

Green and Inclusive TAXONOMY

Papua New Guinea

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Introduction

The Green and Inclusive Taxonomy of Papua New Guinea (hereafter referred to as the “taxonomy”) is designed for investors, lenders, and other financial sector participants to identify, track, monitor, and demonstrate – through quantitative metrics – the scope and volume of their green and inclusive financial flows, whether it is in the form of a loan, equity, guarantee, or some other financial instrument.

The term “green and inclusive finance” here refers to public and private funds earmarked to support the transition to a low carbon, inclusive, and climate resilient economy. One of the key steps to mobilizing green and inclusive finance at scale is a consistent, transparent, and practical definition of what constitutes a green and/or inclusive activity. A comprehensive list of such definitions is referred to as a green and inclusive **classification system** or **taxonomy**, and it is key to operationalizing the transition to a low carbon, inclusive, and climate resilient economy in accordance with the Paris Agreement.

The goal of PNG’s taxonomy, similar to other taxonomies being developed in other countries, is to provide companies, financial institutions, and policymakers with appropriate definitions of what economic activities and business practices can be considered environmentally sustainable by developing a nationally agreed classification framework of activities and practices that contribute to climate change mitigation, adaptation, resilience, pollution prevention, resource conservation, inclusiveness, and livelihood improvement.

Specific examples of the taxonomy’s uses include:

- Providing financial institutions, businesses, citizens, policy makers, and other stakeholders with a common understanding of and a system to identify, develop and finance inclusive and environmentally sustainable activities.
- Fostering credible and standardized Sustainability Disclosure Requirements and Mitigate the risk of “greenwashing”
- Boosting green and inclusive finance flows from various sources including the domestic private sector, international financial institutions, and foreign investors
- Tracking private sector investments and loans in green and inclusive projects, and measuring the impact contribution to PNG’s green and inclusive development and climate change related policies and targets.
- Minimizing the challenges in identifying and implementing a systematic evaluation method to assess whether economic activities and enterprises are promoting initiatives to reduce carbon emissions.
- Supporting PNG in meeting its climate mitigation and adaptation goals – for example, tracking the volume of climate finance that contributes to the achievement of its Nationally Determined Contribution (NDC).
- Providing the financial sector with clarity and certainty in selecting green and/or inclusive investments in line with international best practices and PNG’s national priorities, policies, and standards.
- Attracting additional foreign capital for climate-friendly and green/inclusive investment in PNG by increasing the credibility and transparency of green activities.
- Facilitating the reporting and management of environmental and social performance, thereby contributing to the reduction of financial, climate, and systemic risks.
- Supporting regulatory and supervisory oversight of the financial sector.
- Reducing the costs associated with labelling and issuing a green financial instrument.

Development of the Taxonomy

The taxonomy’s development has been overseen by a Steering Committee and supported by a Taxonomy Working Group, a multi-representative stakeholder group drawing from the national government, financial sector, NGOs, and businesses, with the Global Green Growth Institute (GGGI) and the Centre for Excellence in Financial Inclusion (CEFI)

jointly serving as the secretariat.. Support and funding for the taxonomy's development was provided by New Zealand's Ministry of Foreign Affairs and Trade. Extensive stakeholder consultations and interviews were conducted between October 2021 and June 2022. A draft was released in August 2022 for public comments.

The taxonomy's development was guided by following six objectives:

- **Climate change mitigation**
- **Climate change adaptation and resilience**
- **Sustainable use and protection of water and marine resources**
- **Pollution prevention and control**
- **Conservation and resource efficiency**
- **Protection and recovery of biodiversity and ecosystems**

For an economic activity to be considered as environmentally sustainable, it must comply with all four of the following criteria:

- **Substantially contributes to one or more environmental objectives**
- **Does not significantly harm (DNSH) any environmental objective**
- **Complies with minimum safeguards based on certain human rights standards**
- **Complies with the technical screening criteria (TSC), which are the detailed conditions for the first two limbs above.**

The following principles were also considered and followed while drafting the IGFP:

Principle 1: Contribute to national policies and targets

The taxonomy should contribute to the key environmental targets included in PNG's green development and climate change related policies, strategies, programs. The taxonomy should respect PNG's green development priorities.

Principle 2: Address and make significant contribution(s) to addressing environmental challenges and promoting inclusive growth

PNG's key environmental and climate risk challenges should be addressed while ensuring the inclusion of marginalized groups in the country's economic growth.

Principle 3: Cover priority economic sectors

The taxonomy should cover the identified priority NAP sectors and contribute to the transition of key economic sectors into sustainable ones.

Principle 4: Align with international standards and good practices

The taxonomy should reference and align with compatible international standards and practices.

Principle 5: Comply with ESG standards

The taxonomy must comply with minimum international environmental, social, governance, and risk management regulations and standards.

Principle 6: Iterative, Dynamic and Continuous review and development

The taxonomy will require continuous review and updates based on policy shifts, scientific developments, technological changes, and new industry needs.

Next Steps

The taxonomy is intended to be a living document to be updated and expanded over time through the support and governance process offered by a Green Finance Centre, which will be established in the second half of 2022. All stakeholders are encouraged to apply the taxonomy to determine which activities would be eligible or which

activities should be added and continue to provide comments even as further refinements and advances take place. Most importantly, the Green Finance Centre will convene experts to support the development of science based technical screening criteria and thresholds that will assess whether an activity meets the taxonomy's objectives. For each of the activities identified in the taxonomy, technical screening criteria that include metrics, thresholds, or specific requirements will be developed.

The Screening Criteria will be based on local policies, benchmarks, and international standards such as the following:

- International Platform on Sustainable Finance's (IPSF) Common Ground Taxonomy - Climate Change Mitigation (2021)
- Climate Bonds Initiative – Climate Bonds Taxonomy Screening Indicators (2021)
- European Bank for Reconstruction and Development's (EBRD) Green Technology Selector
- PNG's updated NDCs (2021)
- EU Taxonomy - Climate Delegated Act (2021)
- China Green Bond Endorsed Project Catalogue (2021)
- PNG's National Adaptation Plan (NAP) (2022)
- International Finance Corporation's (IFC) Climate Smart Agriculture Financing Opportunities (2021)
- South African Green Finance Taxonomy (March 2022)
- Green Bond Endorsed Project Catalogue (2021)
- Colombia Green Taxonomy (draft 2021)
- IFC Guidelines for Blue Finance (2022)

In early 2023, the Green Finance Centre will provide a detailed taxonomy user guide.

With the support of the Green Finance Centre, the Bank of Papua New Guinea (BPNG) will provide oversight, governance, and inform the development of future regulatory instruments and the updating of the taxonomy. BPNG's regulatory guidance will consider emerging international best practices and approaches, including work led by the International Sustainability Standards Board, to deliver a comprehensive global baseline for sustainability-related disclosure standards. The disclosure standards will provide investors and other financial market participants with information about companies' sustainability-related risks and help them make informed decisions.

