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Second Party Opinion

# PT Bank Mandiri (Persero) Tbk. Sustainable Finance Framework

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**Location:** Indonesia **Sector:** Diversified bank

## Alignment With Principles

Aligned = ✓ Conceptually aligned = ○ Not aligned = ✗

- ✓ Social Bond Principles, ICMA, 2023
- ✓ Social Loan Principles, LMA/LSTA/APLMA, 2023
- ✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)
- ✓ Green Loan Principles, LMA/LSTA/APLMA, 2023
- ✓ Sustainability Bond Guidelines, ICMA, 2021

See Alignment Assessment for more detail.

The SPO assessment on Bank Mandiri's Sustainable Finance Framework covers eligible green and social projects within the use of proceeds financing (i.e. sections 3-6, and 8 of the framework).

## Strengths

**The framework's eligible activities are consistent with Indonesia's Nationally Determined Contributions (NDCs).** The country's NDCs have mitigation targets for forest and land use, and for the energy sector, which together account for about 97% of the total national commitment.

## Weaknesses

**Proceeds may finance activities in the fossil fuel value chain.** Such eligible projects, including hybrid vehicles or hard-to-abate industries, may raise risks of emissions lock-in and stranded assets.

**Social projects have broad target populations and limited safeguards on associated environmental risks.** Similarly, the proposed social impact indicators are largely outputs rather than outcomes. This limits insight into the benefits of projects. However, this choice of indicators is not unusual for social projects due to the complexity of measuring their impacts.

## Areas to watch

**Broad eligibility criteria and multiple certifications may lead to uneven impacts.** Although this is common for frameworks with extensive projects, the absence of performance thresholds for some categories limits insights on potential benefits. Relying on certifications may raise challenges with enforcement, traceability, and gaps in criteria.

**Bank Mandiri's decarbonization strategy for carbon intensive industries and physical risks analysis are still at early stage.** The bank is yet to set lending limits to these sectors and lacks interim scope 3 targets for financed emissions. Nevertheless, it aims to achieve net zero emissions in operations by 2030, and in financed activities by 2060.

**Overall benefits for early retirement of coal-fired power plants are uncertain.** While it supports gradual energy transition in Indonesia, the technical criteria and practicalities of these projects remain unknown.

## Eligible Green Projects Assessment Summary

Bank Mandiri does not have an indicative allocation of net proceeds across eligible categories, nor does it have an estimate on share of financing versus refinancing for its sustainable instruments in the next three years.

Eligible projects under the bank's framework are assessed based on their environmental benefits and risks, using Shades of Green methodology.

| **Electricity, gas, steam, and air conditioning supply – electricity generation** | **Medium green** |
|---|---|
| Operational activities of electricity generation | |
| Manufacture of renewable energy technologies | |

| **Electricity, gas, steam and air conditioning supply – transmission and distribution (T&D)** | **Light green** |
|---|---|
| Operational activities of electricity T&D networks | |
| Conversion, repurposing or retrofit of gas networks for the transmission and distribution of renewable and low carbon gases | |
| Construction or operation of T&D pipelines dedicated to the transport of hydrogen or other low-carbon gases | |
| Operational activities of district heating/cooling distribution | |
| Development, manufacture, installation of technologies/components that enable more efficient T&D and/or end-user demand management | |

| **Electricity, gas, steam, and air conditioning supply – co-generation of heat/cool and power** | **Light green** |
|---|---|
| Construction and operation of facilities co-generating electricity and heat/cool from renewable energy including bioenergy | |

| **Electricity, gas, steam, and air conditioning supply – energy efficiency** | **Light green** |
|---|---|
| Development and implementation of products or technology that reduce energy consumption or mitigate greenhouse gas emissions by 20% or more over the baseline | |

| **Electricity, gas, steam, and air conditioning supply – carbon capture** | **Light green** |
|---|---|
| Planning, design, development, implementation, and operations related to carbon capture, utilization and/or storage | |

| | |
|---|---|
| **Electricity, gas, steam, and air conditioning supply – energy storage technologies** | **Medium to Light green** |
| Planning, design, development, implementation, and operations related to all electrical storage systems which are available to provide power to electrical networks or loads | |
| **Electricity, gas, steam, and air conditioning supply – bioenergy** | **Light green** |
| Operation of facilities producing liquid biofuel, solid and gaseous biomass for heating, cogeneration, and electricity production | |
| **Electricity, gas, steam, and air conditioning supply – early retirement of coal-fired power plant (CFPP)** | **Light green** |
| Acceleration of CFPP phase-out that aligned with criteria specified in Taxonomy or applicable regulations | |
| **Agriculture and farming** | **Light green** |
| Sustainable agriculture | |
| Sustainable farming | |
| Sustainable plantation | |
| **Forestry** | **Dark to Medium green** |
| Afforestation, reforestation, rehabilitation, restoration, and reclamation | |
| Protection and restoration of peatland | |
| Terrestrial and aquatic biodiversity conservation | |
| Sustainable commercial forest management | |
| **Transportation** | **Light green** |
| Low-carbon land and water transport | |
| Low-carbon infrastructure | |
| Vehicle energy efficiency | |
| Transportation system development | |
| Biofuel | |

| **Construction** | **Light green** |
|---|---|
| Green buildings | |
| Residential, commercials, institutional, public, and non-infrastructure buildings | |
| Network infrastructure | |

| **Oil and gas industry – $CO_2$ transport and storage from a hard-to-abate industry** | **Light green** |
|---|---|
| Transport $CO_2$ | |
| Underground permanent geological $CO_2$ storage | |
| Supporting activities | |

See Analysis Of Eligible Projects for more detail.

# Issuer Sustainability Context

This section provides an analysis of the issuer's sustainability management and the embeddedness of the financing framework within its overall strategy.

## Company Description

PT Bank Mandiri (Persero) Tbk. is the result of a merger of four state-owned banks in 1998. It is one of the largest domestic banks, with operations in all provinces in Indonesia (97% of revenues amounting to Indonesian rupiah (IDR) 128.5 trillion; US$8.3 billion in 2023), Singapore, Malaysia, Hong Kong, Timor Leste, China, the U.K., and the Cayman Islands.

Bank Mandiri offers retail banking (39% of revenue in 2023), corporate and commercial banking (23%), and other services, including Islamic finance (38%). The bank had total assets of IDR2,174 trillion (US$141 billion) on Dec. 31, 2023, and net loans of IDR1,398 trillion (US$85 billion). During the same period, sustainable lending amounted to IDR264 trillion (US$16 billion), representing 24% of total loans (bank only).

The government of the Republic of Indonesia owns 52% of Bank Mandiri, which is listed on the Indonesia Stock Exchange.

## Material Sustainability Factors

### Climate Transition Risk

Banks are highly exposed to climate transition risk through their financing of economic activities, which impact the environment. Banks' direct environmental impact is small compared to financed emissions and stems mainly from power consumption (e.g. data centers). Policies and rules to reduce emissions could raise credit, legal, and reputational risks for banks with large exposures to high-emitting sectors, such as oil and gas, metals and mining, real estate or transportation. These medium- to long-term risks are significant and will be proportional to the impact of climate change on the economy. Positively, financing the climate transition offers a growth avenue for banks through lending, debt structuring, and other capital markets activities. Indonesia aims to reduce its greenhouse gas emissions by 31.9% (unconditionally) and 43.2% (conditionally, subject to availability of international support for finance, technology transfer and development, and capacity building) by 2030, against a business-as-usual scenario. The country expects to achieve net zero emissions by 2060 or sooner.

### Physical Climate Risk

Physical climate risks will affect many economic activities as climate change will increase the frequency and severity of extreme weather events. Banks finance a wide array of business sectors that are exposed to physical climate risks, exposing banks through their financing activities. However, while climate change is a global issue, weather-related events are typically localized, so the magnitude of banks' exposure is linked to the geographical location of the activities and assets they finance. Similarly, banks' physical footprints (e.g. branches or ATMs) may also be exposed to physical risks, which may disrupt their ability to service clients in the event of a natural catastrophe, amplifying the impact on communities. Banks may contribute to mitigating the effects of physical climate risks by financing adaptation projects and climate-resilient infrastructure, as well as by investing in solutions that support business continuity in exposed geographies. As an archipelagic country, Indonesia is highly vulnerable to climate change impacts, including extreme events such as floods and droughts, and long-term changes such as rising sea levels, shifting rainfall patterns, and rising temperatures.

