to the ASEAN Taxonomy for Sustainable Finance:

Revision	Activity	Title	Revisions	Endorsed on	Issued on
1/2024 (Annex 1)	351[071]	Transmission and distribution (T&D) of electricity	<p>The revision was made to enhance the interoperability of the TSC with other widely used international taxonomies such as the EU Taxonomy and the Singapore-Asia Taxonomy. The revision for the Green Tier is as follows:</p> <p>1. T&amp;D infrastructure or equipment is part of a System where:</p> <p>a. &gt;67% of new generation capacity which achieved commercial operation on the System over a five-year rolling period<sup>5</sup> is 'Green';</p> <p><b>OR<sup>1</sup></b></p> <p>b. emissions intensity &lt;100 gCO<sub>2</sub>e/kWh for the System measured on a life cycle basis over a rolling five-year period;</p>	25 April 2024	3 May 2024
<p><b>*Note:</b></p> <p>1. The bold and yellow highlighted item was revised from “AND” to “OR”.</p>					
2/2024 (Annex 1)	TSC for Construction and Real Estate	Bases for setting TSC for Environmental Objective 4: Resource Resilience and the Transition to a Circular Economy	<p>The revision was made to refine the basis of the TSC in order to achieve Environmental Objective 4 (EO4). The revision for the Amber Tier 2 basis is as follows:</p> <p>Activity supports a transition towards a Green pathway within a defined time frame; AND</p>	27 May 2024	4 June 2024

			<p>Results in a contribution to the EO which is at least as good <b>as the technology which results in the lowest possible waste production which is<sup>2</sup></b> currently technologically and economically feasible for widespread use in ASEAN; OR</p> <p>Results in achieving the best reduction in EUI from a building construction and implementation plan.</p>		
--	--	--	--	--	--

**\*Note:**

2. The bold and yellow highlighted text was revised from “the lowest carbon emitting technology” to “as the technology which results in the lowest possible waste production which is”.



## PREAMBLE

Annex 1 of the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy) encompasses the list of Activities and their respective Technical Screening Criteria (TSC), as developed by the ATB. This Annex is intended to be updated at each revision to the ASEAN Taxonomy, primarily to include new focus sectors and enabling sectors as well as its subsequent Activities as defined by the ATB. Version 1 of the ASEAN Taxonomy did not include this Annex, as it was intended to provide the conceptual framework of the ASEAN Taxonomy.

Version 2 of the ASEAN Taxonomy, first published on 27 March 2023 and made effective on 19 February 2024, introduced Annex 1, to include Activities within the following ISIC codes:

- ISIC 351 Electricity, gas, steam, and air conditioning supply;
- ISIC 352 Transmission and distribution networks for renewable and low-carbon gases; including storage of renewable and low-carbon gases; and
- ISIC 353 Production of heating/cooling through various means; including storage of thermal energy.

Version 2 also includes Activities which are not included in ISIC, under the Carbon Capture, Utilisation and Storage enabling sector, namely:

- Activity 000[010] Transport of CO<sub>2</sub>; and
- Activity 000[020] Underground permanent geological storage of CO<sub>2</sub>.

Version 3 of the ASEAN Taxonomy, published on 27 March 2024, was updated to include Activities within the following ISIC codes:

- ISIC 410 Construction;
- ISIC 681 Real estate;
- ISIC 492 Land transportation;
- ISIC 501 Water transportation; and
- ISIC 51 Air transportation.

Subsequent to a stakeholder consultation in Q3 2024, clarifications to these TSC were included in this updated version.

Future revisions of the ASEAN Taxonomy will include additional focus sectors and enabling sectors, as and when developed in Annex 1.

# CONTENTS

LIST OF REVISIONS .....	119
PREAMBLE .....	121
CONTENTS .....	122
1 INTRODUCTION .....	124
1.1 Use of this Annex	124
1.2 Activity Identification System	125
1.3 Types of TSC and Activities	125
APPENDIX A: TSC FOR ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY .....	127
Bases for setting TSC	127
Current and Future TSC	128
351[011] Electricity generation from fossil gas	132
351[012] Electricity generation from renewable non-fossil gaseous and liquid fuels, including co-firing with fossil fuels	134
351[013] Hybrid fossil, renewable power generation, T&D, and/or energy storage for Island Systems	136
351[014] Electricity generation from bioenergy, including co-firing with fossil fuels	139
351[021] Electricity generation using solar photovoltaic technology	141
351[022] Electricity generation using CSP technology	142
351[030] Electricity generation from wind power	143
351[040] Electricity generation from hydropower	144
351[050] Electricity generation from geothermal energy	146
351[060] Electricity generation from ocean energy	148
351[071] Transmission and distribution (T&D) of electricity	149
351[072] Storage of electricity, including pumped storage	152
351[100] Coal power phase-out	153
352[010] Transmission and distribution networks for renewable and low-carbon gases	155
352[030] Storage of renewable and low-carbon gases	157
353[011] Production of heating/cooling from solar thermal energy	159
353[012] Production of heating/cooling from geothermal energy	161
353[013] Production of heating/cooling from renewable non-fossil gaseous and liquid fuels	163
353[014] Production of heating/cooling from fossil gas	165
353[015] Production of heating/cooling using waste heat	167
353[020] District heating/cooling distribution	169
353[030] Storage of thermal energy	171
353[040] Production of heating / cooling using electric heat pump	173
APPENDIX B: TSC FOR CONSTRUCTION AND REAL ESTATE .....	175
Bases for setting TSC	175

Current and Future TSC	176
Definitions of terms used in this TSC	177
410[001] Construction of new buildings	178
410[002] Renovation of existing buildings	181
431[001] Demolition and site preparation	184
681[001] Acquisition and ownership of buildings	186
68[001] Electric vehicle charging stations	188
68[002] Energy efficient equipment	190
68[003] Energy performance measurement, regulation, control	193
68[004] Renewable Technologies	195
68[005] Early Warning Systems	197
APPENDIX C: TSC FOR TRANSPORTATION AND STORAGE.....	199
Bases for setting TSC	199
Current and Future TSC	200
Definitions of terms used in this TSC	201
492[001] Urban and suburban transport, road passenger transport	203
492[002] Transport by motorbikes, passenger cars and light commercial vehicles	205
4911[001] Passenger interurban rail transport	207
4912[001] Freight rail transport	209
49[001] Infrastructure for road and public transportation, including infrastructure to enable low-carbon land transport	211
49[002] Infrastructure for personal mobility, cycle logistics	213
492[003] Operation of personal mobility devices, cycle logistics	215
491[001] Infrastructure for rail transport	217
4923[001] Freight transport services by road	219
5012[001] Sea and coastal freight water transport, vessels for port operations and auxiliary activities	221
5011[001] Sea and coastal passenger water transport	223
501[001] Retrofitting of sea and coastal freight and passenger water transport	225
5021[001] Inland passenger water transport	227
502[001] Retrofitting of inland water passenger and freight transport	229
50[001] Infrastructure for water transportation, including infrastructure to enable low-carbon water transport	231
5022[001] Inland freight water transport	233
51[001] Airport infrastructure, including low-carbon assets and facilities	235
APPENDIX D: TSC FOR ACTIVITIES NOT INCLUDED IN ISIC .....	237
Bases for setting TSC	237
000[010] Transport of CO <sub>2</sub>	238
000[020] Underground permanent geological storage of CO <sub>2</sub>	240

# 1 INTRODUCTION

This Annex contains information in support of the ASEAN Taxonomy. This Annex is further divided into Appendices for the established focus sectors, with TSC for each industry sector and its cross references to DNSH criteria.

## 1.1 Use of this Annex

This Annex contains details of the respective guiding principles and TSC for all Activities for which TSC have been defined under the Plus Standards (PS). For each Activity, TSC have been defined for each Tier which is applicable to that Activity in each Environmental Objective (EO).

Development of this Annex is ongoing, and ATB will seek consultation and conduct reviews on the Guiding Principles and TSC for all EOs in subsequent revisions of the Annex.

It is only possible to classify an Activity under the ASEAN Taxonomy, under an EO if TSC have been set for the Activity in that EO, for the respective Tier.

The term 'No TSC available' in this Annex means that the Activity cannot be classified under that EO at that Tier by use of the PS, and there are currently no plans to develop TSC for that Activity Tier. For example, it is currently not expected that there will be Amber Tiers for Climate Change Adaptation (EO2) for Activities defined under the Electricity, Gas, Steam, and Air Conditioning Supply focus sector. The reason is that it is expected that Amber for these Activities will normally only apply for Climate Change Mitigation (EO1), and that any classification under EO2 must demonstrate clear substantial contribution to EO2.

The term, 'TSC are presently not available for the Activity Tiers defined' means that the TSC could be developed for that Activity Tier in future revisions of this Annex.

Details on the procedure for the assessment of an Activity for the purposes of classification under the PS can be found in the Main Report.

Notwithstanding any TSC published in this Annex, any Activity which is directly or indirectly resulting in an effect which detracts from the EO to which it is intended to contribute should be classified as Red.

Note that the information provided in this Annex is not intended for use in assessments conducted using the Foundation Framework (FF).

In all places in this Annex, the term carbon capture, utilisation, and storage (CCUS) may refer to circumstances where greenhouse gases are captured with the intention of utilisation, storage or both. This can apply to any focus sector defined under the ASEAN Taxonomy, where relevant.

## 1.2 Activity Identification System

Definitions and Activities under the PS are grouped under 'ISIC Groups'. The ISIC system is the international reference classification of productive activities based on a set of internationally agreed concepts, definitions, principles, and classification rules. The ASEAN Taxonomy also appends an additional code to the end of the ISIC Group Code to precisely define the Activity within the ISIC Group Code.

This additional code is known as the Activity Code (AC). For example:

- 351[040] – Electricity Generation from Hydropower; where:
  - 351 – ISIC Group Code for 'Electric power generation, transmission and distribution'
  - [040] – AC for hydropower within this ISIC Group

## 1.3 Types of TSC and Activities

It is currently assumed that any Activity which may be classified as Green by its nature in the ASEAN Taxonomy will continue to be classified in this way for the foreseeable future.

The ASEAN Taxonomy defines TSC in the three different ways shown in Table 1. The plans below relate to each of these TSC types.

**Table 1: Types of TSC**

#	Type of TSC	Explanation	Examples of Activities included
1	TSC applied to Activities classified 'by their nature'.	TSC which relate to specific Activities which are normally considered to be 'Green' by default (assuming any other TSC which may be applicable to that Activity are also fulfilled).	<ul style="list-style-type: none"> <li>• Electricity generation using solar photovoltaic technology.</li> <li>• Electricity generation using CSP technology.</li> <li>• Electricity generation from wind power.</li> <li>• Electricity generation from ocean energy.</li> <li>• Storage of electricity, including pumped storage.</li> </ul>
2	Qualitative TSC.	Process- or practice-based TSC which require for an Activity to demonstrate that it is following certain principles, standards or rules.	<ul style="list-style-type: none"> <li>• All Activities may be subject to some qualitative TSC (e.g., Activities listed down under the Construction and Real Estate sector).</li> </ul>
3	Quantitative TSC.	Threshold-based TSC where Activities are required to meet certain defined numerical targets (e.g., gCO <sub>2</sub> e/kWh).	<ul style="list-style-type: none"> <li>• All forms of power generation and transportation which emit GHG</li> <li>• Electrical Transmission and Distribution (T&amp;D) networks which incorporate GHG emitting generation.</li> </ul>

Additionally, Section 6.3.2 in this version of the ASEAN Taxonomy describes grandfathering rules as they pertain to green financial instruments. This is limited to green financial instruments which fund Activities that may be classified in alignment with Tier 1. Subsequent versions of the ASEAN

Taxonomy will consider other forms of financial instruments, including those which consider underlying Activities at all Tiers.

It is recognised that AMS are on a journey to a 'Green' future and that each AMS may follow a different pathway. In this respect, it is expected that for financial instruments which incorporate Activities which may be classified as 'Amber', AMS will have some latitude to set grandfathering periods which are more closely aligned with their individual environmental plans up to a maximum limit of 7 years.

# APPENDIX A: TSC FOR ELECTRICITY, GAS, STEAM AND AIR CONDITIONING SUPPLY

## Bases for setting TSC

### Environmental Objective 1: Climate Change Mitigation

Tier	Description / Definition
Tier 1 (Green)	<p>TSC are aimed at achieving defined GHG emissions levels, which reference to credible, 1.5°C-aligned science-based pathways, as aligned with the Paris Agreement.</p> <p>Note that a 'Green' Activity need not necessarily preclude the use of fossil fuels. Activities which can achieve these targets while using fossil fuels may be eligible.</p> <p>In practice, this definition usually takes the form of quantitative thresholds which limit the emission of GHG for given units of utility. For example, it has been assessed that a threshold of 100 gCO<sub>2</sub>e/kWh for power generation is aligned with limiting temperature rise to 1.5°C by 2100. The equivalent value of 28 gCO<sub>2</sub>e/MJ has been used for heating and cooling Activities. As seen below, thresholds may be adjusted after the first TSC Period, which concludes at the end of 2030.</p>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. Activity supports a transition towards a Green pathway within a defined time frame; AND               <ol style="list-style-type: none"> <li>a. Results in a contribution to the EO which is at least as good at the lowest carbon emitting technology currently that is technologically feasible for widespread use in ASEAN, with a prescribed sunset date; OR</li> <li>b. Enables or promotes the implementation of a Green Activity in the context of this EO.</li> </ol> </li> </ol>
Tier 3 (Amber T3)	<ol style="list-style-type: none"> <li>1. Activity is in line with supporting the meeting of Nationally Determined Contribution (NDC) reduction targets of AMS that do not have a net zero 2050 timeline; OR</li> <li>2. Activity meets the TSC of Amber (Tier 2) or Green but has been assessed that it will do some level of significant harm to other EOs; which will be remediated within 5 years.</li> </ol>

### Environmental Objective 2: Climate Change Adaptation

Tier	Description / Definition
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity where measures have been implemented to ensure own resilience to climate change and thereby contribute to overall local, national or regional resilience; OR</li> <li>2. Activity enables other Activities to increase resilience to climate change.</li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

### Environmental Objective 3: Protection of Healthy Ecosystems and Biodiversity

Tier	Description / Definition
Tier 1 (Green)	No TSC available.

Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

#### Environmental Objective 4: Resource Resilience and the Transition to a Circular Economy

Tier	Description / Definition
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

All TSC set within this Appendix are common for all AMS. The Green TSC were set for interoperability with widely used international taxonomies and alignment with national taxonomies.

TSC for the Amber Tiers were set against future emissions projections for all Activities under the Electricity, Gas, Steam, and Air Conditioning Supply focus sector in Southeast Asia, as derived from the IEA Sustainable Development Scenario (SDS)<sup>1</sup>:

- Amber Tier 2: reflects projected emissions intensity for SE Asia in 2030.
- Amber Tier 3: reflects projected emissions intensity for SE Asia in 2027.

The TSC set here are for TSC Period 1. Proposed future TSC can be seen below.

TSC were checked against the lowest carbon emitting technology currently that is technologically feasible, for widespread use in ASEAN, both through review of publicly available technology comparisons<sup>2</sup> and through consultation with regional stakeholders.

The TSC for EOs 3-4 have been considered by the ATB but have not been included as no clear case can currently be identified from Activities in this focus sector that shows a direct positive benefit to these EOs. However, these EOs are considered under the DNSH assessment described in Annex 2.

Certain Activities which would normally fall under this sector may not be classified as Green, Amber Tier 2 or Amber Tier 3 under the TSC shown in this Annex, as stated in Appendix G (Activities Classified Red) of the ASEAN Taxonomy. This includes:

- Coal or oil power generation without carbon capture, utilisation and storage (CCUS);
- Heat recovery from coal or oil fuelled power generation.

This Appendix does not include waste to energy, which would be considered an Activity under the Water Supply, Sewerage and Waste Management sector.

### Current and Future TSC

It is expected that the TSC in this Appendix will change over time, as criteria become more stringent to promote a pathway to sustainability for ASEAN. In order to promote transparency, and to allow

<sup>1</sup> Southeast Asia Energy Outlook 2022, International Energy Agency

<sup>2</sup> Intergovernmental Panel on Climate Change (IPCC)



for forward planning by users of the ASEAN Taxonomy, the ATB has included this sub-section which shows current intentions for how TSC will change over time.

Note that the future TSC below are not binding, and that ATB reserves the right to make changes to meet changing technological and economic situations in ASEAN.

For all Activities under this Appendix which emit GHG, including Transmission and Distribution (T&D) of electricity, the ASEAN Taxonomy intends to follow the plans shown in Table 2,

Table 3, Table 4 and Table 5.

These plans relate only to quantitative TSC. These Activities may also be subject to other TSC as described further in this Appendix.

In all tables below, 'years' mean from 1 January to 31 December, except for TSC Period 1 which commenced on publishing of ASEAN Taxonomy Version 2. As such:

- TSC Period 1 commenced in February 2024 and will conclude on 31 December 2030, a period of approximately 6 ½ years;
- Subsequent TSC Periods are expected to be 5 years each.

The values below which refer to TSC Periods after TSC Period 1 are indicative and may be revised in the future in line with availability of technology etc.

**Table 2: Plan for quantitative TSC for Power generation which emits GHG**

TSC Period	TSC Years	Tier 1 TSC	Tier 2 TSC	Tier 3 TSC
1	2024 - 2030	Lifecycle GHG emissions from the generation of electricity by the entire facility <100 gCO <sub>2</sub> e/kWh.	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and <425 gCO <sub>2</sub> e/kWh.	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥425 and <510 gCO <sub>2</sub> e/kWh.
2	2031 - 2035	Lifecycle GHG emissions from the generation of electricity by the entire facility <100 gCO <sub>2</sub> e/kWh.	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and <285 gCO <sub>2</sub> e/kWh.	Sunset.
3	2036 - 2040	Lifecycle GHG emissions from the generation of electricity by the entire facility <100 gCO <sub>2</sub> e/kWh.	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and <185 gCO <sub>2</sub> e/kWh.	Sunset.
4	2041 - 2045	Not published as of this Annex date.	Sunset.	Sunset.

**Table 3: Plan for quantitative TSC for electrical T&D**

TSC Period	TSC Years	Tier 1 TSC	Tier 2 TSC	Tier 3 TSC
1	2024 - 2030	<p>T&amp;D infrastructure or equipment is part of a System where:</p> <ul style="list-style-type: none"> <li>a. &gt;67% of newly enabled generation capacity on the System over a five-year rolling period is 'Green'; AND</li> <li>b. emissions factor, &lt;100 gCO<sub>2</sub>e/kWh.</li> </ul>	<p>T&amp;D infrastructure or equipment is part of a System with emissions factor: ≥100 and &lt;425 gCO<sub>2</sub>e/kWh.</p>	<p>T&amp;D infrastructure or equipment is part of a System with emissions factor: ≥425 and &lt;510 gCO<sub>2</sub>e/kWh.</p>
2	2031 - 2035	<p>T&amp;D infrastructure or equipment is part of a System where:</p> <ul style="list-style-type: none"> <li>a. &gt;67% of newly enabled generation capacity on the System over a five-year rolling period is 'Green'; AND</li> <li>b. emissions factor, &lt;100 gCO<sub>2</sub>e/kWh.</li> </ul>	<p>T&amp;D infrastructure or equipment is part of a System with emissions factor: ≥100 and &lt;285 gCO<sub>2</sub>e/kWh.</p>	Sunset.
3	2036 - 2040	<p>T&amp;D infrastructure or equipment is part of a System where:</p> <ul style="list-style-type: none"> <li>a. &gt;67% of newly enabled generation capacity on the System over a five-year rolling period is 'Green'; AND</li> </ul>	<p>T&amp;D infrastructure or equipment is part of a System with emissions factor: ≥100 and &lt;185 gCO<sub>2</sub>e/kWh.</p>	Sunset.

		b. emissions factor, <100 gCO <sub>2</sub> e/kWh.		
4	2041 - 2045	Not published as of this Annex date.	Sunset.	Sunset.

**Table 4: Plan for quantitative TSC for transmission, distribution and storage of renewable and low-carbon gas**

TSC Period	TSC Years	Tier 1 TSC	Tier 2 TSC	Tier 3 TSC
1	2024 - 2030	T&D and storage of renewable and low carbon gases with lifecycle GHG intensity of <28 gCO <sub>2</sub> e/MJ.	T&D and storage of renewable and low carbon gases with lifecycle GHG intensity of <65 gCO <sub>2</sub> e/MJ.	No TSC available.
2	2031 - 2035	Not published as of this Annex date.	Not published as of this Annex date.	No TSC available.
3	2036 - 2040	Not published as of this Annex date.	Not published as of this Annex date.	No TSC available.
4	2041 - 2045	Not published as of this Annex date.	Not published as of this Annex date.	No TSC available.

**Table 5: Plan for quantitative TSC for production of heating / cooling**

TSC Period	TSC Years	Tier 1 TSC	Tier 2 TSC	Tier 3 TSC
1	2024 - 2030	Lifecycle GHG emissions <28 gCO <sub>2</sub> e/MJ per unit of heat and/or cooling produced.	Lifecycle GHG emissions <65 gCO <sub>2</sub> e/MJ per unit of heat and/or cooling produced.	No TSC available.
2	2031 - 2035	Not published as of this Annex date.	Not published as of this Annex date.	No TSC available.
3	2036 - 2040	Not published as of this Annex date.	Not published as of this Annex date.	No TSC available.
4	2041 - 2045	Not published as of this Annex date.	Not published as of this Annex date.	No TSC available.

## 351[011] Electricity generation from fossil gas

- Includes:
  - Power generation as part of cogeneration.
- Excludes:
  - Power generation using gas derived from coal except where it can be shown that, by abatement through CCUS, respective TSC below are fulfilled.
  - Co-firing of fossil fuels with fuels derived from renewable sources (refer to 351[012] and 351[014]).

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Lifecycle GHG emissions from the generation of electricity by the entire facility <100 gCO <sub>2</sub> e/kWh.
Tier 2 (Amber T2)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and <425 gCO <sub>2</sub> e/kWh.
Tier 3 (Amber T3)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥425 and <510 gCO <sub>2</sub> e/kWh.
TSC applicable to all Tiers	<ol style="list-style-type: none"> <li>1. For facilities that are equipped with CCUS, CO<sub>2</sub> from power generation that is captured for underground storage, must be transported and stored in accordance with the TSC for Activities 000[010] and 000[020].</li> <li>2. The Activity meets either of the following criteria:               <ol style="list-style-type: none"> <li>a. At construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed, or a leak detection and repair program is introduced; OR</li> <li>b. At operation, physical measurement of methane emissions is reported, and leak is eliminated.</li> </ol> </li> </ol>
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018.</li> <li>• For estimating GHG intensity in cogeneration, 1 MJ of heat energy shall be deemed to be equivalent to 0.277778 kWh of electricity:               <ul style="list-style-type: none"> <li>○ If used for heating, calculated at the point of discharge from the heat producing facility;</li> <li>○ If used for cooling, calculated at the point of discharge to the equipment for producing a cooling medium.</li> </ul> </li> <li>• Regulations for the detection and elimination of gas leaks must conform at least with regulations applicable in the AMS in which the Activity takes place and should demonstrate due consideration of the Methane Guiding Principles (<a href="https://methaneguidingprinciples.org/">https://methaneguidingprinciples.org/</a>).</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.

Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

<b>Tiers</b>	<b>EO4: Resource Resilience and the Transition to a Circular Economy TSC</b>
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 351[012] Electricity generation from renewable non-fossil gaseous and liquid fuels, including co-firing with fossil fuels

- Includes:
  - Power generation as part of cogeneration.
- Excludes:
  - Power generation using gas derived from coal except where it can be shown that, by abatement through CCUS, respective TSC below are fulfilled.
  - Power generation from fuels derived from waste, other than bio-waste.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Lifecycle GHG emissions from the generation of electricity by the entire facility <100 gCO <sub>2</sub> e/kWh.
Tier 2 (Amber T2)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and <425 gCO <sub>2</sub> e/kWh.
Tier 3 (Amber T3)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥425 and <510 gCO <sub>2</sub> e/kWh.
TSC applicable to all Tiers	<ol style="list-style-type: none"> <li>1. For facilities that are equipped with CCUS, CO<sub>2</sub> from power generation that is captured for underground storage, must be transported and stored in accordance with the TSC for Activities 000[010] and 000[020].</li> <li>2. Where the electricity makes use of fuels derived from biomass, the same TSC as described in Activity 351[014] shall apply.</li> <li>3. The Activity meets either of the following criteria:               <ol style="list-style-type: none"> <li>a. At construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed, or a leak detection and repair program is introduced; OR</li> <li>b. At operation, physical measurement of methane emissions is reported and leak is eliminated.</li> </ol> </li> </ol>
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018</li> <li>• For estimating GHG intensity in cogeneration, 1 MJ of heat energy shall be deemed to be equivalent to 0.277778 kWh of electricity:               <ul style="list-style-type: none"> <li>○ If used for heating, calculated at the point of discharge from the heat producing facility;</li> <li>○ If used for cooling, calculated at the point of discharge to the equipment for producing a cooling medium.</li> </ul> </li> <li>• Regulations for the detection and elimination of gas leaks must conform at least with regulations applicable in the AMS in which the Activity takes place and should demonstrate due consideration of the Methane Guiding Principles (<a href="https://methaneguidingprinciples.org/">https://methaneguidingprinciples.org/</a>).</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

### 351[013] Hybrid fossil, renewable power generation, T&D, and/or energy storage for Island Systems

- Includes:
  - Island System, which is defined as a collection of grid-connected power generation, electrical distribution, storage, control assets and loads, which have the ability to operate together independently of a wider electrical network.
  - Island Systems in this can refer to ‘electrical’ islands and do not need to be literal islands surrounded by water.
  - Any generation, T&D or related control, monitoring or management operating within the Island System may be classified if the whole Island System meets the terms of the relevant TSC for the relevant Tier, as well as Essential Criteria (EC).
- Excludes:
  - Power generation from coal or fuels derived from coal except where it can be shown that, by abatement through CCUS, respective TSC below are fulfilled.
  - Power generation from fuels derived from waste, other than bio-waste.
  - Any Activity on an Island System with a total nameplate power generation capacity of >100 MW.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Lifecycle GHG emissions from the generation of electricity by the entire facility <100 gCO <sub>2</sub> e/kWh.
Tier 2 (Amber T2)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and <425 gCO <sub>2</sub> e/kWh.
Tier 3 (Amber T3)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥425 and <510 gCO <sub>2</sub> e/kWh.
TSC applicable to all Tiers	<ol style="list-style-type: none"> <li>1. Any part of the Island System may be classified under the appropriate Tier if the lifecycle GHG emissions for the whole Island System are within the TSC for that Tier.</li> <li>2. If an Island System becomes unaligned with the classification after having previously been aligned, Activities within that System are not considered aligned unless the individual Activity can be shown to be aligned with a specific TSC (e.g., operation of a wind or solar farm).</li> <li>3. Where the electricity makes use of fuels derived from biomass, the same TSC as described in Activity 351[014] shall apply.</li> <li>4. For facilities that are equipped with CCUS, CO<sub>2</sub> from power generation that is captured for underground storage, must be transported and stored in accordance with the TSC for Activities 000[010] and 000[020].</li> </ol>
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018.</li> <li>• Regulations for the detection and elimination of gas leaks must conform at least with regulations applicable in the AMS in which the Activity takes place and should demonstrate due consideration of the Methane Guiding Principles (<a href="https://methanequidingprinciples.org/">https://methanequidingprinciples.org/</a>).</li> </ul>



Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which must be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers within the Island System, as an adaptation measure addressing specific identified physical climate risks projected to impact energy supply to the area. It should be shown that: <ol style="list-style-type: none"> <li>a. The Island System could not technologically or economically be integrated into a wider electrical network within the periods considered in the CRVA; OR</li> <li>b. The wider electrical network is projected to experience significant disruptions due to climate change impacts, cannot be feasibly made resilient to those impacts and an Island System is deemed to represent the most suitable back-up or alternative energy supply option.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	<ol style="list-style-type: none"> <li>1. If an Island System becomes unaligned with the classification after having previously been aligned, Activities within that System are not considered aligned unless the individual Activity can be shown to be aligned with a specific TSC (e.g., operation of a wind or solar farm).</li> <li>2. Where the electricity makes use of fuels derived from biomass, the same TSC as described in Activity 351[014] shall apply.</li> </ol>

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5

EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

### 351[014] Electricity generation from bioenergy, including co-firing with fossil fuels

- Includes:
  - Power generation as part of cogeneration.
- Excludes:
  - Power generation from coal or fuels derived from coal except where it can be shown that, by abatement through CCUS, respective TSC below are fulfilled.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Lifecycle GHG emissions from the generation of electricity by the entire facility <100 gCO <sub>2</sub> e/kWh.
Tier 2 (Amber T2)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and <425 gCO <sub>2</sub> e/kWh.
Tier 3 (Amber T3)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥425 and <510 gCO <sub>2</sub> e/kWh.
TSC applicable to all Tiers	<ol style="list-style-type: none"> <li>1. Anaerobic digestion of organic biowaste or sewage which is conducted at the site of the power generation must comply with the following:               <ol style="list-style-type: none"> <li>a. Implement monitoring and contingency plan to minimise methane leakage;</li> <li>b. Biogas produced onsite at a facility for the conduct of this Activity must be used only for this Activity or other Activities defined by the ASEAN Taxonomy, etc.; AND</li> <li>c. Any bio-waste that is used for anaerobic digestion is source segregated and collected separately.</li> </ol> </li> <li>2. For facilities that are equipped with CCUS, CO<sub>2</sub> from power generation that is captured for underground storage, must be transported and stored in accordance with the TSC for Activities 000[010] and 000[020].</li> </ol>
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018</li> <li>• For estimating GHG intensity in cogeneration, 1 MJ of heat energy shall be deemed to be equivalent to 0.277778 kWh of electricity:               <ul style="list-style-type: none"> <li>○ If used for heating, calculated at the point of discharge from the heat producing facility;</li> <li>○ If used for cooling, calculated at the point of discharge to the equipment for producing a cooling medium.</li> </ul> </li> <li>• Regulations for the detection and elimination of gas leaks must conform at least with regulations applicable in the AMS in which the Activity takes place and should demonstrate due consideration of the Methane Guiding Principles (<a href="https://methanequidingprinciples.org/">https://methanequidingprinciples.org/</a>).</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.

Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

<b>Tiers</b>	<b>EO4: Resource Resilience and the Transition to a Circular Economy TSC</b>
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

### 351[021] Electricity generation using solar photovoltaic technology

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Activity generates electricity using solar photovoltaic (PV) technology.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant (floating solar)	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Not Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Not Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 351[022] Electricity generation using CSP technology

- Excludes:
  - Power generation through a combination of CSP and a combustion process (refer to 351[011], 351[012], 351[014], as applicable).

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Activity generates electricity using concentrated solar power (CSP) technology.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant (floating solar)	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Not Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Not Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

### 351[030] Electricity generation from wind power

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Activity generates electricity using wind power.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 351[040] Electricity generation from hydropower

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Generation plant meets criteria (1) OR (2) OR (3): <ol style="list-style-type: none"> <li>the electricity generation facility is a run-of-river plant and does not have an artificial reservoir;</li> <li>Power density of the electricity generation facility is above 5 W/m<sup>2</sup>;</li> <li>Lifecycle GHG emissions from the generation of electricity by the entire facility &lt;100 gCO<sub>2</sub>e/kWh.</li> </ol>
Tier 2 (Amber T2)	Generation plant meets criterion (1): <ol style="list-style-type: none"> <li>Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and &lt;425 gCO<sub>2</sub>e/kWh</li> </ol>
Tier 3 (Amber T3)	No TSC available
Applicable standards	<p>The GHG emissions intensity is the average GHG emissions intensity, including emissions associated with the reservoir only and allocated to hydropower only, averaged over an estimated 100-year life of the facility. This can be estimated in one of two ways:</p> <ul style="list-style-type: none"> <li>Using the G-res tool<sup>3</sup>;</li> <li>Site-specific assessments carried out by the issuer or its appointed consultant following IEA Hydro Framework as described in the 'Guidelines for the Quantitative Analysis of Net GHG Emissions from Reservoirs'<sup>4</sup>.</li> </ul> <p>Power density is defined as the nameplate capacity of the facility divided by the surface area of the reservoir.</p>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4

<sup>3</sup> <https://g-res.hydropower.org/about-tool/>

<sup>4</sup> Task XII: Hydropower & the Environment Task 1: Managing the Carbon Balance of Freshwater Reservoirs (2007 - Present), <https://www.ieahydro.org/annex-xii-hydropower-and-the-environment>



EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 351[050] Electricity generation from geothermal energy

- Includes:
  - Power generation as part of cogeneration.
- Excludes:
  - Power generation through a combination of geothermal and a combustion process (refer to 351[011], 351[012], 351[014], as applicable).

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Lifecycle GHG emissions from the generation of electricity by the entire facility <100 gCO <sub>2</sub> e/kWh.
Tier 2 (Amber T2)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥100 and <425 gCO <sub>2</sub> e/kWh.
Tier 3 (Amber T3)	Lifecycle GHG emissions from the generation of electricity by the entire facility: ≥425 and <510 gCO <sub>2</sub> e/kWh.
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018.</li> <li>• For estimating GHG intensity in cogeneration, 1 MJ of heat energy shall be deemed to be equivalent to 0.277778 kWh of electricity:               <ul style="list-style-type: none"> <li>○ If used for heating, calculated at the point of discharge from the heat producing facility.</li> <li>○ If used for cooling, calculated at the point of discharge to the equipment for producing a cooling medium.</li> </ul> </li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7

EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5
-----	--	----------	--------------------

## 351[060] Electricity generation from ocean energy

- Excludes:
  - Offshore wind; refer to Activity 351[030].
  - Floating solar PV; refer to Activity 351[021].

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Activity generates electricity from ocean energy.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 351[071] Transmission and distribution (T&D) of electricity

- Includes:
  - T&D related Activities on an electrical 'System' which meets the TSC for the relevant classification. A System in this context may refer to the entire T&D System of an AMS but may also refer to a subordinate System within that national System.
- Excludes:
  - T&D Activity related entirely to transportation of electricity from a power generator which does not meet the TSC for which the T&D is seeking classification.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. T&amp;D infrastructure or equipment is part of a System where:               <ol style="list-style-type: none"> <li>a. &gt;67% of new generation capacity which achieved commercial operation on the System over a five-year rolling period<sup>5</sup> is 'Green'<sup>6</sup>; OR</li> <li>b. emissions intensity &lt;100 gCO<sub>2</sub>e/kWh for the System measured on a life cycle basis over a rolling five-year period; OR</li> </ol> </li> <li>2. Activity relates entirely to the implementation or operation of equipment and infrastructure:               <ol style="list-style-type: none"> <li>a. For electrical connection to power generation, classified as 'Green' based on compliance with the TSC for the respective technology; OR</li> <li>b. For electrical connection and related supporting infrastructure, for 'Green' electrical transport based on alignment with the TSC for the respective technology; OR</li> <li>c. which is intended to increase the controllability and observability of the System and to enable the development and integration of 'Green' power generation.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. T&amp;D infrastructure or equipment is part of a System with emissions intensity for the installed facilities: ≥100 and &lt;425 gCO<sub>2</sub>e/kWh; AND</li> <li>2. Activity relates to the implementation or operation of equipment and infrastructure which will support an increase of the generation or use of 'Green' electricity in the System or 'Green' electrical transport (as defined in the ASEAN Taxonomy).</li> </ol>
Tier 3 (Amber T3)	<ol style="list-style-type: none"> <li>1. T&amp;D infrastructure or equipment is part of a System with emissions factor: ≥425 and &lt;510 gCO<sub>2</sub>e/kWh; AND</li> <li>2. Activity relates to the implementation or operation of equipment and infrastructure which will support an increase of the generation or use of 'Green' electricity in the System or 'Green' electrical transport.</li> </ol>
TSC applicable to all Tiers	<ol style="list-style-type: none"> <li>1. In the case of a power control area<sup>7</sup> of an electrical T&amp;D network, the weighted average emissions intensity should be calculated for the entire T&amp;D network.</li> <li>2. In the case of individual subordinate T&amp;D systems, an emissions intensity for that subordinate System may be estimated.</li> <li>3. If a System becomes unaligned after having previously been aligned, no new T&amp;D Activities are aligned with the applicable classification from that moment onward, until the System complies again with the TSC (except for those Activities that are always aligned). 'Activities that are always aligned' refers to (e.g.) a transmission line which only</li> </ol>

<sup>5</sup> Requirement is waived if no new generation capacity was installed in that period

<sup>6</sup> The term 'Green' in all parts of this TSC refers to technology which may be classified as Green under the ASEAN Taxonomy

<sup>7</sup> A power control area is a power system, a part of a power system or a combination of systems to which a common generation control scheme is applied.

	supplies renewable energy. This means that, even if the rest of the system becomes unaligned, that specific line will remain aligned.
Applicable standards	'Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers within the System with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned: <ol style="list-style-type: none"> <li>a. Operation of T&amp;D equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain T&amp;D equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of T&amp;D-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Not Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7

EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5
-----	--	----------	--------------------

## 351[072] Storage of electricity, including pumped storage

- Includes:
  - All electrical storage systems which are available to provide power to electrical networks or loads.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Construction and operation of grid-connected electricity storage, including pumped hydropower storage.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5



## 351[100] Coal power phase-out

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Aligned with a 1.5°C outcome and is consistent with the IEA Net Zero Emissions Pathway for the power sector to achieve net zero emissions by 2050. Specific conditions under (1) include:               <ol style="list-style-type: none"> <li>a. Coal phase out by 2040; AND</li> <li>b. Coal plants achieving financial close (FC) after 31 December 2022 will not qualify; AND</li> <li>c. Operation duration of the coal plant from FC is capped at 35 years; AND</li> <li>d. It has been independently verified or acknowledged by internationally recognised bodies or programmes that qualifying coal plants show climate impact through the demonstration of positive absolute emissions savings over the expected lifetime of the coal plant compared with a case with no intervention to phasing it out. Coal plants under the ADB ETM or JETP programs, or which meet the definition set out in the joint paper by CPI, RMI and CBI<sup>8</sup>, meet these criteria.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. Aligned with a 1.5°C outcome for coal phase-out that is derived from regional- or country-specific pathways that are consistent with science-based pathways. Specific conditions under (1) include:               <ol style="list-style-type: none"> <li>a. Coal phase out by 2050; AND</li> <li>b. Coal plants achieving FC after 31 December 2022 will not qualify; AND</li> <li>c. Operation duration of the coal plant from FC is capped at 35 years.</li> </ol> </li> </ol>
Tier 3 (Amber T3)	<ol style="list-style-type: none"> <li>1. Operation duration of the coal plant from FC is capped at 35 years; AND</li> <li>2. Coal plants that achieve FC after 31 December 2022 will not qualify, except for coal plants:               <ol style="list-style-type: none"> <li>a. that achieve FC from 1 January 2023 up till 31 December 2027; AND</li> <li>b. which will result in minimum possible lifecycle greenhouse gas emissions using technologies which are affordable, accessible, and reliable.</li> </ol> </li> </ol>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

<sup>8</sup> <https://rmi.org/insight/guidelines-for-financing-credible-coal-transition/>

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Not Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 352[010] Transmission and distribution networks for renewable and low-carbon gases

- Includes:
  - Operation of facilities related to low carbon hydrogen, renewable-derived gases, fossil gases or mixtures thereof which meet the criteria below.
- Excludes:
  - Networks supplying fuels derived from coal except where it can be shown that, by abatement through CCUS, respective TSC below are fulfilled.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<p>Operation of gas networks for the transmission and distribution of renewable and low-carbon gases (including hydrogen and fossil gas), including:</p> <ol style="list-style-type: none"> <li>1. New networks transporting renewable and low carbon gases with lifecycle GHG intensity of &lt;28 gCO<sub>2</sub>e/MJ;</li> <li>2. Networks converted or re-purposed for renewable and low carbon gases with lifecycle GHG intensity of &lt;28 gCO<sub>2</sub>e/MJ;</li> <li>3. Activity which results in the injection of fuel gas with lifecycle GHG intensity of &lt;28 gCO<sub>2</sub>e/MJ into an existing network.</li> </ol> <p>* For transmission and distribution systems of hydrogen, hydrogen gas must meet the 'Green' criteria for 'manufacture of hydrogen' Activity set out in the 'Manufacturing' sector when it is finalised in future ASEAN Taxonomy versions.</p>
Tier 2 (Amber T2)	<p>Operation of gas networks for the transmission and distribution of gases (including hydrogen and fossil gas), including:</p> <ol style="list-style-type: none"> <li>1. New networks transporting gases with lifecycle GHG intensity of &lt;65 gCO<sub>2</sub>e/MJ;</li> <li>2. Networks converted or re-purposed for gases with lifecycle GHG intensity of &lt;65 gCO<sub>2</sub>e/MJ.</li> </ol> <p>* For transmission and distribution systems of hydrogen, hydrogen gas must meet the 'Amber Tier 2' criteria for 'manufacture of hydrogen' Activity set out in the 'Manufacturing' sector when it is finalised in future ASEAN taxonomy versions.</p>
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	<ul style="list-style-type: none"> <li>• For all Tiers, it must be shown that the average carbon intensity of a low carbon gas transported through the network is below the respective threshold.</li> <li>• As indicated above, this Activity permits the transportation of fossil gas, as long as it meets the thresholds shown, which are aligned with principles explained above in the bases for setting TSC. This inclusion is subject to review and may be revised at the end of the first TSC Period.</li> <li>• For purposes of assessment, fuel gas GHG intensities should be averaged over a rolling five-year period.</li> </ul>
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018.</li> <li>• Regulations for the detection and elimination of gas leaks must conform at least with regulations applicable in the AMS in which the Activity takes place and should demonstrate due consideration of the Methane Guiding Principles (<a href="https://methaneguidingprinciples.org/">https://methaneguidingprinciples.org/</a>).</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned: <ol style="list-style-type: none"> <li>a. Operation of T&amp;D equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain T&amp;D equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of T&amp;D-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Not Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 352[030] Storage of renewable and low-carbon gases

- Includes:
  - Operation of facilities related to low carbon hydrogen, renewable-derived gases, fossil gases or mixtures thereof which meet the criteria below.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity is operation of one of the following facilities:               <ol style="list-style-type: none"> <li>a. New storage facilities for renewable and low carbon gases; OR</li> <li>b. Existing underground gas storage facilities converted for dedicated renewable and low-carbon gases; AND</li> <li>c. Activity which results in the injection of fuel gas with lifecycle GHG intensity of &lt;28 gCO<sub>2</sub>e/MJ into an existing network.</li> </ol> </li> <li>2. Renewable and low-carbon gases, including hydrogen and fossil gases, stored in the facility meets lifecycle GHG intensity of &lt;28 gCO<sub>2</sub>e/MJ.</li> </ol> <p>* For storage systems of hydrogen, hydrogen gas has to meet the 'Green' criteria for 'manufacture of hydrogen' Activity set out in the 'Manufacturing' sector when it is finalised in future ASEAN taxonomy versions.</p>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. Activity is operation of one of the following facilities:               <ol style="list-style-type: none"> <li>a. New storage facilities for gases; OR</li> <li>b. Existing underground gas storage facilities converted for dedicated gases; AND</li> </ol> </li> <li>2. Gases, including hydrogen and fossil gases, stored in the facility meets lifecycle GHG intensity of &lt;65 gCO<sub>2</sub>e/MJ.</li> </ol> <p>* For storage systems of hydrogen, hydrogen gas must meet the 'Amber Tier 2' criteria for 'manufacture of hydrogen' Activity set out in the 'Manufacturing' sector when it is finalised in future ASEAN taxonomy versions.</p>
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	<ul style="list-style-type: none"> <li>• For all Tiers, it must be shown that the average carbon intensity of a low carbon gas stored in the facility is below the respective threshold.</li> <li>• As indicated above, this Activity permits the storage of fossil gas, as long as it meets the thresholds shown, which are aligned with principles explained above in the bases for TSC Setting. This inclusion is subject to review and may be revised at the end of the first TSC Period.</li> <li>• For purposes of assessment, fuel gas GHG intensities should be averaged over a rolling five-year period.</li> </ul>
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018.</li> <li>• Regulations for the detection and elimination of gas leaks must conform at least with regulations applicable in the AMS in which the Activity takes place and should demonstrate due consideration of the Methane Guiding Principles (<a href="https://methanequidingprinciples.org/">https://methanequidingprinciples.org/</a>).</li> </ul>
Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> </ol>

	<p>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:</p> <ul style="list-style-type: none"> <li>a. Operation of fuel gas storage facilities which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain fuel gas storage facilities in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of related fuel gas storage facilities in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ul>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Not Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

### 353[011] Production of heating/cooling from solar thermal energy

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Activity produces heating/cooling using solar thermal energy.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned: <ol style="list-style-type: none"> <li>a. Operation of heating/cooling equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain heating/cooling equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of heating/cooling-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Not Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6

EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5



## 353[012] Production of heating/cooling from geothermal energy

- Excludes:
  - Geothermal heating/cooling as part of cogeneration (refer to 351[050]).
  - Geothermal heating/cooling through a combination of geothermal and a combustion process (refer to 353[013], 353[014], as applicable).

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Lifecycle GHG emissions <28 gCO <sub>2</sub> e/MJ per unit of heat and/or cooling produced.
Tier 2 (Amber T2)	Lifecycle GHG emissions <65 gCO <sub>2</sub> e/MJ per unit of heat and/or cooling produced.
Tier 3 (Amber T3)	No TSC available.
Applicable standards	Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a. Operation of heating/cooling equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain heating/cooling equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of heating/cooling-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

### 353[013] Production of heating/cooling from renewable non-fossil gaseous and liquid fuels

- Includes:
  - Heating/cooling resulting from non-biological renewable non-fossil gaseous and liquid fuels only.
  - Heating/cooling resulting from a blend of non-biological renewable non-fossil gaseous and liquid fuels and biofuels.
- Excludes:
  - Heating/cooling as part of cogeneration (refer to 351[014]).
  - Heating/cooling resulting from bioenergy only.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Lifecycle GHG emissions <28 gCO <sub>2</sub> e/MJ per unit of heat and/or cooling produced.
Tier 2 (Amber T2)	Lifecycle GHG emissions <65 gCO <sub>2</sub> e/MJ per unit of heat and/or cooling produced.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	<ol style="list-style-type: none"> <li>1. Anaerobic digestion of organic biowaste or sewage which is conducted at the site of fuel combustion must comply with the following:               <ol style="list-style-type: none"> <li>a. Implement monitoring and contingency plan to minimise methane leakage;</li> <li>b. Biogas produced onsite at a facility for the conduct of this Activity must be used only for this Activity or other Activities defined by the ASEAN Taxonomy, etc.; AND</li> <li>c. Any bio-waste that is used for anaerobic digestion is source segregated and collected separately.</li> </ol> </li> <li>2. For facilities that are equipped with CCUS, CO<sub>2</sub> from energy provision that is captured for underground storage, must be transported and stored in accordance with the TSC for Activities 000[010] and 000[020].</li> <li>3. The Activity meets either of the following criteria:               <ol style="list-style-type: none"> <li>a. At construction, measurement equipment for monitoring of physical emissions, such as methane leakage, is installed, or a leak detection and repair program is introduced;</li> <li>b. At operation, physical measurement of methane emissions is reported, and leak is eliminated.</li> </ol> </li> </ol>
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018.</li> <li>• Regulations for the detection and elimination of gas leaks must conform at least with regulations applicable in the AMS in which the Activity takes place and should demonstrate due consideration of the Methane Guiding Principles (<a href="https://methanequidingprinciples.org/">https://methanequidingprinciples.org/</a>).</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> </ol>

	<p>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:</p> <ul style="list-style-type: none"> <li>a. Operation of heating/cooling equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain heating/cooling equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of heating/cooling-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ul>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Not Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Not Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 353[014] Production of heating/cooling from fossil gas

- Excludes:
  - Fossil heating/cooling as part of cogeneration (refer to 351[011] or 351[013] as applicable).

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Lifecycle GHG emissions <28 gCO <sub>2</sub> e/MJ per unit of heat and/or cooling produced.
Tier 2 (Amber T2)	Lifecycle GHG emissions <65 gCO <sub>2</sub> e/MJ per unit of heat and/or cooling produced.
Tier 3 (Amber T3)	No TSC available.
TSC applicable to all Tiers	<ol style="list-style-type: none"> <li>1. For facilities that are equipped with CCUS, CO<sub>2</sub> from energy provision that is captured for underground storage, must be transported and stored in accordance with the TSC for Activities 000[010] and 000[020].</li> <li>2. The Activity meets either of the following criteria:               <ol style="list-style-type: none"> <li>a. At construction, measurement equipment for monitoring of physical emissions, such as methane leakage is installed, or a leak detection and repair program is introduced; OR</li> <li>b. At operation, physical measurement of methane emissions is reported, and leak is eliminated.</li> </ol> </li> <li>3. This Activity permits the storage of fossil gas, as long as it meets the thresholds shown, which are aligned with principles explained above in the bases for TSC setting. This inclusion is subject to review and may be revised at the end of the first TSC Period.</li> </ol>
Applicable standards	<ul style="list-style-type: none"> <li>• Calculation of Lifecycle Emissions ISO 14067: 2018 or ISO 14064-1: 2018.</li> <li>• Regulations for the detection and elimination of gas leaks must conform at least with regulations applicable in the AMS in which the Activity takes place and should demonstrate due consideration of the Methane Guiding Principles (<a href="https://methaneguidingprinciples.org/">https://methaneguidingprinciples.org/</a>).</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a. Operation of heating/cooling equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain heating/cooling equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of heating/cooling-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>

Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Not Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Not Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 353[015] Production of heating/cooling using waste heat

- Excludes:
  - Any heating / cooling conducted by a cogeneration (combined heat and power) plant (refer to 351[011], 351[012], 351[013], 351[014], 351[022] or 351[050] as applicable).

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Heating/cooling from waste heat resulting from another process; AND</li> <li>2. It must be shown that such waste heat would otherwise be lost and would result in no utility.</li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a. Operation of heating/cooling equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain heating/cooling equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of heating/cooling-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3

EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5



### 353[020] District heating/cooling distribution

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity is operation of an efficient district heating and cooling system; or evidence can be provided to show that the system will become an efficient district heating and cooling system within 3 years of assessment, where an efficient district heating or cooling system is defined as using at least:               <ol style="list-style-type: none"> <li>a. 50% renewable energy;</li> <li>b. 50% waste heat;</li> <li>c. 75% cogenerated heat; OR</li> <li>d. 50% of a combination of such energy and heat; OR</li> </ol> </li> <li>2. Activity is an advanced pilot system (control and energy management systems, Internet of Things).</li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a. Operation of heating/cooling equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain heating/cooling equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of heating/cooling-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

### 353[030] Storage of thermal energy

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Activity is storage of thermal energy, including Underground Thermal Energy Storage (UTES) or Aquifer Thermal Energy Storage (ATES).
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned: <ol style="list-style-type: none"> <li>a. Operation of heating/cooling equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain heating/cooling equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of heating/cooling-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6

EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

### 353[040] Production of heating / cooling using electric heat pump

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	Activity is operation of electric heat pumps complying with both of the following criteria: <ol style="list-style-type: none"> <li>1. Refrigerant threshold: Global Warming Potential does not exceed 675;</li> <li>2. Demonstrate a high standard of energy efficiency according to an internationally recognised certifications scheme.</li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of energy security of supply to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:           <ol style="list-style-type: none"> <li>a. Operation of heating/cooling equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b. Operation of monitoring and control equipment or other related IT systems to operate or maintain heating/cooling equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c. Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of heating/cooling-related equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3

EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## APPENDIX B: TSC FOR CONSTRUCTION AND REAL ESTATE

### Bases for setting TSC

#### Environmental Objective 1: Climate Change Mitigation

Tier	Description / Definition
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. TSC are aimed at achieving an advanced level of certification in credible, national or international Green Building Certification (GBC) schemes; OR</li> <li>2. TSC are aimed at specified proxies relevant to emissions intensity from energy usage/consumption in order to identify the level of Greenness in some Activities;               <ol style="list-style-type: none"> <li>a. It has been assessed that the measure of Energy Usage Intensity (EUI) demonstrates the most comprehensive measure for assessing Greenness of the Activities.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. Activity supports a transition towards a Green pathway within a defined time frame; AND               <ol style="list-style-type: none"> <li>a. Results in a contribution to the EO which is at least as good at the lowest carbon emitting technology currently that is technologically feasible for widespread use in ASEAN; OR</li> <li>b. Results in achieving the best reduction in EUI from a building construction and implementation plan.</li> </ol> </li> </ol>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

#### Environmental Objective 2: Climate Change Adaptation

Tier	Description / Definition
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity where measures have been implemented to ensure own resilience to climate change and thereby contribute to overall local, national or regional resilience; OR</li> <li>2. Activity enables other Activities to increase resilience to climate change.</li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

#### Environmental Objective 3: Protection of Healthy Ecosystems and Biodiversity

Tier	Description / Definition
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

#### Environmental Objective 4: Resource Resilience and the Transition to a Circular Economy

Tier	Description / Definition
Tier 1 (Green)	Activity optimises waste management, including the management and reduction of waste from the construction and demolition of buildings. It has been assessed as meeting the base minimum criteria of maintaining existing structural materials, as defined under credible, international GBC schemes.

Tier 2 (Amber T2)	Activity supports a transition towards a Green pathway within a defined time frame; AND a. Results in a contribution to the EO which is at least as good as the technology which results in the lowest possible waste production which is currently technologically and economically feasible for widespread use in ASEAN; OR b. Results in achieving the best reduction in EUI from a building construction and implementation plan.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined

All TSC set within this Appendix are common for all AMS. The Green TSC were set for interoperability with widely used international taxonomies<sup>9</sup>, including reference to credible international GBC schemes, and where relevant and available, national GBC schemes and standards in respective AMS.

TSC for Amber Tier 2 were developed in reference to relevant GBC schemes, both national and international, where available. As there is currently no Energy Performance Certificate (EPC) applicable to AMS, TSC were checked against various international and national GBC schemes for widespread use in ASEAN. Additionally, other standards and taxonomies (such as the EU Taxonomy) reference Primary Energy Demand (PED) which AMS currently do not have. As a result, through review of publicly available technology comparisons and consultation with regional stakeholders, a commonly used measure of Energy Usage Intensity (EUI) was utilised.

There is no Amber Tier 3 TSC available for the Construction and Real Estate sector Activities. These internationally recognised schemes are developed in line with achieving better than market practice, hence seen as viable and practical benchmarks for setting TSC.

The TSC set within this Appendix are for TSC Period 1. Details on the proposed future TSC can be seen below.

The TSC for EO3 have been considered by the ATB but have not been included as no clear case can currently be identified from Activities in this focus sector that shows a direct positive benefit to EO3. However, this EO is considered under the DNSH assessment described in Annex 2.

## Current and Future TSC

It is expected that the TSC in this Appendix will change over time, as criteria become more stringent to promote a pathway to sustainability for ASEAN.

In the case of Construction and Real Estate Activities, it is recommended that assessors should allow classification of Activities in all cases where:

- The Activity met the applicable requirements of certifications referred to in TSC which were extant at the time of its assessment; and
- The Activity complied with all national and regional rules and regulations, as well as any applicable international conventions, at the time of assessment.

It is currently unclear as to how qualitative TSC may change over time, noting that many qualitative TSC cross refer to external standards developed by other bodies.

<sup>9</sup> Including but not limited to, the EU Taxonomy for Sustainable Finance, Singapore-Asia Taxonomy, Thailand Taxonomy.



## Definitions of terms used in this TSC

To avoid ambiguity, certain terms used in these TSC are defined here.

'Recognised GBC programs' encompass credible and accepted GBC programs, including, but not limited to, those listed in Table 6.

**Table 6: Credible and acceptable GBC programs (non-exhaustive)<sup>10</sup>**

International Schemes	National Schemes
<ul style="list-style-type: none"> <li>• Leadership in Energy and Environmental Design (LEED)</li> <li>• Building Research Establishment Environmental Assessment Method (BREEAM)</li> <li>• EDGE (Excellence in Design for Greater Efficiencies)</li> <li>• WELL Building Standard</li> <li>• NGBS</li> <li>• Green Globes</li> <li>• Other globally recognised GBC schemes<sup>11</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Green Mark</li> <li>• GreenRE</li> <li>• Thai's Rating for Energy and Environmental Sustainability (TREES)</li> <li>• GREENSHIP</li> <li>• Green Building Index (GBI)</li> <li>• Building for Ecologically Responsive Design Excellence (BERDE)</li> <li>• LOTUS</li> <li>• Other nationally recognised GBC schemes for buildings<sup>12</sup></li> </ul>

'Advanced level of certification' typically refers to a higher tier within a given GBC scheme. For schemes with a tiered ranking system, this includes elevated certification levels, although not necessarily the absolute top tier. The term 'advanced level of certification' may also refer to lower GBC tiers, as long as it can be demonstrated that the building in question represents a marked improvement on common practices in a specific country.

A building may represent a marked improvement in the context of a specific country if one of the following can be demonstrated<sup>13</sup>:

- The building achieves a GBC certification using a nationally recognised scheme at a tier on average or above average compared to other certified buildings of that type in that country.
- Where a nationally recognised scheme is unavailable, the building achieves a GBC certification using an internationally recognised scheme at a tier on average or above average compared to other certified buildings of that type in that country.

Notwithstanding the above, in all cases, a building must exceed the lowest certification standard of its GBC scheme to qualify as an 'advanced level of certification'.