1. Agriculture, Sustainable Land Use & Marine Resources (PNG Priority Sector)

Macro Sector	Sub-Sector	Activity/Technologies Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
Agriculture, Forestry, Land-use & Marine Resources	1.1 Agriculture	<p>1.1.1 Regenerative Agriculture and Improvement of soil health</p> <p>Transition from temporary crops or pastures to agroforestry systems (e.g., cocoa, fruit trees or forestry) and agro silvo pastoral system.</p> <ul style="list-style-type: none"> Example: Permaculture, agroecology, agroforestry, restoration ecology, keyline design, and holistic management <p>Replace synthetic fertilizers with fertilizers prepared from organic material, such as harvest waste, pruning, manure, grass, etc.</p> <p>Introduce green manures, such as beans, crotalaria, canavalia, among others</p> <p><i>See MEBA Activities for Micro Clients</i></p> <p>https://unepmeba.org/wp-content/uploads/2020/01/Microfinance_for-Ecosystem_based_Adaptation_EN.pdf</p>	<p><i>Detailed technical screening criteria TBD</i></p> <ul style="list-style-type: none"> <i>Project length of at least five years</i> <i>Reduced tillage</i> <i>Avoided erosion</i> <i>No open burning</i> <p><i>PNGDAL/ NARI</i></p>
		<p>1.1.2 Reduction in energy use in traction</p> <p>Example: efficient tillage, irrigation, and other agricultural processes</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>20% reduction in Energy use from Baselines</i></p> <p><i>(need to set baselines for PNG by technical experts)</i></p> <p><i>Catalog of green equipment and standardized products, technologies, material, equipment</i></p> <p><i>PNGDAL/ NARI</i></p>

	<p>1.1.3 Agricultural projects that improve existing carbon pools</p> <p>Change land use towards systems with greater carbon sequestration (such as agroforestry systems), which have better soil protection and are consistent with their vocation. Conserve water resources.</p> <ul style="list-style-type: none"> • Example: Rangeland management, collection and use of bagasse, rice husks, or other agricultural waste, reduced tillage techniques that increase carbon contents of soil, rehabilitation of degraded lands, peatland restoration, etc. 	<p><i>Detailed technical screening criteria TBD</i></p> <ul style="list-style-type: none"> • <i>Project length of at least five years</i> • <i>Reduced tillage</i> • <i>Avoided erosion</i> • <i>No open burning</i> <p><i>Evidence that soil carbon sequestration is likely to be maintained for 20 years or more (secure land rights, low threat of conversion, contractual commitments) or demonstrate 50% higher level of sequestration</i></p> <p><i>PNGDAL/ NARI</i></p>
	<p>1.1.4 Reduction of non-CO2 GHG emissions from agricultural practices, technologies, and fertilizer types</p> <p>Example: Paddy rice production, reduction in fertilizer use, etc.</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>PNGDAL/ NARI</i></p>
	<p>1.1.5 Organic Farming and Certified Agriculture Projects</p> <p>Agriculture projects utilizing international certification schemes which have climate change mitigation components.</p> <p>This activity includes:</p> <ul style="list-style-type: none"> • Manufacture of fresh liquid milk, pasteurized, sterilized, homogenized and/or ultra-heat treated • Manufacture of milk-based drinks • Manufacture of cream from fresh liquid milk, pasteurized, sterilized, homogenized • Manufacture of dried or concentrated milk whether or not sweetened • Manufacture of milk or cream in solid form • Manufacture of butter • Manufacture of yoghurt • Manufacture of cheese and curd • Manufacture of whey • Manufacture of casein or lactose • Manufacture of ice cream and other edible ice such as sorbet 	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Organic Certification</i></p> <p><i>Eligible certifications schemes include:</i></p> <ul style="list-style-type: none"> • <i>Climate Bonds certification (bond certification)</i> • <i>Crop certification</i> • <i>Global GAP</i> • <i>Roundtable on Sustainable Biomaterials Certificate</i> <p><i>PNGDAL/ NARI</i></p>

		<p>Projects enhancing food security</p> <ul style="list-style-type: none"> • Example: Pest management <p>Conversion of grassland to cropland (Oil Palm Standards used by NBPOL)</p>	<p><i>Eligibility or detailed technical screening criteria TBD</i></p>
	1.2 Afforestation and reforestation, biosphere conservation	<p>1.2.1 Afforestation (plantations) and agroforestry on non-forested land</p> <p>Establishment of forest through planting, deliberate seeding or natural regeneration on land that, until then, was under a different land use or not used. Afforestation implies a transformation of land use from non-forest to forest, in accordance with the Food and Agriculture Organization of the United Nations (FAO) definition of afforestation, where forest means a land matching the forest definition as set out in national law, or where not available, is in accordance with the FAO definition of forest. Afforestation may cover past afforestation as long as it takes place during the period between the planting of the trees and the time when the land use is recognized as a forest</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Apply Climate Bonds Criteria:</i> https://www.climatebonds.net/standard/forestry <i>or</i> <i>the local criteria can be applied for:</i></p> <ul style="list-style-type: none"> • <i>Afforestation plan and subsequent forest management plan or equivalent instrument</i> • <i>Climate benefit analysis</i> • <i>Guarantee of permanence</i> • <i>Audit</i> • <i>Group assessment</i> <p><i>Certificate of Approval by PNGDAL</i></p> <p><i>REDD+</i> <i>PNGDAL/ NARI</i></p>
		<p>1.2.2 Reforestation on previously forested land</p> <p>Rehabilitation and restoration of forests as defined by PNG law. Where PNG law does not contain such a definition, rehabilitation and restoration corresponds to a definition with broad agreement in the peer-reviewed scientific literature for specific countries or a definition in line with the FAO concept of forest restoration or a definition in line with one of the definitions of ecological restoration applied to forest, or forest rehabilitation under the Convention on Biological Diversity. The economic activities in this category also include forest activities in line with the FAO definition of “reforestation” and “naturally regenerating forest” after an extreme event, where extreme event is defined by national law, and where national law does not contain such a definition, is in line with the IPCC definition of extreme weather event; or after a wildfire, where wildfire is defined by national law, and where national law does not contain such a definition, as defined in the European Glossary for wildfires and forest fires. The economic activities in this category imply no change of land use and occurs on degraded land matching the forest definition as set out in national law, or where not available, in accordance with the FAO definition of forest.</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Apply Climate Bonds Criteria:</i> https://www.climatebonds.net/standard/forestry <i>or</i> <i>the local criteria can be applied for:</i></p> <ul style="list-style-type: none"> • <i>Afforestation plan and subsequent forest management plan or equivalent instrument</i> • <i>Climate benefit analysis</i> • <i>Guarantee of permanence</i> • <i>Audit</i> • <i>Group assessment</i> <p><i>PNGDAL/ NARI</i></p>
		<p>1.2.3 Biosphere conservation and restoration projects (including payments for ecosystem services) seeking to reduce emissions from the deforestation or degradation of ecosystems</p>	<p><i>PNGDAL/ NARI</i></p>

		<p>Support or services to communities to enter carbon markets</p> <p>Example: via REDD+ program</p>	<p><i>Eligibility or detailed technical screening criteria TBD</i></p>
	1.3 Forest and Logging	<p>Sustainable forest management activities that increase carbon stocks or reduce the impact of forestry activities</p> <p>Forest management as defined by national law. Where national law does not contain such a definition, forest management corresponds to any economic activity resulting from a system applicable to a forest that influences the ecological, economic or social functions of the forest. Forest management assumes no change in land use and occurs on land matching the definition of forest as set out in national law, or (when such a definition is not available) the FAO definition of forest.</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Apply Climate Bonds Criteria:</i> https://www.climatebonds.net/standard/forestry <i>or</i> <i>the local criteria can be applied for:</i></p> <ul style="list-style-type: none"> • <i>Afforestation plan and subsequent forest management plan or equivalent instrument</i> • <i>Climate benefit analysis</i> • <i>Guarantee of permanence</i> • <i>Audit</i> • <i>Group assessment</i> <p><i>PNGDAL/ NARI</i></p>
		<p>Conservation forestry</p> <p>Forest management activities with the objective of preserving one or more habitats or species.</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>No change in land category and occurs on land matching the forest definition as set out in national law, or (when such a definition is not available) in accordance with the FAO definition of forest.</i></p> <p><i>PNGDAL/ NARI</i></p>
		<p>Plantations and natural forests</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Certificate of Approval</i></p> <p><i>No conversion from natural landscape and the health of the forest is well managed</i> <i>(Sustainable Forestry Certificate) – align to ADB/ IFC safeguards</i></p> <p><i>PNGFA</i></p>
		<p>Machinery and equipment to manage and cultivate eligible forested land</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>PNGFA</i></p> <p><i>Eligible if the forest and timber production adheres with the above</i></p>

