BANK NEGARA MALAYSIA
CENTRAL BANK OF MALAYSIA

Climate Change and Principle-based Taxonomy

Applicable to:
1. Licensed banks
2. Licensed investment banks
3. Licensed international Islamic banks
4. Licensed Islamic banks
5. Licensed insurers
6. Licensed reinsurers
7. Licensed takaful operators
8. Licensed retakaful operators
9. Prescribed development financial institutions

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PREFACE & ACKNOWLEDGEMENT

The Climate Change and Principle-based Taxonomy (CCPT) is prepared by Bank Negara Malaysia in collaboration with the Risk Management sub-committee of the Joint Committee on Climate Change (JC3). The World Wide Fund for Nature (Malaysia and Singapore offices) also provided substantial inputs, particularly on aspects of environmental sustainability to the drafting of this document.

Feedback and suggestions received during the public consultation have been incorporated in this document, where relevant. Queries and clarification may be directed to climatechange@bnm.gov.my.

Members of Risk Management sub-committee of JC3 are listed below:

1. Bank Islam Malaysia Berhad
2. Bank Pertanian Malaysia Berhad (Agrobank)
3. CIMB Bank Berhad
4. Etiqa Insurance and Takaful
5. Hong Leong Bank Berhad
6. Institutional Investors Council Malaysia
7. Malayan Banking Berhad
8. Nomura Asset Management Malaysia Sdn Bhd
9. Securities Commission Malaysia
10. Standard Chartered Bank Malaysia Berhad
11. Zurich Insurance and Takaful

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ABBREVIATIONS

AMC	Asset management company
CCPT	Climate Change and Principle-based Taxonomy
CDP	Carbon Disclosure Project
CO_2	Carbon dioxide
EIA	Environmental Impact Assessment
EPU	Economic Planning Unit, Prime Minister's Department
EQA 1974	Environmental Quality Act 1974
ESG	Environmental, social and governance
FIs	Financial institutions
GDP	Gross domestic product
GHG	Greenhouse gas
IFI	International Financial Institution
IPBES	Intergovernmental Panel Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
ITOs	Insurers and takaful operators
JC3	Joint Committee on Climate Change
LULUCF	Land Use, Land-Use Change and Forestry
MGP	Malaysian Sustainable Palm Oil General Principle
MSPO	Malaysian Sustainable Palm Oil
NDC	Nationally determined contributions
RE	Renewable energy
TCFD	Task Force on Climate-Related Financial Disclosures
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN PRI	United Nation Principles for Responsible Investment
VBI	Value-based Intermediation
VBIAF	Value-based Intermediation Financing and Investment Impact Assessment Framework
WWF	World Wide Fund for Nature

PART A OVERVIEW

1 Introduction

1.1 Climate change has significant impacts on the society, economy and financial system. Such changes can be observed through many ways such as a rise in surface temperature and sea level, volatility in local climate including drought and rainfall patterns, and higher frequency and severity of disaster occurrences. These changes are occurring at an unprecedented level, with human activity largely responsible[1] (refer to Appendix 1 for the characteristics and effects of climate change).

1.2 Malaysia has experienced an increase in surface mean temperature of 0.13°C to 0.24°C per decade since 1969 to 2016.[2] The impact of physical risk resulting from climate-related events and disasters has been significant with occurrences of more than 50 natural disasters in the past 20 years. These disasters have resulted in over RM8 billion monetary losses and affected the lives and livelihoods of more than 3 million people in Malaysia through displacements, injuries and death.[3]

1.3 Climate change also affects biodiversity, ecosystems, and natural resources such as fresh water, air and soil nutrients. In food production for example, increases in temperature can reduce the quality and quantity of cultivated crops, and lower the resilience of agroecosystems against pests and pathogens. Environmental degradation may also reduce the capacity of the ecosystems to absorb carbon.[4] This demonstrates the close interlinkages and interactions between climate-related and environmental risks, with negative feedback loops that reinforces the damage from the materialisation of these risks.

1.4 Failure to recognise and manage climate and environmental-related risks may therefore lead to substantial financial consequences for businesses and households, as well as FIs that provide financing or investment to those exposed to such risks.

1.5 As corporate citizens and given the impact of climate change on enterprise value, viability and profitability, it is imperative that FIs integrate climate change considerations in all aspects of their business strategies and

[1] IPCC. (2014). Fifth Assessment Report and IPCC (2018) Special Report: Global Warming of 1.5 ºC.
[2] Ministry of Environment and Water. (December 2020). Malaysia's Third Biennial Update Report submitted to the UNFCCC.
[3] Zurairi AR. (October 2018). "Climate-related natural disasters cost Malaysia RM8b in last 20 years".
[4] Ecosystems such as forests, soils and oceans provide essential carbon storage as they absorb 60% of all anthropogenic carbon emissions. IPBES. (2019). The Global Assessment Report on Biodiversity and Ecosystem Services, Summary for Policymakers.

operations including human capital and compensation, risk management processes and public disclosures.

1.6 FIs should play a pivotal role in accelerating their customers' transition towards more sustainable practices in their business operations.

1.7 This document aims to:

(a) provide an overview of climate change and its impact on businesses and households as well as the broader economy;

(b) introduce a principle-based taxonomy for FIs to assess and categorise economic activities according to the extent to which the activities meet climate objectives and promote the transition to a low-carbon economy. The taxonomy also incorporates the consideration of broader environmental outcomes through the principle of no significant harm, with specific regard to how business operations affect pollution, biodiversity and resource efficiency. In supporting an orderly transition, the taxonomy recognises remediation measures and introduces a progressive system of transition categories to acknowledge concrete efforts and commitments by businesses to adopt sustainable practices; and

(c) facilitate standardised classification and reporting of climate-related exposures to support risk assessments at the institution and systemic levels, strengthen accountability and market transparency, and encourage financial flows towards supporting climate objectives. FIs can also leverage on the taxonomy in the design and structuring of green finance solutions and services to accelerate development of green sectors and activities, and decarbonisation efforts.

1.8 The principle-based approach considers the state of economic development of the country and the nascent stage of climate risk management at which businesses and other economic agents are currently in. By taking a more nurturing approach, this could avoid disruptive exclusions and dislocations thus ensuring an orderly transition of the economy.

1.9 The principle-based approach also supports applications in a wider context and alignment with other classification systems, particularly for FIs that operate across geographies. This takes into account different surrounding conditions across economies, progress in bridging data gaps, the quality of reporting or verification systems, and the ongoing update on national commitments, sectoral targets, thresholds and metrics.

2 Applicability

2.1 This document is developed to serve as a guide for FIs supervised by Bank Negara Malaysia:

- Licensed banks
- Licensed investment banks
- Licensed international Islamic banks
- Licensed Islamic banks
- Licensed insurers
- Licensed reinsurers
- Licensed takaful operators
- Licensed retakaful operators
- Prescribed development financial institutions

2.2 The document is developed such that it may also be used by other financial sector stakeholders such as capital market players and intermediaries and analysts to guide in investment and asset selection decisions, as well as rating agencies in rating decisions. For the public sector, the document may serve as a guide for policy formulation and prioritisation as well as funds allocation.

3 Effective date

3.1 This document comes into effect on 30 April 2021.

4 Related documents

4.1 This document complements the VBIAF Guidance Document issued by Bank Negara Malaysia in November 2019. The VBIAF lays the foundation for ESG considerations in the provision of financial services, to generate a positive and sustainable impact on the economy, community and environment. While the VBIAF is premised on Shariah tenets, the framework has universal application for FIs seeking to reflect ESG considerations in their governance, business strategy and operations, reporting and risk management systems.

4.2 In efforts to align and converge the VBI and climate risk initiatives, the CCPT will leverage the VBIAF sectoral guides developed (thus far on renewable energy, palm oil and energy-efficiency) by the VBIAF Sectoral Guide Working Group spearheaded by the VBI Community of Practitioners (VBI CoP), to support the implementation of the VBIAF and CCPT.[5] Guides for other sectors and activities are being developed[6] to expand the practical resources available to FIs in implementing the VBIAF and CCPT progressively. FIs are encouraged to make reference to the VBIAF sectoral guides for more detailed guidance to conduct ESG impact assessments in specific sectors.

PART B CLIMATE CHANGE IMPACT AND OPPORTUNITIES

5 Dimensions and transmission channels of climate-related risks

5.1 Climate change impacts can manifest in three dimensions of risk namely physical, transition and liability risks.

(a) **Physical risk** arises from acute (event-driven) and chronic (long term shift) climate-related events that damage property, reduce productivity and disrupt trade. This in turn, increases financial risk to FIs as revenue-generating capacity and credit worthiness of borrowers are materially impacted. In addition, this would lead to higher cost of financial protection or the potential reduction in insurance/takaful capacity. Physical risk also impacts collateral values, where assets pledged as collateral to financial institutions can be destroyed or significantly damaged by climate events, impacting the recovery value.