<sup>10</sup> Some GBC schemes, such as LEED, BREEAM and Green Mark, include credits related to climate change adaptation, including flood resilience, heat stress mitigation, and water security. These can also be used to support the assessment of certain elements of a building's potential to meet the EO2 requirements of the ASEAN Taxonomy.

<sup>11</sup> The Green Business Certification Inc. (GBCI) provides guidance for globally recognised standards (<https://www.gbci.org/>).

<sup>12</sup> The ASEAN Taxonomy will only recognise national GBC schemes for buildings in the country where the scheme is recognised. For nations without a local green building scheme, internationally recognised schemes must be used.

<sup>13</sup> The average certification tier for buildings of a given type in a country is defined in the following way: (1) Define the type to which the building belongs (e.g., hospital, hotel, shopping mall, office building); (2) Where that building is certified under a GBC, and in as much as data is available, identify or estimate the distribution of certification tiers under that GBC for that building type in that country; (3) The average certification level is the **median** tier for that building type in that country. Where no building of that type in that country has yet been certified under that scheme, the first building of that type to be certified under that scheme will automatically be considered the average.

## 410[001] Construction of new buildings

- Includes:
  - Development and construction of residential and non-residential buildings for sale or on a fee or contract basis. Examples of Buildings in this Activity include:
    - Government Buildings
    - Healthcare
    - Schools
    - Retail
    - Hospitality
    - Data Centres
    - Transport Terminal
    - Warehouses and Distribution Centres
    - Core and Shell Development
    - Multi-family Residential Properties
    - Houses of Worship
    - Cultural, Community Recreational

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	1. Construction of new buildings for which: <ol style="list-style-type: none"> <li>a. The building has been certified under a national GBC program, that is recognised by AMS or through industry association and relevant for that jurisdiction, that achieves an advanced level of certification and is applicable to climate change mitigation; OR</li> <li>b. The building has been certified under one of the applicable internationally recognised GBC programs, achieving an advanced level of certification and is applicable to climate change mitigation.</li> </ol>
Tier 2 (Amber T2)	1. Construction of new buildings for which: <ol style="list-style-type: none"> <li>a. The building has been certified under a national GBC program, that is recognised by AMS or through industry association and relevant for that jurisdiction, that includes criteria relevant to climate change mitigation; OR</li> <li>b. The building has been certified under an applicable internationally recognised GBC program: AND</li> </ol> 2. An Energy Efficiency Improvement Plan for the building is prepared and provided that upon implementation will lead to a reduction of the current Energy Usage Intensity (EUI).
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	The following are defined in 'Definitions of terms used in this TSC': <ul style="list-style-type: none"> <li>• 'Recognised GBC program'.</li> <li>• 'Advanced level of certification'.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<p>1. The Activity complies with one or all of the following criteria:</p> <ul style="list-style-type: none"> <li>a. The economic Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, as may be evidenced through an advanced level of certification in the climate adaptation category of a recognised GBC; OR</li> <li>b. The physical climate risks that are material to the Activity have been identified by performing a robust climate risk and vulnerability assessment (CRVA) in accordance with the guidance provided in Annex 3; OR</li> <li>c. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications and open source or paying models; AND</li> <li>d. The adaptation solutions implemented: <ul style="list-style-type: none"> <li>i. Do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;</li> <li>ii. Favour nature-based solutions or rely on blue or green infrastructure to the extent possible;</li> <li>iii. Are consistent with local, sectoral, regional or national adaptation plans and strategies;</li> <li>iv. Are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;</li> <li>v. Where the solution implemented is physical and consists in an Activity for which technical screening criteria have been specified, the solution complies with the do no significant harm technical screening criteria for that Activity.</li> </ul> </li> </ul>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3

EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 410[002] Renovation of existing buildings

- Includes:
  - Construction and civil engineering works or preparation thereof.
  - An improvement activity resulting in transformation of a building towards greater environmental sustainability but does not yet necessarily fully meet the TSC described in 410[001].

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	1. It leads to a reduction of Energy Usage Intensity (EUI) of at least 30%, where: <ul style="list-style-type: none"> <li>a. The initial EUI and the estimated improvement is based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method and validated through an Energy Performance Certificate; OR</li> <li>b. The 30% improvement results from an actual reduction in EUI (where the reductions in net EUI demand through renewable energy sources are not taken into account) and can be achieved through a succession of measures within a maximum of three years; OR</li> </ul> 2. The building has been certified under a national GBC program, that is recognised by AMS or through industry association and is relevant for that jurisdiction, that achieves an advanced level of certification and is applicable to climate change mitigation.
Tier 2 (Amber T2)	1. It leads to a reduction of EUI of at least 15%, where: <ul style="list-style-type: none"> <li>a. The initial EUI and the estimated improvement is based on a detailed building survey, an energy audit conducted by an accredited independent expert or any other transparent and proportionate method and validated through an Energy Performance Certificate; OR</li> <li>b. The 15% improvement results from an actual reduction in EUI (where the reductions in net EUI through renewable energy sources are not taken into account) and can be achieved through a succession of measures within a maximum of three years; OR</li> </ul> 2. The building has been certified under a national GBC program, that is recognised by AMS or through industry association and is relevant for that jurisdiction.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	The following are defined in 'Definitions of terms used in this TSC': <ul style="list-style-type: none"> <li>• 'Recognised GBC program'.</li> <li>• 'Advanced level of certification'.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	1. The Activity complies with one or all of the following criteria: <ul style="list-style-type: none"> <li>a. The economic Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, as may be evidenced through an advanced level of certification in the climate adaptation category of a recognised GBC</li> <li>b. The physical climate risks that are material to the Activity have been identified by performing a robust climate risk and</li> </ul>

	<p>vulnerability assessment (CRVA) in accordance with the guidance provided in Annex 3.</p> <p>c. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications and open source or paying models.</p> <p>d. The adaptation solutions implemented:</p> <ol style="list-style-type: none"> <li>i. Do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;</li> <li>ii. Favour nature-based solutions or rely on blue or green infrastructure to the extent possible;</li> <li>iii. Are consistent with local, sectoral, regional or national adaptation plans and strategies;</li> <li>iv. Are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;</li> <li>v. Where the solution implemented is physical and consists in an Activity for which technical screening criteria have been specified, the solution complies with the do no significant harm technical screening criteria for that Activity.</li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Maintain 75% of the existing building structure (including floor and roof decking) and envelope (the exterior skin and framing, excluding window assemblies and non-structural Roofing materials). Portions of buildings deemed structurally unsound or hazardous should be excluded from calculations; AND</li> <li>2. Use existing interior non-structural elements (e.g., interior walls, doors, floor coverings and ceiling systems) for at least 30% of the entire completed building, including additions; AND</li> <li>3. Conduct a life cycle assessment of the project's structure and enclosure that demonstrates a minimum of 10% reduction, compared with a baseline building, in at least three of the six impact categories listed in the LEED v4.1 Building Lifecycle Reduction Criteria<sup>14</sup>, one of which must be global warming potential.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. Maintain 45% of the existing building structure (including floor and roof decking) and envelope (the exterior skin and framing, excluding window assemblies and non-structural roofing materials). Portions of buildings deemed structurally unsound or hazardous should be excluded from calculations; AND</li> </ol>

<sup>14</sup> Leadership in Energy and Environmental Design (LEED) v4.1

	<p>2. Use existing interior non-structural elements (e.g., interior walls, doors, floor coverings and ceiling systems) for at least 30% of the entire completed building, including additions; AND</p> <p>3. Conduct a life cycle assessment of the project's structure and enclosure that demonstrates a minimum of 5% reduction, compared with a baseline building in at least three of the six impact categories in LEED v4.1 Building Lifecycle Reduction Criteria, one of which must be global warming potential.</p>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 431[001] Demolition and site preparation

- Includes:
  - Activities of preparing a site for subsequent construction activities, including the removal of previously existing structures.
- Excludes:
  - Demolition and wrecking of buildings and other structures carried out as part of the remediation of contaminated sites and areas.
  - For projects associated with the Activities 410[001] (Construction of new buildings) or 410[002] (Renovation of existing buildings), where the demolition works and the construction or renovation works are procured under the same contract, the TSC for those respective activities apply.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Prior to the start of the demolition or wrecking activity, at least the following aspects are discussed and agreed upon with the client:               <ol style="list-style-type: none"> <li>a. Definition of key performance indicators and target ambition level; AND</li> <li>b. Identification of project-specific constraints that may compromise the target ambition level (such as time, labour and space) and how to minimise these constraints; AND</li> <li>c. Details of the pre-demolition auditing procedure; AND</li> <li>d. An outline waste management plan that prioritises selective deconstruction, decontamination and source separation of waste streams. Where these actions are not prioritised, an explanation is provided to justify why selective deconstruction, decontamination or source separation of waste streams are not technologically feasible in the project. Cost or financial considerations are not an acceptable reason to avoid complying with this requirement; AND</li> </ol> </li> <li>2. The operator of the activity conducts a pre-demolition audit:               <ol style="list-style-type: none"> <li>a. All demolition waste generated during the demolition or wrecking activity is treated in accordance with regional waste legislation; AND</li> <li>b. Where there is no AMS regulation to prescribe percentage, at least 90% (by weight) of the non-hazardous demolition waste generated</li> </ol> </li> </ol>



	<p>on the demolition site is prepared for re-use or recycling. This excludes naturally occurring material. Alternatively, at least 95% for mineral fraction and 70% for the non-mineral fraction for non-hazardous demolition waste is separately collected and prepared for reuse or recycled.</p> <p>Definitions:</p> <ul style="list-style-type: none"> <li>• <b>Building demolition material reuse</b> is the practice of salvaging and repurposing construction materials and components from a demolished structure. These materials are then either incorporated into the development of the same site or made available for use in other construction projects.</li> <li>• <b>Building demolition material recycling</b> is the process of collecting, sorting, and reprocessing materials and components that are removed during the demolition of a building. These materials, such as concrete, wood, metal, and other construction materials, are treated to remove contaminants and then transformed into new construction materials or products.</li> </ul>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 681[001] Acquisition and ownership of buildings

Includes:

- Buying real estate and exercising ownership of that real estate.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. For buildings built before 31 December 2023, the building has an advanced level of certification from an internationally recognised GBC program; OR</li> <li>2. For buildings built after 31 December 2023, the building meets the criteria specified under 'Tier 1 (Green)' in Construction of New Buildings.</li> <li>3. Where the building is a large non-residential building (with an effective rated output for heating systems, systems for combined space heating and ventilation, air-conditioning systems or systems for combined air-conditioning and ventilation of over 290 kW) it is efficiently operated through energy performance monitoring and assessment.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. For buildings built before 31 December 2023, the building has certification from an applicable internationally recognised GBC program; AND</li> <li>2. An Energy Efficiency Improvement Plan for the building is prepared and provided that upon implementation will lead to a reduction of the current Energy Usage Intensity (EUI).</li> </ol>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Recognised GBC program'.</li> <li>• 'Advanced level of certification'.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or all of the following criteria: <ol style="list-style-type: none"> <li>a. The economic Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, as may be evidenced through an advanced level of certification in the climate adaptation category of a recognised GBC.</li> <li>b. The physical climate risks that are material to the Activity have been identified by performing a robust climate risk and vulnerability assessment (CRVA) in accordance with the guidance provided in Annex 3.</li> <li>c. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications and open source or paying models.</li> <li>d. The adaptation solutions implemented: <ol style="list-style-type: none"> <li>i. Do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;</li> <li>ii. Favour nature-based solutions or rely on blue or green infrastructure to the extent possible;</li> <li>iii. Are consistent with local, sectoral, regional or national adaptation plans and strategies;</li> </ol> </li> </ol> </li> </ol>

	<ul style="list-style-type: none"> <li>iv. Are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;</li> <li>v. Where the solution implemented is physical and consists in an Activity for which technical screening criteria have been specified, the solution complies with the do no significant harm technical screening criteria for that Activity.</li> </ul>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 68[001] Electric vehicle charging stations

Includes:

- Individual renovation measures consisting of installation, maintenance and repair of charging stations for electric vehicles in buildings (and parking spaces attached to buildings).

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	1. Installation, maintenance or repair of charging stations for electric vehicles.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<p>1. The Activity complies with one or all of the following criteria:</p> <ol style="list-style-type: none"> <li>The economic Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that .</li> <li>The physical climate risks that are material to the Activity have been identified by performing a robust climate risk and vulnerability assessment (CRVA) in accordance with the guidance provided in Annex 3.</li> <li>The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications and open source or paying models.</li> <li>The adaptation solutions implemented:               <ol style="list-style-type: none"> <li>Do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;</li> <li>Favour nature-based solutions or rely on blue or green infrastructure to the extent possible;</li> <li>Are consistent with local, sectoral, regional or national adaptation plans and strategies;</li> <li>Are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;</li> <li>Where the solution implemented is physical and consists in an Activity for which technical screening criteria have been specified, the solution complies with the do no significant harm technical screening criteria for that Activity.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance <sup>15</sup>	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Not relevant	-
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Not relevant	-
EO3	Impact on Water Resources	Not relevant	-
EO3	Impacts Related to Noise	Not relevant	-
EO3	Impact on Air	Not relevant	-
EO3	Impact on Soil	Not relevant	-
EO3	Impact on Biodiversity	Not relevant	-
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

<sup>15</sup> Where item is shown as 'not relevant', it is assumed that these factors are considered in the construction and operation of the host building.

## 68[002] Energy efficient equipment

Includes:

- Individual renovation measures consisting of installation, maintenance or repair of energy efficiency equipment.

Tiers	E01: Climate Change Mitigation TSC
Tier 1 (Green)	<p>1. The Activity consists in one of the following individual measures provided that they comply with minimum requirements set for individual components and systems and where applicable rated in the highest class(es) of energy efficiency defined in the relevant existing AMS regulations, standards and/or adopted classifications:</p> <ol style="list-style-type: none"> <li>a. Addition of insulation to existing envelope components, such as external walls (including green walls), roofs (including green roofs), lofts, basements and ground floors (including measures to ensure air-tightness, measures to reduce the effects of thermal bridges and scaffolding) and products for the application of the insulation to the building envelope (including mechanical fixings and adhesive); OR</li> <li>b. Replacement of existing windows with new energy efficient windows; OR</li> <li>c. Replacement of existing external doors with new energy efficient doors; OR</li> <li>d. Installation and replacement of energy efficient light sources; OR</li> <li>e. Installation, replacement, maintenance and repair of heating, ventilation and air-conditioning (HVAC) and water heating systems, including equipment related to district heating services, with highly efficient technologies; OR</li> <li>f. Installation of low water and energy using kitchen and sanitary water fittings which comply with technical specifications set out as below:               <ol style="list-style-type: none"> <li>i. The flow rate is recorded at the standard reference pressure 3 -0/+ 0,2 bar or 0,1 -0/+0,02 for products limited to low pressure.</li> <li>ii. The flow rate at the lower pressure 1,5 -0/+ 0,2 bar is <math>\geq</math> 60% of the maximum available flow rate.</li> <li>iii. For mixer showers, the reference temperature is <math>38 \pm 1</math> °C.</li> <li>iv. Where the flow has to be lower than 6 L/min, it complies with the rule set out in point 2.</li> <li>v. For taps the test procedure in item 6 is followed, with the following exceptions:                   <ul style="list-style-type: none"> <li>▪ For taps that are not limited to low pressure applications only: apply a 3 -0/+ 0,2 bar pressure to both the hot and the cold inlets, alternatively;</li> <li>▪ For taps that are limited to low pressure applications only: apply a 0,4 -0/+0,02 bar pressure to both the hot and the cold inlets and fully open the flow control.</li> </ul> </li> <li>vi. Test Procedure:                   <ul style="list-style-type: none"> <li>▪ Fully open the obturator</li> <li>▪ Gradually apply (4+2) s a torque of <math>(6 \pm 0,2)</math> Nm to the operating mechanism in the opening direction;</li> <li>▪ Maintain this torque for <math>(300 + 15)</math> s;</li> <li>▪ Fully close the obturator;</li> <li>▪ Gradually apply over <math>(4 + 2)</math> s a torque of <math>(6 \pm 0,2)</math> Nm to the operating mechanism in the closing direction;</li> </ul> </li> </ol> </li> </ol>

	<ul style="list-style-type: none"> <li>▪ Maintain this torque for (300 + 15) s;</li> <li>▪ Reinsert the seat washer of screw down taps.</li> </ul> <p>vii. In the case of shower solutions, mixer showers, shower outlets and taps, have a max water flow of 6 L/min or less attested by an existing label in the market.</p>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<p>1. The Activity complies with one or all of the following criteria:</p> <ol style="list-style-type: none"> <li>a. The economic Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity.</li> <li>b. The physical climate risks that are material to the Activity have been identified by performing a robust climate risk and vulnerability assessment (CRVA) in accordance with the guidance provided in Annex 3.</li> <li>c. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications and open source or paying models.</li> <li>d. The adaptation solutions implemented: <ol style="list-style-type: none"> <li>i. Do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;</li> <li>ii. Favour nature-based solutions or rely on blue or green infrastructure to the extent possible;</li> <li>iii. Are consistent with local, sectoral, regional or national adaptation plans and strategies;</li> <li>iv. Are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;</li> <li>v. Where the solution implemented is physical and consists in an Activity for which technical screening criteria have been specified, the solution complies with the do no significant harm technical screening criteria for that Activity.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance <sup>16</sup>	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Not relevant	-
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Not relevant	-
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Not relevant	-
EO3	Impact on Air	Not relevant	-
EO3	Impact on Soil	Not relevant	-
EO3	Impact on Biodiversity	Not relevant	-
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

<sup>16</sup> Where item is shown as 'not relevant', it is assumed that these factors are considered in the construction and operation of the host building.



## 68[003] Energy performance measurement, regulation, control

Includes:

- Individual renovation measures consisting of installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity consists in one of the following individual measures:               <ol style="list-style-type: none"> <li>a. Installation, maintenance and repair of zoned thermostats, smart thermostat systems and sensing equipment, including. motion and day light control; OR</li> <li>b. Installation, maintenance and repair of building automation and control systems, building energy management systems (BEMS), lighting control systems and energy management systems (EMS); OR</li> <li>c. Installation, maintenance and repair of smart meters for gas, heat, cool and electricity; OR</li> <li>d. Installation, maintenance and repair of façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance <sup>17</sup>	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Not relevant	-
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Not relevant	-
EO3	Impact on Water Resources	Not relevant	-
EO3	Impacts Related to Noise	Not relevant	-
EO3	Impact on Air	Not relevant	-
EO3	Impact on Soil	Not relevant	-

<sup>17</sup> Where item is shown as 'not relevant', it is assumed that these factors are considered in the construction and operation of the host building.

EO3	Impact on Biodiversity	Not relevant	-
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 68[004] Renewable Technologies

Includes:

- Individual renovation measures consisting of installation, maintenance and repair of renewable energy technologies which are organic to a building or collection of buildings forming part of a single facility or estate.

Excludes:

- Standalone equipment for the provision of electricity, gas, heat and/or cooling to an external load, which are covered under Appendix A of this Annex.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<p>1. The Activity consists in one of the following individual measures, if installed on-site as technical building systems:</p> <ul style="list-style-type: none"> <li>a. Installation, maintenance and repair of solar photovoltaic systems and the ancillary technical equipment; OR</li> <li>b. Installation, maintenance and repair of solar hot water panels and the ancillary technical equipment; OR</li> <li>c. The activities encompassing the installation, maintenance, repair, and enhancement of heat pump systems are geared towards advancing the utilisation of renewable energy for heating and cooling purposes. These actions are aligned with AMS' commitments to harnessing sustainable energy sources, in line with their local energy policies and goals; OR</li> <li>d. Installation, maintenance and repair of wind turbines and the ancillary technical equipment; OR</li> <li>e. Installation, maintenance and repair of solar transpired collectors and the ancillary technical equipment; OR</li> <li>f. Installation, maintenance and repair of thermal or electric energy storage units and the ancillary technical equipment; OR</li> <li>g. Installation, maintenance and repair of high efficiency micro-CHP (combined heat and power) plant; OR</li> <li>h. Installation, maintenance and repair of heat exchanger/recovery systems.</li> </ul>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<p>1. The Activity complies with one or all of the following criteria:</p> <ul style="list-style-type: none"> <li>a. The economic Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity.</li> <li>b. The physical climate risks that are material to the Activity have been identified by performing a robust climate risk and vulnerability assessment (CRVA) in accordance with the guidance provided in Annex 3.</li> <li>c. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications and open source or paying models.</li> <li>d. The adaptation solutions implemented:</li> </ul>

	<ul style="list-style-type: none"> <li>i. Do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;</li> <li>ii. Favour nature-based solutions or rely on blue or green infrastructure to the extent possible;</li> <li>iii. Are consistent with local, sectoral, regional or national adaptation plans and strategies;</li> <li>iv. Are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;</li> <li>v. Where the solution implemented is physical and consists in an Activity for which technical screening criteria have been specified, the solution complies with the do no significant harm technical screening criteria for that Activity.</li> </ul>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance <sup>18</sup>	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Not relevant	-
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Not relevant	-
EO3	Impact on Water Resources	Not relevant	-
EO3	Impacts Related to Noise	Not relevant	-
EO3	Impact on Air	Not relevant	-
EO3	Impact on Soil	Not relevant	-
EO3	Impact on Biodiversity	Not relevant	-
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

<sup>18</sup> Where item is shown as 'not relevant', it is assumed that these factors are considered in the construction and operation of the host building.

## 68[005] Early Warning Systems

Includes:

- Individual renovation measures consisting in installation, maintenance, testing and repair of instruments and devices for providing early warning for climate related hazards.

Instruments and devices can include both early warning communication systems and hazard specific systems.

Examples of climate related hazard specific systems that can be addressed by a local level system could include the following:

- Severe Weather Alert System
- Flood Monitoring and Warning
- Earthquake Early Warning System
- Tsunami and Landslide Early Warning System
- Fire Weather Warning System
- Heatwave and Extreme Heat Warning System
- Hurricane and Tropical Storm Tracking
- Lightening Detection
- Air Quality Monitoring

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or all of the following criteria:               <ol style="list-style-type: none"> <li>a. The economic Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity; OR</li> <li>b. The physical climate risks that are material to the Activity have been identified by performing a robust climate risk and vulnerability assessment (CRVA) in accordance with the guidance provided in Annex 3; OR</li> <li>c. The climate projections and assessment of impacts are based on best practice and available guidance and take into account the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent; OR Intergovernmental Panel on Climate Change reports, scientific peer-reviewed publications and open source or paying models; OR</li> <li>d. The adaptation solutions implemented:                   <ol style="list-style-type: none"> <li>i. Do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other people, of nature, of cultural heritage, of assets and of other economic activities;</li> <li>ii. Favour nature-based solutions or rely on blue or green infrastructure to the extent possible;</li> </ol> </li> </ol> </li> </ol>

	<ul style="list-style-type: none"> <li>iii. Are consistent with local, sectoral, regional or national adaptation plans and strategies;</li> <li>iv. Are monitored and measured against pre-defined indicators and remedial action is considered where those indicators are not met;</li> <li>v. Where the solution implemented is physical and consists in an Activity for which technical screening criteria have been specified, the solution complies with the do no significant harm technical screening criteria for that Activity.</li> </ul>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance <sup>19</sup>	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Not relevant	-
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Not relevant	-
EO3	Impact on Water Resources	Not relevant	-
EO3	Impacts Related to Noise	Not relevant	-
EO3	Impact on Air	Not relevant	-
EO3	Impact on Soil	Not relevant	-
EO3	Impact on Biodiversity	Not relevant	-
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

<sup>19</sup> Where item is shown as 'not relevant', it is assumed that these factors are considered in the construction and operation of the host building.

## APPENDIX C: TSC FOR TRANSPORTATION AND STORAGE

### Bases for setting TSC

#### Environmental Objective 1: Climate Change Mitigation

Tier	Description / Definition
Tier 1 (Green)	<p>TSC are aimed at achieving defined GHG emissions levels, which reference credible, 1.5°C-aligned science-based pathways, as aligned with the Paris Agreement. In practice, this definition usually takes the form of quantitative thresholds which limit the emission of GHG for given units of distance travelled (e.g., passenger-km / vehicle-km and tonne-km for passenger and freight vehicles/vessels, respectively).</p> <p>It has been assessed for the following sub-sectors that:</p> <ol style="list-style-type: none"> <li>Land and air transport and infrastructure be at near-zero or zero-emissions (i.e., electric vehicles, state-of-the-art hybrid, hydrogen refuelling, etc.); AND</li> <li>Water transport and infrastructure meet the latest emissions reduction standards set under the 2023 IMO GHG Strategy.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>Activity supports a transition towards a Green pathway within a defined time frame; AND               <ol style="list-style-type: none"> <li>Results in a contribution to the EO which is at least as good at the lowest carbon emitting technology currently that is technologically feasible for widespread use in ASEAN, with a prescribed sunset date; OR</li> <li>Enables or promotes the implementation of a Green Activity in the context of this EO.</li> </ol> </li> </ol>
Tier 3 (Amber T3)	<ol style="list-style-type: none"> <li>Where an Activity meets the TSC of Amber T2 or Green but has been assessed that it will do some level of significant harm to other EOs; which will be remediated within 5 years; OR</li> <li>Activity is in line with significantly reducing its GHG emissions levels following credible science-based pathways; however, is not aligned to a 1.5°C pathway.</li> </ol>

#### Environmental Objective 2: Climate Change Adaptation

Tier	Description / Definition
Tier 1 (Green)	<ol style="list-style-type: none"> <li>Activity where measures have been implemented to ensure own resilience to climate change and thereby contribute to overall local, national or regional resilience; OR</li> <li>Activity enables other Activities to increase resilience to climate change.</li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

#### Environmental Objective 3: Protection of Healthy Ecosystems and Biodiversity

Tier	Description / Definition
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

## Environmental Objective 4: Resource Resilience and the Transition to a Circular Economy

Tier	Description / Definition
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

All TSC set within this Appendix are common for all AMS. The Green TSC were set for interoperability with widely used international taxonomies<sup>20</sup>.

TSC for the Amber Tiers were set against future emissions projections for all types of transport vehicles (i.e., land, water, and air), inclusive of freight and passenger vehicles, in Southeast Asia as derived from the IEA Net-zero Emissions by 2050 Scenario (NZE):

- Amber Tier 2 and Amber Tier 3: reflects projected emissions intensity for SE Asia in 2030.

The TSC set here are for TSC Period 1. Proposed future TSC can be seen below.

TSC were checked against the following:

- For land-based Activities: the best available proxy data for GHG emissions, such as the EURO Standard; and lowest carbon emitting technology currently that is technologically feasible for widespread use in ASEAN.
- For water-based Activities: modelling against the IMO 2023 GHG Emissions Strategy, consider growth scenarios<sup>21</sup> with the highest level of confidence to maintain a trajectory along the 1.5°C pathway.
- For air-based Activities: the lowest carbon emitting technology currently that is technologically feasible, for widespread use in ASEAN, both through review of publicly available technology comparisons and through consultation with regional stakeholders.

The TSC for EOs 3-4 have been considered by the ATB but have not been included as no clear case can currently be identified in this focus sector that shows a direct positive benefit to these EOs. However, these EOs are considered under the DNSH assessment described in Annex 2.

Air transport Activities<sup>22</sup> have also been excluded under this Appendix. The basis for exclusion of these Activities under the current version of the ASEAN Taxonomy is due to limited availability to data to develop thresholds, as well as no clear link for establishing contextually relevant TSC for these Activities in AMS. This can be developed in future revisions of the ASEAN Taxonomy and the ATB will monitor ongoing progress of widely used taxonomies.

### Current and Future TSC

It is expected that the TSC in this Appendix will change over time, as criteria become more stringent to promote a pathway to sustainability for ASEAN.

<sup>20</sup> Including but not limited to, the EU Taxonomy for Sustainable Finance, Singapore-Asia Taxonomy, Thailand Taxonomy.

<sup>21</sup> DNV's model considers IMO's Revised 'Striving' strategy with a 13% GHG intensity reduction from a baseline scenario.

<sup>22</sup> Leasing of Aircraft; Passenger and Freight Air Transport.



Note that the ATB is currently not providing future TSC guidance for Activities under this Appendix and reserves the right to make changes to meet changing technological and economic situations in ASEAN.

In ASEAN Taxonomy Version 3, the EO1 TSC for Transportation and Storage sector activities is based on vehicle emissions at the point of use, referred to as 'tail-pipe emissions.' For water transport, this concept is known as 'tank-to-wake,' focusing solely on emissions from fuel stored in the onboard tank. However, future versions of the ASEAN Taxonomy may transition to a 'well-to-wake' approach, which would consider the entire lifecycle emissions of the activity.

### Definitions of terms used in this TSC

To avoid ambiguity, certain terms used in this TSC are defined here.

**‘Technologically and economically feasible’** refers to conditions under which a project or investment can be implemented using available technology and resources in a financially viable manner. In the context of sustainable investments in ASEAN, it refers to projects in an AMS which:

- Utilise current or near-future technologies which could in practice be implemented, and
- Which can be sustained over time without imposing undue economic burdens or endangering economic development in the AMS.