	Management, information systems, and other technologies associated with above	<i>Detailed technical screening criteria TBD</i>
1.4 Pulp & paper	Production facilities incorporating efficient pulping process, bio-refineries, use of recyclates	<i>Detailed technical screening criteria TBD</i>
1.5 Livestock	Livestock projects that reduce methane or other GHG emissions Example: Manure management with biodigesters and improved feeding practices to reduce methane emissions, Rearing livestock and interventions to enhance adaptation and resilience	<i>Detailed technical screening criteria TBD</i> <i>Demonstration of significant carbon sequestration, reduction in emissions, or compatibility with 'low carbon agriculture' targets and/or adaptation and resilience activities</i> <i>PNGDAL</i>
	Green animal husbandry Green animal husbandry projects carried out to promote the efficiency of animal husbandry resources and environmental protection. For example: <ul style="list-style-type: none"> • Harmless treatment systems for sick and dead livestock and poultry • Facility construction for storage, treatment, and utilization of waste from livestock and poultry breeding • Construction of environment-friendly breeding facilities, such as elevated beds • Construction of agricultural industrial parks with a circular system between breeding, biogas, planting, and processing 	<i>Detailed technical screening criteria TBD</i> <i>Meet local certification scheme that has ecological conservation and/or resource efficiency components</i> <i>PNGDAL/ NARI</i>
	Construct physical structures and install equipment to protect livestock against heat stress Construct physical structures and install equipment to protect livestock against heat stress (e.g., adequate cooling, air flow, evaporative systems, water misting and ventilation); elevated livestock shelters (e.g. raised foundations); protection of livestock against heat stress (e.g. shade screens or shade cloth structures).	<i>Direct eligibility</i>
1.6 Crops	Resilient Crops Agricultural land used for the production of crops, agroforestry and silvopastoral systems	<i>Eligible crops determined by Agency</i> <i>PNGDAL/ NARI</i>
	Other agricultural practices: Introduction of polycultures or associated crops in permanent crops Introducing polycultures or crops associated with compatible species (preferably native timber or fruit trees) protects the soil, increases carbon and nitrogen fixation, diversifies production and increases resilience to climate variability.	<i>Direct eligibility</i>
1.7 Infrastructure	Machinery and equipment to manage and cultivate eligible land or livestock	<i>Eligible land determined by AGENCY</i> <i>Eligible if the agricultural production adheres with the above</i>

			PNGDAL/ NARI
		Other agricultural practices: Implementation of clean energy and energy efficiency measure (May be listed under RE or EE)	<i>Direct eligibility for renewable energy and methane gas. Fuel saving subject to % criteria.</i>
		Install equipment to save energy and take advantage of its renewable sources, including methane gas and solar energy. Equipment maintenance and improving fuel saving routines.	PNGDAL/ NARI
		Management, information systems and other technologies associated to above	
		Drip, flood and pivot irrigation systems	<i>Direct eligibility</i>
	Biodigesters		<i>Direct eligibility</i>
	Incorporate biodigesters (organic fertilizer and methane). Biogas can be used as fuel in kitchens, for heating and lighting, or to power an engine that generates electricity. There is also the fertilizer called biol.		
1.8 Natural Ecosystem Protection and Restoration	Land remediation and clean up		<i>Detailed technical screening criteria TBD</i> <i>Habitat is appropriate for the location and is maintained in good health</i> CEPA/CCDA
	Natural ecosystem land as designated by AGENCY (managed and unmanaged)		<i>Detailed technical screening criteria TBD</i> <i>Determined by Agency</i>
	Machinery and equipment to manage eligible ecosystems		<i>Detailed technical screening criteria TBD</i> <i>Eligible if the related land is in compliance with the above</i>
	Management and information systems and other technologies to manage eligible ecosystems		<i>Detailed technical screening criteria TBD</i>
1.9 Eco-Tourism	Products and services promoting eco-tourism development		<i>Detailed technical screening criteria TBD</i> <i>Demonstration that project is targeted at ecological restoration and protection, community-based tourism, protection and development of national parks and geological parks, protection of natural heritage and/or specially protected areas</i> PNGTPA

		Sustainable hotel & camp management	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>In compliance with local or nationally recognized sustainable hospitality industry standards</i></p>
	2.0 Fisheries	Sustainable wild fisheries and farmed fish	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Must hold certification for sustainable management</i> <i>MSC Fisheries Standard Certification - RINA.org</i></p> <p><i>PNG NFA</i></p>
	2.1 Fisheries Infrastructure	Machinery and equipment to manage and harvest in fisheries and fish farms Example: Fishing vessels	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>PNG NFA</i></p> <p><i>Eligible if the fishery or aquaculture operation adheres with the above</i> <i>[types of fish and risk profile of what is overfished]</i></p>
		On-shore and off-shore fish processing and storage facilities connected to eligible fisheries and fish farms	<i>Detailed technical screening criteria TBD</i>
		Management, information systems and other technologies associated with above Example: Application of information systems, technology, and instruments deployed for measuring, tracking, and reporting physical and chemical indicators of a water body to achieve sustainable fishery and aquaculture management, water-related ecosystem restoration, and disaster resilience. These activities may include systems with drones, autonomous sailing vessels, autonomous underwater vehicles, and ocean buoys, among other technologies.	<i>Direct eligibility</i>
2.2 Supply chain	Input supply systems for seed production, distribution, and access for eligible crops	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Facility is sustainable managed and certified as such</i></p> <p><i>PNG NFA</i></p>	
	Primary processing and storage facilities for eligible agricultural produce	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Eligible if agricultural produce complies with relevant criteria</i></p>	
	Primary processing and storage facilities for eligible forestry produce	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Eligible if forest produce complies with relevant criteria</i></p>	

		Primary processing facilities and storage for eligible fisheries and aquaculture activities	<i>Detailed technical screening criteria TBD</i> <i>Eligible if fish produce complies with relevant criteria</i>
	2.3 Conservation	Terrestrial and aquatic biodiversity conservation;	
	2.4 Research and Development	<p>Research and development and application of green prevention/ control products</p> <p>Research, development, promotion, and commercial application of green prevention/control products including but not limited to:</p> <ul style="list-style-type: none"> • Research, development, promotion, and commercial application of green prevention/control products such as green efficient functional fertilizers, biological fertilizers, new soil conditioners, low-risk pesticides, pesticide application agents, and physical and chemical inducements • Research, development, promotion, and commercial application of emerging products (such as green efficient feed additives, low-toxicity and low drug-resistance veterinary drugs, and efficient and safe vaccines, etc.) 	<i>Detailed technical screening criteria TBD</i>