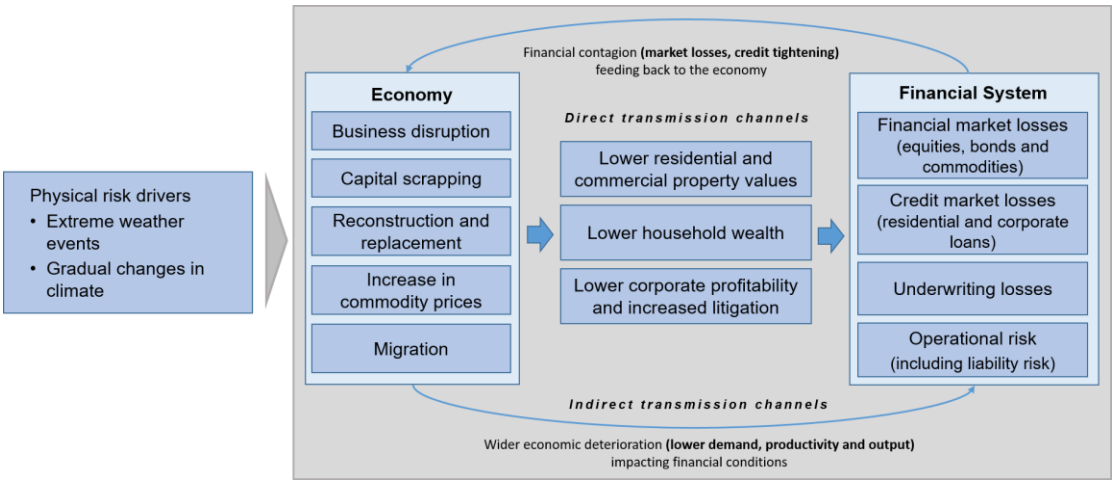
(b) **Transition risk** occurs as a result of adjustment to a low-carbon economy. The adjustment may translate into financial and/or reputational risk to FIs. Sources of transition risk include changes in public policy and strategy, legislative and regulatory framework (e.g. mandatory disclosure requirements and carbon pricing policies), technological advancements (e.g. lowering the cost of RE) and/or shift in consumer and investor behaviour (e.g. certification mandates and fossil fuel divestment strategies).

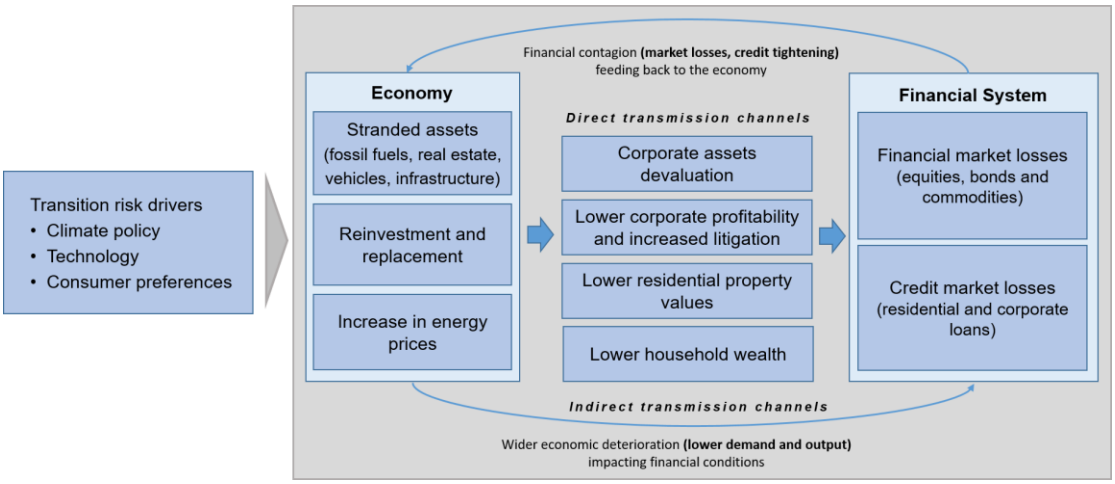
(c) **Liability risk** stems from legal risk and claims on damages and losses incurred from inaction or lack of action that results in the effects of physical and transition risks. This risk is potentially higher for ITOs as climate-related liabilities are transferable via liability protection underwritten by ITOs. For banking institutions and asset managers, this could result from financing and investment activities, whilst for the public policy makers and regulatory authorities, this could stem from public and regulatory policies.

5.2 Climate-related risks in the form of physical risk and transition risk are transmitted to FIs through various economic transmission channels that impact businesses and households as well as the broader economy. Bank Negara Malaysia views climate-related risks as a risk driver that has an impact on most of the commonly known risks managed by FIs, namely credit, market, liquidity, insurance/takaful, operational and strategic risks.

[5] See the VBIAF Sectoral Guide Working Group and related documents at *https://aibim.com/value-based-intermediation*.
[6] For 2021, the focus is on manufacturing, oil and gas, construction and infrastructure sectors.

5.3 The diagrams below illustrate the transmission of climate-related risks to the financial system.





Source: Network of Central Banks and Supervisors for Greening the Financial System. (May 2020). "Guide for Supervisors Integrating Climate-related and Environmental Risks into Prudential Supervision."

5.4 It is important to recognise that climate-related risks are dynamic, evolving over time and interacting with each other. A significant increase in physical risk or delays in responding to physical risk would warrant a swift response to build resilience as well as to withstand and absorb climate shocks. This in turn will translate into higher transition risk. Where resources are limited, transition can be costly and involves significant inter-temporal trade-offs between competing socio-economic priorities. Poorly designed and sequenced changes in climate policy and technology, and shifts in market sentiment during the adjustment to a lower carbon economy could result in economic and social dislocations.

5.5 If the required adaptation and transition measures are not implemented carefully and in a timely manner, physical risks will escalate and manifest in further financial losses. This will adversely impact the balance sheets of FIs with broader consequences for financial stability. In a worst-case scenario of inaction, the increased probability of disruptive events will inevitably force a

sudden and radical change to the economy, with adverse consequences to a large part of the population.

6 Advancing climate ambitions and opportunities

6.1 The Paris Agreement sets out the long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels and pursue efforts to limit temperature increase to 1.5°C above pre-industrial levels.[7] Central to the Paris Agreement is the NDC that embodies efforts by each country to reduce national emissions and adapt to the impacts of climate change. The NDC process is dynamic with countries expected to periodically increase their ambitions until the Paris Agreement goal is achieved.

6.2 Malaysia, in its NDC, pledged to reduce GHG emissions intensity of GDP by 45% by 2030, relative to the GHG emissions intensity of GDP in 2005. The commitment represents a 35% reduction on an unconditional basis and an additional 10% with the support of climate finance, technology transfer and capacity building from developed countries.[8]

6.3 To support the NDC, the Government has introduced relevant policies and targets (refer to Appendix 2 for relevant national policies and plans to address climate change, biodiversity, and environmental issues). These efforts would require the mobilisation of funds to support climate change mitigation and adaptation activities.

6.4 The table below provides the relevant policies and targets[9]:

Sectors	Policies	Targets
Renewable Energy	Power Sector Development Plan 2021-2039	31% renewable energy installed capacity mix by 2025, 45% reduction of emissions from the power sector by 2030 compared to 2005 level
Energy Efficiency	National Energy Efficiency Action Plan 2016	A savings of 52,233 GWh of electricity from 2016 to 2025, corresponding to an 8% reduction of electricity demand by 2025 across residential, commercial and industrial sectors

[7] UNFCCC. (2015). Paris Agreement, Article 2 Paragraph 1(a).

[8] In 2016, the energy sector was the largest contributor of emissions which accounted for 79.4% of emissions, followed by industrial processes and product use (IPPU), and waste sectors, which contributed to about 8.6% of total emissions. The agriculture, forestry and other land use (LULUCF) sectors contributed to about 3.4% of emissions. Compared with 2005, Malaysia's GHG emissions intensity of GDP decreased by 23.3% in 2016 (without LULUCF) and 29.4% (with LULUCF). Malaysia 3rd Biennial Update Report to UNFCCC (December 2020).

[9] The policies and targets listed are non-exhaustive.

Sectors	Policies	Targets
	Green Technology Master Plan Malaysia 2017-2030	15% reduction in electricity consumption by 2030
Transport	National Automotive Policy 2020	Reduce carbon emissions in line with the ASEAN Fuel Economy Roadmap of 5.3 Lge/100km by 2025
	National Land Public Transport Masterplan	40% modal share of public transport in urban areas by 2030
	National Electric Mobility Blueprint 2015-2030[10]	100,000 electric cars, 100,000 electric motorcycles, 125,000 charging stations, 2000 electric buses by 2030
Building	Green Technology Master Plan Malaysia 2017-2030	1,750 green buildings certified by 2030
Manufacturing	Green Technology Master Plan Malaysia 2017-2030	Increase in the number of green manufacturers to 17,000 by 2030
Waste	Green Technology Master Plan Malaysia 2017-2030	28% recycling rate by 2030
Forestry	Malaysian Forestry Policy[11]	50% of the land mass to be maintained under forest cover

6.5 Climate change mitigation and adaptation also bring significant new opportunities. The Global Commission on the Economy and Climate estimated that the transformative investments in energy, cities, food and land use, water, and industry could amount to USD26 trillion by 2030.[12] Globally, there has been a significant increase in the number of companies committed to net zero emission, from 500 recorded in 2019 to 1,541 in 2020, driving demand for nature-based and technological solutions that actively remove carbon from the atmosphere.[13] According to a study commissioned by the UN PRI, corporate demand for forest-related carbon removal could generate an annual revenue of

[10] In April 2021, the Malaysian Climate Action Council announced that the Low Carbon Mobility Development Plan 2021-2030 would be implemented, which may entail updated targets for e-mobility. The Edge. (April 13, 2021). "Government's approach to climate change issues outlined in MyCAC, says KASA", https://www.theedgemarkets.com/article/govts-approach-climate-change-issues-outlined-mycac-says-kasa.
[11] As reported in The Edge (March 21, 2021) "Malaysian Forestry Policy to serve as reference for policies adopted by states" and Forest Research Institute Malaysia (March 21, 2021) "PM launches Malaysian Forestry Policy at KBG FRIM", https://www.frim.gov.my/pm-launches-malaysian-forestry-policy-at-kbg-frim/.
[12] The Global Commission on the Economy and Climate. (August 2018). Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times.
[13] UNPRI. (October 2020). "An Investor Guide to Negative Emissions Technologies and Land Use".