### Access and Affordability

Banks' large impacts on society and the economy stem from their role in enabling access to financial services to individuals and businesses, and in ensuring the correct functioning of payments systems, which are cornerstones of economic development and

stability. In most countries, unbanked and underserved population segments are still meaningful, although the access gap is most acute in emerging economies. Market imperfections such as low competition, incomplete information, and a lack of financial literacy, often result in costly alternatives for small businesses and low-income people, so ensuring affordable access to financial services, especially to the most vulnerable population, remains a challenge for the banking industry. New technologies will, however, increasingly enable banks to close this gap through cost efficiencies and product innovation. While structural issues such as poverty, informality of economies, and lack of financial literacy partly limit access to financial services, banks have large opportunities to support economic development through financial inclusion. The Indonesian central bank (Bank Indonesia)'s strategy includes programs to increase financial literacy and accessibility specifically targeting micro, small, and medium enterprises (MSMEs) and subsistence groups. According to the World Bank, financial inclusion in Indonesia has improved, with people having access to banking services (including mobile money service providers) increasing to 52% in 2021 from 20% in 2011.

### Privacy Protection

Banks rely heavily on IT systems, using digitization (or computer processing of information) extensively. Growing use of client data collection, data mining, and artificial intelligence (AI) have brought significant efficiency gains and facilitated financial access. However, this has increased banks' exposure to the risk of IT infrastructure failures, cyber attacks, and other quickly evolving risks. Privacy protection risks is rising and evolving as cyber hackers become more sophisticated. According to Statista, Indonesia is one of the most adaptable countries to digital banking services globally mainly as most of its population is relatively young and is therefore receptive to digital payment options. By 2025, the number of mobile wallet users could reach 202 million.

### Biodiversity and Resource Use

Banks contribute to significant resource use and biodiversity impact through the activities they fund or invest in. For example, the construction sector--which is a major recipient of bank financing--is a large consumer of raw materials such as steel and cement. Similarly, bank-financed agricultural activities can have material biodiversity impacts. With nearly 22.3 million hectares of plantation, Indonesia is the largest producer of palm oil in the world with estimated production of over 46.2 million tons of crude palm oil in 2021. The largest plantations are in Sumatra and Kalimantan. According to WWF, 90% of the world's oil palm trees are grown on a few islands in Malaysia and Indonesia, both countries with highly biodiverse tropical forests. Accordingly, there is a direct relationship between the growth of oil palm estates and deforestation.

# Issuer And Context Analysis

**Green categories aim to address climate transition and physical risks, and social projects contribute to access and affordability, which are material sustainability factors for the bank.** Some projects introduce additional considerations such as biodiversity and resources use. Bank Mandiri's sustainability strategy covers three pillars (sustainable banking, sustainable operation, and sustainability beyond banking) across three commitments (supporting Indonesia's transition to a low carbon economy, achieving net zero in operations by 2030, and helping the nation progress towards the U.N.'s Sustainable Development Goals (SDGs).

**Bank Mandiri has set decarbonization targets, yet its roadmap to net zero for financed emissions is still in development**. It aims to achieve net zero emission in operations by 2030, and in financed activities by 2060. While Bank Mandiri has launched initiatives to manage its operational emissions (in areas including energy efficiency, renewable energy, fleet electrification, and ESG contract clauses in supply chain), the bank is yet to develop a clear roadmap to achieve net zero for financed emissions by 2060. Currently, the bank's calculated financed emissions cover 44% of its financing portfolio. While the bank intends to cover its entire loan book over time, it is dependent on client's data disclosures, which will enable the bank to better assess the environmental impacts of its financing activities and align future strategies with sustainability goals. Additionally, the bank is currently developing decarbonization strategies for highly carbon intensive priority sectors in alignment with the national decarbonization strategy. However, it has not set lending limits for these industries.

**Bank Mandiri integrates environment and social risks in lending decisions to identify and manage sustainability exposures across its operations**. ESG risk identification and assessment

are integrated into the bank's strategy, decision-making processes, and credit policies. The bank has identified 12 priority sectors: palm oil, energy and water, FMCG (Fast-Moving Consumer Goods), mining (metals and coal), construction, pulp & paper, telecommunications, transportation, other transport industries (shipbuilding), pharmaceuticals and health services, and oil and gas. Subsequently, the bank has developed sectoral binding credit policies, which will be reviewed periodically. Bank Mandiri, however, is yet to establish sector specific targets on financed emissions. Furthermore, the bank's approach to responsible financing is largely driven by the sustainability commitments and financing needs of regions where it operates and the sectors it lends to. The bank relies on taxonomies, local and regional standards, and its own risk management systems, to assess and monitor its customers' sustainability performance.

**Bank Mandiri's physical risk analysis is in its early stages and follows the Indonesia Financial Services Authority (OJK) guidelines**. The Indonesian archipelago faces relatively high risk of natural disasters due to its extensive coastline and geographic location. The framework has several project categories exposed to physical risks, such as green buildings, transmissions and distribution, transport infrastructure, carbon capture and storage assets, agriculture and plantation, and forestry. The bank has started with the implementation of climate risk stress test (CRST) for its portfolio covering forest fire scenarios for agriculture and flood scenarios for commercial and residential properties. Furthermore, as per OJK guidelines, about 50% of the total portfolio requires to be covered by the CRST assessment in 2024 and full coverage to begin in 2025. The bank will also include some qualitative analysis of physical risks for its own operations. Additionally, Bank Mandiri incorporates recommendations from the Task Force on Climate-related Financial Disclosures (TCFD) into its management systems.

**To support the Indonesian government's financial inclusion program, Bank Mandiri has established initiatives around equitable and effective access to its services, inter alia through its digital platforms**. The bank was one of the first to join OJK's financial inclusion program in 2015. OJK has a target of reaching 90% financial inclusion by 2024. The bank aims to support this program through expansion of financial services digitally, which is a commitment under its sustainability strategy. A priority is financing MSMEs, which represent the largest share of businesses and employers of direct labor in Indonesia. The bank's share of sustainable financing in its total portfolio has remained stable at 24.3%-24.8% over the last three years, with almost 50% allocated toward lending to MSMEs. Additionally, Bank Mandiri employs many agents, with the mission to make banking services accessible to the remotest areas. In parallel, the acceleration of its digital offerings exposes the bank to data protection and privacy risks. Bank Mandiri has a dedicated unit to manage cyber resilience and security. A cyber resilience framework adopting international standards is in place and supervised by senior management. The bank also conducts annual internal and external audits and provides employees with training.

**While the bank has identified the most sensitive sectorial exposures to natural capital, it is yet to formulate a comprehensive policy on biodiversity.** The framework includes eligible projects in relation to biodiversity such as agriculture and forestry. Bank Mandiri includes binding provisions on biodiversity in its sectoral credit policies, such as "no deforestation, no peat, no exploitation (NDPE)" for the agriculture sector, and the Forest Stewardship Council (FSC) certification for commercial forestry. Additionally for forestry projects, operations in high biodiversity areas including Ramsar material sites and International Union for Conservation of Nature (IUCN) category 1 & 2 sites are banned. Furthermore, conducting an environmental impact assessment (EIA) and/or having international standards environmental management certification is a compulsory requirement for all priority sectors. Nevertheless, there have been reports against some of the bank's clients in the palm oil and pulp and paper sectors for causing environmental and social issues in their value chain, such as deforestation, biodiversity loss, and poor working conditions. This demonstrates the complexity of lending to the huge commodity industry in Indonesia. In particular, Bank Mandiri is one of the largest lenders to the palm oil sector in the country.

# Alignment Assessment

This section provides an analysis of the framework's alignment to the Social and Green Bond/Loan Principles and the Sustainability Bond Guidelines.

The SPO assessment on Bank Mandiri's Sustainable Finance Framework covers eligible green and social projects within use of proceeds financing (i.e., sections 3-6, and 8 of the framework).