**‘Dedicated to the transport of fossil fuel’**, in the context of water transport, refers to vessels that may be excluded from classification due to their role in transporting fossil fuels.

Table 7 lists vessels that are excluded from Green or Amber Tier 2 classification for this reason.

**Table 7: Vessels excluded due to being ‘dedicated to the transport of fossil fuels’**

Activity	Green Tier	Amber Tier 2
Crude Oil Tankers	Excluded in all cases	Excluded in all cases
LNG Tankers	<ul style="list-style-type: none"> <li>• Until 31 December 2030: excluded if more than 25% of tonnage transported annually is consumed at a ‘non-Green’ facility<sup>23</sup>.</li> <li>• From 1 January 2031: exclusion to be reassessed, subjected to prevailing technology standards and market practices.</li> </ul>	<ul style="list-style-type: none"> <li>• Not excluded</li> </ul>

<sup>23</sup> A ‘non-Green facility’ in this context means a facility (e.g., a power station) which would not fulfil the Green TSC as defined by the ASEAN Taxonomy. Assessors would not normally be expected to conduct a full ASEAN Taxonomy assessment of any facility which is intended as the final destination of fuel carried, unless individual classification is also being sought for that facility. Nevertheless, assessors should, at a minimum, expect to see evidence that such destination facilities would meet Green TSC.

Dry bulk carriers	<ul style="list-style-type: none"> <li>• Until 31 December 2030: excluded if more than 25% of tonnage transported annually is fossil fuel consumed at a 'non-Green' facility.</li> <li>• From 1 January 2031: excluded if any tonnage transported annually is fossil fuel consumed at a 'non-Green' facility.</li> </ul>	<ul style="list-style-type: none"> <li>• Until 31 December 2030: excluded if more than 25% of tonnage transported annually is fossil fuel consumed at a 'non-Amber (Tier 2)' facility<sup>24</sup>.</li> <li>• From 1 January 2031: excluded if any tonnage transported annually is fossil fuel consumed at a 'non-Amber (Tier 2)' facility.</li> </ul>
-------------------	--	---

**'Alternative fuels'** are zero direct CO<sub>2</sub> tailpipe emission fuels, or as defined by either the Fourth IMO GHG Study (2020)<sup>25</sup>, or the EU<sup>26</sup>. Note that the term does not include cases where avoidance of carbon emissions is achieved by onboard carbon capture and storage (OCCS), as this may be addressed in a future version of the ASEAN Taxonomy, when the technology has become more mature.

**'Until [date]'**, means that a TSC is applicable up to and including the date specified. After that date, the TSC ceases to be applicable.

<sup>24</sup> A 'non-Amber (Tier 2) facility' has a similar definition to a 'non-Green facility' except that it relates to Amber (Tier 2) TSC.

<sup>25</sup>

<https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/Fourth%20IMO%20GHG%20Study%202020%20-%20Full%20report%20and%20annexes.pdf>, Table 75

<sup>26</sup> <https://alternative-fuels-observatory.ec.europa.eu/general-information/alternative-fuels>

## 492[001] Urban and suburban transport, road passenger transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or all of the following criteria: <ol style="list-style-type: none"> <li>a. the Activity provides urban or suburban passenger transport, and its direct (tailpipe) CO<sub>2</sub> emissions are zero; AND<sup>27</sup></li> <li>b. until 31 December 2030, the Activity provides interurban passenger road transport using vehicles designated as categories M2 and M3<sup>28</sup> that have a type of bodywork classified as CA, CB, CC, CD<sup>29</sup> and comply with the latest EURO VI Standard<sup>30</sup>.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. The Activity provides interurban passenger road transport using vehicles designated as categories M2 and M3 that have a type of bodywork classified as CA, CB, CC, CD; AND</li> <li>2. Until 31 December 2030, comply with the latest EURO V Standard.</li> </ol>
Tier 3 (Amber T3)	<ol style="list-style-type: none"> <li>1. The Activity provides interurban passenger road transport using vehicles designated as categories M2 and M3 that have a type of bodywork classified as CA, CB, CC, CD; AND</li> <li>2. Until 31 December 2030, comply with the latest EURO IV Standard.</li> </ol>
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Until [date]'.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned: <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.

<sup>27</sup> Activities involving urban/suburban passenger transport and interurban passenger road transport must meet both clause 1(a) and clause 1(b). For Activities that refer to only urban/suburban passenger transport or only interurban passenger road transport, only the applicable clause is required.

<sup>28</sup> M2: Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass ("technically permissible maximum laden mass") not exceeding 5 tons, M3: Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a maximum mass exceeding 5 tons

<sup>29</sup> CA: Single-deck vehicle; CB: Double-deck vehicle; CC: Single-deck articulated vehicle; CD: Double-deck articulated vehicle

<sup>30</sup> As defined by European Emissions Standards. Note that these standards do not define GHG limits per se. However, these are intended to set minimum standards for M2 and M3 vehicles (i.e., buses), which are deemed to be low emission in terms of gCO<sub>2</sub>e/pkm.

Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

<b>Tiers</b>	<b>EO4: Resource Resilience and the Transition to a Circular Economy TSC</b>
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 492[002] Transport by motorbikes, passenger cars and light commercial vehicles

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with the following criteria:               <ol style="list-style-type: none"> <li>a. for vehicles of category M1 and N1<sup>31</sup>:                   <ol style="list-style-type: none"> <li>i. Until 31 December 2025, direct emissions of CO<sub>2</sub> are &lt; 50 gCO<sub>2</sub>e/v-km<sup>32</sup>;</li> <li>ii. From 1 January 2026, direct emissions of CO<sub>2</sub> are 0 gCO<sub>2</sub>e/v-km;</li> </ol> </li> <li>b. for vehicles of category L<sup>33</sup>, tailpipe CO<sub>2</sub> emissions are 0 gCO<sub>2</sub>e/v-km.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. The Activity complies with the following criteria:               <ol style="list-style-type: none"> <li>a. for vehicles of category M1 and N1:                   <ol style="list-style-type: none"> <li>i. Until 31 December 2030, direct emissions of CO<sub>2</sub> are &lt; 50 gCO<sub>2</sub>e/v-km.</li> </ol> </li> </ol> </li> </ol>
Tier 3 (Amber T3)	<ol style="list-style-type: none"> <li>1. The Activity complies with the following criteria:               <ol style="list-style-type: none"> <li>a. for vehicles of category M1 and N1:                   <ol style="list-style-type: none"> <li>i. Until 31 December 2030, direct emissions of CO<sub>2</sub> are &lt; 100 gCO<sub>2</sub>e/v-km.</li> </ol> </li> </ol> </li> </ol>
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Until [date]'.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:           <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

<sup>31</sup> M1: Vehicles designed and constructed for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat, and having a maximum mass ("technically permissible maximum laden mass") not exceeding 3.5 tons; N1: Vehicles for the carriage of goods and having a maximum mass not exceeding 3.5 tonnes

<sup>32</sup> vkm: Vehicle-kilometre

<sup>33</sup> L: Mopeds, Motorcycles, Motor Tricycles and Quadricycles

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 4911[001] Passenger interurban rail transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or both of the following criteria:               <ol style="list-style-type: none"> <li>a. The trains and wagons have zero direct tailpipe CO<sub>2</sub> emissions; OR</li> <li>b. The trains and wagons have zero direct tailpipe CO<sub>2</sub> emissions when operated on a track with necessary infrastructure and use a conventional engine where such infrastructure is not available (bimodal); AND</li> </ol> </li> <li>2. The trains and wagons are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	Passenger rolling stock is eligible if its direct emissions are below 50 gCO <sub>2</sub> e/p-km <sup>34</sup> until 2027 (after this year only rolling stock with zero direct emissions will be eligible).
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Until [date]'.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

<sup>34</sup> pkm: passenger-kilometre

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5



## 4912[001] Freight rail transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or both of the following criteria:               <ol style="list-style-type: none"> <li>a. The trains and wagons have zero direct tailpipe CO<sub>2</sub> emissions; OR</li> <li>b. The trains and wagons have zero direct tailpipe CO<sub>2</sub> emissions when operated on a track with necessary infrastructure and use a conventional engine where such infrastructure is not available (bimodal); AND</li> </ol> </li> <li>2. The trains and wagons are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	Freight transport by rail is eligible if direct emissions are below 25 gCO <sub>2</sub> e/t-km <sup>35</sup> until 2027 (after this year only rolling stock with zero direct emissions will be eligible).
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Until [date]'.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

<sup>35</sup> tkm: tonne-kilometre

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 49[001] Infrastructure for road and public transportation, including infrastructure to enable low-carbon land transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. The infrastructure is dedicated to the operation of vehicles with zero tailpipe CO<sub>2</sub> emissions: electric charging points, electricity grid connection upgrades, hydrogen fuelling stations or electric road systems (ERS); OR</li> <li>b. The infrastructure and installations are dedicated to trans-shipping freight between the modes: terminal infrastructure and superstructures for loading, unloading and trans-shipment of goods; OR</li> <li>c. The infrastructure and installations are dedicated to urban and suburban public passenger transport, including associated signalling systems for metro, tram, and rail systems; AND</li> </ol> </li> <li>2. The infrastructure is not dedicated to the transport or storage of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	In this context, 'Infrastructure' refers specifically to transportation infrastructure and essential facilities. This includes areas and services necessary for loading and unloading, boarding and disembarking, ticketing, travel information, passenger waiting areas, and the storage of freight and baggage. Essential amenities such as washrooms, infant care facilities, health and safety provisions, and spaces for religious observance are also encompassed. Non-core facilities, such as cafes, bars, restaurants, shops, entertainment venues, and exhibition spaces, are generally excluded, as they do not directly support transportation activities.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 49[002] Infrastructure for personal mobility, cycle logistics

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	1. The infrastructure that is constructed and operated is dedicated to personal mobility or cycle logistics: pavements, bike lanes and pedestrian zones, electrical charging, and hydrogen refuelling installations for personal mobility devices.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned: <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5

EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 492[003] Operation of personal mobility devices, cycle logistics

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The propulsion of personal mobility devices comes from the physical activity of the user, from a zero-emissions motor, or a mix of zero-emissions motor and physical activity.</li> <li>2. The personal mobility devices are allowed to be operated on the same public infrastructure as bikes or pedestrians.</li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned: <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4

EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5



## 491[001] Infrastructure for rail transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one of the following criteria:               <ol style="list-style-type: none"> <li>a. the infrastructure is either:                   <ol style="list-style-type: none"> <li>i. Electrified trackside infrastructure and associated subsystems: infrastructure, energy, on-board control-command and signalling, and trackside control-command and signalling subsystems; OR</li> <li>ii. New and existing trackside infrastructure and associated subsystems where there is a plan for electrification as regards line tracks, and, to the extent necessary for electric train operations, as regards sidings, or where the infrastructure will be fit for use by zero tailpipe CO<sub>2</sub> emission trains within 10 years from the beginning of the Activity: infrastructure, energy, on-board control-command and signalling, and trackside control-command and signalling subsystems; OR</li> </ol> </li> <li>b. The infrastructure and installations are dedicated to transshipping freight between the modes: terminal infrastructure and superstructures for loading, unloading and transshipment of goods; OR</li> <li>c. Infrastructure and installations are dedicated to the transfer of passengers from rail to rail or from other modes to rail; AND</li> </ol> </li> <li>2. The infrastructure is not dedicated to the transport or storage of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 4923[001] Freight transport services by road

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one of the following criteria:               <ol style="list-style-type: none"> <li>a. vehicles of category N1 have zero direct (tailpipe) CO<sub>2</sub> emissions;</li> <li>b. vehicles of category N2 and N3<sup>36</sup> with a technically permissible maximum laden mass not exceeding 7.5 tonnes are 'zero-emission heavy-duty vehicles';</li> <li>c. vehicles of category N2 and N3 with a technically permissible maximum laden mass exceeding 7.5 tonnes are one of the following:                   <ol style="list-style-type: none"> <li>i. Zero-emission heavy-duty vehicle; OR</li> <li>ii. Where technologically and economically not feasible to comply with the criterion in point (i), until 31 December 2030 have direct (tailpipe) CO<sub>2</sub> emissions less than 21 gCO<sub>2</sub>/t-km<sup>37</sup>; AND</li> </ol> </li> </ol> </li> <li>2. Vehicles are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. The Activity complies with one of the following criteria:               <ol style="list-style-type: none"> <li>a. vehicles of category N2 and N3 with a technically permissible maximum laden mass exceeding 7.5 tonnes are one of the following:                   <ol style="list-style-type: none"> <li>i. Where technologically and economically not feasible to achieve zero emissions, until 31 December 2030, have direct (tailpipe) CO<sub>2</sub> emissions less than 42 gCO<sub>2</sub>e/t-km, and 1 January 2031 onwards, less than 21 gCO<sub>2</sub>e/t-km; AND</li> </ol> </li> </ol> </li> <li>2. Vehicles are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Technologically and economically feasible'.</li> <li>• 'Until [date]'</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of</li> </ol> </li> </ol>

<sup>36</sup> N1: Vehicles for the carriage of goods and having a maximum mass not exceeding 3.5 tonnes; N2: Vehicles for the carriage of goods and having a maximum mass exceeding 3.5 tonnes but not exceeding 12 tonnes; N3: Vehicles for the carriage of goods and having a maximum mass exceeding 12 tonnes

<sup>37</sup> Based on the current difference between emissions projections for freight activity by the CBI (18gCO<sub>2</sub>e/t-km by 2050) and IEA NZE (18gCO<sub>2</sub>e/t-km by 2040), it is proposed to have a forward outlook with a horizon date of 2030; indicative of reviewing the TSC at the period and potentially amending the threshold based on new emissions data in the future.

	equipment in scenarios of projected flooding, storm conditions or higher temperatures.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

<b>Tiers</b>	<b>EO3: Protection of Healthy Ecosystems and Biodiversity TSC</b>
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

<b>Tiers</b>	<b>EO4: Resource Resilience and the Transition to a Circular Economy TSC</b>
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 5012[001] Sea and coastal freight water transport, vessels for port operations and auxiliary activities

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. The vessels have zero direct (tailpipe) CO<sub>2</sub> emissions; OR</li> <li>b. Until 31 December 2027, hybrid and dual fuel vessels derive at least 25% of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports; OR</li> <li>c. Where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2027, and only where it can be proved that the vessels are used exclusively for operating coastal and short sea services designed to enable modal shift of freight currently transported by land to sea, the vessels have direct (tailpipe) CO<sub>2</sub> emissions 13% below the AER trajectories from IMO2023<sup>38</sup>; OR</li> <li>d. Where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2027, the vessels have an attained EEDI<sup>39</sup>/EEXI<sup>40</sup> value 10% below the EEDI/EEXI requirements applicable on 1 January 2023 if the vessels are able to run on zero direct (tailpipe) CO<sub>2</sub> emission fuels or on fuels from alternative sources; AND</li> </ol> </li> <li>2. Vessels are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. Until 1 January 2030, vessels must be capable of using zero direct CO<sub>2</sub> tailpipe emission fuels; AND will derive at least 50% of their energy from alternative fuels; OR</li> <li>b. Until 31 December 2030, vessels meet the same TSC as Green criterion 1.c. or criterion 1.d.; AND</li> </ol> </li> <li>2. Vessels are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Technologically and economically feasible'.</li> <li>• 'Alternative fuels'.</li> <li>• Vessels excluded due to being 'dedicated to the transport of fossil fuels'.</li> <li>• 'Until [date]'</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:</li> </ol>

<sup>38</sup> AER: Annual Efficiency Ratio (The AER trajectory is the benchmark established by IMO under the Carbon Intensity Indicator (CII) regulations. It measures the carbon intensity of a vessel's operations by calculating its CO<sub>2</sub> emissions relative to its transport work.)

<sup>39</sup> EEDI: Energy Efficiency Design Index

<sup>40</sup> EEXI: Energy Efficiency Existing Ship Index

	<ul style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ul>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 5011[001] Sea and coastal passenger water transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. The vessels have zero direct (tailpipe) CO<sub>2</sub> emissions; OR</li> <li>b. Where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2027, hybrid and dual fuel vessels derive at least 25% of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation at sea and in ports; OR</li> <li>c. Where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2027, the vessels have an attained EEDI / EEXI value 10% below the EEDI / EEXI requirements applicable on 1 January 2023 if the vessels are able to run on zero direct (tailpipe) CO<sub>2</sub> emission fuels or on fuels from alternative sources; AND</li> </ol> </li> <li>2. Vessels are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. Until 1 January 2030, vessels must be capable of using zero direct CO<sub>2</sub> tailpipe emission fuels; AND, will derive at least 50% of their energy from alternative fuels; OR</li> <li>b. Until 31 December 2030, vessels meet the same TSC as Green criterion 1.b. or criterion 1.c.; AND</li> </ol> </li> <li>2. Vessels are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Technologically and economically feasible'.</li> <li>• 'Alternative fuels'.</li> <li>• Vessels excluded due to being 'dedicated to the transport of fossil fuels'.</li> <li>• 'Until [date]'</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5



## 501[001] Retrofitting of sea and coastal freight and passenger water transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. Until 31 December 2027, the retrofitting Activity reduces fuel consumption of the vessel by at least 10% expressed in tonnes of fuel per deadweight tons per nautical mile and equivalent EEXI trajectory, as demonstrated by computational fluid dynamics (CFD), tank tests or similar engineering calculations; OR</li> <li>b. Until 31 December 2027, the retrofitting Activity reduces fuel consumption of the vessel by at least 13% below the AER trajectories from IMO2023, expressed in grams of fuel per deadweight tonne per nautical mile; AND</li> </ol> </li> <li>2. Vessels retrofitted or upgraded are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. The Activity complies with the following criteria:               <ol style="list-style-type: none"> <li>a. Until 31 December 2030 vessels meet the same TSC as Green criterion 1.a. or criterion 1.b.; AND</li> </ol> </li> <li>2. Vessels are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following is defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• Vessels excluded due to being 'dedicated to the transport of fossil fuels'.</li> <li>• 'Until [date]'</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 5021[001] Inland passenger water transport

- Includes:
  - Vehicles for transport through rivers, lakes, canals, and other inland water regions.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	1. The Activity complies with one of the following criteria: <ol style="list-style-type: none"> <li>a. The vessels have zero direct (tailpipe) CO<sub>2</sub> emissions; OR</li> <li>b. Until 31 December 2027 hybrid and dual fuel vessels derive at least 50% of their energy from zero direct (tailpipe) CO<sub>2</sub> emission fuels or plug-in power for their normal operation; AND</li> </ol> 2. Vessels are not dedicated to the transport of fossil fuels.
Tier 2 (Amber T2)	1. The Activity complies with the following criteria: <ol style="list-style-type: none"> <li>a. Until 1 January 2030, vessels must be capable of using zero direct CO<sub>2</sub> tailpipe emission fuels; AND,</li> <li>b. will derive at least 50% of their energy from alternative fuels; AND</li> </ol> 2. Vessels are not dedicated to the transport of fossil fuels.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	The following are defined in 'Definitions of terms used in this TSC': <ul style="list-style-type: none"> <li>• 'Alternative fuels'.</li> <li>• Vessels excluded due to being 'dedicated to the transport of fossil fuels'.</li> <li>• 'Until [date]'</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND 2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned: <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
-------	---

Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 502[001] Retrofitting of inland water passenger and freight transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with the following criteria:               <ol style="list-style-type: none"> <li>a. Until 31 December 2027, the retrofitting Activity reduces fuel consumption of the vessel by at least 13% below the AER trajectories from IMO2023, expressed in grams of fuel per deadweight tonne per nautical mile; AND</li> </ol> </li> <li>2. Vessels retrofitted or upgraded are not dedicated to transport of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. The Activity complies with the following criteria:               <ol style="list-style-type: none"> <li>a. Until 31 December 2030 vessels meet the same TSC as Green criterion 1.a.; AND</li> </ol> </li> <li>2. Vessels are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following is defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• Vessels excluded due to being 'dedicated to the transport of fossil fuels'.</li> <li>• 'Until [date]'</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 50[001] Infrastructure for water transportation, including infrastructure to enable low-carbon water transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. The infrastructure is dedicated to the operation of vessels with zero direct (tailpipe) CO<sub>2</sub> emissions: electricity charging, hydrogen-based refuelling;</li> <li>b. The infrastructure is dedicated to the provision of shore-side electrical power to vessels at berth;</li> <li>c. The infrastructure is dedicated to the performance of the port's own operations with zero direct (tailpipe) CO<sub>2</sub> emissions;</li> <li>d. The infrastructure and installations are dedicated to trans-shipping freight between the modes: terminal infrastructure and superstructures for loading, unloading and trans-shipment of goods; AND</li> </ol> </li> <li>2. The infrastructure is not dedicated to the transport or storage of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following is defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• Vessels excluded due to being 'dedicated to the transport of fossil fuels'.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

<b>Tiers</b>	<b>EO4: Resource Resilience and the Transition to a Circular Economy TSC</b>
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

<b>Significant Harm</b>	<b>Category for Assessment</b>	<b>Relevance</b>	<b>If Relevant, Reference for Assessment</b>
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5



## 5022[001] Inland freight water transport

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or both of the following criteria:               <ol style="list-style-type: none"> <li>a. The vessels have zero direct (tailpipe) CO<sub>2</sub> emission;</li> <li>b. Where technologically and economically not feasible to comply with the criterion in point (a), until 31 December 2027, have direct (tailpipe) CO<sub>2</sub> emissions less than 21 gCO<sub>2</sub>e/t-km<sup>41</sup>; AND</li> </ol> </li> <li>2. Vessels are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. Until 31 December 2030, have direct (tailpipe) CO<sub>2</sub> emissions less than 42 gCO<sub>2</sub>e/t-km, and from 1 January 2031 onwards, less than 21 gCO<sub>2</sub>e/t-km; AND</li> <li>2. Vessels are not dedicated to the transport of fossil fuels.</li> </ol>
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.
Notes	<p>The following are defined in 'Definitions of terms used in this TSC':</p> <ul style="list-style-type: none"> <li>• 'Technologically and economically feasible'.</li> <li>• Vessels excluded due to being 'dedicated to the transport of fossil fuels'.</li> <li>• 'Until [date]'</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</li> <li>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:               <ol style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ol> </li> </ol>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.

<sup>41</sup> Based on the current difference between emissions projections for freight activity by the CBI (18gCO<sub>2</sub>e/t-km by 2050) and IEA NZE (18gCO<sub>2</sub>e/t-km by 2040), it is proposed to have a forward outlook with a horizon date of 2030; indicative of reviewing the TSC at the period and potentially amending the threshold based on new emissions data in the future.

Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## 51[001] Airport infrastructure, including low-carbon assets and facilities

The criteria proposed for Green and Amber TSC are indicative of the fact that sustainable aviation fuel (SAF) is not a zero-tailpipe CO<sub>2</sub> emissions fuel; hence, should be recognised as a transitional measure. SAF blends above 50% and up to 99% are not commonly envisaged in practice and as a result, development of SAF blends above 50% are mainly focused on 100% supply; implying that airport fuel infrastructure should be capable of handling a pure supply of SAF.

Renewable diesel does not require changes to infrastructure as it is not a blended fuel. However, biodiesel blends in practice are typically in the range of 5-20%. Blends above this range (i.e., 20-100%) are not envisaged because they may require significant infrastructure changes as well as changes to ground assets or facilities using the relevant infrastructure.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. The infrastructure is dedicated to the operation of aircraft with zero tailpipe CO<sub>2</sub> emissions: electricity charging and hydrogen refuelling; OR</li> <li>b. The infrastructure is dedicated to the provision of fixed or mobile electrical ground power, handling vehicles and devices, and preconditioned air to stationary aircrafts; OR</li> <li>c. The infrastructure is dedicated to the zero direct tailpipe (CO<sub>2</sub>) emissions performance of the airport's own operations, including ground handling vehicles and devices: electric charging points, electricity grid connection upgrades, hydrogen refuelling stations; OR</li> <li>d. The infrastructure and installations are dedicated to transshipping freight with rail and water transport: terminal infrastructure and superstructures for loading, unloading and transshipment of goods; AND</li> </ol> </li> <li>2. The infrastructure is not dedicated to the transport or storage of fossil fuels.</li> </ol>
Tier 2 (Amber T2)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. The infrastructure is capable to handle aircraft fuels with low lifecycle CO<sub>2</sub> emissions: 100% SAF;<sup>42</sup> OR</li> <li>b. The infrastructure is dedicated to the operation of ground assets or facilities with low lifecycle CO<sub>2</sub> emissions: 100% renewable diesel; AND</li> </ol> </li> <li>2. The infrastructure is not dedicated to the transport or storage of fossil fuels.</li> </ol>
Tier 3 (Amber T3)	<ol style="list-style-type: none"> <li>1. The Activity complies with one or more of the following criteria:               <ol style="list-style-type: none"> <li>a. The infrastructure is capable to handle aircraft fuels and the operation of aircraft with low lifecycle CO<sub>2</sub> emissions: SAF; OR</li> <li>b. The infrastructure is dedicated to the operation of ground assets or facilities that are between 5% up to and including 100% biodiesel blends; AND</li> </ol> </li> <li>2. The infrastructure is not dedicated to the transport or storage of fossil fuels.</li> </ol>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Activity has implemented physical and non-physical solutions ('adaptation solutions') that substantially reduce the most important physical climate risks that are material to that Activity, which can be</li> </ol>

<sup>42</sup> In reference to infrastructure having the capability to handle 100% SAF supply.

	<p>demonstrated by a climate risk and vulnerability assessment (CRVA) as described in Annex 3; AND</p> <p>2. It must be shown that the Activity is necessary for the provision of transport security to consumers with consideration to future possible climate-related disruptions. In the context of this Activity, the following examples may be regarded as aligned:</p> <ul style="list-style-type: none"> <li>a) Operation of equipment which has been built or upgraded to be better able to operate in projected flooding, storm conditions or higher temperatures; OR</li> <li>b) Operation of monitoring and control equipment or other related IT systems to operate or maintain equipment in the event of projected flooding, storm conditions or higher temperatures; OR</li> <li>c) Operation of facilities or equipment to provide support, storage or training related to the operations, maintenance or repair of equipment in scenarios of projected flooding, storm conditions or higher temperatures.</li> </ul>
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	TSC are presently not available for the Activity Tiers defined.
Tier 2 (Amber T2)	TSC are presently not available for the Activity Tiers defined.
Tier 3 (Amber T3)	TSC are presently not available for the Activity Tiers defined.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

## APPENDIX D: TSC FOR ACTIVITIES NOT INCLUDED IN ISIC

### Bases for setting TSC

#### Environmental Objective 1: Climate Change Mitigation

The Activities in this Appendix are not explicitly included in ISIC rev 4 and are therefore not included in any other Appendix. However, the Activities in this Annex are a potential prerequisite for the Green or Amber classification under EO1 of Activities listed under Appendix A of this Annex.

For this reason, the Activities in this Annex may be classified as Green in their own right assuming they meet TSC, and other ASEAN Taxonomy requirements. The TSC were developed in line with relevant international guidelines, such as those developed by the IPCC as well as guidelines established under ISO, for the transport and underground storage of CO<sub>2</sub>.

The TSC for EOs 2-4 have been considered by the ATB but have not been included as no clear case can currently be identified in this focus sector that shows a direct positive benefit to these EOs. However, these EOs are considered under the DNSH assessment described in Annex 2.

## 000[010] Transport of CO<sub>2</sub>

- Includes
  - Equipment for the transport of CO<sub>2</sub> for the purposes of sequestration.

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. CO<sub>2</sub> transported from capture point to injection point does not lead to leakages above 0.5% of CO<sub>2</sub> by mass on an annual basis; AND</li> <li>2. CO<sub>2</sub> is delivered directly or indirectly to a permanent storage site that meets the criteria for underground geological CO<sub>2</sub> storage as described in Activity 000[020]; AND</li> <li>3. Appropriate leak detection systems are applied, and a monitoring plan is in place, with the report verified by an independent third party in accordance with international standards.</li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
Applicable standards	<ul style="list-style-type: none"> <li>• Exploration and operation of storage sites ISO 27914: 2017 Carbon dioxide capture, transportation, and geological storage - Geological storage.</li> <li>• Refer to international guidelines, such as cited to in IPCC guidance<sup>43</sup>.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant (Offshore)	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5
EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7

<sup>43</sup> <https://www.ipcc.ch/report/carbon-dioxide-capture-and-storage/>

EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5
-----	--	----------	--------------------

## 000[020] Underground permanent geological storage of CO<sub>2</sub>

Tiers	EO1: Climate Change Mitigation TSC
Tier 1 (Green)	<ol style="list-style-type: none"> <li>1. Characterisation and assessment of the potential storage complex and surrounding area, or exploration is carried out in order to establish whether the geological formation is suitable for use as a CO<sub>2</sub> storage site; AND</li> <li>2. For operation of underground geological CO<sub>2</sub> storage sites, including closure and post-closure obligations: appropriate leakage detection systems are implemented to prevent release during operation; AND</li> <li>3. A monitoring plan of the injection facilities, the storage complex, and, where appropriate, the surrounding environment is in place, with the regular reports checked by the competent national authority; AND</li> <li>4. Exploration and operation of storage sites complies with applicable standard.</li> </ol>
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.
Applicable standards	<ul style="list-style-type: none"> <li>• Exploration and operation of storage sites ISO 27914: 2017 Carbon dioxide capture, transportation, and geological storage — Geological storage.</li> <li>• Refer to international guidelines, such as cited to in IPCC guidance<sup>44</sup>.</li> </ul>

Tiers	EO2: Climate Change Adaptation TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO3: Protection of Healthy Ecosystems and Biodiversity TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Tiers	EO4: Resource Resilience and the Transition to a Circular Economy TSC
Tier 1 (Green)	No TSC available.
Tier 2 (Amber T2)	No TSC available.
Tier 3 (Amber T3)	No TSC available.