USD800 billion by 2050 with assets valued over USD1.2 trillion, surpassing the current market capitalisation of major oil and gas companies.

6.6 Locally, Malaysia's targets as outlined in the policies above and the recent establishment of the Malaysian Climate Action Council which would steer national direction and coordination towards a green recovery, the development of low carbon cities[14] and mobility, alongside the development of carbon markets,[15] unlock new investment and funding opportunities for FIs. There are also emerging opportunities for FIs to support the development of nature-based solutions which have wider benefits for enhancing carbon sink, such as advanced soil and farming management techniques which sequester and keep carbon in soil, afforestation and reforestation of terrestrial forests, sustainable forest management and restoration of wetland areas. Aside from agriculture and plantation activities, opportunities are also aplenty in other sectors and industries such as manufacturing in terms of reengineering of production, processes and operations to be environmentally friendly and sustainable, application of new energy and water efficiency technology as well as sustainable materials in construction activities to produce energy efficient buildings and properties, etc.

6.7 The continuous pursuit of the Paris Agreement ambitions creates significant opportunities for the financial sector to catalyse further growth in sustainable businesses and practices. As the economy and financial system are dependent on and simultaneously impact the environment and society, it is important that FIs embrace the opportunities to support pathways towards low carbon and climate-resilient development for the benefit of people, planet and prosperity.

[14] Based on EPU and UNDP study, investments in low-carbon cities in the country could create work opportunities in emerging green sectors and save RM46.9 billion in energy spending between 2016 and 2030, *https://www.my.undp.org/content/malaysia/en/home/news-centre/articles/2019/lowcarboncity.html*.

[15] The Edge. (April 13, 2021). "Government's approach to climate change issues outlined in MyCAC, says KASA", *https://www.theedgemarkets.com/article/govts-approach-climate-change-issues-outlined-mycac-says-kasa*.

PART C ASSESSMENT OF ECONOMIC ACTIVITIES

7 Guiding principles for the assessment of economic activities

7.1 Recognising the impact of climate change on communities, businesses and the wider economy, there is an urgency to alleviate the impact of climate change and accelerate transition towards a low carbon and climate resilient economy. FIs play a critical role in this transition by channeling capital and funds through their green financing and investment as well as advisory activities. The taxonomy supports these efforts by facilitating robust and consistent assessments of economic activities and their impact on climate and the environment.

7.2 In applying the taxonomy, the key elements of its guiding principles should be embedded in the due diligence assessment of existing and prospective customers. GP1 and GP2 are assessed at transaction level (e.g. upon origination and extension of credit, investment in financial assets, and structuring of capital market transactions). A more holistic assessment of the customer's overall business is required to evaluate compliance with GP3, GP4 and GP5. Effective and transparent engagements between FIs and their customers, as well as access by FIs to relevant and verifiable information will be required to support assessments against the principles.

Guiding Principle 1 (GP1): Climate change mitigation

7.3 The objective of climate change mitigation is to reduce or prevent emission of GHG into the atmosphere. An economic activity can be considered to meet climate change mitigation if such activity makes a substantial[16] contribution in the following objectives:

(a) Avoid GHG emissions;

(b) Reduce GHG emissions; or

(c) Enable others to avoid or reduce GHG emissions.

7.4 Common climate change mitigation activities include, but are not limited to, generation of renewable energy, rehabilitation, retrofitting and/or replacement of energy-inefficient technology and/or production of energy-efficient technologies as well as maintenance and strengthening of land-based carbon stock and sinks[17], above and below ground. The activity should demonstrate

[16] Positive impact from the activities should not be negligible and must be material enough to avoid potential greenwashing.

[17] Activities involving maintenance and strengthening of land-based carbon stock and sinks, above and below ground can only be recognised as meeting GP1 if undertaken at the source of emissions.

the capability to avoid or reduce GHG emissions compared to the baseline scenario without the mitigating action.

7.5 Examples of the application of GP1 are provided in Table A.

Table A: Examples on the application of GP1:

Economic Activity	Examples	Measurement
Renewable energy	• Onshore and/or offshore wind power generation • Onshore and floating solar photovoltaic (PV) power generation	• The IFI approach[18] to GHG accounting for renewable energy projects can be used to measure GHG emissions associated with production of electricity at a wind farm, solar farm or hydro power plant. • These activities are assumed to reduce CO_2 emission by comparing against emissions under an alternative scenario without the project.
Rehabilitation, retrofitting and/or replacement with energy-efficient technology	• Replacement of existing heating/cooling systems in buildings with non-fossil fuel powered systems • Energy-efficient vehicles and transport (e.g. hybrid cars)	• The IFI approach to GHG accounting for energy-efficient economic activities can also be used to measure GHG emissions associated with investments in improvement of energy efficiency. • These activities are assumed to reduce CO_2 emissions by comparing against existing emissions.
Restoring, maintaining, conserving and strengthening of natural land-based carbon stock and sinks (for LULUCF only)	• Avoidance/ suspension of deforestation • Afforestation and reforestation • Restoration or rehabilitation of forests, croplands, peatlands, grasslands and wetlands • Sustainable forest and agricultural management • Forest and peatland conservation	• Guidance on forest, soil and biomass GHG accounting are provided by: ○ LULUCF GHG Protocol; ○ Guidelines for National GHG Inventories by the IPCC; and ○ CDP disclosure framework and system. • These activities are assumed to avoid or reduce CO_2 emissions by comparing against existing emissions.

[18] UNFCCC. (2021). "IFIs - Harmonization of Standards for GHG accounting", https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting.

7.6 An economic activity, while contributing to climate change mitigation, should not cause significant negative impact on the broader environment. Further examples of economic activities that generally meet GP1 are provided in Appendix 3.

Guiding Principle 2 (GP2): Climate change adaptation

7.7 Adaptation is the process or actions taken to lower the negative effects and/or moderate harm caused by climate change[19]. The objective of climate change adaptation is to increase resilience to withstand the adverse physical impact of current and future climate change. The adaptation activity can benefit an entity, organisation, community, market, sector or region. An economic activity can be considered as meeting climate change adaptation objective through the following:

(a) Implement measures to increase own resilience to climate change; or

(b) Enable others to increase resilience to climate change.

7.8 In order to demonstrate that an activity contributes to increasing resilience to the negative physical effects of climate change, it is necessary to:

(a) Identify expected negative physical effects of climate change by leveraging evidence and appropriate climate information; and

(b) Demonstrate how the activity or measures taken can build resilience, prevent an increase or shift the identified negative impact of climate change.

7.9 In order to identify an economic activity that contributes to the climate change adaptation objective, the following considerations are necessary:

(a) The economic activity shall positively contribute to a reduction in material physical climate risk

(i) For adaptation activity to increase its own resilience, the adaptation activity shall reasonably reduce material physical risk from current and future climate change. 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 adaptation activity.

(ii) For an activity that is enabling adaptation of other economic activities, the activity shall reduce the impact of material physical risk from other economic activities and/or reduce barriers to adaptation through the use of technology, service or product.

[19] IPCC. (2012). Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation.

(b) The economic activity, while contributing to climate change adaptation, should be sustainable, does not negatively impact other adaptation efforts or cause harm to the broader environment and community.

(c) The economic activity should have climate change adaptation outcomes that can be clearly defined. The outcomes of the action taken shall be sustainable and fit-for-purpose. These outcomes should also be observable, measurable and monitored over time against a set of pre-determined indicators.

7.10 Examples of assessment criteria are provided in Table B.

Table B: Examples of assessment criteria

Economic Activity Component	Key Consideration	Assessment Criteria
Purpose of the economic activity	Positively contribute to a reduction in material physical climate risk	• Is the purpose of economic activity to reduce physical risk to an organisation, community or society? • Can the objectives and benefits of the activity be clearly articulated? • How far reaching are the expected benefits to the organisation, community or society?
Impact of the economic activity	Should be sustainable and does not negatively impact other adaptation efforts or cause harm to the broader environment and community	• Is the activity performed in a sustainable manner? • Has the organisation or the FI obtained an independent and reliable expert opinion for due diligence purposes? (e.g. feasibility studies, vulnerability assessments, impact analysis) • Any unintended impacts on other adaptation efforts or the broader environment and community? (e.g. displacement of flood water at the expense of another community area, poorly managed construction of adaptation infrastructure resulting in waste production, water contamination, destruction of natural animal habitats or local communities)
Defining the outcome of the economic activity	Outcome to be clearly defined, sustainable and fit-for-purpose	• What is the desired outcome of the activity i.e. project/R&D/business process improvement/product innovation? (e.g. construction of slope protection to prevent landslides) • Can the desired outcome increase resilience against the effects of climate change in the long run? (e.g. sustained crop production in

		drought-prone areas with the installation of water harvesting systems) • Is the objective clearly articulated and transparent to relevant stakeholders? (e.g. shareholders, financiers, sponsors, insurers/takaful operators, fund managers, vendors, customers, local community)
Measuring outcome of the economic activity	Outcome shall be observable, measureable and monitored over time against a set of pre-determined indicators	• What is the expected performance of activity and how is success defined? (e.g. reduced landslide incidences and loss of assets during rainfall) • Is the outcome of economic activity measurable? (e.g. frequency of landslide incidences) • Can the outcome be measured on an on-going basis to monitor effectiveness of economic activity? (e.g. annual occurrences of landslide incidences)

7.11 Non-exhaustive examples of climate change adaptation activities are provided in Appendix 4.

Guiding Principle 3 (GP3): No significant harm to the environment

7.12 An economic activity is generally location and context specific and interacts directly or indirectly with the surrounding environment. While the economic activity may contribute towards climate risk mitigation and/or adaptation, the economic activity and the overall business may cause unintended harm to the broader environment. This could adversely impact the surrounding community and environment and may even precipitate disruptions to overall climate resilience.