## Alignment With Principles

Aligned = ✓ Conceptually aligned = o Not aligned = ×

- ✓ Social Bond Principles, ICMA, 2023
- ✓ Social Loan Principles, LMA/LSTA/APLMA, 2023
- ✓ Green Bond Principles, ICMA, 2021 (with June 2022 Appendix 1)
- ✓ Green Loan Principles, LMA/LSTA/APLMA, 2023
- ✓ Sustainability Bond Guidelines, ICMA, 2021

### ✓ Use of proceeds

The bank commits to allocate the net proceeds issued under the framework exclusively to eligible green and social projects, contributing to specific SDG targets and environmental and social goals. All environmental projects are shaded in green and all social projects are aligned with the principles' requirements. Please refer to the Analysis of Eligible Projects section for more information on our analysis of the environmental and social benefits of the expected use of proceeds.

The bank will not disclose the proportion of financing versus refinancing in its allocation reporting. In addition, it will not disclose the look-back period, reducing insight into projects' additionality.

### ✓ Process for project evaluation and selection

The framework outlines a process that Bank Mandiri has developed to screen financed proposals. Business units will assess the activities against the eligibility criteria, based on client proposals, which must include information such as environmental and/or social objectives, and processes to identify and manage perceived social and environmental risks associated with the proposal activities. The bank's ESG group will then evaluate the proposals, and clients may be required to provide third-party verification, or additional supporting information. Lastly, the credit committee will review and approve the proposal. The framework includes an exclusion list on activities endangering the environment, illegal logging, peatland financing, gambling business, pornography and human rights violations, and drugs and narcotics.

### ✓ Management of proceeds

Bank Mandiri will establish a register to track the allocation of proceeds through its internal information systems. Periodic monitoring of transactions will be conducted. The company commits to replacing projects, which cease to comply with the framework's eligibility criteria as soon as practicable. As long as a sustainable instrument is outstanding, the bank aims to allocate an amount equivalent to the instrument's net proceeds to eligible assets. Pending allocation, net proceeds will be held in cash or marketable instruments such as government bonds, in accordance with the bank's liquidity management strategy. The framework's exclusion criteria apply to the management of unallocated proceeds, adding consistency to the bank's spending.

### ✓ Reporting

Bank Mandiri commits to reporting its sustainable finance activities in its annual and/or sustainability reports, until loans are fully drawn or bonds fully allocated, and in case of material developments. Reporting will include the amount of invested

proceeds and the balance of unallocated proceeds, invested projects' brief description, and expected and achieved impacts, and target populations for social projects.

The bank will refer to ICMA's Harmonized Framework for Impact Reporting. Examples of disclosed metrics for projects are installed capacity of renewable energy, amount of energy saved, numbers of certified green buildings financed, number of students supported, number of hospitals built or upgraded, and number of SMEs financed.

# Analysis Of Eligible Projects

This section provides details of our analysis of eligible projects, based on their environmental benefits and risks, using the "Analytical Approach: Shades Of Green Assessments," as well as our analysis of eligible projects considered to have clear social benefits and to address or mitigate a key social issue.

## Green project categories

**Electricity, gas, steam, and air conditioning supply – electricity generation**

| Assessment | Description |
|---|---|
| Medium green | 1. Operational activities of electricity generation from:<br>a. Solar energy<br>b. Wind power (onshore, offshore)<br>c. Ocean energy (tidal, wave)<br>d. Hydropower<br>e. Geothermal energy<br>f. Bioenergy<br>g. Hydrogen<br>h. Waste-to-energy from municipal solid waste (MSW)<br>2. Manufacture of renewable energy technologies, including equipment for renewable energy generation |

**Analytical considerations**

- The energy sector contributed to 34.5% of Indonesia's greenhouse gas emissions in 2019. Energy demand should increase along with economic development and population growth. This category covers a wide range of electricity generation activities and associated technologies. While the use of renewable energy is key to the low carbon transition and contributes to climate change mitigation, some activities (e.g. bioenergy, waste-to-energy) can entail potential risks such as direct and indirect land use changes, and value chain risks. The extensive list of projects translates into an overall shade of Medium green.
- Eligible solar, wind, ocean, hydropower, and geothermal energy generation projects will participate in integrating renewable energy into the local power grid and are a Dark green solution to a low-carbon future. They will contribute to Indonesia's target of reaching 23% and 31% of renewable energy in its primary energy supply mix by 2025 and 2050, respectively. However, there are lifecycle carbon considerations during the development, construction, installation, and maintenance phases. These include emissions from materials sourcing, manufacturing, transportation, and equipment end-of-life decommissioning (e.g. solar panels and wind turbines). While Bank Mandiri is the lender and not the asset owner, the bank includes requirements on end-of-life issues in lending agreements.
- Hydropower can entail significant emissions from construction and water reservoirs, as well as bring adverse impacts on biodiversity and ecosystems, for example disrupting water flows and fish migration. Water scarcity assessment will be conducted to understand historical and projected water availability of the project site, as well as water needs for local people. It is also positive that thresholds for greenhouse gas emissions intensity of below 100g$CO_2$e/kWh and power density of above 4W/$m^2$ or being a run-of-river plant are set. Similarly, for geothermal facilities, a lifecycle emissions threshold of less than 100g$CO_2$e/kWh should ensure an adequate performance for such projects.
- Bioenergy activities could be exposed to sustainable sourcing and lifecycle emissions risks. These risks include the risk of direct and indirect land use change from feedstocks, including deforestation and loss of biodiversity, transportation emissions, and impacts on water and soil. Bank Mandiri has excluded the use of non-sustainably produced crops (i.e. non-certified) and

conventional food or feed crop-based feedstocks, which could raise additional risks of food competition. Examples of feedstocks are switchgrass, miscanthus, MSW, food waste, animal manure, wood chips or sawdust. For biogas, the bank requires management and monitoring procedures, as well as contingency plans in case of methane gas leakage. For energy plantations, the bank requires the biomass fuel supply to follow applicable regulations. Bank Mandiri will prioritize sourcing feedstock locally and require feedstocks to be certified by the International Sustainability and Carbon Certification (ISCC) and ISPO. A lifecycle emissions ceiling of 100g$CO_2$e/kWh should ensure invested projects have an adequate carbon footprint performance. In addition, the bank will go through due diligence and impact assessment procedures, where the certificate of land usage may be requested from potential borrowers, to manage direct and indirect land use change risks. We assess these activities Light green.

- Bank Mandiri does not restrict the types of hydrogen to be green but has set a lifecycle emissions threshold of below 100g$CO_2$e/kWh from the generation of electricity by the entire facilities, aligning with the Indonesia Taxonomy for Sustainable Finance. Not limiting to green hydrogen means that it does not rule out the possibility of using blue hydrogen as long as it is within the emissions threshold, where emissions from blue hydrogen could be cut by partly powering the process with renewable electricity but fugitive methane emissions from the natural gas would remain. These activities are Light green.
- Waste-to-energy projects include usage of MSW where majority of recyclables are separated before incineration. Bank Mandiri will ensure customers demonstrate a commitment to the waste management hierarchy, which prioritizes waste prevention, reduction, reuse, and recycling efforts, before resorting to waste-to-energy solutions. However, no further details on its implementation are available. While waste-to-energy may be preferable to landfilling, projects should incinerate only waste that cannot have a second life, to maximize its benefits. Waste-to-energy projects are also emissions intensive and will likely involve fossil fuel use throughout the value chain (i.e. transportation of waste over long distances). The absence of lifecycle emission threshold reduces insight on the overall environmental benefits, limiting this subcategory to Light green. There is also a risk from local pollution from by-products like dioxins, which could be challenging to address. There is limited visibility on the source of waste to be processed, such as the percentage of plastic incineration. According to Indonesia's National Waste Management System (SIPSN), 33.8% of waste generated was unmanaged in 2023. Nevertheless, compliance with the national emission quality standards is an eligibility criterion.
- As part of the bank's binding credit policy for customers in the energy sector, power plants operators must obtain environmental management certifications such as ISO 14001 or ISO 45001, and have a code of conduct and policies related to the environmental and labor management. Having a Company Performance Rating Assessment Program (PROPER) assessment and/or EIA approved by the environmental agency is also a requirement.