Significant Harm	Category for Assessment	Relevance	If Relevant, Reference for Assessment
EO1	Climate Change Mitigation	Relevant	Annex 2, Section 2
EO2	Climate Change Adaptation	Relevant	Annex 2, Section 3
EO3	Protection of Healthy Ecosystems and Biodiversity	Relevant	Annex 2, Section 4
EO3	Impact on Water Resources	Relevant	Annex 2, Section 4.3
EO3	Impacts Related to Noise	Relevant (Offshore)	Annex 2, Section 4.4
EO3	Impact on Air	Relevant	Annex 2, Section 4.5

<sup>44</sup> <https://www.ipcc.ch/report/carbon-dioxide-capture-and-storage/>



EO3	Impact on Soil	Relevant	Annex 2, Section 4.6
EO3	Impact on Biodiversity	Relevant	Annex 2, Section 4.7
EO4	Resource Resilience and the Transition to Circular Economy	Relevant	Annex 2, Section 5

**ANNEX 2. to the ASEAN Taxonomy for Sustainable Finance**

# **Significant Harm criteria for the ASEAN Taxonomy for Sustainable Finance**

Updated as of 27 March 2024

## PREAMBLE

Annex 2 of the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy) encompasses the Do No Significant Harm (DNSH) criteria to be considered under each Environmental Objective (EO), as and when Activities undergo an assessment. This Annex can be updated as and when new considerations for the DNSH assessment criteria are needed as determined by the ATB. Version 1 of the ASEAN Taxonomy did not include this Annex, as it was intended to provide the conceptual framework of the ASEAN Taxonomy.

Version 2 of the ASEAN Taxonomy, first published on 27 March 2023 and made effective on 19 February 2024, introduced Annex 2, to include:

- Generic Principles and criteria for DNSH assessments under EOs 1-4;
- ‘Generic Principles’ changed to ‘Guiding Principles’ for consistency and showing the interlink between EO and DNSH assessments;
- Clarification to the DNSH Guiding Principles criteria for EO1, EO3, and EO4;
- Simplification of EO3 DNSH Assessment Protocol, emphasising the reference to conducting EIAs / ESIAAs and reducing the detailed criteria to be considered under each sub-chapter of EO3.

Version 3 of the ASEAN Taxonomy, published on 27 March 2024, has been updated to include revisions in the DNSH assessment protocol:

- Clarification to the guidance on Lifecycles Assessment (LCA);
  - Clarification to the details listed under the LCA Checklist;
  - Worked example on requirements for an LCA.

Future revisions of the ASEAN Taxonomy may include amendments, as and where required, upon endorsement by the ATB.

# CONTENTS

PREAMBLE .....	243
CONTENTS .....	244
1 INTRODUCTION.....	246
1.1 Document Purpose	246
1.2 Definition of Significant Harm in the ASEAN Taxonomy	246
1.3 Lock-in	247
1.4 Application of Significant Harm Criteria	247
2 EO1: CLIMATE CHANGE MITIGATION.....	248
2.1 Generic Criteria and Guiding Principles	248
2.2 Assessment of Significant Harm	248
2.3 Specific Criteria for Consideration	248
2.3.1 Energy Provision, T&D and Storage	248
2.3.2 Carbon Lock-in	249
3 EO2: CLIMATE CHANGE ADAPTATION.....	250
3.1 Generic Criteria and Guiding Principles	250
3.2 Climate Risk and Vulnerability Assessment	250
4 EO3: PROTECTION OF HEALTHY ECOSYSTEMS AND BIODIVERSITY ...	251
4.1 Generic Criteria and Guiding Principles	251
4.2 Guidance on Environmental Impact Assessments	251
4.2.1 Requirement for an EIA or ESIA	251
4.2.2 Guidance for ESIA or EIAs	252
4.2.3 Harm being caused by ongoing Activities	253
4.3 Impact on Water Resources	253
4.4 Impacts related to Noise	253
4.5 Impact on Air	254
4.6 Impact on Soil	254
4.7 Impact on Biodiversity	255
5 EO4: RESOURCE RESILIENCE AND THE TRANSITION TO A CIRCULAR ECONOMY.....	256
5.1 Generic Criteria and Principles	256
5.2 Assessment of Risk	256
5.3 Guidance on LCAs	257
APPENDIX A ACTIVITIES WHERE AN ESIA OR EIA MUST BE CONDUCTED IN ALL CASES.....	259
APPENDIX B ACTIVITIES WHICH MAY BE ASSESSED AS HAVING A MATERIAL IMPACT.....	261

APPENDIX C CONSIDERATIONS WHEN DETERMINING THE MATERIALITY OF AN ASPECT OF POTENTIAL SIGNIFICANT HARM.....264

APPENDIX D: PROTECTED LAND OR LANDS WITH HIGH BIODIVERSITY PROTECTION VALUES.....265

APPENDIX E: LCA CHECKLIST WORKED EXAMPLE .....266

# 1 INTRODUCTION

## 1.1 Document Purpose

This Annex relates to Activities undergoing assessment for classification under the Plus Standard (PS) of the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy). Specifically, the Annex provides criteria to determine if these Activities may cause significant harm to Environmental Objectives (EOs). The criteria outlined in this Annex are partly mandated by the text of the ASEAN Taxonomy requiring that an assessment must be undertaken to ascertain whether the Activities are causing significant harm to the environment while fulfilling one or more of the EOs. In alignment with the intentions of the ASEAN Taxonomy,<sup>1</sup> this Annex attempts to provide consistent understanding of what it means for Activities to be considered as causing significant harm (or not) to the ASEAN Taxonomy EOs and ensures that progress in achieving any EO is not made at the expense of another. Notwithstanding the guiding questions that have been provided to address the DNSH aspect in the FF, this document can also be a useful reference for FF assessments of DNSH.

## 1.2 Definition of Significant Harm in the ASEAN Taxonomy

A definition of 'significant harm' in the context of the ASEAN Taxonomy is important as users must work from the same definition and avoid subjective interpretations. With progress in the implementation of the criteria developed in this Annex, it is expected that there will be periodic reviews and updates to keep the document relevant to the prevailing contexts.

An Activity is considered as having done significant harm when, with respect to:

**1. Climate Change Mitigation (EO1):**

- (i) Activity leads to significant greenhouse gas (GHG) emissions.

**2. Climate Change Adaptation (EO2):**

- (i) Activity leads to greater adverse impacts of the current and expected future climate on the Activity itself, or on people, nature, or other assets; or
- (ii) Activity fails to adequately assess, consider and manage key climate risks affecting the Activity.

**3. Protection of Healthy Ecosystem and Biodiversity (EO3):**

- (i) Activity is significantly detrimental to the good condition and resilience of ecosystems;
- (ii) Activity encroaches upon ecosystems; or
- (iii) Activity is detrimental to the conservation status of habitats and species.

**4. Promotion of Resource Resilience and Transition to Circular Economy (EO4):**

- (i) Activity leads to significant inefficiencies in the use of materials or the direct or indirect use of natural resources compared to what is technically and economically feasible in that industry; or
- (ii) Activity significantly increases the generation, incineration, or disposal of waste, or if waste disposal may cause significant and/or long-term environmental harm.

---

<sup>1</sup> Section 2.1 of ASEAN Taxonomy Version 1 recognises the clear need for a common language across AMS to communicate and coordinate on labelling for Activities and financial instruments.

### **1.3 Lock-in**

For an Activity seeking classification under any EO, it must be shown that the Activity is not resulting in 'Lock-in'. Lock-in refers to an Activity, which may itself be supporting an EO, but does not support a sustainable solution over the medium/long term or may limit or inhibit resource availability (capital, technology, etc.) for longer-term sustainable alternatives.

### **1.4 Application of Significant Harm Criteria**

The Annex is intended as a generic guide to significant harm for use with the PS for assessment of any defined Activity at any Tier.

Any Activity to be classified under the ASEAN Taxonomy must Do No Significant Harm (DNSH) to an EO other than that for which the EO was intended to result in a benefit.

Also, notwithstanding any guidance given in this Annex, any significant harm, which is being caused or which may potentially be caused by an Activity, whether or not described in this Annex, may negatively affect the classification of the Activity.

The baseline scenario for the economic activities should be in compliance with relevant national requirements in the AMS in which the Activity takes place or other international standards – such as the IFC Performance Standards, World Bank Group's Environmental, Health, and Safety Guidelines or the Asian Development Bank's Safeguard Policy Statements.

Note also, that although significant harm relates to EOs other than that to which the Activity is intended to contribute, Activities may also not cause effects which directly or indirectly detract from the intended EO. Such an effect must result in the Activity being assessed as not meeting the criteria for the intended EO, and therefore being classified as Red. This could include an effect which is the same as significant harm, as it has been defined in this Annex.

## 2 EO1: CLIMATE CHANGE MITIGATION

### 2.1 Generic Criteria and Guiding Principles

An Activity seeking classification under the ASEAN Taxonomy must demonstrate that it will not unduly result in emissions which contribute to Climate Change. An Activity is deemed to be considered as doing significant harm to EO1 if it leads to significant GHG emissions or causes other people or assets, to increase their GHG emissions.<sup>2</sup>

**Table 1: Guiding Principles for DNSH in EO1**

Guiding Principles
<p>For an Activity to demonstrate that it will do no significant harm with respect to factors related to climate change mitigation, the following must be considered:<sup>3</sup></p> <ol style="list-style-type: none"><li>1. An identification of the Scope 1 and Scope 2 Emissions related to the Activity; and<ol style="list-style-type: none"><li>a. If relevant to the Sector under assessment, an identification of the Scope 3 Emissions related to the Activity.</li></ol></li><li>2. An identification of the potential risk to other people or assets to directly increase their GHG emissions; and</li><li>3. Plans for the management and minimisation of emissions related to the Activity.</li></ol>

### 2.2 Assessment of Significant Harm

An assessment of the potential significant harm caused to the environment by an Activity must be conducted if the Activity causes emissions which contribute to Climate Change.

Where an Activity is applicable and deemed relevant based on the above assessment, the following actions should be in place, for which evidence is required as part of an assessment to determine if the Activity is causing significant harm to EO1:

- Plans for the management and minimisation of Scope 1, Scope 2 emissions related to the Activity, as well as Scope 3 if relevant to the sector under assessment<sup>4</sup>;
- Evidence that the remediation plans have been implemented and are ongoing.

### 2.3 Specific Criteria for Consideration

#### 2.3.1 Energy Provision, T&D and Storage

Activities involving aspects of energy provision (including power generation, co-generation, heating, and cooling) shall have lifecycle GHG emissions as follows:

- Activities which predominantly involve electric power generation, transmission and distribution: less than 510 gCO<sub>2</sub>e/kWh;
- Activities which predominantly involve distribution of gas fuels and steam and air conditioning supply: less than 65 gCO<sub>2</sub>e/MJ.

<sup>2</sup> General Principle under EO1: Climate Change Mitigation.

<sup>3</sup> The following points are referenced from all sectors included in the Appendix List of Activities in the EU Taxonomy, as they pertain to direct impact on the climate. The EU Taxonomy does not provide a direct reference to DNSH in terms of EO1, however, provides references to Annexes for specific Activities/Sectors that need to consider DNSH requirements in terms of climate change mitigation.

<sup>4</sup> Greenhouse Gas Protocol 2001 (GHG Protocol, 2001).



The provision of electricity or heat / cooling 'predominates' for an Activity if more than 50% of the energy supplied by that Activity over its lifetime is electricity or heat / cooling respectively.

For the purposes of estimating GHG intensity, the 'non-predominant' energy supplied shall be converted to the 'predominant' energy unit. For this conversion, 1 MJ of heat energy is equal to 0.277778 kWh of electricity:

- If used for heating, calculated at the point of discharge from the heat producing facility; or
- If used for cooling, calculated at the point of discharge to the equipment for producing a cooling medium.

Electricity T&D or storage Activities must demonstrate an average GHG intensity of less than 510 gCO<sub>2</sub>e/kWh averaged over a five-year rolling period for all energy supplied from that network.

Gas supply networks, or networks which are used to distribute heating or cooling media, must demonstrate an average GHG intensity of less than 65 gCO<sub>2</sub>e/MJ averaged over a five-year rolling period, for all energy supplied from that network.

In all cases, lifecycle emissions are calculated using the methodology described in ISO 14067: 2018 or ISO 14064-1: 2018.

### 2.3.2 Carbon Lock-in

Carbon lock-in is a form of lock-in related specifically to the difficulty of transitioning to cleaner and more sustainable energy sources due to the existing infrastructure and economic systems being built around the use of carbon-based fuels.

Examples of carbon lock-in may include, but are not necessarily limited to:

- Sustainable Activities (e.g., renewable power), solely dedicated to supporting the extraction, storage, transport, or manufacture of fossil fuels which are not eligible under the ASEAN Taxonomy;
- Climate change adaptation Activities which are intended to serve another high carbon emitting Activity (e.g., the upgrade of a road intended to transport coal to a power plant).

### 3 EO2: CLIMATE CHANGE ADAPTATION

#### 3.1 Generic Criteria and Guiding Principles

An Activity is deemed to be considered as doing significant harm to EO2 if it fails to adequately assess, consider and manage its own climate change related physical risks, or leads to greater adverse impacts of the current and expected future climate on the Activity itself, or on people, nature, or other assets; directly infringing on these to build resilience against climate change.<sup>5</sup> Resilience in this context is defined as the ability of the Activity, or other Activities, to provide utility over time - in the short, medium and long term - at the current or improved performance level in the face of actual or potential climate-related disruption or gradual change.

**Table 2: Guiding Principles for DNSH in EO2**

Guiding Principles
<p><b>Criterion 1: Reducing material physical climate risks</b> The Activity must reduce all material physical climate risks to the Activity to the extent possible and on a best effort basis.</p>
<p>1.1 The Activity integrates physical and non-physical measures aimed at reducing – to the extent possible and on a best effort basis – all material risks that have been identified through a climate risk and vulnerability assessment.</p> <ul style="list-style-type: none"> <li>● For existing Activities, the implementation of those physical and non-physical measures may be phased and executed over a period of up to 5 years.</li> <li>● For new Activities, implementation of these measures must be met at the time of design and construction.</li> </ul>
<p>1.2 The above-mentioned climate risk and vulnerability assessment has the following characteristics:</p> <ul style="list-style-type: none"> <li>● considers both current weather variability and future climate change, including uncertainty;</li> <li>● is based on robust analysis of available climate data and projections across a range of future scenarios; and</li> <li>● is consistent with the expected lifespan of the Activity.</li> </ul>
<p><b>Criterion 2: Supporting system adaptation</b> The Activity and its adaptation measures do not adversely affect the adaptation efforts of other people, nature, and/or assets.</p>
<p>2.1 The Activity and its adaptation measures do not increase the risks of an adverse climate impact on other people, nature, and assets, or hamper adaptation elsewhere.</p>
<p>2.2 The Activity is consistent with sectoral, regional, and/or national adaptation efforts.</p>

#### 3.2 Climate Risk and Vulnerability Assessment

Any Activity seeking to demonstrate its compliance with DNSH related to EO2, must conduct a Climate Risk and Vulnerability Assessment (CRVA) in accordance with the guidance shown in Annex 3.

<sup>5</sup> Referenced from the EU Taxonomy and consolidated with the general principle of EO2 under the ASEAN Taxonomy.

## 4 EO3: PROTECTION OF HEALTHY ECOSYSTEMS AND BIODIVERSITY

### 4.1 Generic Criteria and Guiding Principles

An Activity is deemed to be considered as doing significant harm to EO3 if it meets any of the conditions in Table 3.

**Table 3: Guiding Principles for DNSH in EO3.**

Guiding Principles
<p>An Activity is deemed to be considered as doing significant harm to EO3 if it meets any of the conditions below:</p> <ol style="list-style-type: none"> <li>1. The Activity is detrimental to the good status, or where relevant the good ecological potential, of water bodies, including surface waters and groundwaters, or to the good environmental status of marine waters; OR</li> <li>2. The Activity leads to a significant increase in the emissions of pollutants into air, water, or land, as compared to the situation before the Activity started; OR</li> <li>3. The Activity is detrimental to a significant extent to the good condition and resilience of ecosystems or where that Activity is detrimental to the conservation status of habitats and species, including those of community interest.</li> </ol>

This Section is broken down into two distinct parts:

- Section 4.2:
  - Provides guidance as to whether an Environmental Impact Assessment (EIA) or an Environmental and Social Impact Assessment (ESIA)<sup>6</sup> is required for an aspect of potential significant harm; and
  - If required, the requirements for assessing harm and/or measures to remediate harm through an EIA or ESIA.
- Sections 4.3 to 4.7:
  - Define specific criteria, and provide guidance and standards, for aspects of potential significant harm, through sub-categories under an overarching umbrella of ecosystem and biodiversity protection (as listed in Table 4).

**Table 4: Aspects of Potential Significant Harm**

Aspect of Potential Significant Harm	Criteria defined in
Impact on Water Resources	Section 4.3
Impacts related to Noise	Section 4.4
Impact on Air	Section 4.5
Impact on Soil	Section 4.6
Impact on Biodiversity	Section 4.7

### 4.2 Guidance on Environmental Impact Assessments

#### 4.2.1 Requirement for an EIA or ESIA

The general requirement for Activities that may have the potential for environmental impacts is to conduct an Environmental Impact Assessment (EIA) or an Environmental and Social Impact

<sup>6</sup> Note that Significant Harm, as defined by the ASEAN Taxonomy, does not cover Social Aspects; these are a separate Essential Criterion. Nevertheless, in some cases, an ESIA study is required, as its output will be a necessary input to Social Aspects.

Assessment (ESIA),<sup>7</sup> to address an aspect of significant harm which may be **relevant** and **material** to the Activity.

An EIA or ESIA is the process of identifying, predicting and evaluating environmental and social impacts of an Activity, in order to reduce or mitigate adverse impacts.

- A potential aspect of significant harm is considered not **relevant** if the Activity would not have any interaction with that aspect at all. For example, subsea noise would not be relevant to a purely onshore Activity. Annex 1 shows those aspects of significant harm which are not relevant.
- In the context of the ASEAN Taxonomy, '**materiality**'<sup>8</sup> relates to the extent to which the negative impact of an Activity could be considered significant to a specific aspect.

The circumstances under which an EIA or ESIA is not required to address a potential aspect of significant harm are outlined below:

- It can be shown that an aspect of significant harm is not material to that Activity. It should be noted that all aspects of potential significant harm, other than those which are not relevant (refer to Annex 1), should normally be considered material. Materiality is deemed to be on a case-by-case basis with due consideration to Appendix C of this Annex.
- An EIA or EISA already exists which covers an aspect of potential significant harm for that Activity, and: any appropriate mitigation actions required by the existing EIA or ESIA were taken and the situation as it related to the Activity as described in that EIA or ESIA has not significantly changed and no new significant increase in the Activity's environmental impact is expected.
- The Activity falls under an exemption category in national or local environmental regulations, which do not require an EIA or ESIA.

The materiality and relevance of an Activity should be determined on a case-by-case basis. The final determination of the materiality and relevance of any aspect of potential significant harm shall lie with the assessor. An assessor may require an EIA or ESIA to be presented related to any aspect of potential significant harm which they deem to be material.

#### 4.2.2 Guidance for ESIA or EIAs

Except in those cases listed in Table 3, for an Activity to demonstrate that it will do no significant harm to the ecosystem and biodiversity, the following is required:

- EIA or ESIA for the Activity which assesses the potential impact of relevant forms of significant harm; and
- Implementation of mitigation actions resulting from the EIA or ESIA.

EIAs should draw from the **UN Environment Programme's Guidelines for Conducting Integrated Environmental Assessments**,<sup>9</sup> or from national requirements, where such exist. It is

<sup>7</sup> Note that DNSH does not cover Social Aspects; these are a separate Essential Criterion (EC) within the ASEAN Taxonomy. Nevertheless, in some cases, an ESIA study is required, as its output will be a necessary input to the Social Aspects EC.

<sup>8</sup> Note that 'materiality' in this context does not have the same meaning that is commonly used in financial reporting.

<sup>9</sup> [UN Environment Programme Guidelines for Conducting Integrated Environmental Assessments](#).

expected that while carrying out an EIA, the necessary adaptations to the scale of the economic operator as well as the scale and impact of Activities on the Environment, are considered.

Any EIA or ESIA used in support of an assessment of an Activity must be completed and provided prior to the start of on-site construction of facilities to be used for the Activity.

#### 4.2.3 Harm being caused by ongoing Activities

For an ongoing Activity, where no EIA or ESIA was conducted before commencement, an EIA or ESIA should be conducted with respect to any relevant and material aspect of potential significant harm.

In all cases, regardless of whether a prior EIA or ESIA was conducted, details of any significant harm being caused by an ongoing Activity must be presented as part of an assessment. Harm being caused by an ongoing Activity will be considered in the classification of an Activity.

### 4.3 Impact on Water Resources

Prior to the commencement of any Activity which may have a material impact on water and marine resources, the following actions must be taken:

- Ensure an EIA or an ESIA has been completed in accordance with the national requirements applicable in the AMS in which the Activity takes place or other international standards – such as the IFC Performance Standards, the World Bank Group’s Environmental, Health, and Safety Guidelines or the Asian Development Bank’s Safeguard Policy Statements;
- Identify and manage environmental detrimental risks associated with the Activity related to water quality and/or water consumption at the appropriate level;
- Ensure all relevant management plans such as Water Quality Protection and Conservation Management Plans are developed in consultation with relevant stakeholders, and implemented for the potentially affected water bodies, which include tangible commitments to minimise environmental impacts through the appropriate management of water utilised during the Activities lifecycle; and
- Monitor the compliance and effectiveness of the mitigation measures to which the Project has committed.

### 4.4 Impacts related to Noise

It must be shown that neither the construction nor operation of the Activity will cause significant harm to the environment through noise emissions. Noise emitted by the Activity must comply with maximum permissible noise levels for the area in which the Activity will take place in accordance with current and future laws and regulations applicable in the AMS where the Activity will take place, as well as any applicable international agreements or conventions such as the World Bank Group’s Environmental, Health, and Safety (EHS) Guidelines or the WHO Guidelines.

Prior to the commencement of an Activity which may have a material impact on noise, the following actions must be taken:

- Ensure an EIA or an ESIA has been completed in accordance with the national requirements applicable in the AMS in which the Activity takes place or other international

standards – such as the IFC Performance Standards, the World Bank Group’s Environmental, Health, and Safety Guidelines or the Asian Development Bank’s Safeguard Policy Statements.

- Identify and manage environmental detrimental risks associated with the Activity related to noise at the appropriate level.
- Ensure all relevant management plans such as Noise Management Plans are developed in consultation with relevant stakeholders and implemented for the potentially affected area; and
- Monitor the compliance and effectiveness of the mitigation measures to which the Project has committed.

#### **4.5 Impact on Air**

It must be shown that neither the construction nor operation of the Activity will cause significant harm to the environment through air emissions. Air emissions caused by the Activity must comply with maximum permissible air quality levels for the area in which the Activity will take place in accordance with the current and future laws and regulations applicable in the AMS where the Activity will take place, as well as any applicable international agreements or conventions such as the World Bank Group’s Environmental, Health, and Safety (EHS) Guidelines or the WHO Guidelines.

Prior to the commencement of any Activity which may have a material impact on air quality, the following actions must be taken:

- Ensure an EIA or an ESIA has been completed in accordance with the national requirements applicable in the AMS in which the Activity takes place or other international standards – such as the IFC Performance Standards, the World Bank Group’s Environmental, Health, and Safety Guidelines or the Asian Development Bank’s Safeguard Policy Statements.
- Not hamper the achievement of air quality targets specified by national or local policies, laws and regulations or any international agreements or conventions applicable in the AMS in which the Activity will take place.
- Identify and manage environmental detrimental risks associated with the Activity related to air quality at the appropriate level.
- Ensure all relevant management plans such as Air Quality Management Plans are developed in consultation with relevant stakeholders and implemented for the potentially affected area; and
- Monitor the compliance and effectiveness of the mitigation measures to which the Project has committed.

#### **4.6 Impact on Soil**

It must be shown that neither the construction nor operation of the Activity will cause significant harm to the environment by impacting soil quality. Minerals and chemicals such as metals, pesticides, polychlorinated biphenyl, and total petroleum hydrocarbons contained in the soil must

be within the permissible limits for the area in which the Activity will take place in accordance with current and future laws and regulations applicable in the AMS where the Activity will take place, as well as any applicable international agreements or conventions such as the World Bank Group's Environmental, Health, and Safety (EHS) Guidelines or the WHO Guidelines.

Prior to the commencement of any Activity which may have a material impact on air quality, the following actions must be taken:

- Ensure an EIA or an ESIA has been completed in accordance with the national requirements applicable in the AMS in which the Activity takes place or other international standards – such as the IFC Performance Standards, the World Bank Group's Environmental, Health, and Safety Guidelines or the Asian Development Bank's Safeguard Policy Statements.
- Identify and manage environmental detrimental risks associated with the Activity related to soil quality at the appropriate level.
- Ensure all relevant management plans such as Soil Erosion and Sediment Control Plans are developed in consultation with relevant stakeholders and implemented for the potentially affected area; and
- Monitor the compliance and effectiveness of the mitigation measures to which the Project has committed.

#### **4.7 Impact on Biodiversity**

Prior to the commencement of any Activity which may have a material impact on biodiversity, the following actions must be taken:

- Ensure an EIA or an ESIA has been completed in accordance with the national requirements applicable in the AMS in which the Activity takes place or other international standards – such as the IFC Performance Standards, the World Bank Group's Environmental, Health, and Safety Guidelines or the Asian Development Bank's Safeguard Policy Statements.
- Identify and manage environmental detrimental risks associated with the Activity related to biodiversity at the appropriate level.
- Ensure all relevant management plans such as Biodiversity Management Plans are developed in consultation with relevant stakeholders and implemented for the potentially affected area; and
- Monitor the compliance and effectiveness of the mitigation measures to which the Project has committed.

## 5 EO4: RESOURCE RESILIENCE AND THE TRANSITION TO A CIRCULAR ECONOMY

### 5.1 Generic Criteria and Principles

Resource resilience refers to the ability of an Activity to adapt and recover from disruptions or changes in resource availability. It involves the development and implementation of strategies and practices that enable the sustainable management and use of resources, including reducing waste and promoting conservation, efficiency, and innovation. A circular economy is an economic model that aims to reduce waste, conserve resources, and promote sustainability by minimizing the use of virgin materials and maximizing the use of existing resources.

An Activity is deemed to be considered as doing significant harm to EO4 if it meets any of the conditions in Table 5.

**Table 5: Guiding Principles for DNSH in EO4**

Guiding Principles
An Activity is deemed to be considered as doing significant harm to EO4 if it meets any of the conditions below: <ol style="list-style-type: none"><li>1. The Activity leads to significant inefficiencies in the use of materials and the direct or indirect use of natural resources such as non-renewable energy sources, raw materials, water and land in one or more stages of the life-cycle of products, including in terms of durability, reparability, upgradability, reusability or recyclability of products; OR</li><li>2. The Activity leads to a significant increase in the generation, incineration or disposal of waste, with the exception of incineration of nonrecyclable hazardous waste, or where the long-term disposal of waste may cause significant and long-term harm to the environment.</li></ol>

For an Activity to demonstrate that it will do no significant harm with respect to resource resilience and a circular economy, the following must be conducted to determine its resource use effectiveness: A **Lifecycle Assessment (LCA)** on the products, material, process, or other measurable activities involved in the Activity.

LCAs should be a key consideration for the Construction and Real Estate sector. For new construction (buildings or portions of buildings), a cradle-to-grave life-cycle assessment of the projects structure and enclosure should be conducted.

### 5.2 Assessment of Risk

Prior to commencement of the Activity, risks associated with resource resilience/circularity must be identified. This is to ensure the Activity encourages less use of primary resources, reuse, and recycling of materials, but that the recycling is done in a way that avoids harm.

It must be demonstrated that the Activity will do no significant harm with respect to the following:

1. Impacts resulting from the natural diminution of resources on people, nature, or other assets; and



2. Actions by the Company implementing the Activity to ensure the maximum possible circularity of the resources/products and services.