7.13 FIs should therefore take into account the impact of the economic activity and the overall business on the wider ecosystem. Specifically, the following environmental objectives[20] must be met:

(a) Prevent, reduce and control pollution (air, water and land);

(b) Protect healthy ecosystems and biodiversity; and

(c) Use energy, water and other natural resources in a sustainable and efficient manner.

7.14 FIs should establish a clear risk acceptance criteria for informed decision making, particularly in assessing whether the economic activity and overall business is at risk of causing significant harm to the environment. FIs are

[20] Environmental Quality Act 1974 and National Policy on the Environment 2002.

expected to exercise appropriate due diligence in determining if the customers meet the principle of no significant harm to the environment.[21] More often than not, a certification serves as a starting point for FIs to understand the assessment criteria used as well as the strength of emphasis placed on specific climate and/or environmental objectives. FIs should obtain assurance that the certification can strongly demonstrate substantial contribution to climate and/or environmental objectives.

7.15 The following non-exhaustive criteria can be considered in facilitating the assessment:

Environmental objectives	Examples of assessment criteria
Prevent, reduce and control pollution (air, water and land)	• Prevent pollution of air, water and land where the economic activity takes place, including appropriate use of products, equipment and techniques. For example, proper use of fertilisers, pesticides and herbicides taking into account the appropriate dosage, avoidance of harmful materials/substances such as asbestos in buildings/constructions. • Undertake cleaning measures immediately when there is a pollution. • Proper waste management practices. • Ensure no potential contaminants on land prior to or during use.
Protect healthy ecosystems and biodiversity	• Implement necessary measures to protect ecosystems and biodiversity. • Prevent soil erosion and run-off into watercourses. • Avoid land/site use on protected natural areas. • Adopt sustainable logging practices and ensure timber products are sourced from sustainably managed forests.
Sustainable and efficient use of energy, water, and other natural resources	• Identify and manage risks related to water quality/energy/natural resources and/or water/energy/natural resources loss through leakage and/or improper management of infrastructure. • Implement water use/conservation management plans. • Ensure water/energy/natural resources appliances fulfil the requirements of relevant national legislations.

[21] For avoidance of doubt, certification in itself is insufficient to fulfil GP3.

Guiding Principle 4 (GP4): Remedial measures to transition

7.16 The applicability of remedial measures is predicated on FIs' assessment of GP1, GP2 and GP3 insofar as the remedial measures address the significant harm identified at either the economic activity level or the overall business level or both.

7.17 The recognition of remedial measures aims to support an orderly transition by avoiding any outright exclusion of economic activities that are currently not contributing to climate change objectives and/or not sustainable. Accordingly, FIs are expected to encourage, facilitate and take into account the remedial efforts and improvement programmes undertaken by businesses to align their operations with a low-carbon and climate resilient economy. Where relevant, FIs should also encourage businesses to adopt practices that are both resource-efficient and minimise waste production as propounded by the concept of circularity or a circular economy[22].

7.18 FIs may consider establishing baseline expectation(s) on the broader environmental strategy of businesses which can be done by ensuring that businesses set mid-term target(s), identify pathways to meet climate objective(s) and establish implementation plans to meet the target(s) over a defined period of time. For carbon intensive sectors, FIs must exercise due care to avoid supporting activities that promote long-term carbon lock-in and/or activities that maintain economic barriers to low carbon solutions.

7.19 In this regard, FIs should conduct adequate assessments to ascertain the effects and significance of remedial efforts undertaken by businesses, taking into account the business objectives, the size and systemic importance to the economy, and impact of the efforts to compensate short-term loss/harm to the environment. The strength and suitability of remedial efforts may be evaluated based on the following considerations as illustrated in Table C.

[22] A circular economy is a systemic approach to economic development designed to benefit businesses, society, and the environment. In contrast to the 'take-make-waste' linear model, a circular economy is regenerative by design and aims to gradually decouple growth from the consumption of finite resources. The Ellen MacArthur Foundation, *https://www.ellenmacarthurfoundation.org/explore/the-circular-economy-in-detail*.

Table C: An illustration of criteria to assess the strengths and suitability of remedial efforts

Background/Context Setting
Business is assessed as causing significant harm to the climate and/or the environment.
Assessment Objectives
• The remedial efforts should directly contribute towards the outcomes in which unacceptable risks to the climate and/or environment can be eliminated or significantly reduced. • The commitment/willingness of the business is demonstrated through the development/practice/commitment of sustainable practices to ensure that the business is conducted in a sustainable manner where all parties involved understand the potential risks and take appropriate mitigating actions to reduce any adverse climate and/or environmental impacts.
Assessment Criteria
Sector/industry • What is the intensity of the business' GHG emissions in comparison with the industry average or other acceptable benchmark? • Is there a decarbonisation pathway established within the industry that the business operates in? • What are the environmental-related risks commonly associated with the sector/industry? Have these risks been taken into consideration in business strategy and policies? • Is there any pollution management or mitigation plan? How effective is the policy implementation? • Is there a requirement for mandatory industry-specific certification? **Purpose and possible impact of loan/financing/investment** • What are the proceeds used for? • Will the use of proceeds help reduce GHG emissions? • Will the use of proceeds help increase climate resilience? • Will the use of proceeds help fund sustainable practices? • Will the use of proceeds help remediate, or at least not increase, the harm caused by the business to the environment? **Business profile** • Is the business strategy (proactiveness and willingness) aligned with climate change and environmental objectives? • Is the business operation(s) and asset(s) located in areas vulnerable to physical risk? • How extensive is the business supply chain and to what extent are the business' vendor(s) adopting sustainable practices? • Does the business have adequate financial capacity to fund the remedial efforts, including supporting remediation efforts by its vendor(s)? • What is the business competitive position and its leadership role in the industry?

Determining remediation efforts for credit decision and monitoring
Remedial efforts and transition period • What is the business' current GHG emissions profile and does it have a plan to close gaps against acceptable benchmarks? • Has a plan with specific milestones been drawn up to outline appropriate measures to achieve GHG emissions reduction and reduce environment-related risks? • Is the remediation plan appropriate and does the plan commensurate with the size, complexity and financial capacity of the business? • Is there a plan and time-bound commitment to pursue external certification and/or validation (voluntary certifications)?
Tracking and monitoring of remedial outcomes
• Progress of remedial efforts should be tracked by FIs against the agreed milestone and timelines i.e. short, medium and long term.

7.20 The above illustration serves as a guide and FIs are encouraged to expand the scope of assessment to include broader ESG considerations for more holistic due diligence on the business' transition commitment.

Guiding Principle 5 (GP5): Prohibited activities

7.21 At the outset, FIs should verify and ensure that the economic activities being considered and/or financed are not illegal and do not contravene environmental laws. These include, but are not limited to:

(a) The National Forestry Act 1984;
(b) Wildlife Conservation Act 2010;
(c) National Parks Act 1980;
(d) The Fisheries Act 1985; and
(e) The Environmental Quality Act 1974.

7.22 Examples of environment-related prohibited activities are as follows:

(a) Operations involving illegal deforestation or the act of illegal deforestation, which results in soil degradation that ultimately releases CO_2 into the atmosphere;
(b) Industrial process operations, generation, storage, treatment and disposal, which include illegal waste management as well as the release of untreated toxic and hazardous industrial waste and substances; and
(c) Operations that use fire for land clearance or leave fires burning for the purpose of agriculture and urbanisation, and other forestry related activities within, adjacent to, or upstream of designated protected areas (reserved forests and habitats of rare/endangered species).

7.23 FIs are also strongly encouraged, as part of their lending and/or investment decisions, to ascertain if businesses are engaged in activities that are in

contravention with national human rights and labour laws in line VBIAF[23].These include but are not limited to the following laws:

(a) Employment Act 1955;

(b) Children and Young Persons (Employment Act 1966); and

(c) Minimum Wages Order 2018.

7.24 FIs may obtain written statements or enforce compliance clauses signed by customers in the Letter of Undertaking or any other form of facility agreements to give effect to GP5. This provides an avenue for FIs to take necessary actions in the event that customers are subsequently found to be involved in illegal activities post on-boarding. This includes actions to terminate relationship with the customer.

8 External certification and verification

8.1 FIs can leverage on third party verifications or recognised certifications by local agencies, national authorities or international accreditation bodies to inform their internal due diligence process.

8.2 FIs need to be aware of the differences in scope and assessment rigour under various certification standards and apply informed judgment on whether certification standards used in assessment against the guiding principles meets the climate and environmental objectives. FIs should review and be satisfied that the certifications provided are relevant, credible, and supported by acceptable standards and criteria with robust and transparent assessment processes.

8.3 Where relevant, FIs should consider mandatory certification requirements in the respective jurisdiction that the business operates in, to determine the relevance and adequacy of the certification standard.

8.4 In instances where an economic activity does not meet the substance of the guiding principles or internationally accepted practices, FIs should evaluate the nature of the gaps and assess the effectiveness of remedial actions taken/or to be taken, if any, to raise the standards of performance and/or compliance.

8.5 FIs should establish an internal list of approved certifications, which is subject to appropriate oversight and regular review to ensure the certifications are relevant, current and valid. Examples of third party certifications and verifications are provided in Appendix 5.

[23] FIs may also refer to OECD Guidelines for Multilateral Enterprise and UN Guiding Principles on Business and Human Rights.

8.6 FIs can also leverage sustainability reporting standards or external rating agencies to assess evidence of customers' practices.

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PART D CLASSIFICATION OF ECONOMIC ACTIVITIES

9 Classification system

9.1 A consistent and systematic classification of economic activities can facilitate and promote the channeling of financial flows to activities that support climate change and environmental objectives, including the transition towards more sustainable practices. For the purpose of this document, economic activities are classified into three broad categories (Climate Supporting, Transitioning and Watchlist), based on GP1 to GP4.