2. Renewable Energy (PNG Priority Sector)

Macro Sector	Sub-Sector	Activity/Technologies Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
Renewable Energy	Electricity Generation	On-Shore Wind power	<i>Meeting licensing requirements for grid connection and Do No Significant Harm to Environment – More detailed eligibility criteria TBD</i>
		Solar power (concentrated solar power, photovoltaic power)	<i>Meeting licensing requirements for grid connection and Do No Significant Harm to Environment – More detailed eligibility criteria TBD</i> <i>Facilities shall have no more than 15% of electricity generated from non-renewable sources except in situations where existing thermal generation is being replaced by renewable energy generation</i> <i>PNG NEA/ PNG Power Ltd</i>
		Pico Solar and attached devices	<i>Direct eligibility</i>
		Geothermal power Example: Facilities for electricity generation and thermal applications of geothermal power in all sectors, geothermal heat pumps for space and district heating	<i>Meeting licensing requirements for grid connection and Do No Significant Harm to Environment – More detailed eligibility criteria TBD</i> <i>Direct emissions less than 100gCO₂/kWh only if net emission reductions can be demonstrated</i>
		Biomass or biogas power station	<i>Meeting licensing requirements for grid connection and Do No Significant Harm to Environment – More detailed eligibility criteria TBD</i> <i>Emissions of electricity generated must be lower than 100gCO₂/kWh</i> <i>and</i> <i>Biofuel must be sourced from a sustainable feedstock (the only timber feedstock allowed is waste wood) only if it results in net emission reductions, taking into account production, processing and transportation</i>

	<p>Hydropower Plants</p> <p>Example: Hydro power electricity generation facilities, including run of river, small-hydro with or without storage, impoundment, pumped hydro power plant</p>	<p><i>Meeting licensing requirements for grid connection and Do No Significant Harm to Environment – More detailed eligibility criteria TBD</i></p> <p><i>Only if net emission reductions can be demonstrated In operation before 2020 power density > 5W/m²; or GHG emissions intensity of electricity generated < 100gCO₂e/kWh. Commencing operation in 2020 or after: power density >10W/m²; or GHG emissions intensity <50g CO₂e/kWh AND</i></p> <p><i>Must perform an assessment, based on recognized best practice guidelines for environmental and social risks and incorporate measures to address risks</i></p> <p><i>Only for pumped storage: facility will not be charged with carbon intensive energy OR facility is contributing to a grid which has at least 20% share of intermittent renewables</i></p> <p><i>PNG NEA/ PNG Power Ltd</i></p>	
	<p>Micro-Hydro installations</p>	<p><i>Direct Eligibility for Off-Grid project and Do No Significant Harm to Environment Assessment</i></p>	
	<p>Offshore wind farms</p>	<p><i>Meeting licensing requirements for grid connection and Do No Significant Harm to Environment – More detailed eligibility criteria TBD</i></p> <p><i>Fossil fuel back up can only be used for restart capability and monitoring, operating or resilience measures in the event of no power in the system</i></p>	
	<p>Offshore solar farms</p>		
	<p>Tidal and wave energy generation facilities</p>		
	<p>Other marine electricity generation and ocean power facilities using ocean thermals, salinity, gradients, wave, tidal, ocean currents, salt gradient, etc.</p>		
	<p>Heating or cooling facilities using ocean thermals</p>		<p><i>Must achieve an 80% reduction in gCO₂e/kWh compared to fossil fuel alternative</i></p>
	<p>Solar water heating and other thermal applications of solar power in all sectors</p>		<p><i>Do No Significant Harm to Environment – More detailed eligibility criteria TBD</i></p>
	Heat production or other renewable energy application	<p>Thermal applications of geothermal power in all sectors</p>	<p><i>PNG NEA/ PNG Power Ltd</i></p>
		<p>Wind-driven pumping systems or similar applications</p>	
<p>Thermal applications of sustainably produced bioenergy in all sectors</p>			

	Measures to facilitate integration of renewable energy into grids	<p>New, expanded, and improved transmission systems</p> <p>Examples:</p> <ul style="list-style-type: none"> • Overhead lines (conductors and insulators) and pylons • Transformers, reactors, and substations • Underground cables • Circuit breakers and switchgear • Sub-stations, buildings, fences and busbars • Fuses, circuit breakers, disconnectors, reactors, capacitors, transformers, voltage regulators and switchgear 	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Is a dedicated connection to a power production plant eligible under one of the climate bonds sector criteria (e.g. Solar)</i></p> <p><i>Is a dedicated connection to a power production plant operating under the low carbon power threshold (100g CO2/kWh)</i></p> <p><i>The infrastructure is located on a system with a grid factor at or below 100 g CO2/kWh</i></p> <p><i>The infrastructure is located on a system for which at least 67% of its added generation capacity in the last 5 years falls below the low carbon power threshold</i></p> <p><i>PNG NEA/ PNG Power Ltd</i></p>
		Storage systems (battery, mechanical, pumped storage) that facilitate integration of renewables, or increase renewable energy	<i>Detailed technical screening criteria TBD</i>
		New information and communication technology, smart-grid and mini-grid	<i>Detailed technical screening criteria TBD</i>
Lower Carbon and Efficient Energy Generation	Retrofits	Retrofit of transmission lines or substations and/or distribution systems to reduce energy use and/or technical losses including improving grid stability/reliability	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Minimum 80% pollution reduction compared to fossil fuel baseline.</i></p> <p><i>In case of capacity expansion, only the portion of the investment that is reducing existing losses is included</i></p> <p><i>PNG NEA/ PNG Power Ltd</i></p>
	Power plant Improvements	Thermal power plant retrofit to fuel switch from a more GHG-intensive fuel to a different and less GHG-intensive fuel type	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Does not qualify for New Zealand Funding, which prohibits any investment in fossil fuels</i></p> <p><i>PNG NEA/ PNG Power Ltd</i></p>
		Conversion of existing fossil-fuel based power plant to co-generation technologies that generate electricity in addition to providing heating/cooling	<i>PNG NEA/ PNG Power Ltd</i>
		Energy efficiency improvement in existing thermal power plant	<i>Direct eligibility</i>
		Renewable energy power plant retrofits	<i>Direct eligibility</i>
Bio-Fuel - Production of biofuels, including biodiesel and	Facilities producing liquid biofuel, solid and gaseous biomass for heating and cogeneration	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>80% GHG emission reduction compared to fossil fuel baseline</i></p>	

	bioethanol	Facilities producing liquid biofuel, solid and gaseous biomass for electricity production	<i>and Biofuel must be sourced from a sustainable feedstock (the only timber feedstock allowed is waste wood)</i>
		Facilities producing biofuel for transport Example: Aviation Fuel <i>delivering substantial reduction in gCO₂e/passenger or ton/km</i>	<i>≥50% Biomass based products produced for energy use Department of Petroleum</i>
		Biofuel preparation process facilities, pretreatment facilities and biorefinery facilities	<i>Detailed technical screening criteria TBD In transport sector, fuel delivering substantial reduction in gCO₂e/passenger or ton/km</i>

3. Energy Efficiency (Australian or New Zealand Standards EE Standards may be used)

Macro Sector	Sub-Sector	Activity/Technologies Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
Energy Efficiency	Energy efficiency in industry in existing facilities	Energy efficiency improvements through the installation of more efficient equipment, changes in processes, reduction of heat losses and/or increased waste heat recovery and/or resource efficiency	<i>Baselines and detailed technical screening criteria TBD</i>
		Installation of co-generation plants that generate electricity in addition to providing heating/cooling	<i>Minimum 20% GHG emission reduction or Energy consumption reduction from baseline</i>
		More efficient facility replacement of an older (retired) facility with a more efficient one	<i>Upgrades to coal, oil, diesel, and gas facilities/technologies is excluded PNG NEA/ PNG Power Ltd</i>
	Energy efficiency improvements in existing commercial, public and residential buildings	Energy efficiency improvement in temperature control, lighting, appliances, and equipment	<i>Baselines and detailed technical screening criteria TBD</i>
		Substitution of existing heating/cooling systems for buildings by cogeneration plants that generate electricity in addition to providing heating/cooling	<i>Minimum 20% GHG emission reduction or energy consumption reduction from baseline</i>
		Retrofit of existing buildings: architectural or building changes that enable reduction of energy consumption	<i>Green product, equipment, and material catalog to be developed PNG NEA/ PNG Power Ltd</i>
	Energy efficiency improvements in the utility sector and public services	Energy efficiency improvements in utilities and public services through the installation of more efficient lighting or equipment	
		Rehabilitation of district heating systems	
		Utility heat loss reduction and/or increased waste heat recovery	
		Improvement in utility scale energy efficiency through efficient energy use, and loss reduction, or resource efficiency improvements	
	Energy efficiency in new commercial, public, and residential buildings	Use of highly efficient architectural designs, energy efficient appliances and equipment, and building techniques that reduce building energy consumption, exceed available standards, and comply with high energy efficiency certification or rating schemes	<i>Baselines and detailed technical screening criteria TBD Green product catalog to be developed PNG NEA/ PNG Power Ltd/ National Housing Commission PNG NEA/ PNG Power Ltd/ Department of Transport</i>
	Energy audits	Energy audits to energy end-users, including industries, buildings, and transport systems	<i>Direct eligibility</i>