### 5.3 Guidance on LCAs

Prior to the commencement of any Activity, an LCA must be completed for all significant aspects relevant to EO4 which have not already been covered by an EIA or ESIA.

The LCA should be conducted using the ISO 14040 and 14044 Series as a guideline.<sup>10</sup> The principles and framework of the LCAs are described in ISO 14040; while the requirements themselves are set out in ISO 14044. The key components which should be included within an LCA are outlined in the guidelines, while the specific content within each of the sections can be tailored based on the context of the Activity under assessment. The ISO 14040 and 14044 Series are meant to serve as guidance on the details of the content.

Table 6 can be used as a template for an LCA checklist related to investigating EO4. This may be used by entities to declare completion of lifecycle aspects of the Activity where relevant.

**Table 6: Lifecycle Assessment Checklist**

Step	Item	Description	Explanation	Status
1A	Activity Definition	Activity	What is the proposed activity?	
1B		Period of Activity (Start / End)	When will the Activity start and what it is expected life?	
2A	Inputs and outputs throughout Activity lifecycle	Initial infrastructure / equipment	High level view of main equipment items	
2B		Raw materials used	What type of raw materials will be used for the activity? (Mainly applies to manufacturing Activities)	
2C		Replacements and Spares	What spares are likely to be consumed during Activity life?	
2D		Energy use	What forms of energy does the Activity consume?	
2E		Emissions	What emissions does the Activity make?	
2F		Waste Streams	What forms of waste will the	

<sup>10</sup> ISO 14040 and ISO 14044 'Environmental Management – Lifecycle Assessment'

			Activity generate in its lifetime?	
3A	Potential impacts from the Activity on EO4 (circular economy and resource resilience)	Initial infrastructure / equipment	For each of these categories, what are or could be the impact on EO4?	
3B		Raw materials used		
3C		Replacements and Spares		
3D		Energy use		
3E		Emissions		
3F		Waste Streams		
4A	Proposed actions and improvements to mitigate impact	Initial infrastructure / equipment	What actions are or will be implemented to avoid harm to EO4?	
4B		Raw materials used		
4C		Replacements and Spares		
4D		Energy use		
4E		Emissions		
4F		Waste Streams		

The LCA checklist should demonstrate considerations of:

1. **Upstream sourcing** of materials and/or products for the intended Activity.
2. **Usage** of the materials and/or products, or for processes and other measurable activities, for the intended Activity, including information on potential by-products, alternative processes, etc.
3. **Downstream** use or value of the materials and/or products, processes, and other measurable activities, for the intended Activity.
4. **End of life requirements** and expectations from the materials and/or products, processes, or other measurable Activities.

The LCA need not include any aspects already covered in other EOs and which are not relevant to EO4.

A worked example of this table is shown in Appendix E.

## APPENDIX A ACTIVITIES WHERE AN ESIA OR EIA MUST BE CONDUCTED IN ALL CASES

An ESIA must be conducted in all cases for the following Activities.<sup>11</sup>

Note that inclusion in this list does not necessarily indicate that the Activity described would be eligible for classification under the ASEAN Taxonomy.

- Thermal power plants and other combustion installations with a heat output of 300 MW or more;
- Hydropower plant with an electrical output of 50 MW or more;
- Wind power plant with an electrical output of 50 MW or more;
- Integrated works for the initial smelting of cast iron and steel;
- Installations for the production of non-ferrous crude metals from ore, concentrates or secondary raw materials by metallurgical, chemical or electrolytic processes;
- Installations for the extraction of asbestos and for the processing and transformation of asbestos and products containing asbestos: for asbestos-cement products, with an annual production of more than 20,000 tonnes of finished products, for friction material, with an annual production of more than 50 tonnes of finished products, and for other uses of asbestos, utilization of more than 200 tonnes per year;
- Integrated chemical installations; i.e., those installations for the manufacture of substances on an industrial scale, using chemical conversion processes in which several units are contrasted and are functionally linked to one another, and which are:
  - for the production of basic organic chemicals;
  - for the production of basic inorganic chemicals;
  - for the production of phosphorous-, nitrogen- or potassium-based fertilisers (simple or compound fertilisers);
  - for the production of basic plant health products and of biocides;
  - for the production of basic pharmaceutical products using a chemical or biological process;
  - for the production of explosives.
- Construction of lines for long-distance railway traffic.
- Construction of airports with a basic runway length of 2,100m or more.
- Inland waterways and ports for inland-waterway traffic which permit the passage of vessels of over 1,350 tonnes.
- Trading ports, piers for loading and unloading connected to land and outside ports (excluding ferry piers) which can take vessels of over 1,350 tonnes.
- Waste disposal facilities using incineration or chemical treatment:
  - for hazardous waste;
  - for non-hazardous waste with a capacity exceeding 100 tonnes per day.
- Groundwater abstraction or artificial groundwater recharge schemes where the annual volume of water abstracted or recharged is equivalent to or exceeds 10 million cubic metres.
- Works for the transfer of water resources:

---

<sup>11</sup> This list is not exhaustive and may be expanded as and when Activities are added to the ASEAN Taxonomy. Users should ensure that they are referring to the most up-to-date list. Note, however, that inclusion of infrastructure types within this list does not necessarily imply that the related Activity will be an eligible Activity under the ASEAN Taxonomy.

- between river basins where that transfer aims at preventing possible shortages of water and where the amount of water transferred exceeds 100 million cubic metres/year; and
- between river basins where the multi-annual average flow of the basin of abstraction exceeds 2,000 million cubic metres/year and where the amount of water transferred exceeds 5% of that flow.
- In both cases, transfers of piped drinking water are excluded.
- Wastewater treatment plants with a capacity which will serve population of greater than 150,000.
- Infilling of natural wetlands for real estate activities and/or the construction of water and/or wastewater treatment facilities.
- Extraction of natural gas for commercial purposes where the amount extracted exceeds 500,000 cubic metres/day in the case of gas.
- Dams and other installations designed for the holding back or permanent storage of water, where a new or additional amount of water held back or stored exceeds 10 million cubic metres.
- Pipelines with a diameter of more than 800 mm and a length of more than 40 km:
  - for the transport of gas, oil, chemicals;
  - for the transport of carbon dioxide (CO<sub>2</sub>) streams for the purposes of geological storage, including associated booster plants.
- Installations for the intensive rearing of poultry or pigs with more than:
  - 85,000 places for broilers, 60,000 places for hens;
  - 3,000 places for production pigs (over 30 kg); or
  - 900 places for sows.
- Industrial plants for the production of:
  - pulp from timber or similar fibrous materials;
  - paper and board with a production capacity exceeding 200 tonnes per day.
- Quarries and open-cast mining where the surface of the site exceeds 25 hectares, or peat extraction, where the surface of the site exceeds 150 hectares.
- Construction of overhead electrical power lines with a voltage of 220 kV or more and a length of more than 15 km.
- Installations for storage of petroleum, petrochemical, or chemical products with a capacity of 200,000 tonnes or more.
- Storage sites for the geological storage of carbon dioxide.
- Installations for the capture of CO<sub>2</sub> streams for the purposes of geological storage where the total yearly capture of CO<sub>2</sub> is 1.5 megatonnes or more.
- Project related to the supply or use of biofuels, bioliquids and biomass fuels from agricultural or forest biomass.

Any change to or extension of Activities listed above where such a change or extension in itself meets the thresholds, if any, set out above.

## **APPENDIX B ACTIVITIES WHICH MAY BE ASSESSED AS HAVING A MATERIAL IMPACT**

The following Activities, where not specifically listed in Appendix A, shall be subject to an assessment for materiality in as much as they may have an impact on EO3.

For avoidance of doubt, inclusion in this list does not necessarily indicate that the Activity described would be eligible for classification under the ASEAN Taxonomy.

- 1 AGRICULTURE, SILVICULTURE AND AQUACULTURE
  - (a) Projects for the restructuring of rural land holdings;
  - (b) Projects for the use of uncultivated land or semi-natural areas for intensive agricultural purposes;
  - (c) Water management projects for agriculture, including irrigation and land drainage projects;
  - (d) Initial afforestation and deforestation for the purposes of conversion to another type of land use;
  - (e) Intensive livestock installations (Activities not included in Appendix A);
  - (f) Intensive fish farming;
  - (g) Reclamation of land from the sea.
- 2 EXTRACTIVE INDUSTRY
  - (a) Quarries, open-cast mining and peat extraction (Activities not included in Appendix B);
  - (b) Underground mining;
  - (c) Extraction of minerals by marine or fluvial dredging;
  - (d) Deep drillings, in particular geothermal drilling but not including drilling for investigating the stability of the soil;
  - (e) Surface industrial installations for the extraction of natural gas and ores.
- 3 ENERGY INDUSTRY
  - (a) Industrial installations for the production of electricity, steam and hot water (Activities not included in Appendix A);
  - (b) Industrial installations for carrying gas, steam and hot water; transmission of electrical energy by overhead cables (Activities not included in Appendix A);
  - (c) Surface or underground storage of combustible gases;
  - (d) Surface or underground storage of combustible liquids;
  - (e) Installations for the processing and storage of radioactive waste (unless included in Appendix B);
  - (f) Installations for hydroelectric energy production (Activities not included in Appendix B);
  - (g) Installations for the harnessing of wind power for energy production (wind farms);
  - (h) Installations for the capture of CO<sub>2</sub> streams for the purposes of geological storage (projects not included in Appendix A).
- 4 PRODUCTION AND PROCESSING OF METALS
  - (a) Installations for the production of pig iron or steel (primary or secondary fusion) including continuous casting;
  - (b) Installations for the processing of ferrous metals:
    - (c) hot-rolling mills;
    - (d) Ferrous metal foundries;

- (e) Installations for the smelting, including the alloyage, of non-ferrous metals, excluding precious metals, including recovered products (refining, foundry casting, etc.);
  - (f) Installations for surface treatment of metals and plastic materials using an electrolytic or chemical process;
  - (g) Manufacture and assembly of motor vehicles and manufacture of motor-vehicle engines;
  - (h) Shipyards;
  - (i) Installations for the construction and repair of aircraft;
  - (j) Manufacture of railway equipment;
  - (k) Swaging by explosives;
  - (l) Installations for the roasting and sintering of metallic ores.
- 5 MINERAL INDUSTRY
- (a) Coke ovens (dry coal distillation);
  - (b) Installations for the manufacture of cement;
  - (c) Installations for the production of asbestos and the manufacture of asbestos products (Activities not included in Appendix A);
  - (d) Installations for the manufacture of glass including glass fibre;
  - (e) Installations for smelting mineral substances including the production of mineral fibres;
  - (f) Manufacture of ceramic products by burning, in particular roofing tiles, bricks, refractory bricks, tiles, stoneware or porcelain.
- 6 CHEMICAL INDUSTRY (Activities not included in Appendix A)
- (a) Treatment of intermediate products and production of chemicals;
  - (b) Production of pesticides and pharmaceutical products, paint and varnishes, elastomers and peroxides;
  - (c) Storage facilities for petroleum, petrochemical and chemical products.
- 7 FOOD INDUSTRY
- (a) Manufacture of vegetable and animal oils and fats;
  - (b) Packing and canning of animal and vegetable products;
  - (c) Manufacture of dairy products;
  - (d) Brewing and malting;
  - (e) Confectionery and syrup manufacture;
  - (f) Installations for the slaughter of animals;
  - (g) Industrial starch manufacturing installations;
  - (h) Fish-meal and fish-oil factories;
  - (i) Sugar factories.
- 8 TEXTILE, LEATHER, WOOD AND PAPER INDUSTRIES
- (a) Industrial plants for the production of paper and board (Activities not included in Appendix A);
  - (b) Plants for the pre-treatment (operations such as washing, bleaching, mercerization) or dyeing of fibres or textiles;
  - (c) Plants for the tanning of hides and skins;
  - (d) Cellulose-processing and production installations.
- 9 RUBBER INDUSTRY
- (a) Manufacture and treatment of elastomer-based products.
- 10 INFRASTRUCTURE PROJECTS

- (a) Industrial estate development projects;
- (b) Urban development projects, including the construction of shopping centres and car parks;
- (c) Construction of railways and intermodal transshipment facilities, and of intermodal terminals (Activities not included in Appendix A);
- (d) Construction of airfields (Activities not included in Appendix A);
- (e) Construction of roads, harbours and port installations, including fishing harbours (Activities not included in Appendix A);
- (f) Inland-waterway construction not included in Appendix A, canalization and flood-relief works;
- (g) Dams and other installations designed to hold water or store it on a long-term basis (Activities not included in Appendix A);
- (h) Tramways, elevated and underground railways, suspended lines or similar lines of a particular type, used exclusively or mainly for passenger transport;
- (i) Oil and gas pipeline installations and pipelines for the transport of CO<sub>2</sub> streams for the purposes of geological storage (Activities not included in Appendix A);
- (j) Installations of long-distance aqueducts;
- (k) Coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dykes, moles, jetties and other sea defence works, excluding the maintenance and reconstruction of such works;
- (l) Groundwater abstraction and artificial groundwater recharge schemes (Activities not included in Appendix A).

#### 11 OTHER PROJECTS

- (a) Permanent racing and test tracks for motorised vehicles;
- (b) Installations for the disposal of waste (Activities not included in Appendix A);
- (c) Waste-water treatment plants (Activities not included in Appendix A);
- (d) Sludge-deposition sites;
- (e) Storage of scrap iron, including scrap vehicles;
- (f) Test benches for engines, turbines or reactors;
- (g) Installations for the manufacture of artificial mineral fibres;
- (h) Installations for the recovery or destruction of explosive substances;
- (i) Knackers' yards.

#### 12 TOURISM AND LEISURE

- (a) Ski runs, ski lifts and cable cars and associated developments;
- (b) Marinas;
- (c) Holiday villages and hotel complexes outside urban areas and associated developments;
- (d) Permanent campsites and caravan sites;
- (e) Theme parks.

13 Any change or extension of Activities listed in Appendix A or this Appendix, already authorised, executed or in the process of being executed, which may have significant adverse effects on the environment (change or extension not included in Appendix A).

14 Projects in Appendix A undertaken exclusively or mainly for the development and testing of new methods or products and not used for more than two years.

## **APPENDIX C CONSIDERATIONS WHEN DETERMINING THE MATERIALITY OF AN ASPECT OF POTENTIAL SIGNIFICANT HARM**

### **1 CHARACTERISTICS OF PROJECTS**

The characteristics of projects must be considered having regard, in particular, to:

- (a) the size of the project;
- (b) the cumulation with other projects;
- (c) the use of natural resources;
- (d) the production of waste;
- (e) pollution and nuisances;
- (f) the risk of accidents, having regard in particular to substances or technologies used.

### **2 LOCATION OF PROJECTS**

The environmental sensitivity of geographical areas likely to be affected by projects must be considered, having regard, in particular, to:

- (a) the existing land use;
- (b) the relative abundance, quality and regenerative capacity of natural resources in the area;
- (c) the absorption capacity of the natural environment, paying particular attention to the following areas:
  - i. wetlands;
  - ii. coastal zones;
  - iii. mountain and forest areas;
  - iv. nature reserves and parks;
  - v. areas classified or protected under ASEAN Member States' legislation;
  - vi. densely populated areas;
  - vii. landscapes of historical, cultural or archaeological significance.

### **3 CHARACTERISTICS OF THE POTENTIAL IMPACT**

The potential significant effects of projects must be considered in relation to consideration set out in points 1 and 2, and having regard in particular to:

- (a) the extent of the impact (geographical area and size of the affected population);
- (b) the transfrontier nature of the impact;
- (c) the magnitude and complexity of the impact;
- (d) the probability of the impact;
- (e) the duration, frequency and reversibility of the impact.



## **APPENDIX D: PROTECTED LAND OR LANDS WITH HIGH BIODIVERSITY PROTECTION VALUES**

Generic examples of protected lands or lands with high biodiversity conservation value:

- Nature reserves;
- Nature monuments;
- Ramsar sites;
- Resource management areas;
- World Heritage Sites;
- Lands with conservation deeds;
- Marine protected areas with mangroves or forest components;
- Areas protected by Indigenous Peoples and local communities, including Community Conservation Areas;
- Areas covered by community-based resource management agreements;
- Forests recognised as being regionally significant at the bioregion or larger scale in formally recognised reports or peer-reviewed journals, due to the unusual landscape scale biodiversity values provided by size and condition of the forest relative to regional forest land cover and land use trends;
- Ridge-to-Reef ecosystems, including but not limited to those containing mangrove, freshwater swamp, and freshwater stream components.

## APPENDIX E: LCA CHECKLIST WORKED EXAMPLE

The worked example in Table 7 gives an indication of the level of information required to provide evidence of avoidance or mitigation of significant harm to EO4.

Where evidence is provided in another document (e.g., an EIA or ESIA), this document may be referenced in this table.

**Table 7: Lifecycle Assessment Checklist – Worked Example**

Step	Item	Description	Explanation	Status [ <i>Example of information expected</i> ]
1A	Activity Definition	Activity	What is the proposed activity?	A 20 MW solar farm located in [LOCATION]
1B		Period of Activity (Start / End)	When will the Activity start and what it is expected life?	Operation will commence on 1 January 2025. Projected operating lifetime of equipment is until 2055.
2A	Inputs and outputs throughout Activity lifecycle	Initial infrastructure / equipment	High level view of main equipment items	(1) Solar panels; (2) Inverters; (3) Panel mounts, including concrete foundations; (4) Internal cabling; (5) Interconnector cable to substation; (6) Air-insulated switchgear equipment; (6) Ceramic insulators; (7) Monitoring and control equipment
2B		Raw materials used	What type of raw materials will be used for the activity? (Mainly applies to manufacturing Activities)	Not applicable – Activity does not consume raw materials
2C		Replacements and Spares	What spares are likely to be consumed during Activity life?	Schedule of spares and operations and maintenance plans to be required from equipment suppliers.
2D		Energy use	What forms of energy does the Activity consume?	Equipment is intended for the generation of electricity but draws relatively small amounts of power from the grid for its own operation.
2E		Emissions	What emissions does the Activity make?	Activity results in no emissions.
2F		Waste Streams	What forms of waste will the Activity generate in its lifetime?	Activity will result in small volumes of waste resulting from maintenance, repairs and replacements during equipment life.

3A	Potential impacts from the Activity on EO4 (circular economy and resource resilience)	Initial infrastructure / equipment	For each of these categories, what are or could be the impact on EO4?	Activity will result in significant use of up-front equipment (e.g. solar panels, cabling).
3B		Raw materials used		Not applicable
3C		Replacements and Spares		Replacements and spares will be used during operation, as defined in operations and maintenance plans.
3D		Energy use		Low impact
3E		Emissions		No impact
3F		Waste Streams		Other waste during operation is likely to be minimal.
4A	Proposed actions and improvements to mitigate impact	Initial infrastructure / equipment	What actions are or will be implemented to avoid harm to EO4?	EPC / O&M contracts will specify end of life management plans to optimise recyclability and recycling of equipment during and at completion of operation.
4B		Raw materials used		Not applicable
4C		Replacements and Spares		See 'Initial infrastructure / equipment'
4D		Energy use		Not applicable
4E		Emissions		Not applicable
4F		Waste Streams		See 'Initial infrastructure / equipment'

ANNEX 3. to the ASEAN Taxonomy for Sustainable Finance

## Guidance on performing a Climate Risk and Vulnerability Assessment (CRVA)

Updated as of 27 March 2024

## PREAMBLE

Annex 3 of the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy) encompasses the Climate Resilience and Vulnerability Assessment (CRVA) to be considered under EO2 Climate Change Adaptation, as and when Activities undergo an assessment. This Annex can be updated as and when new considerations for the CRVA is needed as determined by the ATB. Version 1 of the ASEAN Taxonomy did not include this Annex, as it was intended to provide the conceptual framework of the ASEAN Taxonomy.

Version 2 of the ASEAN Taxonomy, first published on 27 March 2023 and made effective on 19 February 2024, introduced Annex 3, to include:

- Application of the CRVA when considered under both EO and DNSH assessment criteria; and
- CRVA Checklist Template to guide users on how to report on the criteria for assessment.

Version 3 of the ASEAN Taxonomy, published on 27 March 2024, has been updated to include revisions in the CRVA Checklist:

- Clarification to the CRVA Checklist Template
  - Clarifications to the details listed under the CRVA Checklist Template;
  - Worked example on requirements for a CRVA.

Future revisions of the ASEAN Taxonomy may include amendments, as and where required, upon endorsement by the ATB.

# CONTENTS

- PREAMBLE 269
- CONTENTS ..... 270
- 1 INTRODUCTION..... 271
  - 1.1 Document Purpose 271
  - 1.2 Application of a CRVA 271
  - 1.3 Terminology and Concepts for a CRVA 272
  - 1.4 Guidance on Conducting a CRVA 273
- 2 CLASSIFICATION OF CLIMATE-RELATED HAZARDS ..... 275
- 3 TEMPLATE OF CRVA CHECKLIST ..... 276
- APPENDIX A: CRVA CHECKLIST WORKED EXAMPLE ..... 278

# 1 INTRODUCTION

## 1.1 Document Purpose

This Annex relates to Activities for which a Climate Risk and Vulnerability Assessment (CRVA) must be conducted under the ASEAN Taxonomy for Sustainable Finance (“ASEAN Taxonomy”).

A CRVA will be required for the following Activities undergoing Assessment for Classification based on their contribution to an Environmental Objective (EO):

- Activities undergoing assessment for Classification under the Technical Screening Criteria (TSC) defined for EO2 (Climate Change Adaptation); and
- Activity undergoing assessment for Classification under another EO, but where it is necessary to show that the Activity meets Do No Significant Harm (DNSH) criteria for EO2 DNSH

Note, however, that there is a distinction between Activities which are:

1. seeking classification under EO2; or
2. seeking classification under another EO but are seeking to avoid DNSH related to EO2.

In the case of item (1), it must also be shown that the Activity is essential to providing resilience in the face of climate-change to other activities, communities or industry. In the case of item (2), it must be shown that the Activity itself will remain resilient into the future.

The guidance is based on guidance prepared by the German Environment Agency<sup>1</sup> for performing a taxonomy compliant CRVA,<sup>2</sup> based on the principles and framework of ISO 14091.

## 1.2 Application of a CRVA

For an Activity to demonstrate that it meets the TSC for EO2, or that it will do no significant harm with respect to factors related to climate change adaptation, the following must be considered:

1. The physical climate risks that are material to the Activity must be identified from those listed in Section 2, by performing a robust CRVA. This includes the following steps:
  - a. Screening of the Activity to identify which physical climate risks from the list in Section 2 of this Annex may affect the performance of the Activity during its expected lifetime;
  - b. Where the Activity is screened to likely be at risk from one or more of the physical climate risks in Section 2 of this Annex, conduct a CRVA to assess the significance of the physical climate risks on the Activity; and
  - c. An assessment and prioritisation of adaptation solutions that can reduce the identified physical climate risk.
2. The CRVA is proportionate to the scale of the Activity and its expected lifespan, such that:

---

<sup>1</sup> German Environment Agency. How to perform a robust CRVA for EU Taxonomy reporting? Recommendations for Companies. November 2022.

<sup>2</sup> The EU Taxonomy refers to a CRVA as a method for identifying material impacts to the Activity, in line with both chronic and acute climate-related disasters.

- a. For Activities with a lifespan of less than 10 years, the assessment is performed, at least by using climate projections at the smallest appropriate scale, which may include extrapolated past trends data; and
- b. For all other Activities, the assessment is performed using the highest available resolution, state-of-the art climate projections across the existing range of future scenarios<sup>3</sup> consistent with the expected lifetime of the Activity, including at least, 10-to-30-year climate projections scenarios for major investments.

The climate projections and assessment of impacts are based on best practice and available guidance, issued by international bodies, national or regional authorities, standardisation bodies and other sources of equivalent trustworthiness and consider the state-of-the-art science for vulnerability and risk analysis and related methodologies in line with the most recent Intergovernmental Panel on Climate Change reports,<sup>4</sup> scientific peer-reviewed publications, and open source<sup>5</sup> or paying models.

For existing and new Activities using existing physical assets, physical and non-physical solutions ('adaptation solutions') must be identified, assessed, prioritised. An adaptation plan for the implementation of those solutions is to be drawn up accordingly. This implementation plan must cover a timeframe of up to five years and reduce the most important identified physical climate risks that are material to that Activity.

For new and existing Activities using newly built physical assets, the Activity must integrate adaptation solutions that reduce the most important identified physical climate risks that are material to that Activity at the time of design and construction and implement them before the start of operations.

### 1.3 Terminology and Concepts for a CRVA

The concepts under a CRVA are shown in Table 1.

**Table 1: Concepts under a CRVA<sup>6</sup>**

Terminology	Context
Climate-related hazard	The potential occurrence of natural or human-induced physical events and changes which stem from changes to the climate caused by anthropogenic GHG emissions. Potential climate-related hazards are listed under Table 2 of Section 2 in this Annex.
Vulnerability	Encompasses or susceptibility to harm and lack of capacity to cope and adapt.
Risk	Under this context, the potential impacts as a result of exposure to hazards and level of vulnerability to specific climate-related hazards.

<sup>3</sup> Future scenarios include Intergovernmental Panel on Climate Change (IPCC) representative concentration pathways RCP2.6, RCP4.5, RCP6.0, and RCP8.5.

<sup>4</sup> Assessments Reports on Climate Change: Impacts, Adaptation and Vulnerability, published periodically by the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change produces, <https://www.ipcc.ch/reports/>.

<sup>5</sup> Including, but not necessarily limited to the Copernicus Services managed by the European Commission.

<sup>6</sup> The definitions are adapted and derived from the relevant climate adaptation sections of the IPCC AR6 and ISO 14090f.



Physical climate risk	A physical climate risk can occur to any Activity (or system), where the Activity is exposed to and sensitive to a climate-related hazard. For example, “potential flooding damage to buildings or infrastructure.”
-----------------------	---

## 1.4 Guidance on Conducting a CRVA

In general, there are four main steps that should be included as part of a CRVA:<sup>7</sup>

- **Step 1:** Identify the lifespan of the Activity under assessment, and identify the specific components (i.e., factors, processes, materials, etc., of the Activity) that would require an investigation under a risk assessment.
- **Step 2:** Screening of climate-related hazards from Table 2, Section 2 in this Annex and identify those with most potential risks to the Activity and/or objects under assessment.
- **Step 3:** Conduct the risk assessment. For current potential risks, it is recommended to use past climate trends and climate projections based on these trends. For future potential risks, it is recommended to use a range of climate projections based on future scenarios.
  - For an Activity with a lifespan of less than 10 years may use extrapolated past trends data assessment;
  - For an Activity with a lifespan of more than 10 years, an assessment of both current and future risks based on modelled data is required.
- **Step 4:** Identify adequate and effective adaptation solutions to reduce the risks that are material to the Activity, including:
  - Identifying a range of possible solutions/measures; and
  - Assessing the different solutions for their costs, benefits, effectiveness for reducing or eliminating the risk, the adaptation efforts or the level of resilience.

Adaptation solutions must:

- Not adversely affect physical climate risks of other people, of nature, of cultural heritage, of assets and of other Activities;
- Not result in any form of maladaptation, including solutions which will not achieve the intended objective or may result in unintended side effects;
- Be consistent with local, sectoral, regional or respective ASEAN Member State adaptation strategies and plans; and must consider the use of nature-based solutions<sup>8</sup> to the extent possible.

Proactive consultations on the proposed Activity must be conducted. This ensures that adaptation solutions do not adversely affect the adaptation efforts or the level of resilience to physical climate risks of other stakeholders (directly impacted or interested persons). The consultation process should at least:

1. Identify potentially impacted and or interested persons, assets, heritage, etc.; and

<sup>7</sup> Ibid.

<sup>8</sup> Nature-based solutions are defined as ‘solutions that are inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions’. Therefore, nature-based solutions benefit biodiversity and support the delivery of a range of ecosystem

2. Communicate, consult and/or provide for the participation of these persons/institutions ensuring that their concerns, desires, expectations, needs, rights, and opportunities are considered.

In this way, the adaptation solutions will ensure that there are no negative impacts as a result of implementing the Activity.