9.2 The classification system in Table D is constructed based on the following considerations:

(a) Positive impact on climate change objectives i.e. mitigation (GP1) and adaptation (GP2);

(b) Potential negative effects to the broader environment (GP3); and

(c) Measures taken (or not taken) to reduce harmful practices (GP4).

FIs should ascertain that the positive impact and remediation measures are not negligible and must be material enough to avoid potential greenwashing.

Table D: Classification of economic activities

Classification		Economic Activity (Transaction Level)		Overall Business	
		GP1 Climate Change Mitigation	GP2 Climate Change Adaptation	GP3 No Significant Harm to the Environment	GP4 Remedial Efforts to Promote Transition
Climate Supporting	C1	GP1 or GP2 or both		✓	
Transitioning	C2	GP1 or GP2 or both		✘	✓
	C3	✘		✘	✓
Watchlist	C4	GP1 or GP2 or both		✘	✘
	C5	✘		✘	✘

9.3 An economic activity should not be considered sustainable independently of the impact of such economic activity and overall business of the party undertaking the economic activity on the wider eco-system. Due diligence assessments by FIs for this purpose should include ensuring that there is no track record of environmentally damaging practices.

9.4 ‘C1’ to ‘C5’ represent the different levels of contribution of economic activities towards climate and environmental objectives. Only economic activities that meaningfully contribute to climate objectives without causing significant harm to the environmental objectives identified in GP3, in the immediate and intermediate future, can be categorised as ‘C1’.

9.5 When businesses undertake efforts to transition to low carbon and sustainable practices, the initiatives and/or overall business may still, in the immediate and intermediate future, cause some harm to the broader environment. In such cases, FIs must assess the level of commitment and actions taken to implement remedial measures necessary to reduce or eliminate the identified harm. Categories ‘C2’ and ‘C3’ in the classification system serve to represent these businesses that are in the progressive stages of transitioning.

9.6 For businesses that do not display any commitment or are not serious in their commitment to remediate the harm identified and/or do not undertake any initiative to transition to more sustainable practices, the economic activities are categorised as ‘C4’ or ‘C5’. These categories reflect the heightened transition cost and reputational risk associated with the economic activity or business. FIs should constructively engage customers in these categories to develop concrete, actionable plans to address the identified harm to the environment and promote business viability associated with more sustainable practices.

9.7 FIs have an important role in supporting and/or accelerating business transition through providing incentives, which include, among others, via pricing mechanisms, rehabilitation programmes, financing and underwriting conditions and strategy, and advisory and corporate finance activities. Notwithstanding, should the customer fail to demonstrate serious commitment in implementing remediation measures or failed to effectively limit or reduce harm caused by the activities, FIs can consider applying more stringent lending terms such as a shorter tenor, a lower loan limit, increasing the loan pricing, or reassessing its relationship with the customer with a view to exit the relationship.

PART E USE CASES

Use case 1: Financing for an expansion of oil palm plantation

Background

- An existing mid-sized customer (with more than 500 hectares, including peatland) is requesting a new project financing to expand its oil palm plantation on an existing agriculture land. The project financing is primarily to fund new cultivation and implement measures to support the adoption of sustainable practices.
- All oil palm plantations are required to obtain MSPO certification by January 2022[24], failing which, the licence will be suspended or revoked and the economic activity will fall within the prohibited category (GP5). The customer has obtained MSPO certification covering 7 MGPs for its existing oil palm plantation and 6 MGPs for its palm oil mills as follows:
  (a) MGP1: Management commitment and responsibility
  (b) MGP2: Transparency
  (c) MGP3: Compliance to legal requirements
  (d) MGP4: Social responsibility, health, safety, and employment conditions
  (e) MGP5: Environment, natural resources, biodiversity and ecosystem services
  (f) MGP6: Best practices
  (g) MGP7: Development of new planting

  Note: EIA and biodiversity assessment form part of the MSPO certification for oil palm players with more than 500 hectares of plantation. The MSPO certification is reviewed on an annual basis and renewal is required every 5 years.

Scenario A: Assessment and classification

- Feedback from relevant Government agencies such as the Malaysian Palm Oil Board (MPOB), Malaysian Palm Oil Certification Council (MPOCC) and Department of Environment (DOE) on the customer's operations and its impact to the environment was satisfactory. The FI had also ascertained through enhanced due diligence that the customer has satisfactorily implemented the following measures:
  (a) Measures to reduce GHG emissions (GP1)
    (i) Systematically collect, accumulate and transfer oil palm biomass for processing by biofuel producer; and

[24] Malaysian Palm Oil Board

(ii) Use of hybrid vehicles for maintenance work and transportation of palm fruits.

(b) Measures to increase climate resilience (GP2)

(i) Install water harvesting system (e.g. redirecting water from drainage and storage of rainwater as contingency for dry spell periods).

(c) Remedial measures to reduce harm to the environment (GP4)

(i) No use of open burning in preparation for cultivation and waste disposal;

(ii) Management of water table in existing peat areas to reduce peat subsidence rate i.e. release of GHG emissions from peat soil; and

(iii) Use palm oil mill effluent (POME) as a substitute for inorganic fertilisers.

- The customer is subjected to periodic due diligence to assess the progress and performance of the above measures.
- The customer is MSPO certified and has implemented measures to actively reduce its GHG emissions and increase resilience of crop production during dry spell periods. In addition, the customer is making efforts to limit harm to the broader environment. Hence, the project financing shall be classified as ‘C2’.

Scenario B: Assessment and classification

- The FI has ascertained that the customer is also implementing international best practices to limit harm to the environment (GP3):

(a) No new deforestation;

(b) No new cultivation on peatland;

(c) Maintain a ground cover of natural vegetation in existing peatland to keep surface moist, minimize irreversible drying and reduce GHG emissions;

(d) Construct water management and drainage systems to maintain acceptable level of water table for existing peatland;

(e) No new cultivation on steep terrains with slope of 25 degrees or more; and

(f) Conduct periodic soil testing to determine its organic matter and pH structure, and maintain soil fertility.

- The customer is MSPO certified and has implemented international best practices to ensure significant contribution to climate objectives and substantially limit harm to the broader environment. Hence, the project financing shall be classified as ‘C1’.

Use case 2: Financing for a broiler chicken house

Background

- An existing customer is requesting a new project financing from a FI to construct a broiler chicken house (located near residential areas and natural waterways) to supply fresh chickens to surrounding local markets.
- The customer has obtained clearance and approval from the Department of Veterinary Services Malaysia (DVS) for its new project (this approval is compulsory for commercial livestock). The customer has also proactively obtained the Malaysian Good Agriculture Practices (myGAP) certification[25] in line with its sustainable strategy, even though this is not a mandatory requirement for supply to the domestic market. The scope of myGAP certification is broad and covers a wide range of good practices such as appropriate farm management including comprehensive biosecurity programme, drugs and medication monitoring, water management, workers' welfare standards and record keeping.

Scenario A: Assessment and classification

- Feedback from the relevant Government agencies such as Department of Environment (DOE) and Department of Fisheries (DOF) is satisfactory. The customer has also consulted other stakeholders, including environmental groups and community leaders, and has obtained support for the project without adverse comments.
- Given the nature of poultry farming and its potential harm to the broader environment (GP3), the customer has installed a manure management system to reduce pollution (GP4).
- While the customer has implemented measures to limit harm to the broader environment, the measures do not further contribute to climate mitigation and adaptation.[26] Hence, the project financing shall be classified as 'C3'.

Scenario B: Assessment and classification

- In addition to pollution management, the customer has installed a biogas catchment/collection system which enables the conversion of poultry wastes/manure into biogas to generate electricity for own usage. The farm also uses energy-efficient LED light bulbs.
- Besides implementing measures to mitigate harm to the broader environment (GP4), the customer is also actively reducing its GHG emissions (GP1). Hence the project financing shall be classified as 'C2'.

[25] myGAP certification is compulsory for export markets.
[26] Refer to EU Taxonomy Technical Annex to the TEG Final Report on Livestock Production, page 140 – 154, for additional information on practices that can reduce GHG emissions in livestock farming.

Use case 3: Refinancing a green building

Background

- A leading property developer in Malaysia has established a special purpose vehicle to construct a green-certified office building for its own use. The borrower is in discussion with a FI to refinance its existing facility totalling RM300 million, which was used to part finance the construction.
- The building was constructed over a 2-acre land and was issued with a provisional Green Building Index (GBI) Design Assessment certification. The developer is in the midst of applying for the final GBI award, with a target to achieve Platinum rating (i.e. within the FI's risk appetite of silver rating at minimum) covering the following six areas:
  (a) Energy Efficiency
  (b) Indoor Environmental Quality
  (c) Sustainable Site Planning and Management
  (d) Material and Resources
  (e) Water Efficiency
  (f) Innovation
- The borrower complies with applicable requirements such as EIA, Environmental Management Plan and Occupational Safety & Health Management Plan.
- The borrower also adopts a strict policy to ensure compliance with environmental, social and governance standards which includes ensuring no deforestation, forced labour or development-induced displacement of local communities. Based on due diligence, leveraging on external ESG data and analytics platforms, the borrower is free of controversies, fines, penalties and regulatory sanctions in relation to the above. The FI has also verified and obtained assurance on the borrower's good track record in general with no on-going/past history of high-profile allegations, such as illegal dumping of construction waste by its contractors.