	Supply Chain	Support to importers of energy efficient products, equipment and materials	<i>TBD and based on EE approved product catalog or energy labels</i>
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4. Clean Transport

Macro Sector	Sub-Sector	Activity/Technologies Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
Private Passenger Transport	Passenger Vehicles	Electric passenger vehicle	<i>Zero Tailpipe Emissions</i>
		Hydrogen passenger vehicle	<i>Department of Transport/ Local Car Sale Dealers (Boroko/Ela Motors)</i>
		Non-motorized transport (bicycles and pedestrian mobility)	
		Other passenger vehicles, e.g. hybrid vehicles	<i>Vehicle meets universal gCO₂/p-km (passenger per kilometer) threshold</i>
Public Passenger Transport	Busses	Buses with no direct emissions (electric or hydrogen)	<i>Zero Tailpipe Emissions</i> <i>Department of Transport/ Local Car Sale Dealers</i>
	Trains	Rolling stock and vehicles for electrified public transport, such as electrified rail, trams, trolleybuses and cable cars	<i>Passenger transport system meets universal gCO₂/p-km (passenger-kilometer) threshold</i>
		Fossil fuel or hybrid vehicles for public transport	<i>Vehicle meets universal gCO₂/p-km (passenger- kilometer) threshold</i>
Rail Freight	Trains	Rolling stock for electrified freight rail	<i>Fossil fuel freight must not be more than 25% of the freight transported (in tonne/km)</i>
		Rolling stock for non-electrified freight rail	<i>Fossil fuel freight must not be more than 25% of the freight transported (in tonne/ km)</i> <i>Transport meets universal gCO₂/t-km (tonne-kilometre) threshold</i>
		All infrastructure for electrified freight rail	<i>Eligible if the associated rail is eligible</i>
Road Freight	Lorries and Trucks	Vehicles with no direct emissions (electric or hydrogen)	<i>Zero Tailpipe Emissions</i> <i>Department of Transport/ Local Car Sale Dealers</i>
Shipping	Shipping Vessels	Cargo ships	<i>Detailed technical screening criteria TBD</i>
		Zero-Emissions vessels	

MISCELLANEOUS VEHICLES		<p>Passenger ships</p> <p>Example: Cruise ships or ferries</p>	<p><i>Use of low GHG fuel (e.g. hydrogen, ammonia, electric, high % of biofuel), delivering required emissions intensity thresholds gCO₂e/ton/km</i></p> <p><i>Department of Transport/ National Maritime Safety Authority</i></p>
	Vehicles	<p>Zero direct emissions miscellaneous vehicles such as waste collection vehicles or construction vehicles</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Must deliver substantial GHG emissions savings on either a passenger/km or a ton/km basis</i></p> <p><i>Eligible if the transport mode supported is eligible according to one of the criteria above</i></p> <p><i>Department of Transport</i></p>
	Urban transport modal change	<p>Urban mass transit</p>	<p><i>Detailed technical screening criteria TBD</i></p>
Cross Cutting Transport	Infrastructure for low carbon transport	<p>Charging stations and other infrastructure for electric vehicles or hydrogen or alternative fuel infrastructure (when separate from fossil fuel filling stations and garages) including dedicated infrastructure for electrified public transport</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Must deliver substantial GHG emissions savings on either a passenger/km or a ton/ km basis</i></p> <p><i>Eligible if the transport mode supported is eligible according to one of the criteria above</i></p> <p><i>Department of Transport/ DPLGA/ NCD Commission</i></p>
	ICT	<p>ICT that improves asset utilization, flow and modal shift, regardless of transport mode (public transport information, car-sharing schemes, smart cards, road charging systems, etc.)</p>	<p><i>Detailed technical screening criteria TBD</i></p>
	Transport oriented urban development	<p>Integration of transport and urban development planning (dense development, multiple land-use, walking communities, transit connectivity, etc.), leading to a reduction in the use of passenger cars</p> <p>Example: Public walking and cycling infrastructure and cycling schemes, bus rapid transit systems</p>	<p><i>Detailed technical screening criteria TBD</i></p>
		<p>Transport and travel demand management measures dedicated to reducing pollutant emissions, including GHG emissions (e.g., high-occupancy vehicle lanes, congestion charging/road pricing, parking management, restriction or auctioning of license plates, car-free city areas, low-emission zones)</p>	<p><i>Detailed technical screening criteria TBD</i></p>
	Inter-urban transport	<p>Railway transport ensuring a modal shift of freight and/or passenger transport from road to rail (improvement of existing lines or construction of new lines)</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Department of Transport/ DPLGA/ NCD Commission</i></p>
<p>Waterways transport ensuring a modal shift of freight and/or passenger transport from road or air to</p>		<p><i>Detailed technical screening criteria TBD</i></p>	

		waterways (improvement of existing infrastructure or construction of new infrastructure)	
	Intermodal Facilities and Systems	Intermodal freight facilities	<i>Detailed technical screening criteria TBD</i>
		Terminals to improve journey times	
		Smart freight logistics	
		Multi-modal logistics hubs	

5. Green Buildings & Urban Development

Macro Sector	Sub-Sector	Activity/Technologies Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
Buildings	New Commercial buildings	New commercial buildings, including offices, hotels, retail buildings, public buildings, educational buildings, healthcare buildings etc.	<i>Detailed technical screening criteria TBD</i>
	New Residential Buildings	New private dwellings	<i>An emissions footprint in the top 15% of emissions performance in the local market</i>
		Multifamily residential buildings	<i>OR</i> <i>A substantial reduction in gCO2/m2 because of upgrade or retrofit</i> <i>Meet regional, national or internationally recognized standards, codes, or certifications. – BREEAM, LEED, World Green Building Council or the New Zealand Green Building Council or Green Building Index of Malaysia Green Building Index</i> <i>Department of Lands & Physical Planning/ NCDC/ DPLGA/ National Housing Commission</i>
		Implementation of climate friendly refrigerants	<i>Direct eligibility</i>
	Other building types	Data centers	<i>Detailed technical screening criteria TBD</i>
		Stations and related building for eligible transport	
Urban Development	Urban Infrastructure	Building, maintaining, or upgrading utility tunnels for cables or pipelines	<i>Detailed technical screening criteria TBD</i> <i>Significant resource and energy efficiency improvements</i> <i>Department of Lands & Physical Planning/ NCDC/ DPLGA/ National Housing Commission</i>
Adaptation Related Improvements		Resilient housing improvements Example: Adaptation improvements in at risk areas prone to flooding.	<i>Detailed technical screening criteria TBD</i> <i>Department of Lands & Physical Planning/ NCDC/ DPLGA/ National Housing Commission</i>
		Urban and rural infrastructure improvements related to climate change risks	<i>Detailed technical screening criteria TBD</i>
		Construction and operation of certified sustainable tourism destinations	