**Electricity, gas, steam and air conditioning supply – T&D**

| Assessment | Description |
|---|---|
| Light green | 1. Operational activities of electricity transmission<br>2. Operational activities of electricity distribution<br>3. Conversion, repurposing or retrofit of gas networks for the transmission and distribution of renewable and low carbon gases<br>4. Construction or operation of T&D pipelines dedicated to the transport of hydrogen or other low-carbon gases<br>5. Operational activities of district heating/cooling distribution<br>6. The development, manufacture, installation of technologies/components that enable more efficient T&D and/or end-user demand management, in particular, smart grid, smart meters, Wide Area Monitoring System, and monitoring and control automation devices |

**Analytical considerations**

- Investments in T&D networks facilitating the integration of renewable energy sources into the grid supports the deployment of renewable energy and climate change mitigation. A smart power grid is essential to grid resiliency and electrification. It is positive that a lifecycle emissions threshold of below 100g$CO_2$e/kWh is set. Priority will also be given to operators whose

resources originating from renewable energy sources. Bank Mandiri informed that dedicated connections to greenhouse gas emissions intensive or fossil fuel related users are excluded. However, coal still plays a large role in Indonesia's grids, which is linked to ongoing emissions. Other environmental and social considerations, such as biodiversity risks and displacement of local population due to siting of projects, should be carefully managed.

- Bank Mandiri shared that the pipelines will only transport green hydrogen or low carbon gas. Pipes carrying natural gas or blended mixtures are excluded. As communicated, there will be a methane leakage plan to minimize fugitive emissions as a commitment between the bank and the client, but there is no detailed information on how they address transition risks along the value chain.
- For district heating or cooling distribution, only efficient systems within three years of assessment can be financed. Bank Mandiri defines an efficient system as being at least 50% renewable energy or waste heat or 75% cogenerated heat or 50% of a combination of such energy and heat. While it is unclear from what sources the remaining fraction of energy will come, Bank Mandiri excludes the use of fossil fuels and the use of non-sustainably produced crops (i.e. non-certified) and conventional food or feed crop-based feedstock for bioenergy. This limits our ability to fully assess climate and environmental risks such as deforestation, land use, and emissions lock-in. Therefore, the overall category is limited to Light green.
- The same binding credit policy for customers in the energy sector applies.

**Electricity, gas, steam and air conditioning supply – co-generation of heat/ cool and power**

| Assessment | Description |
|---|---|
| Light green | Construction and operation of facilities co-generating electricity and heat or cool from:<br>1. Renewable sources (solar, wind, hydro)<br>2. Geothermal energy<br>3. Bioenergy (biomass, biogas, biomethane, or bioliquids) |

**Analytical considerations**

- The use of renewable energy for co-generation is key to the low carbon transition and contributes to climate change mitigation, which is a Dark green element. However, there are additional concerns over bioenergy sources, limiting the overall shade to Light green.
- It is positive that a lifecycle emissions threshold of below 100g$CO_2$e/kWh is set for geothermal energy sources.
- The cogeneration of heat/cool and power from bioenergy can have climate mitigation benefits. This depends, however, on factors such as feedstock type, origin, and source, and consideration of risks such as direct and indirect land use change. It is positive that a minimum of 80% greenhouse gas emissions saving against the relative fossil fuel-based comparator is required for bioenergy sources. Bank Mandiri has excluded the use of non-sustainably produced crops (i.e. non-certified) and conventional food or feed crop-based feedstocks, which could raise additional risks of food competition. Sourcing waste-based feedstocks is preferable, as risks, such as direct and indirect land use change, loss of biodiversity, transportation emissions, and impacts on water and soil, are higher for non-waste feedstock. The same criteria as electricity generation from bioenergy mentioned in the previous section apply.
- Climate risk assessments will be required for co-generation facilities to identify potential physical risks (e.g. extreme weather events and rising sea levels). It is part of the bank's transaction screening phase.
- The same binding credit policy for customers in the energy sector applies.

**Electricity, gas, steam and air conditioning supply – energy efficiency**

| Assessment | Description |
|---|---|

| | |
|---|---|
| **Light green** | Development and implementation of products or technology that reduce energy consumption or mitigate greenhouse gas emissions by 20% or more over the baseline. Examples include:<br>1. Energy efficient lighting (e.g. light emitting diodes--LEDs)<br>2. Improvement in energy services (e.g. smart grid meters)<br>3. Efficiency improvements for T&D of energy (e.g. smart grids)<br>4. Centralized energy control system<br>Energy efficiency improvement in fossil fuel assets is excluded. |

**Analytical considerations**

- Energy efficiency projects are expected to reduce the amount of energy use, and the associated emissions. It is positive that Bank Mandiri sets a minimum energy consumption threshold of 20% improvement compared to baseline and excludes energy efficiency improvement in fossil fuel assets. However, the 20% threshold is less ambitious than international practices. Therefore, the overall shade is limited to Light green.
- There are less explicit environmental considerations to potential risks associated with such projects, such as lifecycle emissions and biodiversity impacts from direct and indirect land use change. Similarly, energy efficient projects in physical assets present some physical climate risks.
- The same binding credit policy for customers in the energy sector applies.

**Electricity, gas, steam and air conditioning supply – carbon capture**

| Assessment | Description |
|---|---|
| **Light green** | Planning, design, development, implementation, and operations related to carbon capture utilization and/ or storage (CCU), including bioenergy and carbon capture and storage (BECCS) and direct air capture (DAC).<br>Application from fossil fuel processes and CCU where captured carbon intended for enhanced oil recovery, and application in fossil fuel process are excluded. |

**Analytical considerations**

- Carbon removal is necessary in many climate scenarios, and an important part of the global transition when direct and indirect lock-in risks are sufficiently managed. Application from fossil fuel processes and usage for enhanced oil recovery are excluded. Bank Mandiri shared that application in new coal activities is also not eligible, although this is not specified in the framework.
- Bank Mandiri shared that $CO_2$ captured and stored comes from industrial plants such as steel, cement, or chemical production facilities. Helping hard-to-abate sectors on their transition is Light green, given limited safeguards. In addition, the absence of quantification of lifecycle emissions reductions limits insights on the overall environmental benefits.
- This technology requires a significant amount of energy to operate, such as the compression and chilling of the $CO_2$, maintenance of high pressure and low temperatures, as well as to transport to storage facilities. Therefore, such projects should involve thorough planning and selection of technology, as well as measures to mitigate lock-in risks. Bank Mandiri will encourage borrowers to implement monitoring and verification plans for $CO_2$ storage sites to ensure long-term security and minimize the risk of leakage. Geological storage sites also must be carefully selected based on thorough geological characterization.
- While the BECCS technology utilizes renewable biomass resources, it may entail risks related to land use, biodiversity, and food security. The same criteria as electricity generation from bioenergy mentioned in the previous section apply. Thus, these activities are Light green.
- The construction or production of such facilities may imply substantial scope 3 emissions and is an important consideration in the process, as well as materials sourcing. The completion of a lifecycle assessment, as part of the lending agreement between

the bank and debtors, may capture these aspects. Based on the assessment outcome, the bank may set, but will not commit to setting, minimum performance requirements of $CO_2$ capture efficiency.

- The same binding credit policy for customers in the energy sector applies.