## 2 CLASSIFICATION OF CLIMATE-RELATED HAZARDS

**Table 1: Potential climate-related hazards to lead to risks and vulnerabilities**

	Temperature related	Wind related	Water related	Solid mass related
Chronic	<ul style="list-style-type: none"> <li>• Changing temperature (air, freshwater, marine water)</li> <li>• Heat stress</li> <li>• Temperature variability</li> </ul>	<ul style="list-style-type: none"> <li>• Changing wind patterns</li> </ul>	<ul style="list-style-type: none"> <li>• Changing precipitation patterns and types</li> <li>• Precipitation or hydrological variability</li> <li>• Ocean acidification</li> <li>• Saline intrusion</li> <li>• Sea level rise</li> <li>• Water stress</li> </ul>	<ul style="list-style-type: none"> <li>• Coastal erosion</li> <li>• Soil degradation</li> <li>• Soil erosion</li> <li>• Solifluction</li> </ul>
Acute	<ul style="list-style-type: none"> <li>• Heat wave</li> <li>• Wildfire</li> </ul>	<ul style="list-style-type: none"> <li>• Cyclone, hurricane, typhoons</li> <li>• Storms (including dust and sandstorms)</li> <li>• Tornadoes</li> </ul>	<ul style="list-style-type: none"> <li>• Drought</li> <li>• Heavy precipitation</li> <li>• Flood (coastal, fluvial, pluvial, ground water)</li> </ul>	<ul style="list-style-type: none"> <li>• Landslide</li> <li>• Subsidence</li> </ul>

### 3 TEMPLATE OF CRVA CHECKLIST

An example of a climate risk and vulnerability checklist is shown in Table 3. This checklist can be used as a template for evidence to be provided to assessors that climate risk and vulnerability of an Activity has been considered.

**Table 2: Template for CRVA checklist**

Step	Item	Description	Explanation	Status
1A	Lifespan of the Activity equipment and materials	Activity description.	What is the proposed Activity?	
1B		Equipment and materials description	What equipment and materials will be used to perform this Activity?	
1C		Activity start	When will the Activity start operations?	
1D		Activity end	When will the Activity cease operations (either through deterioration of components or reduced demand for Activity)?	
1E		Operational life >10 years?	Will the operational life of the Activity be more than 10 years?: <ul style="list-style-type: none"> <li>• If no, conduct assessment using current IPCC climate scenarios and trends based on extrapolated current climate data.</li> <li>• If yes, conduct current and future assessment using both IPCC climate scenarios and trends.</li> </ul>	
2A	Climate related hazards	Potential climate risks to the Activity	Identify and list potential risks to the Activity from Table 1, considering location of the Activity and applicable scenarios and trends as described in 1E.	
2B		Evaluate most common potential risks	Consider the likelihood of the risk based on the location of the Activity.	
3A	Risk assessment	Projection of climate hazards	If activity has operational life >10 years, what potential hazards may occur based on	
3B				

			using both IPCC climate scenarios and trends?	
3C		Potential impact of climate related hazards	How could climate-related hazards could affect elements of the Activity? Direct impacts may not always occur; some may also be indirect (or impacts in succession). Where appropriate, use flowchart to map the anticipated risks and impacts from each identified climate-risk hazard.	
4A	Identify adequate and effective adaptation solutions	Adaptive solutions	List adequate and effective adaptation solutions under identified climate-related hazards.	

## APPENDIX A: CRVA CHECKLIST WORKED EXAMPLE

The worked example in Where evidence is provided in another document (e.g., an EIA or ESIA), this document may be referenced in this table.

**Table 3** gives an indication of the level of information required to provide evidence of avoidance or mitigation of significant harm to EO2.

Where evidence is provided in another document (e.g., an EIA or ESIA), this document may be referenced in this table.

**Table 3: CRVA Checklist – Worked Example**

Step	Item	Description	Explanation	Status [ <i>Example</i> ]
1A	Lifespan of the Activity equipment and materials	Activity description.	What is the proposed Activity?	A 20 MW solar farm located in [LOCATION]
1B		Equipment and materials description	What equipment and materials will be used to perform this Activity?	(1) Solar panels; (2) Inverters; (3) Panel mounts, including concrete foundations; (4) Internal cabling; (5) Interconnector cable to substation; (6) Air-insulated switchgear equipment; (6) Ceramic insulators; (7) Monitoring and control equipment
1C		Activity start	When will the Activity start operations?	Operation will commence on 1 January 2025.
1D		Activity end	When will the Activity cease operations (either through deterioration of components or reduced demand for Activity)?	Operation will cease on 1 January 2055.
1E		Operational life >10 years?	Will the operational life of the Activity be more than 10 years?: <ul style="list-style-type: none"> <li>• If no, conduct assessment using current IPCC climate scenarios and trends based on extrapolated current climate data.</li> <li>• If yes, conduct current and future assessment using both IPCC climate scenarios and trends.</li> </ul>	Yes
2A	Climate related hazards	Potential climate risks to the Activity	Identify and list potential risks to the Activity from Table 1, considering location of the Activity and applicable scenarios and trends as described in 1E.	Water related: Sea level rise

2B		Evaluate most common potential risks	Consider the likelihood of the risk based on the location of the Activity.	Sea level rise may occur due to proximity of some equipment to the shoreline.
3A	Risk assessment	Projection of climate hazards	If activity has operational life >10 years, what potential hazards may occur based on using both IPCC climate scenarios and trends?	Sea level rise of up to 40 cm may occur by 2060. [CROSS-REFER TO SOURCE AS APPLICABLE]
3B				
3C		Potential impact of climate related hazards	How could climate-related hazards could affect elements of the Activity? Direct impacts may not always occur; some may also be indirect (or impacts in succession). Where appropriate, use flowchart to map the anticipated risks and impacts from each identified climate-risk hazard.	See flowchart at Figure 1.
4A	Identify adequate and effective adaptation solutions	Adaptive solutions	List adequate and effective adaptation solutions under identified climate-related hazards.	EPC contract will specify that equipment must be able to operate with due consideration to impacts resulting from probable climate hazards. This includes ensuring that any equipment is built on sufficiently elevated or protected land.

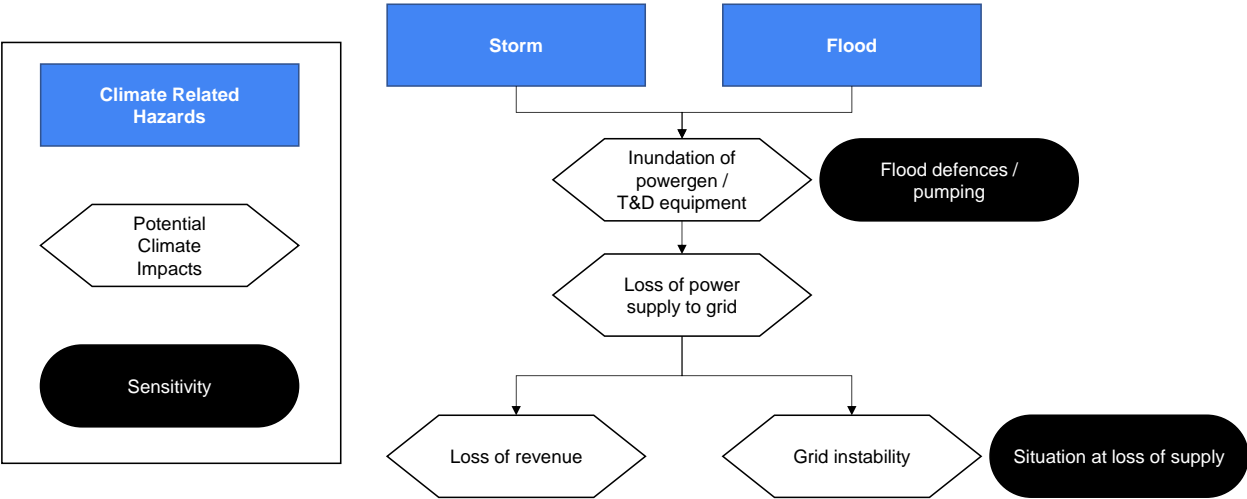


Figure 1: Example of a flowchart highlighting a climate-related hazard and its impacts

**ANNEX 4. to the ASEAN Taxonomy for Sustainable Finance**

## **AMS Policies pertaining to the ASEAN Taxonomy**

27 March 2023



## 1 INTRODUCTION

It is incumbent on the Company to ensure that any proposed Activity to be conducted in ASEAN is aligned with the strategic interests of the AMS in which the Activity takes place, as well as considering any technical, permitting, and other requirements.

This Annex will be progressively updated.




## Regulations pertaining to Social Aspects listed by AMS (not exhaustive)

27 March 2024

## **PREAMBLE**

Annex 5 of the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy) encompasses the national AMS regulations pertaining to the social aspects identified for the ASEAN Taxonomy. This Annex can be updated as and when there are changes in the regulation listed by AMS. Version 1 of the ASEAN Taxonomy did not include this Annex, as it was intended to provide the conceptual framework of the ASEAN Taxonomy. For Version 3 of the ASEAN Taxonomy, regulations in Indonesia, Malaysia and Philippines have been updated.

## Key Social Aspects

Social Aspects	Definition
 Respect human rights	Promotion of human rights and fundamental freedoms, in line with the ASEAN Human Rights Declaration (AHRD) and the Phnom Penh Statement on the Adoption of the AHRD. <sup>1</sup>
 Prevention of forced labour and child labour	Promotion of labour rights and prohibition of forced labour, including but not limited to exploitation, trafficking in persons, violence and abuse, in line with the ASEAN Declaration on the Protection of the Rights of Migrant Workers and the ASEAN Consensus on the Protection and Promotion of Rights of Migrant Workers. <sup>2 3</sup>
 Impact on people living close to investments	Management of investment-related impacts to people (including children) living in at-risk areas by encouraging inclusive and targeted measures to reduce the impact of investments on vulnerable populations and strengthen institutional capacity to address the needs of people affected, in line with the ASEAN Declaration on Strengthening Social Protection. <sup>4 5</sup>

<sup>1</sup> ASEAN Human Rights Declaration, [https://asean.org/wp-content/uploads/2021/01/6\\_AHRD\\_Booklet.pdf](https://asean.org/wp-content/uploads/2021/01/6_AHRD_Booklet.pdf)

<sup>2</sup> ASEAN Consensus on the Protection of the Rights of Migrant Workers, <https://asean.org/wp-content/uploads/2017/11/ASEAN-Consensus-on-the-Protection-and-Promotion-of-the-Rights-of-Migrant-Workers1.pdf>

<sup>3</sup> ASEAN Committee on the Implementation of the ASEAN Declaration on the Protection and Promotion of the Rights of Migrant Workers (ACMW), <https://asean.org/wp-content/uploads/images/archive/23062.pdf>

<sup>4</sup> ASEAN declaration on strengthening social protection, [https://www.asean.org/wp-content/uploads/images/archive/23rdASEANSummit/5.%20asean%20declaration%20on%20social%20protection\\_final.pdf](https://www.asean.org/wp-content/uploads/images/archive/23rdASEANSummit/5.%20asean%20declaration%20on%20social%20protection_final.pdf)

<sup>5</sup> ASEAN Declaration on Strengthening Social Protection, [https://nspc.gov.kh/Images/ASEAN%20Declaration%20on%20Strengthening%20Social%20Protection\\_2019\\_10\\_28\\_11\\_59\\_13.pdf](https://nspc.gov.kh/Images/ASEAN%20Declaration%20on%20Strengthening%20Social%20Protection_2019_10_28_11_59_13.pdf)

## Social Regulations by ASEAN Member State (AMS)

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
Brunei		<ul style="list-style-type: none"> <li>• Anti-Trafficking in Persons Order, 2019</li> <li>• Trafficking and smuggling of Persons Order, 2004</li> </ul>	<ul style="list-style-type: none"> <li>• Children and Young Persons Act, 2006</li> <li>• Environmental Protection and Management Order, 2016</li> </ul>
Cambodia	<ul style="list-style-type: none"> <li>• Constitution of the Kingdom of Cambodia</li> <li>• Cambodia Democracy and Human Rights Act</li> </ul>	<ul style="list-style-type: none"> <li>• Law on Suppression of Kidnapping, Trafficking and Exploitation of Human Persons</li> <li>• Cambodian Labour Law 1997, amended 2007</li> <li>• CAMFEBA Plan of Action on the Elimination of Child Labour</li> <li>• National Plan of Action on the Elimination of the Worst Forms of Child Labour (NPA-WFCL) 2008-2012</li> <li>• Prakas No. 002 of 2008 on Categories of Occupation and Light Work Permitted for Children Aged from 12 to 15 (MoSALVY)</li> <li>• Prakas No. 106 of 2004 on the Prohibition of Hazardous Child Labour (MoSALVY)</li> <li>• Prakas No. 305 of 2007 on Work in Sea Fishing (MLVT)</li> </ul>	<ul style="list-style-type: none"> <li>• Constitution of the Kingdom of Cambodia</li> <li>• Law on Environmental Protection and Natural Resource Management 1996</li> <li>• Sub-Decree on Environmental Impact Assessment 1999</li> </ul>
Indonesia	<b>Law</b>		
	<ul style="list-style-type: none"> <li>• Constitution of the Republic of Indonesia Year 1945</li> </ul>	<ul style="list-style-type: none"> <li>• Ratification of ILO Convention No. 29/1930 concerning Forced or Compulsory Labor</li> </ul>	<ul style="list-style-type: none"> <li>• Law on Handling of the Poor (No. 13/2011)</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
	<ul style="list-style-type: none"> <li>• Law on Statement of Applicability of the Labor Inspection Law of 1984 No. 23 of the Republic of Indonesia for All of Indonesia (No. 3/1951)</li> <li>• Law on Approval of the International Labor Organization Conference No. 98 concerning the Applicability of the Basics of the Right to Organize and Bargain Collectively (No. 18/1956)</li> <li>• Law on Approval of International Labor Organization Conference No. 106 concerning Weekly Rest in Trade and Offices (No. 3/1961)</li> <li>• Law on Approval of the International Labor Organization Convention No. 120 Concerning Hygiene in Commerce and Offices (No. 3/1969)</li> <li>• Law on Work Safety (No. 1/1970)</li> <li>• Law on Human Rights (No. 39/1999)</li> <li>• Law on Trade Unions (No. 21/2000)</li> <li>• Law on Ratification of ILO Convention No. 81 Concerning Labor Inspection in Industry and Commerce (No. 21/2003)</li> </ul>	<ul style="list-style-type: none"> <li>• Law on Approval of International Labor Organization Conference No. 100 concerning Equal Remuneration for Male and Female Workers for Work of the Same Value (No. 80/1957)</li> <li>• Law on Work Safety (No. 1/1970)</li> <li>• Law on Ratification of the Convention on the Elimination of All Forms of Discrimination Against Women (No. 7/1984)</li> <li>• Law on Ratification of ILO Convention No. 105 concerning the Abolition of Forced Labor (No. 19/1999)</li> <li>• Law on the Ratification of the ILO Minimum Age Convention No 138 (No. 20/1999)</li> <li>• Law on Ratification of ILO Convention No. 111 Concerning Discrimination in Respect of Employment and Occupation (No. 21/1999)</li> <li>• Law on Ratification of the International Convention on the Elimination of All Forms of Racial Discrimination 1965 (No. 29/1999)</li> </ul>	<ul style="list-style-type: none"> <li>• Law No. 21/2001 concerning Special Autonomy for Papua Province as amended by Government Regulation in Lieu of Law No. 1/2008 and Law No. 2/2021</li> <li>• Law No. 22/2001 concerning Oil and Natural Gas as amended by Government Regulation in Lieu of Law (Perppu) No. 2/2022 concerning Job Creation as has been enacted into Law through Law No.6/2023 concerning Determination of Perppu No. 2/2022 concerning Job Creation, Becomes Law (Job Creation Law)</li> <li>• Law No. 13/2003 concerning Employment as amended by the Job Creation Law</li> <li>• Law No. 19/2003 concerning State-Owned Enterprises as amended by the Job Creation Law</li> <li>• Law No. 25/2007 concerning Capital Investment as amended by the Job Creation Law</li> <li>• Law No. 40/2007 concerning Limited Liability Companies as</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
	<ul style="list-style-type: none"> <li>• Law on the Ratification of Convention on The Rights of Persons with Disabilities (No. 19/2011)</li> <li>• Law on Persons with Disabilities (No. 8/2016)</li> <li>• Law on Ratification of the Maritime Labor Convention, 2006 (No. 15/2016)</li> <li>• Law No. 13/2003 on Employment as amended by the Job Creation Law</li> </ul>	<ul style="list-style-type: none"> <li>• Law on the Ratification of ILO Convention on The Prohibition and Immediate Action for Elimination of The Worst Forms Of Child Labour, 1999 (No. 182) (No. 1/2000)</li> <li>• Law on Elimination of Human Trafficking Crimes (No. 21/2007)</li> <li>• Law on Social Security Administering Bodies (No. 24/2011)</li> <li>• Law on Persons with Disabilities (No. 8/2016)</li> <li>• Law No. 13/2003 concerning Employment as amended by the Job Creation Law</li> <li>• Law No. 40/2004 concerning the National Social Security System as amended by: (1) Job Creation Law; and (2) Law No. 4/2023 concerning Development and Strengthening of the Financial Sector</li> <li>• Law No. 18/2017 on Protection of Indonesian Migrant Workers as amended by the Job Creation Law</li> <li>• Law on Job Creation (No. 11/2020)</li> </ul>	<p>amended by the Job Creation Law</p> <ul style="list-style-type: none"> <li>• Law No. 20/2008 concerning Small and Medium Macro Enterprises as amended by the Job Creation Law</li> <li>• Law No. 4/2009 as amended by Law No. 3/2020 concerning Mineral and Coal Mining and the Job Creation Law</li> <li>• Law No. 20/2008 concerning Micro, Small, and Medium Enterprises as amended by the Job Creation Law</li> <li>• Law No. 32/2009 concerning Environmental Protection and Management as amended by the Job Creation Law</li> <li>• Law No. 6/2014 concerning Villages as amended by the Job Creation Law</li> <li>• Law No. 21/2014 concerning Geothermal Energy as amended by the Job Creation Law</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
		<ul style="list-style-type: none"> <li>• Regulation in Lieu of the Job Creation Law No. 2/2022 concerning Job Creation</li> <li>• Law on Criminal Acts of Sexual Violence (No. 12/2022)</li> <li>• Law No. 6/2023 concerning the Stipulation of Government Regulations in Lieu of Law No. 2/2022 concerning Job Creation Becomes Law (Job Creation Law).</li> <li>• Law on Health (No. 17/2023)</li> </ul>	
<b>Government Regulations</b>			
	<ul style="list-style-type: none"> <li>• Government Regulation No. 19/1973 concerning Regulation and Supervision of Work Safety in the Mining Sector</li> <li>• Government Regulation No. 11/1979 concerning Work Safety in the Refining and Processing of Oil and Gas</li> <li>• Government Regulation No. 50/2012 concerning Implementation of the Occupational Safety and Health Management System (SMK3).</li> </ul>	<ul style="list-style-type: none"> <li>• Government Regulation No. 31/2006 concerning the National Job Training System</li> <li>• Government Regulation No. 70/2015 as amended by Government Regulation No. 66/2017 concerning Work Accident Insurance and Death Insurance for State Civil Service Employees</li> <li>• Government Regulation No. 88/2019 concerning Occupational Health</li> </ul>	<ul style="list-style-type: none"> <li>• Government Regulation No. 47/2012 concerning Social and Environmental Responsibility of Limited Liability Companies</li> <li>• Government Regulation No. 33/2013 concerning Expansion of Job Opportunities</li> <li>• Government Regulation No. 96/2021 concerning Implementation of Mineral and Coal Mining Business Activities</li> <li>• Government Regulation in Lieu of Law (Perppu) No. 2/2022 concerning Job Creation as has</li> </ul>



AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
	<ul style="list-style-type: none"> <li>Government Regulation No. 5/2021 concerning Implementation of Risk-Based Business Licensing</li> <li>Government Regulation in Lieu of Law No 2 of 2022 concerning Job Creation that has been enacted into Law through Law No 6 of 2023 concerning Determination of Perppu No 2 of 2022 concerning Job Creation Becomes Law (Job Creation Law).</li> </ul>	<ul style="list-style-type: none"> <li>Government Regulation No. 35/2021 concerning Specific Time Work Agreements, Outsourcing, Working Time and Rest Time, and Termination of Employment Relations</li> <li>Government Regulation No. 59/2021 on Implementation of Protection of Indonesian Migrant Workers</li> <li>Government Regulation No. 36/2021 as amended by Government Regulation No. 51/2023 concerning Wages</li> <li>Government Regulation No. 44/2015 as amended by Government Regulation No. 82/2019 and Government Regulation No. 49/2023 concerning the Implementation of Work Accident Insurance and Death Insurance Programs</li> </ul>	<p>been stipulated as Law through Law No. 6/2023 concerning Determination of Perppu No. 2/2022 concerning Job Creation into Law (Job Creation Law)</p>
	<b>Presidential Regulations</b>		
	<ul style="list-style-type: none"> <li>Presidential Regulation No. 21/2010 concerning Labor Inspection.</li> </ul>	<ul style="list-style-type: none"> <li>Presidential Regulation No. 109/2013 concerning Phases of Social Security Program Participation</li> </ul>	<ul style="list-style-type: none"> <li>Presidential Regulation No. 186/2014 concerning Social Empowerment of Remote Indigenous Communities</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
	<ul style="list-style-type: none"> <li>• Presidential Regulation No. 34/2014 concerning Ratification of the Convention regarding the Promotional Framework For Occupational Safety And Health/Convention 187, 2006</li> </ul>	<ul style="list-style-type: none"> <li>• Presidential Regulation No. 7/2019 concerning Occupational Diseases</li> <li>• Presidential Regulation No. 82/2018 as amended by Presidential Regulation No. 75/2019 and Presidential Regulation No. 64/2020 concerning Health Insurance</li> </ul>	<ul style="list-style-type: none"> <li>• Presidential Regulation No. 62/2023 concerning the Acceleration of Implementation of Agrarian Reform</li> </ul>
<b>Presidential Decree</b>			
		<ul style="list-style-type: none"> <li>• Presidential Decree No. 36/1990 concerning Ratification of the Convention on the Rights of the Child</li> <li>• Presidential Decree No. 59/2020 concerning the National Action Plan for the Elimination of the Worst Forms of Child Labor</li> </ul>	
<b>Ministerial Regulations</b>			
	<ul style="list-style-type: none"> <li>• Regulation of the Minister of Manpower and Transmigration No. Per 01/MEN/1980 concerning Occupational Safety and Health in Building Construction</li> <li>• Regulation of the Minister of Manpower No. Per-01/MEN/1992 concerning Occupational Safety</li> </ul>	<ul style="list-style-type: none"> <li>• Regulation of the Minister of Manpower and Transmigration No. Per. 01/Men/1981 concerning the Obligation to Report Occupational Diseases</li> <li>• Regulation of the Minister of Manpower and Transmigration No.</li> </ul>	<ul style="list-style-type: none"> <li>• Regulation of the Minister of Home Affairs No. 51/2007 concerning Community-Based Rural Area Development</li> <li>• Regulation of the Minister of Environment Number 17/2012 concerning Guidelines for Community Involvement in the</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
	<p>and Health Requirements for Carbide Aircraft</p> <ul style="list-style-type: none"> <li>• Regulation of the Minister of Manpower and Transmigration No. Per. 01/Men/2007 concerning Guidelines for Giving K3 Awards</li> <li>• Regulation of the Minister of Manpower and Transmigration No. Per. 15/Men/VIII/2008 concerning First Aid for Accidents (P3K) in the Workplace</li> <li>• Regulation of the Minister of Manpower and Transmigration No. Per. 08/Men/VII/2010 concerning Personal Protective Equipment</li> <li>• Regulation of the Minister of Manpower No. 26/2014 concerning Implementation Assessment of the Occupational Safety and Health Management System</li> <li>• Regulation of the Minister of Manpower No. 12/2015 as amended by Regulation of the Minister of Manpower No. 33/2015 concerning Electrical Work Safety and Health in the Workplace</li> <li>• Regulation of the Minister of Manpower No. 33/2016 as</li> </ul>	<p>Per. 03/Men/1982 concerning Worker Health Services</p> <ul style="list-style-type: none"> <li>• Regulation of the Minister of Manpower and Transmigration No. Per. 11/Men/VI/2005 concerning Prevention and Management of Abuse and Distribution of Narcotics, Psychotropics and Other Addictive Substances in the Workplace</li> <li>• Regulation of the Minister of Manpower and Transmigration No. PER.25/MEN/XII/2008 of 2008 concerning Guidelines for Diagnosis and Assessment of Disabilities due to Accidents and Occupational Diseases</li> <li>• Regulation of the Minister of Home Affairs No. 6/2009 concerning Guidelines for the Formation of Regional Action Committees, Determination of Regional Action Plans, and Community Empowerment in Eliminating the Worst Forms of Child Labor</li> <li>• Regulation of the Minister of Manpower and Transmigration No. 11/2013 concerning Guidelines for</li> </ul>	<p>Environmental Impact Analysis and Environmental Permit Process</p> <ul style="list-style-type: none"> <li>• Regulation of the Minister of State-Owned Enterprises No. PER-07/MBU/05/2015 of 2015 concerning the Partnership Program for State-Owned Enterprises with Small Businesses and the Environmental Development Program</li> <li>• Regulation of the Minister of Agrarian Affairs and Spatial Planning/National Land Agency No. 7/2017 concerning Arrangements and Procedures for Determining Cultivation Rights</li> <li>• Regulation of the Minister of Environment and Forestry No. P.43/MENLHK/SETJEN/KUM.1/6/2017 concerning Community Empowerment around Nature Reserve Areas and Nature Conservation Areas</li> <li>• Regulation of the Minister of Environment and Forestry No. P.70/MENLHK/SETJEN/KUM.1/12/2017 concerning Procedures for Implementing Reducing Emissions from Deforestation and Forest</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
	<p>amended by Regulation of the Minister of Manpower No. 1/2020 concerning Procedures for Labor Inspection</p> <ul style="list-style-type: none"> <li>• Regulation of the Minister of Manpower No. 37/2016 concerning Occupational Safety and Health of Pressure Vessels and Storage Tanks</li> <li>• Regulation of the Minister of Manpower No. 38/2016 concerning Occupational Safety and Health of Power and Production Aircraft</li> <li>• Regulation of the Minister of Manpower No. 6/2017 concerning Occupational Safety and Health of Elevators and Escalators</li> <li>• Regulation of the Minister of Manpower No. 5/2018 concerning Occupational Safety and Health in the Work Environment</li> <li>• Regulation of the Minister of Public Works and Public Housing No. 21/PRT/M/2019 concerning Construction Safety Management System Guidelines</li> <li>• Regulation of the Minister of Manpower No. 8/2020 concerning</li> </ul>	<p>Implementing the National Job Training System in the Region</p> <ul style="list-style-type: none"> <li>• Regulation of the Minister of Manpower and Transmigration No. 8/2014 concerning Guidelines for Organizing Competency Based Training</li> <li>• Regulation of the Minister of Manpower No. 9/2016 concerning Occupational Safety and Health at Height</li> <li>• Regulation of the Minister of Manpower No.10/2016 concerning Procedures for Providing Return to Work Programs as well as Promotional Activities and Preventive Activities for Work Accidents and Occupational Diseases</li> <li>• Regulation of the Minister of Manpower No. 11/2016 concerning Health Services and Tariffs in the Implementation of the Work Accident Insurance Program</li> <li>• Regulation of the Minister of Manpower No. 5/2021 concerning Procedures for Implementing Work Accident Insurance, Death</li> </ul>	<p>Degradation, Role of Conservation, Sustainable Management of Forest and Enhancement of Forest Carbon Stocks</p> <ul style="list-style-type: none"> <li>• Regulation of the Minister of Energy and Mineral Resources No. 25/2018 as amended by Regulation of the Minister of Energy and Mineral Resources No. 50/2018, Regulation of the Minister of Energy and Mineral Resources No. 11/2019 and Regulation of the Minister of Energy and Mineral Resources No. 17/2020 concerning Mineral and Coal Mining Business</li> <li>• Regulation of the Minister of Cooperatives No. 5/2020 concerning the Strategic Plan of the Ministry of Cooperatives and Small and Medium Enterprises for 2020 – 2024</li> <li>• Regulation of the Minister of Social Affairs No. 9/2020 concerning Social and Environmental Responsibility of Business Entities</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
	<p>Occupational Safety and Health of Lifting Aircraft and Transport Aircraft</p> <ul style="list-style-type: none"> <li>Regulation of the Minister of Energy and Mineral Resources No. 33/2021 concerning Occupational Safety and Health, Environmental Protection and Management, and Geothermal Technical Rules for Indirect Use</li> </ul>	<p>Insurance and Old Age Security Programs</p> <ul style="list-style-type: none"> <li>Regulation of the Minister of Manpower No. 23/2021 concerning Revocation of Regulations of the Minister of Manpower as a Result of the Enactment of Law No. 11/2020 concerning Job Creation and Implementing Regulations</li> <li>Regulation of the Minister of Energy and Mineral Resources No. 33/2021 concerning Occupational Safety and Health, Environmental Protection and Management, and Geothermal Technical Rules for Indirect Use</li> <li>Regulation of the Minister of Manpower No. 23/2021 concerning Revocation of Regulations of Minister of Manpower as a Result of the Enactment of Law No. 11/2020 concerning Job Creation and enforcing Regulations</li> <li>Regulation of the Minister of Health No. 11/2022 concerning Health Services for Occupational Diseases</li> </ul>	<ul style="list-style-type: none"> <li>Regulation of the Minister of Agriculture No. 38/2020 concerning Implementation of Indonesian Sustainable Palm Oil Plantation Certification</li> <li>Regulation of the Minister of Villages, Development of Disadvantaged Regions and Transmigration No. 21/2020 as amended by Regulation of the Minister of Villages, Development of Disadvantaged Regions and Transmigration No. 6/2023 concerning General Guidelines for Village Development and Village Community Empowerment</li> <li>Regulation of the Minister of Environment and Forestry No. 2/2023 concerning Assignments for Implementing Peat Restoration Activities for the 2023 Fiscal Year</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
		<ul style="list-style-type: none"> <li>• Regulation of the Minister of Women’s Empowerment and Child Protection No. 1/2020 as amended by Regulation of the Minister of Women’s Empowerment and Child Protection No. 1/2023 concerning Providing Protective Housing for Female Workers in the Workplace</li> <li>• Regulation of the Minister of Manpower No. 2/2023 concerning Procedures for Imposing Administrative Sanctions in the Implementation of the Placement and Protection of Indonesian Migrant Workers</li> <li>• Regulation of the Minister of Manpower No. 4/2023 concerning Social Security for Indonesian Migrant Workers</li> <li>• Regulation of Indonesian Migrant Worker Protection Agency No. 6/2022 concerning Organization and Work Procedures of Indonesian Migrant Worker Protection Service Centers</li> </ul>	

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
Lao PDR	<ul style="list-style-type: none"> <li>• Constitution of the Lao People's Democratic Republic</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-Trafficking Law, 2015 (No. 73 of 2015)</li> </ul>	<ul style="list-style-type: none"> <li>• Law on the Protection of the Rights and Interests of Children</li> <li>• Resistance and Prevention of Violence Against Women and Children Law, 2014 (Law No. 56/NA of 2014)</li> <li>• Decree No 192/PM on Compensation and Resettlement of People Affected by Development Projects</li> <li>• Decree 112/PM on Environmental Impact Assessment</li> </ul>
Malaysia	<ul style="list-style-type: none"> <li>• Federal Constitution of Malaysia</li> <li>• Employees' Minimum Standards of Housing, Accommodations and Amenities Act 1990 [Act 446]</li> <li>• Human Rights Commission of Malaysia Act 1999 [Act 597]</li> <li>• Persons with Disabilities Act 2008 [Act 685]</li> <li>• Workmen's Compensation Act 1952 [Act 273]</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-Trafficking in Persons and Anti-Smuggling of Migrants Act 2007 [Act 670]</li> <li>• Children And Young Persons (Employment) Act 1966 [Act 350]</li> <li>• Child Act 2001 [Act 611]</li> <li>• Employment Act 1955<sup>6</sup> [Act256]</li> <li>• Penal Code<sup>7</sup> [Act 574]</li> <li>• National Action Plan on Forced Labour</li> </ul>	<ul style="list-style-type: none"> <li>• Child Act 2001 [Act 611]</li> <li>• Sexual Offences Against Children Act 2017 [Act 792]</li> <li>• Environmental Quality Act, 1974 [Act 127] <ul style="list-style-type: none"> <li>• Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015 [P.U. (A) 195/2015]</li> </ul> </li> <li>• Land Conservation Act 1960 [Act 385]</li> <li>• Land Development Act 1956 [Act 474]</li> </ul>

<sup>6</sup> Section 90B of the Employment Act 1955.