		Example: Construction and operation of tourism destinations certified under the National Sustainable Tourism Certification Scheme in collaboration with Global Sustainable Tourism Council (GSTC).	
		<p>Retrofit the coastal tourism properties to improve climate resilience</p> <p>Retrofit the coastal tourism properties in identified vulnerable areas (e.g., low-lying beaches, other disaster prone areas) to improve its climate resilience.</p>	<i>Direct eligibility</i>

6. Industry (Small industry improvements in Energy Efficiency)

Macro Sector	Sub-Sector	Activity/Technologies Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
General Industry	Circular Economy	Eco-efficient and/or circular economy adapted products, production technologies and processes	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Significant CO2 emission, resource, productivity, waste reduction and energy efficiency improvements</i></p> <p><i>Department of Commerce, Trade & Industry</i></p>
	Industrial processes	Reduction in GHG emissions resulting from industrial process improvements, process/product substitutions, and cleaner production (e.g., cement, chemical), excluding carbon capture and storage	
Cement	Cement production facilities	Production facilities, incorporating dry processes, reduced clinker content	
Steel	Steel and iron production facilities	Production facilities and equipment, incorporating electric arc furnace, smelting reduction, efficient casting processes	
Basic Chemicals	Basic Chemical Production	Production facilities incorporating lower carbon feedstocks and more efficient processes	
Supply Chain Facilities			
Energy Efficiency equipment	Manufacturing Facilities and Other supply Chain Projects	<p>Facilities dedicated to manufacturing key components for eligible facilities, equipment, material and sectors including facilities dedicated to the storage, distribution or retail of eligible industrial or manufactured products</p> <p>Manufacture of energy efficiency equipment for buildings</p> <p>Example: Low carbon and alternative building materials such as alternatives to cement and concrete, etc.</p>	<p><i>The economic activity manufactures one or more of the following products and their key components:</i></p> <ul style="list-style-type: none"> <i>(a) windows with U-value lower or equal to 1.0 W/m2K</i> <i>(b) doors with U-value lower or equal to 1.2 W/m2K</i> <i>(c) external wall systems with U-value lower or equal to 0.5 W/m2K</i> <i>(d) roofing systems with U-value lower or equal to 0.3 W/m2K</i> <i>(e) insulating products with a lambda value lower or equal to 0.06 W/mK</i> <i>(f) household appliances falling into the highest two populated classes of energy efficiency in accordance with relevant international or local labelling schemes</i> <i>(g) light sources rated in the highest two populated classes of energy efficiency in accordance with relevant international or local labelling schemes</i> <i>(h) space heating and domestic hot water systems rated in the highest two populated classes of energy efficiency in accordance with relevant international or local labelling schemes</i> <i>(i) cooling and ventilation systems rated in the highest two populated classes of energy efficiency in accordance with</i>

			<p><i>relevant international or local labelling schemes</i></p> <p>(j) <i>presence and daylight controls for lighting systems</i></p> <p>(k) <i>heat pumps that meet thresholds defined in M4.12 of this document</i></p> <p>(l) <i>façade and roofing elements with a solar shading or solar control function, including those that support the growing of vegetation</i></p> <p>(m) <i>energy-efficient building automation and control systems for residential and non-residential buildings;</i></p> <p>(n) <i>energy-efficient building automation and control systems for residential and non-residential buildings</i></p> <p>(o) <i>zoned thermostats and devices for the smart monitoring of the main electricity loads or heat loads for buildings and sensing equipment</i></p> <p>(p) <i>products for heat metering and thermostatic controls for individual homes connected to district heating systems, for individual flats connected to central heating systems serving a whole building, and for central heating systems;</i></p> <p>(q) <i>district heating exchangers and substations compliant with the district heating/cooling distribution activity set out in Section M4.11 of this document; products for smart monitoring and regulating of heating system, and sensing equipment</i></p>
	Energy efficiency	Facilities dedicated to manufacturing and servicing of energy efficient components. Facilities dedicated to manufacturing, installation, and servicing energy efficient appliances and equipment (e.g., fridges, cookers)	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Household appliances falling into the highest two populated classes of energy efficiency in accordance with relevant local or international labelling schemes.</i></p> <p><i>Cooling and ventilation systems rated in the highest two populated classes of energy efficiency in accordance with relevant local or international labelling scheme.</i></p> <p><i>The energy efficiency of the energy-saving products should meet or exceed Level 1 of relevant local or international labelling scheme</i></p> <p><i>Energy efficiency rating amongst top performers in the market</i></p>
Supply Chain Facilities	Carbon scrubber Carbon	Facilities and products for cleanup, such as treatment of exhaust gases from industrial plants	<i>Detailed technical screening criteria TBD</i>

7. Water and Wastewater

Macro Sector	Sub-Sector	Activity/Technologies Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
Water and Wastewater	Water Monitoring	Smart networks, early warning systems for storms, droughts, floods or dam failure, water quality or quantity monitoring processes	<i>Direct eligibility</i> <i>Water PNG Ltd</i>
	Water Storage	Rainwater harvesting systems, storm water management systems, water distribution systems, infiltration ponds, aquifer storage, groundwater recharge systems, sewer systems, pumps, sand dams	<i>Detailed technical screening criteria TBD</i> <i>No net GHG emissions are expected, and the issuer discloses the justification for this decision with supporting documentation or</i> <i>Negative net GHG emissions are expected, and the issuer has estimated and delivered the GHG mitigation impact that will be delivered over the operational lifetime of the project or asset</i> <i>Water PNG Ltd</i>
		Construction of new drinking water supply infrastructure Construction and operation of technically-advanced drinking water collection, storage, treatment and supply infrastructure that reaches at least 20% water savings per unit of service compared to a documented local baseline	<i>Direct eligibility</i>
		Retrofit of existing water supply infrastructure Retrofit of existing water supply infrastructure that reaches at least 20% water savings per unit of service compared to a documented local baseline.	<i>At least 20% water savings per unit of measure compared to baseline</i>
	Water Treatment	Drinking water treatment, water recycling systems, wastewater treatment facilities, manure and slurry treatment facilities ecological retention system, current force reduction mechanisms	<i>Direct eligibility or Agency approval</i> <i>Water PNG Ltd</i>
	Water Distribution	Rainwater harvesting systems, gravity fed canal systems, pumped canal or water distribution systems, terracing systems, drip, flood, and pivot irrigation systems	<i>Direct eligibility or Agency approval</i> <i>Water PNG Ltd</i>
	Water Desalination	Seawater desalination plants and brackish water desalination plants	<i>Detailed technical screening criteria TBD</i> <i>Powered by renewable energy</i> <i>The average carbon intensity of energy used to power the plant must be at or below 100g CO2/kWh over the remaining lifetime of the asset</i>