**Electricity, gas, steam and air conditioning supply – energy storage technologies**

| Assessment | Description |
|---|---|
| Medium to Light green | Planning, design, manufacture, development, implementation, and operations related to all electrical storage systems which are available to provide power to electrical networks or loads. Examples include:<br>1. Electrochemical, such as battery storage, hydrogen storage (such as hydrogen storage tanks), supercapacitors or ultracapacitors, green hydrogen fuel cells<br>2. Mechanical, such as pumped hydro, flywheels, compressed air energy storage (CAES)<br>3. Thermal, including Underground Thermal Energy Storage (UTES) or Aquifer Thermal Energy Storage (ATES)<br>4. Power-to-gas (such as power-to-green hydrogen, or power-to-synthetic gas, 'syngas') with lifecycle emissions under 28g$CO_2$e/MJ |

**Analytical considerations**

- Energy storage technology or infrastructure that support renewable energy generation projects indirectly contribute to climate change mitigation, by facilitating renewable energy integration. However, coal still plays a large role in Indonesia's grids. Apart from battery storage, other technology types, such as thermal storage, hydrogen, and power-to-gas may entail risks to climate, hydrology, biodiversity, and ecosystems that need to be carefully managed.
- Leakage of stored hydrogen is difficult to avoid due to the gas' small molecule size and low density. Impacts from leakage of stored hydrogen to the atmosphere are not yet well-understood, but emerging research indicates it could increase the atmospheric lifetime of methane and its climate impacts, partially offsetting its emissions reduction benefits, and may contribute to Antarctic ozone depletion. Nevertheless, Bank Mandiri will encourage debtors to work on leak prevention by selecting suitable materials, conducting regular inspections and maintenance, and utilizing advanced leak detection technologies.
- For pumped hydro storage, Bank Mandiri will prioritize closed-loop systems which is less risky than open-loop systems as they have a lower environmental impact in terms of air pollution and water pollution because all toxic gases and wastewater are routed back into the ground.
- Uncertainty around the primary inputs and end-use of power-to-gas technology contributes to the Light green shade. While the bank informed that it is highly encouraged for projects utilizing renewable sources, not ruling out $CO_2$ from fossil sources entails risk of lock-ins. $CO_2$ may be associated with direct and indirect land use change if sourced from biomass/biofuel combustion, depending on feedstock, as well as substitution effects and valorization of potentially unsustainable economic activities if derived from waste and by-products. The lifecycle emissions threshold of 28g$CO_2$e/MJ should ensure an adequate performance for such projects.
- The manufacture and development of these storage components may also be exposed to supply chain-related risks. For example, material sourcing for batteries used for energy storage may contain significant emissions and result in negative environmental impacts. Bank Mandiri will require borrowers to conduct due diligence exercises to identify and mitigate potential risks (e.g. human rights or environmental damages in mineral extraction activities) in relation to the value chain of batteries. End-of-life plans should also be in place to guide procedures regarding battery recycling and disposal of any nonrecyclable components, according to applicable regulations.
- The same binding credit policy for customers in the energy sector applies.

**Electricity, gas, steam and air conditioning supply – bioenergy**

| Assessment | Description |
|---|---|
| Light green | Operation of facilities producing liquid biofuel, solid and gaseous biomass for heating, cogeneration, and electricity production |

**Analytical considerations**

- Feedstocks for generating bioenergy include agriculture-based, waste-based, and forestry-based feedstocks, which could be exposed to sustainable sourcing and lifecycle emissions risks. These risks include risk of direct and indirect land use change, including deforestation and loss of biodiversity, transportation emissions, and impacts on water and soil. Bank Mandiri has excluded the use of non-sustainably produced crops (i.e. non-certified) and conventional food or feed crop-based feedstocks, which could raise additional risks of food competition. As a result, the overall shade is Light green.
- Bank Mandiri will prioritize sourcing feedstock locally, reducing transportation emissions, and require feedstocks to be certified by the ISCC and ISPO. It is also positive that a minimum of 80% greenhouse gas emissions reduction compared to fossil fuel baseline is set.
- The bank will go through due diligence and impact assessment procedures, where the certificate of land usage may be requested from potential debtors, to manage direct and indirect land use change risks.
- The same binding credit policy for customers in the energy sector applies.

**Electricity, gas, steam and air conditioning supply – early retirement of CFPP**

| Assessment | Description |
|---|---|
| Light green | Acceleration of CFPP phase-out that aligned with criteria specified in Taxonomy (i.e. the Indonesia Taxonomy for Sustainable Finance (TKBI) and ASEAN Taxonomy for Sustainable Finance) or applicable regulations. The replacement of the power capacity should be coming from renewable sources. |

**Analytical considerations**

- In Indonesia, CFPP also still dominates the source of electricity, accounting for 51.1 GW or 52% of the total installed electricity capacity in the second quarter of 2023 as stated in the TKBI. Meanwhile, over 60% of Indonesia's electricity is supplied by a young fleet of coal-fired power plants, according to the IEA.
- The early retirement of CFPP can play a role in supporting a gradual energy transition process in Indonesia and contribute to the national goal of net-zero emissions by 2060. While Bank Mandiri confirms the nature of the power capacity that would replace the retired CFPP is renewable, it is unclear what the criteria will be, limiting insights into the overall environmental benefits, and thus this category is Light green.
- Bank Mandiri confirmed it will not finance new and existing CFPP activities. Compliance with the TKBI and regulations such as the Presidential Regulation of the Republic of Indonesia Number 112 of 2022 concerning the Acceleration of Renewable Energy Development for Electricity Supply is an eligibility criterion. As part of the bank's binding credit policy for customers in the coal sector, they must obtain environmental management certifications such as ISO 14001 or ISO 45001. Having a PROPER assessment and/ or EIA approved by the environmental agency is also a requirement.

**Agriculture and farming**

| Assessment | Description |
|---|---|
| Light green | 1. Sustainable agriculture |

a. Agricultural production of:
    i. Use of low emission or methane rice variety
    ii. Production of organic products certified by credible third-party certification bodies
    iii. Produce and distribute organic agriculture component (organic seed, organic fertilizer, organic pesticide and herbicide)
b. Agricultural techniques:
    i. Agriculture yield improvement through system rice intensification, vertical farming, hydroponics, greenhouse farming, smart land use management
    ii. Any agriculture effort to reduce methane and nitrite production through soil management, crop rotation, dry agriculture technique, drip irrigation technique
    iii. Production of disease resistant, high yield, and low methane emission crop seed

2. Sustainable farming
    a. Livestock management
        i. Development, maintenance and improvement of animal waste management system to reduce methane emissions (manure and slurry)
        ii. Development, maintenance, and improvement of biogas production or organic fertilizer from cattle manure
        iii. Any feed research and development (R&D) and production to increase cattle productivity and/ or reduce methane emissions
    b. Practice of organic farming or livestock production and/or integrated agriculture-farming-forestry activity
3. Sustainable plantation
    a. Sustainable plantation activity of cultivation, plantation, and harvesting of fruits, vegetables, and agri-commodities (rubber, coffee, cocoa, coconut, tea) including implementation of organic fertilization

**Analytical considerations**

- Sustainable practices in agriculture, livestock farming, and plantation development can contribute to mitigating the emissions and negative environmental impacts associated with such activities. However, relying on certifications and standard/regulation compliance to screen projects and the absence of performance thresholds bring uncertainty to these projects' actual environmental impacts, and thus limiting this category at Light green.
- At present, agriculture contributes 18% of the emission for the agriculture, forestry, and other land uses (AFOLU) sector in Indonesia, as per the country's Long-Term Strategy for Low Carbon and Climate Resilience 2050.
- Genetically modified organism crops, dry agriculture practice in peatland area and purchase of agriculture equipment that runs directly on fossil fuel are excluded. Bank Mandiri informed that the main end-market of agricultural production will be organic product consumers, the general public, and livestock. It is unclear whether the livestock feed will be for ruminants or nonruminants. Ruminant animals have the highest footprint, given the high-water consumption per animal, emissions from enteric fermentation and manure management, as well as land use change to pasture. As a result, this sub-category is capped at Light green.
- The adoption of low emission rice varieties is a strategy identified as it can increase rice production with minimum input and improved water use efficiency. It is expected that adoption scale of such will reach 24% of the total rice field area by 2050.

Eligibility criteria include meeting the Indonesia National Standard for Organic Agriculture System SNI 6729: 2016 and Ministry of Agriculture Regulation no 64/Permentan/OT/.140/5/2013 about Organic Agriculture System.