Scenario A: Assessment and classification (clean track record)

- At a transactional level, the borrower meets GP1 subject to a GBI silver rating at minimum. However, the borrower does not meet GP2 as GBI mainly focuses on evaluating the environmental performance of buildings, not the building's adaptive capacity to climate-related hazards.
- In assessing GP3, the FI conducted rigorous assessment at both the borrower/overall business and transaction/economic activity (project) level to establish the following:

(a) Borrower had meticulously assessed the building's environmental performance and improved the design to reduce adverse impact on climate change (e.g. increase building energy intensity, encourage use of renewable energy, use recycled content materials);
(b) Sustainability due diligence was conducted as part of the FIs approval process;
(c) Compliance with the FIs internal real estate and construction sector guides' requirements, sustainable financing policy and controversy check; and
(d) Satisfactory report from EIA (if relevant), Environmental Management Plan and Occupational Safety & Health Management Plan.

- Based on the GBI rating with no adverse finding arising from the due diligence, the borrower meets GP3, and thus the transaction shall be classified as 'C1'.

Scenario B: Assessment and classification (allegations of improper waste management)

- At a transactional level, the borrower meets GP1 subject to a GBI silver rating at minimum. However, the borrower does not meet GP2 as GBI mainly focuses on evaluating the environmental performance of buildings, not the building's adaptive capacity to climate-related hazards.
- In assessing GP3, the FI conducted rigorous assessments at both the borrower/overall business and transaction/economic activity (project) level and discovered that the borrower is facing allegations of improper waste management. The FI engaged the customer on the allegations and found that the customer has put in place remediation measures. The customer has demonstrated a serious commitment to improve its waste management practices with actionable, time-bound and transparent remediation plans. This includes the development and implementation of a company policy to require recycling and proper disposal of construction waste. In this regard, the transaction will be classified as 'C2'.
- The FI will continue to engage the borrower to evaluate the effectiveness of the remediation plans. In the event of unsatisfactory progress or failure to implement the committed remediation plans, the classification shall be downgraded to 'C4'. The FI should also consider applying more stringent lending terms such as a shorter tenor, a lower loan limit, increasing the loan pricing, or reassessing its relationship with the customer with a view to exit the relationship.

Use case 4: Financing in fossil-fuel related activities

Background

- An offshore customer who is involved in both upstream (i.e. exploration and production of crude oil and natural gas) and downstream (i.e. refining, manufacturing, trading and distribution of oil and gas and petroleum-related products) activities within the oil and gas sector is seeking facilities as stated below.
- The customer's overall strategy in addressing climate change and the associated environmental impacts include having a commitment to reduce GHG emissions by 20 million tonnes by 2025, focusing on liquefied natural gas while transitioning towards renewable energy solutions, employing carbon capture utilisation, and sequestration technologies and approaches in upstream activities. Over and above this, the customer has also demonstrated a clear sustainability strategy including plans to achieve net zero carbon emissions by 2050, alongside other key sustainability targets.
- In addition, the customer complies not only with the EQA 1974 but has ISO 14001:2003 Environmental Management Systems certification for 80% of its exploration, production and manufacturing facilities with a commitment to obtain 100% certification by end 2022. It has policies, guidelines and response teams in place to manage oil spills, and conducts annual EIAs on key upstream and downstream activities.
- The FI has conducted an assessment to ensure that all financial transactions involving the customer and the customer's overall business activities are not illegal, do not contravene environmental laws and the company does not have any track record in environmentally damaging practices. In addition, the customer has met the FI's internal oil and gas sector guide requirements, sustainable financing policy and controversy check with adequate supporting documentation.

Scenario A: Assessment and classification (back-to-back letter of credit facility)

- The main purpose of the credit facility is to facilitate trading of petrochemical products at the international market.
- At a transactional level assessment, the customer meets neither GP1 nor GP2, as the nature of transaction and purpose of facility do not contribute to climate change mitigation or adaptation objectives.
- In relation to GP3, the customer's activities indirectly contribute potential negative effects to the environment, e.g. the burning of petrochemicals releases GHG emissions. While petrochemical products can be used to produce

pharmaceutical products for social health and wellbeing, petrochemical products are also widely used to produce a range of other products such as plastics, synthetic rubber, urea fertilisers, etc. Such products may cause harm to the environment as many of these products do not biodegrade, resulting in the accumulation and pollution of water supplies, and impacting ecosystems and soil quality.

- Nevertheless, the customer is adopting sustainable practices and has developed concrete long term action plans to transition its business in supporting the shift towards a low carbon and climate resilient economy. In addition, it has also established specific measures to ensure that it only trades petrochemicals products derived through sustainable practices and sourced from facilities with ISO 14001:2003 Environmental Management Systems certification. With the remediation measures in place (at both transactional and business level) and clear commitments towards transitioning, the economic activity meets GP4. Hence, the transaction shall be classified as ‘C3’.

Scenario B: Assessment and classification (bond issuance)

- The main purpose of the bond issuance is to facilitate diversification initiatives specifically related to renewable energy.
- At transactional level assessment, the customer meets GP1 as the purpose of the facility directly supports climate change mitigation through the customer’s involvement in renewable energy.
- Although the customer is involved in renewable energy, from an overall business perspective, it engages in other upstream and downstream oil and gas activities that do have potential negative effects on the environment in relation to GP3. However, since the customer has clear plans and practices in place to support transition efforts towards a low carbon and climate resilient economy, these plans meet GP4. Hence, the transaction shall be classified as ‘C2’.

Scenario C: Assessment and classification (revolving credit facility)

- The main purpose of financing is to facilitate corporate strategies associated with the expansion of upstream business within the region.
- At a transactional level assessment, the customer meets neither GP1 nor GP2.
- At the overall business level, while the customer’s activities do have potential negative effects on the environment in relation to GP3, the customer has clear plans and is adopting sustainable practices to support the transition efforts towards a low carbon and climate resilient economy such as commitment to reduce GHG emissions and its focus on supplying low carbon fuels. These

remedial efforts to promote transition meet GP4 and hence, the economic activity shall be classified as 'C3'.

Use case 5: Investment in green assets

Background

- A public listed renewable electricity power generation company has over 26GW of renewable generation capacity in operation and generates almost 50TWh of clean energy annually. Over the past decade, the company has invested over USD90 billion into clean energy infrastructure, resulting in the production of huge volumes of carbon free energy across its operations, and lowering the cost of renewable technology for other market participants. The company has also begun reporting its climate change mitigation impact i.e. carbon emissions avoided due to the generation of renewable energy. The metric shows that its operating portfolio resulted in over 28 million tonnes of avoided CO_2 emissions in 2019.
- As a responsible investor, the AMC has conducted an assessment on the sustainability metrics and financials of the investee company. Based on its research and analysis, the AMC is satisfied with the environmental attractiveness and future value of renewable energy investments made by the company. Despite the strong performance of the company's shares, there is prospect for the share price to rise and result in higher returns.
- The investee company has also made transparent its strategic roadmap on sustainability in its public disclosures. This allows the AMC to better understand the intrinsic value of the business and its total impact.

Assessment and classification

- The investee company's renewable energy business contributes substantially to GHG emissions reduction, thus supporting climate risk mitigation objective (GP1). Upon rigorous due diligence by the AMC, the investee company is found to have a credible track record with no evidence of harm to the broader environment, in line with GP3.
- Given the above, the equity investment shall be classified as 'C1'.

APPENDIX 1 CHARACTERISTICS AND EFFECTS OF CLIMATE CHANGE

Characteristics of Climate Change

- **Far-reaching in breadth and magnitude**
  Climate change will affect all agents in the economy (households, businesses, governments), across all sectors and geographies. The risks will likely be correlated with and, potentially aggravated by tipping points, in a non-linear fashion. This means the impacts could be much larger, and more widespread and diverse than those of other structural changes (NGFS, 2019).
- **Foreseeable nature**
  While the exact outcomes and time horizon are uncertain, there is a high degree of certainty that some combination of physical and transition risks will materialize in the future (NGFS, 2019).
- **Irreversibility**
  The impact of climate change is determined by the concentration of GHG emissions in the atmosphere and there is currently no mature technology to reverse the process. Above a certain threshold, scientists have shown with a high degree of confidence that climate change will have irreversible consequences on our planet, though uncertainty remains about the exact severity and time horizon (IPCC, 2019).
- **Dependency on short-term actions**
  The magnitude and nature of the future impacts will be determined by actions taken today, which thus need to follow a credible and forward-looking policy path. This includes coordinated actions by governments, central banks and supervisors, financial market participants, firms and households. (NGFS, 2019).

Causes and Effects of Climate Change

The world is getting warmer…

- The concentration of carbon dioxide in the earth's atmosphere has risen 47% since the Industrial Age (NASA, 2019).
- In 2005, burning of fossil fuels produced the largest carbon footprint with the power and industry sector combined dominating 60% of global CO_2 emissions (IPCC, 2005).
- In 2010, 52% of global direct GHG were emitted by industry and waste from Asia region (IPCC, 2014).
- In 2020, the global average surface temperature was 1.2°C higher than the pre-industrial baseline (1850-1900) (WMO, 2020).

…and so is Malaysia

- In the past 46 years, the surface mean temperature average for Malaysia increased by 0.13°C to 0.24°C per decade (Ministry of Environment and Water, 2018).
- Peninsular Malaysia is expected to experience a temperature rise of 0.6°C-0.9°C by 2030 and 1.2°C-1.6°C by 2050.
- Sabah's temperature is expected to rise 0.8°C-1°C by 2030 and 1.3°C-1.4°C by 2050.
- Sarawak's temperature is expected to rise 0.6°C-0.8°C by 2030 and 1.3°C-1.6°C by 2050.

- Deforestation is linked to a rise in temperatures. The land surface temperature in Kedah (35% forest cover) was 2.4°C higher than Perak (49% forest cover) in 2017 (Jafar et al., 2020).