			<i>Water PNG Ltd</i>
	Flood Defenses	Surge barriers, pumping stations, levees, gates	<i>Direct eligibility or Agency approval</i> <i>Water PNG Ltd</i>
	Nature based Solutions	Water storage from aquatic ecosystems, aquifer storage, snowpack runoff, groundwater recharge systems, riparian wetlands	<i>Detailed technical screening criteria TBD</i> <i>No net GHG emissions are expected, and the issuer discloses the justification for this decision with supporting documentation</i> <i>OR</i> <i>Negative net GHG emissions are expected, and the issuer has estimated and delivered the GHG mitigation impact that will be delivered over the operational lifetime of the project or asset</i> <i>Water PNG Ltd</i>
		Flood defenses by ecological retention, restoration of riparian wetlands, relocation of assets	<i>Detailed technical screening criteria TBD</i>
		Drought defenses by aquifer storage, recharge zone management, wetland management	
		Water treatment by natural filtration systems, forest and fire management	
		Stormwater management by permeable surfaces, erosion control systems, evapotranspiration systems	
	Products	Water saving technologies	<i>Detailed technical screening criteria TBD</i> <i>Water PNG Ltd</i>
	Wastewater	Wastewater treatment of major industries Construction and operation of wastewater treatment facilities for major water-polluting industries, such as papermaking, coking, nitrogen fertilizers, non-ferrous metals, printing and dyeing, agricultural and sideline food processing, raw pharmaceutical ingredient manufacturing, tanning, pesticides, electroplating. Examples of this activity include the treatment of phosphate ore, phosphorus chemical industry, phosphogypsum storages, and comprehensive utilization and trading of phosphogypsum, and the construction and operation of wastewater facilities in industries containing phosphorus pesticides.	<i>Meet local wastewater treatment standards</i>

		<p>Portion of treatment of wastewater that reduces methane emissions</p>	<p><i>Detailed technical screening criteria TBD</i></p> <p><i>Only if net GHG emission reductions can be demonstrated and if not a compliance requirement to meet e.g., a performance standard or safeguard requirement</i></p> <p><i>Water PNG Ltd</i></p>
	Composting	<p>Facilities for the production of compost from organic waste</p>	<p><i>Detailed technical screening criteria TBC</i></p>
		<p>Catchment management</p> <p>Low-carbon impact method of influencing raw water quality at its source by managing land use practices on a catchment scale</p>	<p><i>Detailed technical screening criteria TBC</i></p>
		<p>Recycling and treatment of packaging waste</p> <p>Establishment and operation of recycling and treatment facilities for packaging wastes such as packaging containers and materials made from paper, plastic, metal, glass, wood, or mixed materials that comply with national standards</p>	
		<p>Solid waste collection and treatment of garbage generated in shipping vessels, yards and ports</p> <p>Installation of solid waste collectors, receivers and treatment facilities for ports and marine terminals for the collection of garbage generated in shipping vessels, yards and ports</p>	<p><i>Meet local waste treatment standards</i></p>

8. Pollution Prevention, Waste & Control

Macro Sector	Sub-Sector	Activity/Technologies/Description Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
Air Quality	Air Pollution prevention and control	Air pollution management	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p> <p><i>For brownfield sites, introduction of additional air-pollution management will qualify.</i></p> <p><i>The EU standard will normally be the benchmark. Greenfield projects will not normally qualify unless they go substantially beyond normal good practice standards for that industry</i></p> <p>CEPA</p>
	Industrial pollution prevention and control	<p>Industrial pollution prevention and control</p> <p>Example: Industrial air pollution treatment facilities, exhaust gas, and effluent reducing and recycling facilities. desulfurization and denitration facilities, filter-bag, exhaust gas burner</p>	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p> <p><i>Greenfield projects will not normally qualify under this category unless they go substantially beyond good practice standards for that industry</i></p> <p>CEPA</p>
Solid Waste and Soils	Environmental remediation	Regeneration of contaminated sites, and disused brownfield sites	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p> <p><i>Remediation must be associated with clear environmental benefits that result directly from the use of funds. Such benefits may include the removal or isolation of contaminants, or reduction in long-term risks to human health.</i></p>
		Rehabilitation and tailings management for abandoned mines	
		<p>Soil remediation</p> <p>Example: Facilities and infrastructure using soil remediation technologies and products for remediation of polluted or degraded soil</p>	<p><i>Projects should normally be benchmarked to a recognized good-practice guideline or standard, such as the Dutch Target and Intervention Values, 2000 or similar ASEAN benchmarks or guides</i></p> <p>CEPA</p>
Preparation	Facilities for collection, sorting and material recovery	Facilities and assets with high recovery rates of reusable or recyclable material	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p> <p><i>Made from 100% recycled and recyclable materials. Supports source segregation of waste</i></p> <p>CEPA</p>

Waste Storage	Waste storage facilities	Storage and bulking facilities	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p> <p><i>Dedicated to eligible waste processing asset(s) downstream. Those downstream assets do not need to be certified but do need to meet the criteria for that asset type. All waste stored must be transferred to those assets</i></p> <p>CEPA</p>
Re-Use	Facilities for the re-use of materials	Facilities refurbishing or repairing products or cleaning components or products for reuse in their original function	<p><i>Detailed Requirements, Approvals, or Technical Screening Criteria TBD</i></p> <p><i>The products are put back to their original use without requiring any further pre-processing . For WEEE, the product is covered by an ecolabelling scheme and only those products meeting the three lowest energy use categories are eligible</i></p> <p>CEPA</p>
Recycling	Facilities for the recycling of materials	Facilities for recycling metals, plastics, glass (except aggregate) and paper	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p> <p><i>The secondary raw materials (such as steel, aluminum, glass, plastics) cease to be waste and are sold to be used as secondary raw materials</i></p> <p>CEPA</p>
Biological Treatment Facilities	Anaerobic digestion facilities	Facilities for the production of biogas from green waste	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p> <p><i>Total methane emissions \leq 1285g CH₄/ton of waste input. Woody waste must be segregated before or after processing and sent to an eligible EfW or composting plant. Monitoring, sampling, and control of the following is carried out in accordance with PAS110 guidance. The solid and liquid products are not landfilled and replace non waste materials in the market</i></p> <p>CEPA</p>
	Composting Facilities	Facilities for the production of compost from organic waste	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p> <p><i>Zero measurable methane emissions. Monitoring, sampling and control is carried out in accordance with PAS100 guidance. The resulting product is not landfilled and replaces non-waste material in the market</i></p> <p>CEPA</p>
		Sustainable supply-chain management activities that reduce environmental footprint, including 'circular economy' concepts	<p><i>Detailed requirements, approvals, or technical screening criteria TBD</i></p>

			<i>Project will be expected to demonstrate a quantifiable reduction in resource or energy use compared with the pre-project baseline</i>
	Eco-sanitation	Self-Contained and eco-sanitation toilet solutions for farms, rural green areas, tourist camps and small businesses Example: Installation of self-contained and eco sanitation toilets that contribute to soil pollution reduction. Examples of such toilets include composting toilets, container-based toilets, dry toilets, septic systems, UDDT	<i>Detailed Requirements, Approvals, or Technical Screening Criteria TBD</i> CEPA
	Technology enabling the switch of Raw Materials	Toxic with non-toxic, virgin with recycled	<i>Detailed Requirements, Approvals, or Technical Screening Criteria TBD</i> CEPA
Waste to Energy	Waste to Energy plants (e.g. incineration, gasification, pyrolysis and plasma)	Facilities for solid waste treatment with production of electricity or heat as a by-product	<i>Detailed Requirements, Approvals, or Technical Screening Criteria TBD</i> <i>Only facilities outside the EU are potentially eligible. Plant efficiency >= 25%; AND Bottom ash recovery; AND >= 90% recovery of metal from ash; AND Average carbon intensity of electricity and/ or heat over the life of the plant <= waste management allowance; AND capacity of the plant does not exceed the calculated residual waste at any time in the plant's life</i> CEPA
Landfill	Landfill with gas Capture	Projects to add gas capture to existing, closed landfill facilities	<i>Detailed Requirements, Approvals, or Technical Screening Criteria TBD</i> <i>Biogas from closed landfill facilities. Gas capture >= 75%; AND gas used to generate electricity and input to the natural gas grid or used as vehicle fuel; and the landfill is not accepting further waste (with the exception of restoration materials)</i> CEPA