- Some proceeds will be allocated to support agricultural techniques, such as hydroponic greenhouse and vertical farming, to improve yield and reduction methane and nitrite production. These activities deliver environmental benefits such as water conservation, reduction of energy consumption, prevention of soil erosion. Getting certified by the Global Good Agricultural Practices (Global G.A.P.) is an eligibility criterion.
- Indonesia's long-term mitigation strategies relating to livestock comprise the utilization of livestock waste for biogas and improvement of livestock feed supplement.
- The production of biogas and organic fertilizers from livestock waste can contribute to climate change mitigation and has circular economy benefits. Eligibility criteria include compliance with the Ministry of Agriculture Decree No. 261/KPTS/SR.310/M./4/2019 about minimum technical requirement of organic fertilizer, Indonesia National Standardization SNI 9107:2022 about Biogas Production, and Indonesia National Standard for Organic Farming System SNI 6729: 2016 section farming. Yet, its climate risks and impacts depend on factors such as feedstock, unintentional emissions from leakages or discharges of gases, and transportation distances and mode. Biogas in general is exposed to transition risks, particularly via tightened restrictions on feedstocks and control of methane emissions. It is unclear how the bank will address the risks associated with methane leakage and the bank does not seem to engage with clients to manage their lifecycle emissions.
- While livestock production and integrated agriculture-farming-forestry activity have a potential to increase food product yields to meet growing demand and provide some environmental benefits compared to intensive livestock production systems, there are significant climate risks associated with the projects' overall increase in livestock. Animal-based food tends to have a much higher carbon footprint than plant-based foods and other alternative proteins. Bank Mandiri does not restrict the types of livestock raised for these projects, meaning that products from high-emitting ruminant animals may be financed. Nevertheless, the bank requires all projects to adhere to predefined herd size limits and to focus on improving productivity through better management practices rather than increasing the number of animals. While it is unclear what "predefined herd size limits" mean, Bank Mandiri commits to focusing on improving productivity through better management practices. Additionally, regular field and cage inspections are conducted, to help improve animal welfare standards.
- The bank shared that there is currently no emissions threshold regulated in animal husbandry practices in Indonesia and thus has not set an emission threshold. It will follow regulation developments in this regard.
- Organic farming has broad environmental benefits (e.g. positive impact on local biodiversity and improving soil quality) but its overall impacts on greenhouse gas emissions remain uncertain. Meanwhile, eligible plantation of fruits, vegetables, and agri-commodities is required to meet applicable certifications such as Forest Stewardship Council (FSC), trade certified, UTZ certified, Rain Forest Alliance, Bird Friendly, 4C Association, CAFÉ. General challenges with certifications lie with enforcement, traceability, and gaps in certification criteria.
- The framework's reference to relevant regulations and use of certifications should cover important environmental topics and can help verify sustainable practices. At the same time, certification systems vary significantly in stringency, can contain loopholes and, in many cases, they cannot adequately address larger systemic issues, such as direct and indirect land use change driven by agricultural expansion and associated climate emissions, or enforceability and traceability of impacts.
- Physical climate risks are material for this category, given the risks associated with forest fires and the impact of increased precipitation and flooding on agricultural crops. We would expect the issuer to have stronger considerations for physical climate risks in this regard.
- Bank Mandiri will not knowingly approve projects with direct land conversion. The company will also integrate environmental and social considerations into financing decisions, including indirect land use change risks, through due diligence exercise. In addition, Bank Mandiri may require borrowers to provide the certificate of land use to ensure no illegal land use. The bank has also established a binding credit policy for customers in the agriculture sector such that they have to commit to NDPE, including land clearance and opening, preservation of high conservation value or high carbon stock areas, and peatlands. Having a code of conduct and policies related to the environmental and labor management, and a PROPER assessment and/or EIA approved by the environmental agency are also part of the binding policy.

**Forestry**

| **Assessment** | **Description** |
|---|---|

**Dark to Medium green**

1. Afforestation, reforestation, rehabilitation, restoration, reclamation
    a. The establishment of forests through planting and/or deliberate seeding on land that, until then, was under a different land use, implies a transformation of land use from no-forest to forest or forest to forest
    b. Maximizing the use of unproductive lands (idle lands) for the establishment of forest, agriculture, or plantations
    c. Any intentional activity that initiates or accelerates the recovery of an ecosystem/land coverage from a degraded state specified in the Regulation No. 23 of 2021 about Implementation of Forest Land and Rehabilitation
    d. The re-establishment of forest through planting and/or deliberate seeding on land classified as forest. It implies no change of land use, includes planting, seeding of temporarily un-stocked forest areas, as well as planting or seeding of areas with forest cover
2. Protection and restoration of peatland
    a. Restoration of upland and lowland peatlands to enhance the sequestration and long-term storage of carbon from the atmosphere
3. Terrestrial and aquatic biodiversity conservation
    a. Preservation, conservation and/or restoration of biodiversity and valuable natural habitats (e.g. peatland, wetlands, mangrove swamps)
    b. Preservation and/or restoration of biodiversity in urban areas
    c. Wildlife habitat management (including planting and expanding hedgerows), rehabilitation, restoration, and conservation of ecosystems from a degraded state and rewilding projects
4. Sustainable commercial forest management
    a. The sustainable management, seeding, cultivation, harvesting, and mechanized utilization of forest resources for wood and non-wood products that comply with Indonesia policy and strengthen by eco-friendly certifications:
        i. FSC
        ii. Indonesia Forestry Certification Cooperation (IFCC)
        iii. Program for the Endorsement of Forest Certification (PEFC) or
        iv. The Sistem Verifikasi Legalitas Kayu (SVLK) Timber Legality Verification System
    b. Practice of social forestry
    c. Any enhancement of current forest management and utilization to improve productivity such as agroforestry

**Analytical considerations**

- In Indonesia, 63% of territory is designated as state forest area; the remainder is non-forest area or public land. Land use change and forestry including peat fires contribute to 50.13% of the country's greenhouse gas emissions in 2019. The sector is not only a source of greenhouse gas emissions, but also a major greenhouse gas sink. Significant investments in sustainable forest management practices are needed to protect forests' existing carbon sink capacity and decarbonize the sector. This category has a role in supporting the country's target of reaching forestry and other land use net sink by 2030, meaning carbon sequestration from the AFOLU sector are higher than, or at least equal to its overall emissions.

- Investments in sustainable biodiversity activities, such as forest restoration, rehabilitation, and conservation, are critical for the low-carbon future, and we view such activities as Dark green. It also has a role in supporting Indonesia's targets to rehabilitate 12 million hectares of degraded lands by 2030. Bank Mandiri informed that natural forest and peatland conversion for land use change is excluded. However, the absence of quantitative targets and thresholds in the framework's eligibility criteria limits visibility on the expected impact of financed projects. The Dark to medium green interval reflects the broad range of activities, including commercial forest management which is a Light green element due to the reliance on certifications and potential risks.
- Peatlands store a vast amount of carbon. Significant amount of greenhouse gas emissions has been released from the use of peatland through decomposition and peat fire, such that these sources contribute to about 50% of the total emissions from the AFOLU sector. Protection and restoration of peatland is crucial to the forestry and other land use net sink 2030 agenda. It also has a role in supporting Indonesia's targets to restore 2 million hectares of peatlands by 2030.
- Investments in terrestrial and aquatic biodiversity conservation are critical for the low-carbon future. However, the absence of quantitative targets and thresholds in the framework's eligibility criteria limits visibility on the expected impact of financed projects.
- Commercial forest management projects are required to obtain relevant certifications which cover various important environmental topics. However, certification systems vary significantly in stringency, can contain loopholes and, in many cases, cannot adequately address larger systemic issues, such as direct and indirect land use change driven by agricultural expansion and associated climate emissions, or enforceability and traceability of impacts. We assess these activities Light green.
- Physical climate risks are material for this category, given the risks associated with forest fires. Lack of resilience could undermine the benefits of the forestry projects.