Ice is melting fast and sea levels rising

- Every ton of CO_2 emissions melts 32 square feet of Arctic ice (National Geographic, 2017b).
- In September 2015, the Arctic Sea ice extent was about 825,000 square miles smaller (a loss of about the size of Alaska and California combined) (National Geographic, 2017).
- As a result, sea levels could rise three feet (or more) by 2100 with adverse impacts on water resource and coastal habitats; destructive coastal erosion; flooding; and soil contamination (National Geographic, 2017).

…and sea level rise is reaching our shores

- Productive activities of about 436 million people who live within 100 kilometers of ASEAN's coasts will be adversely impacted (ASEAN, 2020).
- Sea level is expected to rise between 110mm to 210mm in Peninsular Malaysia, 210mm to 620mm in Sabah and 150mm to 220mm in Sarawak by 2050 (Ministry of Environment and Water, 2018).

Weather is wreaking havoc

- The occurrences of natural hazard disasters (excluding biological and technological hazards) have almost doubled since 1980 worldwide (UNODRR, 2019).
- Extraordinary heat wave killed at least 30,000 people in Europe in 2003 (UNISDR).
- U.S. Forest Service estimated wildfires will be twice as destructive in US by 2050 with approximately 20 million acres burnt a year (MarketWatch, 2018).
- In 2010, the Amazon rainforest experienced the second 100-year drought in 5 years. Combined with deforestation activities and fires, 55% of the Amazon could be destroyed by 2030 (WWF).
- A 1-in-20 year annual maximum 24 hour precipitation rate is likely to become a 1-in-5 to 1-in-15 year event by the end of the 21st century [global] (WMO, 2018).

…with more rain expected in Malaysia

- Average annual rainfall for Peninsular Malaysia is expected to go up between 7%-11% by 2050 (Ministry of Environment and Water, 2018).
- 9% of the land in Malaysia is at risk from flooding, affecting 4.8 million residents (National Disaster Management Agency, 2017).

Biodiversity is being disrupted

- Animals and plants are vanishing from their natural habitats that are now too hot
- In a 2016 survey, 47% of 976 species had vanished from areas they had previously occupied (Wiens, 2016).
- The loss of coral reefs will result in a disruption to fisheries and tourism.

Examples of Financial Impacts

- Estimated USD8 trillion in financial losses in 15 US cities due to sea level rise and more frequent extreme weather events (BlackRock, 2019).
- Loss in global private sector financial asset value due to direct and indirect impacts of more destructive floods, droughts and severe storms on portfolio growth and returns (NGFS, 2020):
  - USD4.2 trillion loss with 4°C warming
  - USD7 trillion loss with 5°C warming
  - USD13.8 trillion loss with 6°C warming
- In January 2019, Pacific Gas and Electricity declared bankruptcy after being hit by the most destructive and deadliest wildfires in California as the company was unable to pay the legal costs associated with the myriad of legal claims (NYT, 2019).
- A heatwave in Europe has resulted in low water levels on the River Rhine, the major shipping route for many European countries. The low water level had led to restrictions in industrial production due to higher transportation cost for the raw materials. (CNBC, 2019)
- Number of claims on property insurance in the Netherlands is estimated to increase by 131% in 2085 compared to the number in 2016 with 1.5°C - 3.5°C warming (NGFS, 2020).
- Insured losses in 2016 amounted to less than one-third of the approximately USD175 billion in total disaster-related losses, leaving a protection gap of USD121 billion. The global protection gap has widened by about 20% over the past 25 years (EESI, 2021; Swiss Re, 2016).
- Decline in demand for fossil fuel due to innovation-led cost reduction in renewable energy costs. Wind and solar photovoltaic is projected to meet 56% of world electricity demand in 2050 (70-80% in leading countries), with renewables and batteries estimated to capture 80% of the total USD15.1 trillion invested in new power capacity (BloombergNEF, New Energy Outlook 2020).
- The non-performing loan ratio of representative coal-fired power companies could exceed 20% by 2030 due to drop in clean energy costs resulting in downward pressure on the pricing of power assets; rise in carbon prices; decline in demand, and increase in funding costs for pollution and carbon intensive companies (Ma and Sun, 2020).
- Estimated 40% to 60% decrease in enterprise valuations EBITDA for major resource global companies (i.e. Shell, BP, Total and Statoil/Equinor) due to un-burnable fossil fuels (NGFS, 2020).
- ASEAN is expected to experience a loss of 6.7% of combined GDP losses arising from a 4.8°C scenario by 2100 (ASEAN).
- An estimated RM915 million is lost every year due to flooding in Malaysia (Raman et al., 2015).

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APPENDIX 2 RELEVANT NATIONAL POLICIES AND PLANS TO ADDRESS CLIMATE CHANGE, BIODIVERSITY, AND ENVIRONMENTAL ISSUES

The following is a list of policies and plans relevant to Malaysia's efforts in tackling climate change and environmental issues:

1. National Policy on Climate Change 2009 identifies 5 policy principles to ensure climate resilient development:
   - Development on a sustainable path;
   - Conservation of environment and natural resources;
   - Coordinated implementation;
   - Effective participation; and
   - Common but differentiated responsibilities.

   The policy also identifies areas important for the mobilization of financing and technical assistance, such as agriculture and food security, natural resources and environment (water, biodiversity, forestry, minerals, soil, coastal and marine and air), public health, transportation, infrastructure, waste management and disaster risk reduction.

2. The 11th Malaysia Plan pursued green growth for sustainability and resilience, focusing on:
   - Strengthening the enabling environment for green growth;
   - Adopting sustainable production and consumption;
   - Conserving natural resources; and
   - Strengthening resilience against climate change and natural disasters.

3. The 12th Malaysia Plan currently in development aims to accelerate the transition to a green and low carbon economy to support sustainable development.

4. Green Tech Masterplan 2030 focusing on 6 key sectors with high potential to facilitate green growth in the country namely energy, building, manufacturing, transport, water and waste, with the following targets:
   - Energy – reduction in electricity consumption (residential and commercial) of 10% and 15% by 2025 and 2030, respectively;
   - Transport – target of 85% of total industry volume for private vehicles to be EEV by 2020 (with a target reduction in CO_2 emissions of 199.7 ktCO_2e) and 100% by 2030;
   - Building – 550 green buildings (inclusive of green buildings certified by various agencies and organisations such as MyCREST, Green Building Index, GreenRE, etc.) by 2020 and 1,750 by 2030; and
   - Manufacturing – increase the percentage and number of green (including improved EE) manufacturing SMEs by 30% (10,200) and 50% (17,000) by 2025 and 2030 respectively.

5. National Land Public Transport Masterplan aims to drive regulatory and industry reform for the sector with a target to increase the public transport modal share for urban areas from 16% in 2011 to 40% in 2030.

6. National Energy Efficiency Action Plan (NEEAP) outlines the strategy to promote energy efficiency by ensuring productive use of energy and minimising waste in order to contribute to sustainable development and increased welfare and competitiveness.

7. Key reports with data on Malaysia's progress and projections:
   - Malaysia Third Biennial Update Report to the United Nations Framework Convention on Climate Change (UNFCCC) (2020)
   - Malaysia Third National Communication and Second Biennial Update Report to the United Nations Framework Convention on Climate Change (UNFCCC) (2018)

8. Other policies:
   - National Policy on Biological Diversity (2016 –2025)
   - Malaysia's Roadmap Towards Zero Single Use Plastics (2018–2030)
   - National Transport Policy (2019–2030)
   - National Environmental Policy (2002)
   - National Strategic Plan for Solid Waste Management (2005)
   - National Biofuel Policy (2006)
   - National Green Technology Policy (2009)
   - Renewable Energy Policy and Action Plan (2010)
   - Low Carbon Cities Framework (2011)
   - National Agro-food Policy (2011)
   - National Water Resources Policy (2012)

APPENDIX 3 EXAMPLES OF ACTIVITIES THAT GENERALLY MEET GP1

Energy Efficiency	
Real Estate (Commercial and Residential)	• Construction of new buildings and/or retrofit of existing buildings: ○ Buildings certified to an acceptable level under an internationally or domestically recognised green building certification scheme. ○ Buildings that achieve improvement in energy use and/or carbon emissions compared to baseline emissions.
Public Services and Utilities	• Improvement of heat efficiency of utilities such as waste heat recovery improvements for district power generation, cooling systems, boilers with energy efficient alternatives, retrofit with renewable energy power. • Retrofit of distribution systems, transmission lines or substations to reduce energy use and/or losses.
Energy Efficiency Technology	• Energy saving technology such as smart meters and lighting for public, commercial and domestic services (not including real estate). • Manufacture of components to enable energy efficiency.
Transportation	
Infrastructure (for public use)	Development and operation of urban mass transit systems: • Electric mass passenger vehicles (trains and buses). • Infrastructure upgrades for electrified rails, trains and buses • Infrastructure for low-carbon and efficient transport (e.g. charging stations for electric vehicles). • Non-motorised transport (enabling bicycle and pedestrian mobility). • Urban planning and development that leads to a reduction in the use of passenger cars e.g. developing car-free city areas, high-occupancy vehicle lanes, road pricing, parking management.
Freight transportation	• Vehicle, rail or boat fleet retrofit or replacement with technologies including electric or hydrogen technologies. • Development or improvement of railway transport to ensure a modal shift from road to rail. • Development or improvement of water transport to ensure a modal shift from road to waterways.

	• Fleet optimization and route management (e.g. eliminating backhauls and consolidating loads).
Technology	• Vehicle fleet energy efficiency technology and logistical software.

Green Technology / Manufacturing

Development, manufacturing and/or distribution of products or components designed to have a positive environmental impact in terms of reducing either carbon emissions, waste, energy use or water use and material use for circularity and/or adaptive re-use e.g. life cycle analysis.