9. Information & Communications Technology

Macro Sector	Sub-Sector	Activity/Technologies Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain
Broadband Networks	Broadband networks	Fiber optic and cable networks	<p><i>Direct Eligibility or Agency Approval</i></p> <p><i>Cannot support increased emissions / environmental footprint.</i></p> <p><i>ICT projects are typically more complex and would require an environmental impact assessment or expert opinion as there are no simple general technical screening criteria. However due to the broad benefits ICT projects bring to the economy in terms of digitalization, financial inclusion, disaster resilience, most ICT projects are accepted so long as the Do No Significant Harm principle is met.</i></p> <p><i>NICTA/ Telecommunication Companies (Digicel/ Telikom/ Vodafone)</i></p>
	Supporting infrastructure	Such as internet exchange points	
IT Solutions	Connectivity	Teleconferencing and telecommuting software and service	
	Data hubs	Including data storage centers	
	Supporting Infrastructure	Such as hardware and manufacture of hardware	
Power Management	Infrastructure, software and hardware for remote power management	Remote solutions for appliance power management, and load-balancing of renewables Including automatic switching, energy monitoring & data systems	
	In situ power Management		

10. GHG Reductions and Transition Activities - Other

Macro Sector	Sub-Sector	Activity/Technologies/Description Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain	Macro Sector
	Fugitive emissions	Reduction of gas flaring or methane fugitive emissions in the oil and gas industry		<i>Detailed requirements, approvals, or technical screening criteria TBD</i> <i>CCDA/ CEPA</i>
		Coal mine methane capture		<i>Detailed requirements, approvals, or technical screening criteria TBD</i>
	Air conditioning and refrigeration	Retrofit of existing industrial, commercial, and residential infrastructure to switch to cooling agent with lower global warming potential		<i>Detailed requirements, approvals, or technical screening criteria TBD</i> <i>CCDA/ CEPA</i>
		Skills training and capacity building for EE/RE and climate related skills Example: Electric Vehicle Mechanics, EE Auditors, Environmental Engineers, EE/RE Equipment installers and maintenance personnel, etc.		<i>Approval criteria TBC</i>

11. Disaster Resilience, Recovery and Climate Change Adaptation - Other

Macro Sector	Sub-Sector	Activity/Technologies/Description Description & Examples	Metric / Threshold / Technical Screening Criteria PNG Agency Domain	Macro Sector
	Mobile Payments System	Mobile payments system		<i>Detailed requirements, approvals, or technical screening criteria TBD</i> <i>NICTA/ Telecommunication Companies</i>
	Emergency Power and Communication System	Emergency power and communication system		<i>Detailed requirements, approvals, or technical screening criteria TBD</i> <i>NEA/ PNG Power Ltd/ NICTA</i>
	Climate Insurance	Climate insurance		<i>Detailed requirements, approvals, or technical screening criteria TBD</i> <i>CCDA/ CEPA</i>
	Disaster Resilience and Adaptation activities	Disaster resilience and adaptation		<i>Detailed requirements, approvals, or technical screening criteria TBD</i>

	focused on Women	<p>Section to be updated once National Adaptation Plan is published.</p> <p>Example: Adaptation measures which slow-onset disasters; not only rapid-onset disasters. Such as coastal protection, coastal retreat, coral reef and mangrove expansion (both coastal protection and fisheries breeding grounds / food security), landscape protection (e.g. to protect against landslips), flood protection (e.g. drainage improvements).</p> <p>Such adaptation measures will especially include activities that are focused on women.</p>	<i>CCDA/CEPA</i>
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Taxonomy Notes:

Climate change mitigation is a human intervention to reduce the sources or enhance the sinks of greenhouse gases (IPCC 2013).

Adaptation is the process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC 2014).

Disaster resilience is defined as the ability of countries, communities, businesses, and individual households to resist, absorb, recover from, and reorganize in response to natural hazard events without jeopardizing their sustained socioeconomic advancement and development (ADB 2012). Disaster resilience recognizes the highly dynamic, continually shifting nature of the state of resilience as populations grow and move; capital investments expand; and the frequency and intensity of meteorological, hydrological, and climatological events change as a consequence of climate change. Disaster resilience at all levels of society is a critical component of efforts to achieve sustainable socioeconomic development and poverty reduction.

The technical screening criteria for certain activities rely on elements of considerable technical complexity. The assessment of whether those criteria have been complied with may require expert knowledge and may not be feasible for bankers or investors. To facilitate that assessment, compliance with the technical screening criteria for such activities should be verified by an independent qualified third party".

The taxonomy sets out technical criteria that must be complied with for an economic activity to be considered sustainable. Companies will be required to assess how their activities perform against the taxonomy criteria and disclose their results publicly.

Eligibility versus Alignment

Taxonomy alignment refers to an eligible economic activity that is making a substantial contribution to at least one of the climate and environmental objectives while also doing no significant harm to the remaining objectives and meeting minimum standards on human rights and labor standards. The revenue, CAPEX, and OPEX for such an activity is aligned or in alignment. An economic activity that is eligible

but does not meet the technical screening criteria and minimum social safeguards is not aligned.

An activity's eligibility implies that the activity is included in the taxonomy and falls under climate change mitigation or climate change adaptation category. An eligible economic activity is an economic activity that is described by and has a technical screening criteria set out in the taxonomy. All revenue, CAPEX, and OPEX for this eligible economic activity is therefore taxonomy eligible. For example, electricity generation from wind power is an eligible activity, but electricity generation from coal is not. Whether an activity is taxonomy-eligible does not determine its the (un)sustainability. Being taxonomy-eligible is merely an indication that a certain activity makes a substantial contribution to one of the six environmental objectives of the taxonomy.

An activity's alignment is more significant than its eligibility. Taxonomy-alignment implies that an activity complies with the technical screening criteria and the 'Do No Significant Harm'-criteria requirements enumerated specifically for that activity in the taxonomy.

An activity is only considered aligned when it is compliant with the technical screening criteria, the "Do No Significant Harm criteria" criteria, and the minimal safeguards linked to this activity in the taxonomy.

Minimum social safeguard standards based on OECD and UN guidelines

To be sustainable, an economic activity should be carried out "in alignment with the OECD Guidelines for Multinational Enterprises and UN Guiding Principles on Business and Human Rights, including the International Labor Organization's ('ILO') declaration on Fundamental Rights and Principles at Work, the eight ILO core conventions and the International Bill of Human Rights". This means that any business will be required to demonstrate compliance with minimum standards on human rights, social responsibility, labor rights, and anti-corruption procedures.

Let's say for example that company A has two business activities: manufacturing windmills and extracting oil & gas via fracking. Both activities are exactly 50% of the total revenue. Windmill manufacturing is included in the taxonomy, but fracking is not. This means that 50% of the revenue of the total operations of company A are taxonomy-eligible. If the windmill operations of company A comply with the technical screening criteria (TSC) listed in the taxonomy, do no significant harm (DNSH) to any of the other environmental objectives, and meet the minimum safeguards, then all the turnover resulting from this activity can be counted as taxonomy-aligned.

To give another example, suppose that company A has an investment budget of € 100 million. Of this € 100 million, Company A spends € 75

million to expand its windmill operations and € 25 million to explore new oil fields. According to this investment plan, 75% of company A's CAPEX is Taxonomy aligned (since it meets the TSC, DNSH, and the minimum safeguards) and 25% is not, since fracking is not a taxonomy-eligible activity. Finally, the maintenance and restoration of the windmills to keep up with the technical screening criteria in the taxonomy should be counted as taxonomy-aligned OPEX. Operational expenditure linked to the oil & gas business unit cannot be counted as taxonomy-aligned OPEX.