**Transportation**

| Assessment | Description |
|---|---|
| **Light green** | 1. Low-carbon road transport<br>a. Development, manufacture, purchase, financing, leasing, rental, and operations of:<br>i. Electric passenger or freight vehicles<br>ii. Hydrogen passenger or freight vehicles<br>iii. Buses with no direct emissions (electric or hydrogen)<br>iv. Lorries and trucks with no direct emissions (electric or hydrogen)<br>v. Waste collection or construction vehicles with no direct emissions<br>vi. Non-motorized devices that operated by physical activities<br>vii. Other passenger vehicles considered as hybrid vehicles<br>b. Production of technologies/equipment that support the above, in particular, EV batteries and its specialized parts<br>2. Low-carbon rail transport – Development, manufacture, purchase, financing, leasing, rental, and operations of rolling stock for electrified freight rail<br>3. Low-carbon water transport – Development, manufacture, purchase, financing, leasing, rental, and operations of:<br>a. Zero emissions vessels, cargo ships, and passenger ships e.g. cruise ships or ferries<br>b. Production of technologies/equipment that support the above |

   c. These activities are eligible if using low greenhouse gas fuel (e.g. hydrogen, ammonia, electric, high percentage of biofuel), delivering required emissions intensity thresholds

4. Low-carbon infrastructure – Planning, design, manufacture, construction, development, installation, maintenance, and repair of supporting facilities and infrastructure for low-carbon transportation (road, rail, water, aviation). For example, charging stations for electric vehicles, hydrogen fueling stations, and infrastructure related for electrified freight rail
5. Vehicle energy efficiency – Planning, design, manufacture, construction, development, procurement, and operations of:
   a. Vehicle, rail, or boat fleet upgrades, which include replacement of engines with zero-emission technologies. The vehicles are required to be zero-direct emission (e.g. electric or green hydrogen technologies)
   b. Hybrid engines and technologies
6. Transportation system development – Planning, design, development, procurement, and operations of activity that deliver substantial greenhouse gas emissions savings:
   a. Information and communications technology that improves asset utilization, flow and modal shift regardless of transport mode (public transport information, car-sharing schemes, smart cards, road charging systems etc.)
   b. Intermodal freight facilities
   c. Terminals to improve journey times
   d. Multi-modal logistics hubs
   e. Integration of transport and urban development planning
7. Biofuel
   a. Planning, design, construction, development, procurement, and operations of facilities producing biofuel, biomass, biogas, including fuel preparation process facilities for transport
   b. These activities are eligible if biofuel sourced from a sustainable feedstock (the only timber feedstock allowed is waste wood)

**Analytical considerations**

- The transport sector accounts for 15% of total greenhouse gas emissions and 23% of global energy-related $CO_2$ emissions, according to the IPCC's sixth assessment report. The IEA's Net Zero Scenario requires transportation emissions to fall by 25% by 2030, even as demand is projected to continue to grow due to global rising income levels. Electrification of passenger transport will be one of the primary ways to decarbonize the transport sector, though we note that the emissions reductions associated with electrification are highly dependent on the composition of the local electrical grid where coal still plays a large role in Indonesia's grids, resulting in fossil fuel lock-in risk. Alternative fuels such as hydrogen and biofuels will also play an important role in the transition.
- Electric and hydrogen vehicles for passenger or freight transport are Dark green technologies, due to their decarbonization potential for the transportation sector. That said, batteries and battery technology may entail other environmental risks, specifically around mining and air/water pollution. Bank Mandiri manages these risks by implementing monitoring and reporting systems, though the degree to which the bank engages with supply chain partners is unclear. Bank Mandiri has also not specified whether these systems go beyond regulatory requirements and what "required emissions intensity thresholds" are for using low greenhouse gas fuels for water transport, limiting our opinion of the environmental benefit. The framework also does not include any specifications around whether the hydrogen will be produced using renewable energy during the electrolysis process (green hydrogen) for all eligible hydrogen vehicles. Yet, dedicated transportation of fossil fuel is excluded. As a result, this category is limited to Light green.

- For projects in vehicle energy efficiency, the framework includes the replacement of vehicle, rail, or boat fleet engines with zero emissions technologies as well as hybrid engine technologies. Efficiency improvements that involve conventional fossil fuel combustion engines are excluded. In our view, zero emissions engine technologies are a Dark green solution for decarbonizing transport, while we view hybrid technologies a Light green solution due to the possibility of some emissions lock-in. As a result, we shade these activities as Light green due to the range of eligible technologies.
- The framework outlines that transportation system development activities will only be eligible if they provide substantial greenhouse gas emissions savings, but the bank does not provide a definition or threshold for "substantial", instead clarifying that the exact emission reduction requirement will depend on the sector in question. This limits the visibility to assess the environmental benefit of these activities.
- Biogas activities are only eligible if they are sourced from a sustainable feedstock, such as waste wood. Bank Mandiri has excluded the use of non-sustainably produced crops (i.e. non-certified) and conventional food or feed crop-based feedstocks, which could raise additional risks of food competition. The bank has stated that it will prioritize locally available feedstocks but has not elaborated a contingency plan if it is unable to source these feedstocks locally. The issuer also does not currently a have specific procedure to mitigate methane leakages, and instead makes agreements with debtors on a case-by-case basis to determine the source and best course of action to effectively mitigate methane emissions. As a result, these activities are Light green.
- As part of the bank's binding credit policy customers in the transportation sector, they must obtain environmental management certifications such as ISO 14001, ISO 45001, or OHSAS 18001, and make endeavors to improve energy efficiency and reduce emissions, evidenced by documentation.

**Construction**

| Assessment | Description |
|---|---|
| Light green | 1. Green buildings – Construction of new development or renovation of existing buildings must meet one of the following conditions:<br>a. Sertifikat Bangunan Gedung Hijau: Category Utama<br>b. BREEAM: "Very Good" or above<br>c. LEED: "Silver" or above<br>d. Greenship: "Silver" or above<br>e. EDGE: Certified<br>f. Building and Construction Authorities (BCA): Gold or above<br>2. Residentials, commercial, institutional, public, and non-infrastructure buildings<br>a. Renovation, refurbishment, retrofit of existing buildings: construction and civil engineering works including the preparation<br>b. Manufacture and installation of energy efficiency technologies and/or enabling use or production of renewable energies such as efficient appliances, LED lighting, smart meters, high efficiency windows, energy-efficient HVAC systems, building management systems etc.<br>c. Development or construction of new Green Residential Communities (Hunian Hijau Masyarakat (H2M))<br>3. Network infrastructure – Telecom towers upgrades and modernization of broadband network infrastructure, including cooling systems to enhance energy efficiency |

**Analytical considerations**

- Green buildings support climate change mitigation by alleviating greenhouse gas emissions. They also have other benefits such as increasing energy efficiency, reducing water consumption and ensuring waste management. However, construction activities

introduce other issues like the energy performance and emissions associated with building materials. Physical climate risks are material considerations for buildings, and new construction may raise biodiversity issues. The overall shade for this category is Light green.

- Bank Mandiri considers all types of buildings (commercial, residential, public, industrial) in its green buildings category, as long as they are able to achieve one of the above-mentioned certifications. It is positive that buildings serving direct fossil fuel production activities are not eligible. The main energy source is likely to be electricity from the grid, where coal still plays a large role in Indonesia.
- There is an extensive list of eligible certifications, and that not all of them have minimum energy use reduction thresholds. For example, the EDGE Certified requires a minimum of 20% savings. However, some of the certifications are point-based, which limits our ability to determine the realized environmental benefit of achieving such certifications. Our assessment is therefore limited to Light green. In addition, the required levels of certifications are less ambitious than international practices, which are typically one category higher. Nevertheless, given the local context of Indonesia, the required levels could still create some level of additionality.
- Embodied emissions could be addressed according to which green certification is used and what level a given building achieves. Given that some of these green buildings certifications are point-based, they would not necessarily result in a reduction in embodied emissions. Moreover, it is unclear if all certifications listed include adequate standards that effectively limit the use of building materials with high embodied emissions, such as concrete and steel.
- While Bank Mandiri includes renovations for existing buildings that leads to a decrease in primary energy demand (PED) of at least 30% in some cases, the lack of a PED reduction threshold within the framework for both new buildings and renovations limits the ability to quantify the environmental benefit for eligible green buildings. The same logic applies for measures to increase the energy efficiency of buildings.
- Upgrades to telecom towers and other broadband network infrastructure will increase the energy efficiency of these assets, which we view positively. However, the absence of performance thresholds limits our opinion of the overall environmental benefits.
- As part of the bank's binding credit policy customers in the construction sector, they must obtain environmental management certifications such as ISO 14001, ISO 45001, or OHSAS 18001, and have policies related to the environmental and labor management.