<sup>7</sup> Section 374 of the Penal Code.

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
			<ul style="list-style-type: none"> <li>• Town and Country Planning Act 1976 [Act 172]</li> <li>• Land Acquisition Act 1960 [Act 486]</li> </ul>
Myanmar	<ul style="list-style-type: none"> <li>• Constitution of the Republic of the Union of Myanmar</li> </ul>	<ul style="list-style-type: none"> <li>• Order supplementing Order No. 1/1999</li> </ul>	<ul style="list-style-type: none"> <li>• Law on the Rights of the Child, 2019 (Pyidaungsu Hluttaw Law No. 22/2019) the 7th Waning Day of Waso, 1381 ME (23rd July 2019)</li> <li>• Maternity and Child Care Law (Pyidaungsu Hluttaw Law No 34 of 2018)</li> <li>• The Child Law (Law No. 9/93)</li> <li>• Environmental Conservation Law</li> </ul>
Philippines	<ul style="list-style-type: none"> <li>• Constitution of the Philippines</li> </ul>	<ul style="list-style-type: none"> <li>• Expanded Anti-Trafficking in Persons Act of 2012 (R.A. No. 10364)</li> <li>• Anti-Trafficking of Persons Act, 2003 (R.A. No. 9208)</li> <li>• Department Order No. 149-A of 2017 amending the Guidelines on Assessing and Determining Hazardous Work in the Employment of Persons Below the Age of 18 Years</li> <li>• Department Order No. 149 of 2016 on the Guidelines on Assessing and Determining Hazardous Work in the Employment of Persons Below the Age of 18 Years</li> </ul>	<ul style="list-style-type: none"> <li>• Child and Youth Welfare Code</li> <li>• Special Protection of Children Against Child Abuse, Exploitation and Discrimination Amendment Act (R.A No. 9231)</li> <li>• Executive Order No. 310 authorising the adoption and implementation of the Philippine National Strategic Framework for plan development for children, 2000-2025</li> <li>• Proclamation No. 855 proclaiming the adoption and implementation of the</li> </ul>



AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
		<ul style="list-style-type: none"> <li>• Expanded Anti-Trafficking in Persons Act of 2012 (R.A. No. 10364)</li> <li>• Special Program for Employment of Students (R.A. 9547)</li> <li>• Rules and Regulations implementing Republic Act No. 9231, Amending R.A. 7610, as amended (Department Order 65-04)</li> <li>• Department Order No. 04 on hazardous work and activities to persons below 18 years of age</li> <li>• Department Order No. 18 of 12 May 1994 on Rules and Regulations implementing Republic Act No. 7658</li> <li>• Act prohibiting the employment of children below 15 years of age in public and private undertakings, amending for this purpose Section 12, Article VIII of R.A. 7610 (R.A. No. 7658)</li> <li>• Rules implementing Republic Act No. 6727 (Wage Rationalization Act)</li> <li>• List of Hazardous Occupations to Young Workers, 1973 (Department Order No. 4)</li> </ul>	<p>Philippine Program of Action for Children in the 1990s</p> <ul style="list-style-type: none"> <li>• Department of Natural Resources and Environment Administrative Order No. 30 Series of 2003</li> <li>• Indigenous Peoples' Rights Act 1997</li> <li>• Republic Act No. 10066 – National Cultural Heritage Act of 2009, as amended by Republic Act No. 11961</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
		<ul style="list-style-type: none"> <li>Department Order No. 5. Rules XIV of the Rules Implementing Book III of the Labour Code on Employment of Homeworkers, 1992</li> </ul>	
Singapore <sup>8</sup>	<ul style="list-style-type: none"> <li>Constitution of the Republic of Singapore</li> </ul>	<ul style="list-style-type: none"> <li>Children and Young Persons Act 1993</li> <li>Employment Act 1968</li> <li>Prevention of Human Trafficking Act 2014</li> <li>The Penal Code</li> <li>Vulnerable Adults Act 2018</li> <li>Women's Charter 1961</li> </ul>	<ul style="list-style-type: none"> <li>Children and Young Persons Act 1993</li> <li>Environmental Protection and Management Act 1999</li> <li>Planning Act 1998</li> </ul>
Thailand	<ul style="list-style-type: none"> <li>Constitution of the Kingdom of Thailand</li> </ul>	<ul style="list-style-type: none"> <li>Prevention and Suppression of Human Trafficking (2008, amended 2015)</li> <li>Prevention and Suppression of White Slavery Act</li> <li>Measures in the Prevention and Suppression of Trafficking in Women and Children Act B.E. 2540 (1997)</li> <li>Ministerial Regulation No. 6 issued under the Labour Protection Act</li> <li>Notification of the Ministry of Interior Regarding Description of Work and Working Place for Young Persons</li> </ul>	<ul style="list-style-type: none"> <li>Child Protection Act</li> <li>Act Relating to the National Child and Youth Development Promotion B.E. 2550 [2007]</li> <li>Enhancement and Conservation of National Environmental Quality Act (No. 2) B.E. 2561</li> </ul>

<sup>8</sup> References to Singapore Acts include any subsidiary legislation made under the Act

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
		<ul style="list-style-type: none"> <li>• Notification of the Ministry of Interior Regarding Labour Protection (No. 12)</li> <li>• Announcement of the Ministry of the Interior respecting the employment of children of 12 and under 15 years of age</li> <li>• Homeworkers Protection Act B.E. 2553</li> </ul>	
Vietnam	<ul style="list-style-type: none"> <li>• Constitution of the Socialist Republic of Vietnam</li> </ul>	<ul style="list-style-type: none"> <li>• Circular No. 35/2013/TT-BLDTBXH providing guidelines for the implementation of Decree No. 09/2013/ND-CP of January 11, 2013, detailing a number of articles of the Anti-Trafficking Law</li> <li>• Decree No. 09/2013/ND-CP of January 11, 2013, detailing a number of articles of the Anti-Trafficking Law</li> <li>• Decision No. 1427/QD-TTg approving the Program of Action to prevent and combat human trafficking crimes during 2011-2015</li> <li>• Law on the Prevention of and Combat against Human Trafficking (No. 66/2011/QH12)</li> <li>• Circular No. 11/2013/TT-BLDTBXH promulgating the list of light tasks permitted for persons under 15 years old</li> </ul>	<ul style="list-style-type: none"> <li>• Law on Children (Law No. No. 102/2016/QH13)</li> <li>• Decree No. 91/2011/ND-CP regulating the sanction of administrative violation on protection, care for and education of children</li> <li>• Decree No.114/2006/ND-CP defining the sanction of administrative violations on population and children</li> <li>• Youth Law (Law No. 53/2005/GH11)</li> <li>• Instructions of the Prime Minister to implement the Law on Child Protection</li> <li>• Law on Environmental Protection</li> <li>• Decree No. 18/2015</li> </ul>

AMS	Respect human rights	Prevention of forced and child labour	Impact on people living close to investments
		<ul style="list-style-type: none"> <li>• Circular No. 10/2013/TT-BLDTBXH promulgating the list of jobs and workplaces prohibited to young workers</li> <li>• Decision No. 19/2004/QD-TTg ratifying the 2004-2010 program on prevention of, and solution to, the situation of street children, sexually abused children and children subjected to heavy labour or working under noxious and hazardous conditions</li> <li>• Directive on the strengthening of the task of protecting children, preventing and tackling the problem of street children and child labour abuse (No. 6/1998/CT-TTg)</li> </ul>	

**Laws established by AMS on environmental protection  
and efficient use of natural resources (not exhaustive)**

27 March 2024

## PREAMBLE

Annex 6 of the ASEAN Taxonomy for Sustainable Finance (ASEAN Taxonomy) encompasses the national AMS regulations pertaining to the environment. This Annex can be updated as and when there are changes in the regulation listed by the AMS. Version 1 of the ASEAN Taxonomy did not include this Annex, as it was intended to provide the conceptual framework of the ASEAN Taxonomy. For Version 3 of the ASEAN Taxonomy, regulations in Indonesia and Malaysia have been updated.

## Brunei

Environmental policy directions and strategies are included in the Brunei Five Year National Development Plans (NDP), where the Government has continued to address the need to protect and conserve the country's environment from pollution and excessive exploitation of natural resources and maintain the country's biodiversity heritage. Further on, the country has embraced sustainable development as central to socio-economic development.

1. Environmental Protection and Management Order 2016
2. Hazardous Waste (Control of Export, Import and Transit) Order 2013
3. Brunei Darussalam Fishery Limits Act Cap 130
4. Disaster Management Order, 2006
5. Fisheries Order, 2009
6. Forest Act Cap 46
7. Plant Varieties Protection Order, 2015
8. Prevention of Pollution of the Sea Order, 2005
9. Wild Flora and Fauna Order 2007
10. Wildlife Protection Act Cap 102
11. Water Supply Act

## Cambodia

Cambodia's environmental laws generally revolve on providing regulations and policy impositions on protecting and conserving biodiversity. The Royal Decree on the establishment of Natural Protected Areas was promulgated in 1993 designating 23 protected areas covering around 18 percent of the country's total land area. In 1996, Law on Environmental Protection and Natural Resource Management was passed providing policy guidelines in assessing all projects that potentially impacts the environment and encourages public participation in environmental activities. Towards the new millennium, laws on forestry, water resources management including fisheries, mineral resources, protected areas, and animal health and production provide comprehensive policy on the management and conservation of natural resources for its sustainability. As response to the impact of climate change, in 2015, Law on Disaster Management lays down important principles in the mitigation, adaptation, and immediate response to natural or man-made causes.

1. Law on Environmental Protection and Natural Resource Management 1996
2. Royal Decree on Establishment of Natural Protected Areas 1993
3. Law on Mineral Resource Management and Exploitation 2001

4. Law on Forestry 2002
5. Law on Water Resources Management of the Kingdom of Cambodia 2007
6. Law on Fisheries 2007
7. Law on Protected Area 2008
8. Law on the Management of Pesticides and Fertilizers
9. Law on Disaster Management 2015
10. Law on Animal Health and Animal Production 2016

## Indonesia

The primal source of authority for State control over the natural environment stems from the 1945 Constitution which states that land and water and the natural resources shall be controlled by the State and be utilized for the greatest welfare of the people. Indonesia's laws and regulations allocate natural resources access, control and use, establish the mechanism of management and articulate principles and norms of the State pertaining the natural resources and environment.

1. Law on Disaster Management, no. 24 of 2007, dated 26 April 2007
2. Law on Energy, No. 30 of 2007, dated 10 August 2007
3. Law of the Republic of Indonesia Number 41 of 1999 concerning Forestry as amended by Government Regulation in Lieu of Law (Perppu) Number 2 of 2022 concerning Job Creation as has been stipulated into Law through Law Number 6 of 2023 concerning Determination of Perppu Number 2 of 2022 concerning Job Creation, which currently in effect as Job Creation Law
4. Law of the Republic of Indonesia Number 31 of 2004 concerning Fisheries as amended by the Job Creation Law
5. Law of the Republic of Indonesia Number 18 of 2009 concerning Livestock and Animal Health Number as amended by Law Number 41 of 2014 concerning Amendments to Law Number 18 of 2009 concerning Livestock and Animal Health and the Job Creation Law
6. Law of the Republic of Indonesia Number 4 of 2009 concerning Mineral and Coal Mining as amended by: (1) Mineral and Coal (Minerba) Law; and (2) Job Creation Law
7. Law of the Republic of Indonesia Number 32 of 2009 concerning Environmental Protection and Management as amended by the Job Creation Law
8. Law of the Republic of Indonesia Number 21 of 2014 concerning Geothermal Energy as amended by the Job Creation Law
9. Law of the Republic of Indonesia Number 17 of 2019 concerning Water Resources as amended by the Job Creation Law



10. Law of the Republic of Indonesia Number 7 of 2021 concerning the Harmonization of Tax Regulations
11. Government Regulation on Environmental Impact Analysis Number 27 of 1999, dated 7 May 1999
12. Government Regulation on Environmental Permits Number 27 of 2012, dated 23 February 2012
13. Government Regulation on Environmental Economic Instruments Number 46 of 2017, dated 10 November 2017
14. Government Regulation Number 12 Year 2021 Concerning Amendment to Government Regulation Number 14 Year 2016 Concerning Implementation of Housing and Settlement Area, dated 2 February 2021
15. Presidential Regulation Number 55 of 2019 concerning the Acceleration of the Battery Electric Vehicle Program for Road Transportation, dated 8 August 2019
16. Presidential Regulation Number 83 of 2018 concerning Marine Debris Management (National Plan of Action on Marine Plastic Debris), dated 21 September 2018
17. Presidential Regulation Number 98 of 2021 concerning Implementation of Carbon Economic Values for Achieving Nationally Determined Contribution Targets and Control of Greenhouse Gas Emissions in National Development, dated 29 October 2021, which also regulates carbon market
18. Presidential Regulation Number 112 of 2022 Concerning the Acceleration of Renewable Energy Development for Power Supply, dated 13 September 2022
19. Regulation of the Minister of Environment Number 17 of 2012 concerning Guidelines for Community Involvement in the Environmental Impact Analysis and Environmental Permit Process, dated 10 October 2012
20. Regulation of the Minister of Environment and Forestry Number P.70/MENLHK/SETJEN/KUM.1/12/2017 of 2017 concerning Procedures for Implementing Reducing Emissions from Deforestation and Forest Degradation, Role of Conservation, Sustainable Management of Forest and Enhancement of Forest Carbon Stocks, dated 24 January 2018
21. Regulation of the Minister of Environment and Forestry Number P.7/MENLHK/SETJEN/KUM.1/2/2018 of 2018 concerning Guidelines for the Study of Vulnerability, Risks and Impacts of Climate Change, dated 6 March 2018
22. Regulation of the Minister of Energy and Mineral Resources Number 22 of 2019 concerning Guidelines for the Implementation of Greenhouse Gas Investment and Mitigation in the Energy Sector, dated 19 November 2019

23. Regulation of the Minister of Environment and Forestry Number P.75/MENLHK/SETJEN/KUM.1/10/2019 of 2019 concerning Roadmap for Waste Reduction by Producers, dated 5 December 2019
24. Regulation of the Minister of Environment and Forestry Number 75 of 2019 concerning Roadmap to Waste Reduction by Producers, dated 5 December 2019
25. Regulation of the Minister of Energy and Mineral Resources Number 5 of 2021 concerning Standards for Business Activities and Products in the Implementation of Risk-Based Business Licensing in the Energy and Mineral Resources Sector, dated 1 April 2021
26. Regulation of the Minister of Environment and Forestry Number 21 of 2022 concerning the Implementation of Carbon Economic Value, dated 21 September 2022
27. Regulation of the Minister of Environment and Forestry Number 2 of 2023 concerning Assignments for Implementing Peat Restoration Activities for the 2023 Fiscal Year, dated 1 February 2023
28. Regulation of the Minister of Environment and Forestry Number 7 of 2023 concerning Procedures for Carbon Trading in the Forestry Sector, dated 15 June 2023

## Lao PDR

Lao PDR's environmental regulations are greatly anchored on its Law on Environmental Protection, which defines principles, regulations and measures related to environmental management, monitoring of protection, control, preservation and rehabilitation. It also aims to provide balance between social and natural environment, to sustain and to protect natural resources and public health.

1. Decree on The Environmental Impact Assessment
2. Law on Environmental Protection, revised version
3. Decision on environmental risk rating of manufacturing industry
4. Decision on the Pollution Control No. 1687/MONRE

## Malaysia

Malaysia has been rigorous in introducing laws and regulations concerning protection of the environment and natural resources, both at the State and Federal Government levels. Coordinating mechanisms between State and Federal governments are established through councils and committees to consider particular issues, policy formulation and legislative changes. In the development of environmental laws and regulations, the Malaysian government takes into consideration several international environmental principles as well as English common law principles.

1. Environmental Quality Act 1974

2. Wildlife Conservation Act 2010
3. Protection of Wildlife Act 1972
4. Fisheries Act 1985
5. National Forestry Act 1984
6. National Parks Act 1980
7. Town and Country Planning Act 1976
8. Land Conservation Act 1960
9. National Land Code 1965
10. Local Government Act No. 171 of 1976
11. Sarawak National Resources and Environment Ordinance 1997
12. Sarawak Biodiversity Ordinance 1998
13. Sabah Biodiversity Enactment 2001
14. Public Cleansing Management Act 2007
15. Atomic Energy Licensing Act 1984
16. Biosafety Act 2007
17. Drainage Works Act 1954
18. International Trade In Endangered Species Act 2008
19. Irrigation Areas Act 1953
20. Merchant Shipping Ordinance 1952
21. Merchant Shipping (Oil Pollution) Act 1994
22. Plant Quarantine Act 1976
23. Pesticides Act 1974
24. Sewerage Services Act 1993
25. Town and Country Planning Act 1976
26. Waters Act 1920 (Revised 1989)
27. Water Services Industries Act 2006
28. Sabah Pearl Oyster Shell Fishery Ordinance Cap.95 1962
29. Sabah Parks Enactment 1984
30. Sabah Animal Ordinance 1962

31. Sabah Drainage and Irrigation Ordinance 1956
32. Sabah Environment Protection Enactment 2002
33. Sabah Forest Enactment 1968
34. Sabah Mining Ordinance 1960
35. Sabah Wildlife Conservation Enactment 1997
36. Sarawak Forest Ordinance 1954
37. Sarawak Wild Life Protection Ordinance 1998
38. Turtles Enactment (Terengganu) 1951
39. River Terrapin Enactment (Kedah) 1972
40. Petroleum (Safety Measures) Act 1984
41. Petroleum Development Act 1974
42. Gas Supply Act 1993
43. Electricity Supply Act 1990
44. Renewable Energy Act 2011
45. Offshore Oil Mining (Amendment) Act 1958
46. Offshore Petroleum Development (Federal Territory) Act 1974
47. Offshore Minerals Act 2007
48. Access to Biological Resources and Benefit Sharing Act 2017
49. Sarawak Land Code
50. Sabah Land Ordinance
51. Merchant Shipping (Liability and Compensation for Oil and Bunker Oil Pollution) Act 1994

## Myanmar

Myanmar's environmental laws focus on the establishment of national and institutional committees as well as policy frameworks in preparation for the implementation of conservation and protection efforts towards uplifting the country's environmental integrity. The Environmental Conservation Law was passed to provide fundamental principles and pathways for systemic integration of relevant actions towards sustainable development. As a result, the Environmental Conservation Rule was enacted creating an environmental conservation committee to prepare and develop key policies relating environmental conservation to different sectors. In 2019, National Environmental Policy of Myanmar and Myanmar Climate Change Policy was pushed into law aiming to widen the scope in environmental conservation not only on resources but also in the future impacts of human activities as well as mitigating and responding to the impacts of

climate change.

1. Environmental Conservation Law (2012)
2. Environmental Conservation Rule (2014)
3. National Environmental Policy of Myanmar (2019)
4. Myanmar Climate Change Policy (2019)

## Philippines

The Philippines is considered as one of the forerunners in the region in terms introducing laws on environmental protection, with the concept of sustainable development already institutionalized as a policy even before the said term was internationally recognized. Managing the environment and natural resources by the Philippine government is enshrined in the 1987 Constitution, which expressly recognizes the right of the people “to a balanced and healthful ecology in accord with the rhythm and harmony of the nature.” Environment and natural resources laws and regulations are geared threefold: environmental protection, economic development and poverty alleviation, and the promotion of social justice and equity.

1. Presidential Decree No. 1152 - Philippine Environment Code.
2. Republic Act 9275 Philippine Clean Water Act of 2004.
3. Republic Act 8749 Philippine Clean Air Act of 1999.
4. Republic Act No. 11038 – Enhanced National Integrated Protected Areas System Act.
5. Republic Act No. 9147 - Wildlife Resources Conservation and Protection Act.
6. Republic Act 9003 Ecological Solid Waste Management Act of 2000.
7. Republic Act 6969 Toxic Substances, Hazardous and Nuclear Waste Control Act of 1990.
8. Presidential Decree 1586 Environmental Impact Statement (EIS) Statement of 1978.
9. Presidential Decree No. 705 – Revised Forestry Code.
10. Republic Act No. 7942 - Philippine Mining Act of 1995.
11. Presidential Decree No. 1899 - Small-Scale Mining Law.
12. Republic Act No. 4003 - The Fisheries Act.
13. Republic Act No. 9175 – Chain Saw Act of 2002
14. Republic Act No. 9168 – Philippine Plant Variety Protection Act of 2002
15. Republic Act No. 9072 – National Caves and Cave Resources Management and Protection Act
16. Republic Act No. 8550 – Philippine Fisheries Code of 1998

17. Republic Act No. 8435 – Agriculture and Fisheries Modernization Act of 1997
18. Republic Act No. 8048 – Coconut Preservation Act of 1995
19. Republic Act No. 7900 – High Value Crops Development Act of 1995
20. Republic Act No. 7308 – Seed Industry Development Act of 1992

## Singapore

Singapore's environmental laws are diverse from institutional, resource utilization, public welfare and biodiversity. Laws such as the Resource Sustainability Act, Hazardous Waste Act, Radiation Protection Act (as amended), Sewerage and Drainage Act, Public Utilities Act, Energy Conservation Act, and Deep Seabed Mining Act, among others, impose and regulate resource-use and keeping environmental infrastructures as part of their economic agenda. Moreover, the country has developed sound economic and land-use planning policies that guarantees the protection of green places for conservation. There are also laws focused on public and commercial spaces to ensure protection of human ecology from chemicals, haze and the harmful effects of smoking. The references to the Singapore Acts here include any subsidiary legislation made under those Acts.

1. Animals and Birds Act 1965
2. Building Control Act 1989
3. Carbon Pricing Act 2018
4. Control of Plants Act 1993
5. Control of Vectors and Pesticides Act 1998.
6. Deep Seabed Mining Act 2015.
7. Endangered Species (Import and Export) Act 2006
8. Energy Conservation Act 2012
9. Environmental Protection and Management Act 1999
10. Environmental Public Health Act 1987
11. Fisheries Act 1966
12. Hazardous Waste (Control of Export, Import and Transit) Act 1997
13. Merchant Shipping (Civil Liability and Compensation for Oil Pollution) Act 1998
14. National Environment Agency Act 2002
15. National Parks Board Act 1996
16. Parks and Trees Act 2005

17. Plant Varieties Protection Act 2004.
18. Prevention of Pollution of the Sea Act 1990
19. Public Utilities Act 2001.
20. Radiation Protection Act 2007
21. Resource Sustainability Act 2019
22. Road Traffic Act 1961
23. Sewerage and Drainage Act 1999
24. Smoking (Prohibition in Certain Places) Act 1992
25. Transboundary Haze Pollution Act 2014
26. Wildlife Act 1965
27. Workplace Safety and Health Act 2006.

## Thailand

Environmental laws in Thailand have been in place to provide for the establishment of protected areas such as national parks and forest reservations; resource-use regulation and prohibitions such as, but not limited to those related to fisheries, forest resources, mineral resources and hazardous substances; and biodiversity conservation, given the diverse and rare species of flora and fauna of the country. These laws have greatly contributed to the attainment of the nation's vision to sustain its resources and potentially preserve them for future generations.

1. Enhancement and Conservation of National Environmental Quality Act, (No.2) B.E. 2561 (2018)
2. National Park Act, B.E. 2504 (1961)
3. Provincial Waterworks Authority Act B.E. 2522 (1979)
4. Fisheries Act B.E. 2490 (1947)
5. Factory Act B.E. 2535 (1992)
6. Public Health Act B.E. 2535 (1992)
7. Hazardous Substance Act, B.E. 2535 (1992)
8. Wild Animal Reservation and Protection Act, B.E. 2535 (1992)
9. Wild Elephant Protection Act, B.E. 2464 (1921)
10. Elephant Ivory Act, B.E. 2558 (2015)
11. National Reserved Forest Act, B.E. 2507 (1964)

12. Forest Plantation Act, B.E. 2535 (1992)
13. Chain Saws Act, B.E. 2545 (2002)
14. Emergency Decree on Control and Operation Gold Mining, B.E. 2483 (1940)
15. Land Excavation and Land Filling Act B.E.2543 (2000)
16. Tin Control Act B.E. 2514 (1971)
17. Fossil Protection Act, B.E. 2551 (2008)
18. Act on Offences Relating to Offshore Petroleum Production Places, B.E. 2530 (1987)
19. Mines Act B.E.2510 (1967)
20. Minerals Act, B.E. 2560 (2017)
21. Arrest of Ship Act B.E.2534 (1991)

## Viet Nam

Environmental laws of Vietnam provide comprehensive and institutional implementation of national policies on the management and utilization of natural resources. For example, the Law on Water Resources and Law of the Sea was passed in 2012 to ensure transboundary operations on maritime disputes as well as internal use of water resources. Similarly, for inland water usage, a legal framework was created for the investigation/exploration, usage, management, and maximization of freshwater resources for agricultural purposes. Meanwhile, laws have been also passed on disaster management and energy conservation to impose national to local-level prevention and responsive measures on the effects of climate change. Just recently, the Environmental Protection Law communicates principles, rights, and obligations of the public towards involvement in environmental-related activities.

1. Law on Environmental Protection 2020 (Chapter II)
2. Law on Biodiversity 2008
3. Law on Energy Efficiency and Conservation 2010
4. Law on Water Resources 2012
5. Law of the Sea 2012
6. Law on Natural Disaster Prevention and Preparedness 2013
7. Law on Irrigation 2017
8. Decree Detailing a Number of Articles of the Law on Environmental Protection 2022
9. Circular Detailing the Implementation of the Law on Environmental Protection in Response to Climate Change 2022
10. Law on Reducing Greenhouse Gas Emissions and Protecting the Ozone Layer 2022



11. Law on Preliminary Environmental Impact Assessment 2022
12. Decision by the Prime Minister on Forecasting, Warning, Transmitting Information on Disaster and Disaster Risk Levels 2022