- Smart grid and energy internet.
- Energy efficient retail/industrial appliances (e.g. energy efficient fridges, cookers).
- Low carbon transport vehicles, equipment and infrastructure, electric rail supply chain (related to electric, hydrogen, hybrid or alternative fuel vehicles).
- Energy storage equipment or solutions.
- Deployment of Carbon Capture and Utilization (CCU) or Carbon Capture and Storage (CCS) technologies. Note: CCS/CCU can be eligible in any sector/activity if it enables that primary activity to operate in compliance with the threshold - for example, steel, cement or electricity production.

Renewable Energy

Production, manufacturing, operation and maintenance of renewable energy sources/infrastructure:

- Solar generating facilities.
- Hydropower electricity generating facilities.
- Tidal or wave energy generating facilities.
- Geothermal electricity generating facilities.
- Production of zero carbon fuels e.g. hydrogen, ammonia, etc.
- Bioenergy producing biofuel, biomass, biogas including fuel preparation process facilities, pre-treatment facilities and bio refinery facilities for various purposes (e.g. heating, electricity production and transport).

Waste Management

- Waste minimisation, collection, management, recycling, re-use, processing, disposal (such as methane capture) infrastructure, technologies and solutions, such as:
  - Solid waste management (municipal waste management projects that capture or combust methane emissions).
  - Liquid waste management (waste management projects that capture or combust methane emissions).
  - Sewage water treatment plant (treatment of wastewater that reduces GHG emissions).

- Biological treatment facilities (anaerobic digestion facilities, composting facilities).
- Recycling and utilisation of industrial solid wastes, exhaust gas and effluent.

Agriculture, Forests and Land Conservation

- Avoidance of GHG emissions (e.g. livestock management, storage and processing of manure and management of permanent forests).
- Lowering emissions for each calorie or kilo of food produced.
- Maintaining or strengthening land carbon sinks, including:
  - Afforestation (non-forest to forest).
  - Reforestation (re-establishment of forest on land classified as forest).
  - Restoration or rehabilitation of forests, croplands, grasslands and wetlands.
  - Sustainable forest management.
  - Forest and peatland conservation.
- Regenerative agriculture (e.g. no till or conservation tillage).

Note: Based on LULUCF regulation, carbon stocks shall increase above the carbon baseline over a period of 20 years for afforestation and reforestation projects and shall increase over the rotation period for restoration projects, and be maintained or increased in the case of existing forest management and conservation forests.

APPENDIX 4 EXAMPLES OF ACTIVITIES THAT GENERALLY MEET GP2

Activities to increase own resilience and enable others to adapt are generally interrelated and could overlap, depending on the purpose and context within which the activity takes place.

	Measures to increase own resilience	Measures to enable others to adapt to climate change
Forestry	• Use of early warning systems or wildfire control measures (to reduce damages due to wildfires induced by heatwaves). • Use of regeneration material (species and ecotypes) less sensitive to strong wind or timely management of seedling stand and timely thinning (to reduce damage to forest stands from increased wind). • Adoption of sound forestry practices and use of endemic tree species that are less vulnerable to storms and fires. • Afforestation or restoration of former forest areas utilizing natural seed banks and existing plants. • Adopt sustainable forest management and sound harvesting techniques to reduce soil erosion and vulnerabilities to wildfires.	• Conservation of forestry (e.g. to prevent soil erosion which will damage agricultural production, and disrupt local settlements or water supplies) with the primary objective of supporting the adaptation of others.
Fisheries	• Adoption of sustainable aquaculture, such as fish farming in ponds (worsening availability of fish stocks in natural habitats due to temperature increase).	• Mapping changes in the range of fish species and monitoring of fish stocks to understand the impacts of climate change.

Agriculture	• Adoption of diversified agricultural production (e.g. growing a mix of different crops or different varieties of each crop). • Soil and water management to increase water availability in areas experiencing increased water stress.	• Research, development and commercialisation of drought-resistant crop varieties to increase crop yields.
Water Resources	• Increase of water storage capacity by building a dam[27], practicing aquifer storage and recovery[28], removing accumulated sediment in reservoirs or lowering water intake elevation. • Integrated planning and sound management of water resources (water supply, demand and quality). • Water conservation and rainwater harvesting in areas prone to water stress. • Improvement in drainage to cope with increased frequency/severity of floods arising from intense rainfall. • Deployment of early warning system as preemptive measure to reduce damage from flood (especially during monsoon season). • Building of flood barriers such as flood walls and	• Development and deployment of technology to treat and recycle wastewater, thus greatly reduce the use of new freshwater resources. • Design and development of flood early warning systems and flood defense systems.

[27] EIA must be conducted to ascertain the negative impact to the environment and community before the commissioning of a dam, with solutions in place to address these negative effects. The long term benefits must outweigh the costs to the environment and impacted communities.
[28] Aquifer Storage and Recovery ("ASR") is a method to increase water supply using subsurface reservoirs. It offers an important tool to increase freshwater storage at a nominal cost.

	seawalls to protect from future flooding.	
Construction	• Adapting buildings with capability to cope with future climate conditions and extreme weather events.	• Special-purpose building e.g. shelters, relief centers or safe buildings for evacuation from flooding.
Coastal Areas	• Consideration of sea-level rise in the design of a bridge. • Building of sea walls in low-lying islands to stop coastal erosion.	• Research on population exposure to sea level rise and related impacts. • Conservation of mangroves and coral reefs to protect coastal zones from weather-related catastrophes (storms and typhoons) and to preserve fish spawning grounds.
Health		• Development and deployment of heat waves early warning system to reduce associated illnesses and deaths. • Development or enhancement systems for monitoring drinking water, food and air quality (haze related risk), in areas affected by higher temperatures/forest burning, floods and rising sea-level. • Research on food waste data to facilitate the establishment of food waste strategies and baselines, and identify scalable solutions to transition to more sustainable food systems.

Information and Communication		• Development of technology for climate-vulnerable farmers to make informed decisions on production and sale of their crops. • Development of technology and information systems to enable national meteorological services to gather, analyze, and disseminate accurate weather information.
Transportation	• Design and construction of climate resilient/climate-proofed transport network.	• Research on technology to improve safety standards and design of rail asset to withstand adverse weather conditions. • Deployment of rail line detector to detect cracks along railway networks.

APPENDIX 5 EXAMPLES OF CERTIFICATION AND INDEPENDENT VERIFICATION

Sector	Certification and/or Independent Verification
General	• MS ISO 14001: 2015 – Environmental Management Systems* • MS 1722: 2011 and OHSAS 18001 – Occupational Safety and Health Management Systems* • ISO 50001 Energy Management Certification • EU Ecolabel • Cradle to Cradle
Climate	• ISO 14064: 2006 – Greenhouse gases • Science Based Targets Initiative • The Carbon Trust Standard • ISO 14067:2019 Greenhouse Gasses – Carbon Footprint of Products • PAS 2050:2011 – Specification for the assessment of the life cycle greenhouse gas emissions of good and services • PAS 2060 Standard for Carbon Neutrality • PAS 2080 Carbon Management in Infrastructure • GHG Protocol Corporate Accounting and Reporting Standard • Verified Carbon Standard • International Sustainability and Carbon Certification
Water	• AWS International Water Stewardship Standard Corporate context-based water targets
Agriculture	• Malaysian Standards Palm Oil* • Roundtable on Sustainable Palm Oil • BONSUCRO • Better Cotton Initiative • Global Organic Textile Standard • Common Code for the Coffee Community • Tropical Commodities Coalition for Sustainable Tea Coffee and Cocoa • Ethical Tea Partnership • World Cocoa Foundation • Rainforest Alliance • Roundtable on Sustainable Biomaterials • Sustainable Rice Platform • UTZ Certified • Internal Sustainability & Carbon Certification • Fairtrade Certified • Roundtable for Responsible Soy
Fisheries	• Marine Stewardship Council • Aquaculture Stewardship Council • Natural Capital Protocol (2016) • ISO 14008: Monetary valuation of environmental impacts and related environmental aspects (2019) • Value Balancing Alliance

Sector	Certification and/or Independent Verification
	• Fairtrade Fisheries Standard
Forestry	• Malaysian Timber Certification Scheme - Programme for The Endorsement of Forest Certification* • Forest Stewardship Council • Programme for the Endorsement of Forest Certification
Mining and Metals	• World Gold Council Conflict-free Gold Standard • Kimberley Process Certification Scheme • Aluminium Stewardship Initiative • Initiative for Responsible Mining Assurance • RJC Chain of Custody Certification
Infrastructure	• Sustainable INFRASTAR* • The Standard for Sustainable and Resilient Infrastructure • GRESB • BREEAM • USGBC LEED • CEEQUAL • Greenroads Certification • Hydropower Sustainability Assessment Protocol • Excellence in Design for Greater Efficiencies • Green Building Index*
Tourism	• Green Key • Green Globe • Travelife
Energy	• International Hydropower Association (IHA) Hydropower Sustainability Assessment Protocol (HSAP) • International Atomic Energy Agency (IAEA) Safety Standards and Nuclear Security Series
Industrial	• Fairtrade Certified • Responsible Care

* denotes national certification

Examples of certification/standards for investment instruments

Instrument	Certification/Standard
Sukuk	• Sustainable and Responsible Investment Sukuk Framework
Bond	• ASEAN Green Bond Standards • ASEAN Sustainability Bond Standards • Green Bond Principles (International Capital Markets Association) • Sustainability Bond Guidelines (International Capital Markets Association) • Climate Bonds Standards
Equities	• FTSE4Good Bursa Malaysia Index • MSCI Emerging Markets ESG Leaders Index