**Oil and gas industry – $CO_2$ transport and storage from a hard-to-abate industry**

| Assessment | Description |
|---|---|
| **Light green** | 1. Transport $CO_2$<br>a. $CO_2$ transported from the capture point to the injection point does not cause leakage above 0.5% of the $CO_2$ mass per year<br>b. $CO_2$ is conveyed directly or indirectly to a permanent storage location that meets the criteria for underground geological $CO_2$ storage<br>c. Implementation of a leakage detection system and the existence of a Measurement, Reporting, and Verification (MRV) plan that includes stages organized according to referenced standards and good engineering practices<br>2. Underground permanent geological $CO_2$ storage<br>a. Conducting an assessment of the storage complex potential and its surroundings, or exploration is carried out to determine if the geological formation is suitable for use as a $CO_2$ storage site<br>b. For the operation of underground geological $CO_2$ storage sites, including closure and post-closure obligations: a leakage detection system is implemented to prevent releases during operations |

c. There is a monitoring plan for injection facilities, storage sites, and the surrounding environment, with routine reports overseen by the relevant and competent national authorities

d. Exploration and operation of storage sites comply with applicable standards

3. Supporting activities – R&D, and innovation for CCS-related technologies such as

a. Advanced materials for $CO_2$ capture

b. DAC

c. BECCS

d. Geological storage

**Analytical considerations**

- CCS technologies are critical to the removal of greenhouse gases and thus to a sustainable low-carbon future, provided they are not used to support activities that lock-in fossil fuel use. $CO_2$ coming from coal power generation or oil and gas refining/extraction, enhanced oil recovery, and new coal activity is excluded. As a result, we assess this category Light green.
- CCS technology will abide by applicable Indonesian environmental regulation outlined in Presidential Decree 14 of 2024, which dictates safeguards to mitigate spills and other environmental risks posed by the technology.
- The main risks associated with CCS that could affect Bank Mandiri are leakages during transportation and storage and the use of fossil-fuel-powered vehicles for transport. As such, it is positive that the framework includes criteria for low leakage carbon transport, which states leakage will not exceed 0.5% of the $CO_2$ mass per year.
- As part of the bank's binding credit policy for customers in the oil and gas sector, they must obtain environmental management certifications such as ISO 14001 or ISO 45001. Having an EIA approved by the environmental agency is also a requirement.

## S&P Global Ratings' Shades of Green

| Assessments | Dark green | Medium green | Light green | Yellow | Orange | Red |
|---|---|---|---|---|---|---|
| **Description** | Activities that correspond to the long-term vision of an LCCR future. | Activities that represent significant steps toward an LCCR future but will require further improvements to be long-term LCCR solutions. | Activities representing transition steps in the near-term that avoid emissions lock-in but do not represent long-term LCCR solutions. | Activities that do not have a material impact on the transition to an LCCR future, or, Activities that have some potential inconsistency with the transition to an LCCR future, albeit tempered by existing transition measures. | Activities that are not currently consistent with the transition to an LCCR future. These include activities with moderate potential for emissions lock-in and risk of stranded assets. | Activities that are inconsistent with, and likely to impede, the transition required to achieve the long-term LCCR future. These activities have the highest emissions intensity, with the most potential for emissions lock-in and risk of stranded assets. |
| **Example projects** | Solar power plants | Energy efficient buildings | Hybrid road vehicles | Health care services | Conventional steel production | New oil exploration |

Note: For us to consider use of proceeds aligned with ICMA Principles for a green project, we require project categories directly funded by the financing to be assigned one of the three green Shades.

LCCR--Low-carbon climate resilient. An LCCR future is a future aligned with the Paris Agreement; where the global average temperature increase is held below 2 degrees Celsius (2 C), with efforts to limit it to 1.5 C, above pre-industrial levels, while building resilience to the adverse impact of climate change and achieving sustainable outcomes across both climate and non-climate environmental objectives. Long term and near term--For the purpose of this analysis, we consider the long term to be beyond the middle of the 21st century and the near term to be within the next decade. Emissions lock-in--Where an activity delays or prevents the transition to low-carbon alternatives by perpetuating assets or processes (often fossil fuel use and its corresponding greenhouse gas emissions) that are not aligned with, or cannot adapt to, an LCCR future. Stranded assets--Assets that have suffered from unanticipated or premature write-downs, devaluations, or conversion to liabilities (as defined by the University of Oxford).

## Social project categories

**Affordable basic infrastructure**

1. Telecommunication infrastructure and services

   Target population: underserved and marginalized communities

   a. Development of telecommunication infrastructure and services to connect rural areas and smaller islands to such services

   b. Subsidized internal access

2. Transportation infrastructure

   a. Development of roads or other transportation infrastructure to improve connectivity in underdeveloped rural areas, or areas where road infrastructure is clearly inadequate. Development and improvement of highways in both urban and rural areas, and toll booths construction are excluded

   b. Subsidized access to public transportation infrastructure in underdeveloped rural areas

   c. Development of sidewalks for public, including accessibility improvements for people with disabilities

3. Energy infrastructure

   Target population: underserved and marginalized community

   a. Development, expansion, or improvement of access to clean drinking water, sanitation and sewers in the underserved and marginalized community. Desalination plants with dedicated onsite fossil fuel power is excluded

   b. Development and expansion of transmission and distribution infrastructure that improves access to electricity, where there is no access or access is substantially inadequate

4. Public infrastructure

   Target population: communities affected by natural disasters, including low-income households, marginalized groups, and those living in high-risk areas.

   a. Development and maintenance of natural disaster control infrastructures

   b. Rehabilitation of coastal habitats and ecosystems as a form of coastal disaster mitigation

**Analytical considerations**

- Projects in telecommunication infrastructure will improve the connectivity of remote neighborhoods, even more as they cover both coverage and cost of service. Limited access to universal and high-quality internet prevents the population from unlocking its productive capabilities to fully reap the benefits of a digital economy. Fixed broadband penetration was less than 20% in Indonesia in 2022, compared to over 55% in Malaysia, and nearly 80% in Thailand, for instance. Meanwhile, the World Bank states that almost all Internet users in Indonesia still rely on mobile broadband (3G and 4G/LTE) for internet connectivity.
- Bank Mandiri defines underserved communities as areas located in municipalities with a Human Development Index Ranking that is below the national average (74.39 in 2023), while marginalized populations are those who lack of support in economy, education (not meeting the nine-year compulsory education program), and culture, and belong to an ethnic/religious minority. People living below the national poverty line (2023: IDR 550,458 per person per month) is defined by the Indonesia National Statistic Body. It is a strength that the bank references official authorities or regulations to define these target populations.
- Bank Mandiri will finance greenfield investments for telecommunication infrastructure in rural areas and smaller islands. This involves expanding fiber optic infrastructure or supporting the deployment of 5G networks.
- The bank may fund telecommunication operators offering affordable internet access packages in underserved areas. The bank will require regular reports from borrowers to oversee the affordability of the services rendered, with information on the usage of subsidized packages, and user experience. In certain instances, Bank Mandiri might collaborate with government agencies or nongovernmental organizations (NGOs) to directly subsidize internet access for low-income individuals or communities.

- Given the complexity of Indonesia's topography, roads are critical to connect remote parts of the country. In general, road infrastructure in emerging countries is key to economic development, as it can improve access to services, allow more efficient transport of goods, and link producers to markets, thereby lifting populations out of poverty. In 2022, the total length of city roads in Indonesia amounted to 447,000km, compared with 55,000km for provincial roads, according to Statistica. In 2019, the average value of road quality for Indonesia was 4.2 points, compared to 4.1 on average for 141 countries (maximum is 7), suggesting there is a need to improve roads in the country, besides expanding the national network. The roads financed under the framework will not all be free to use, undermining their impact, as it is unclear to what extent subsidies will mitigate the financial burden on low-income users, and the extent. Rapid motorization and road expansion in the country will also continue to exacerbate road safety problems.
- In addition, until lower-emission transportation options are phased in, roads will convey mostly fossil-fuel powered vehicles with associated climate impacts and local pollution concerns. Roads can also cause ecosystem and biodiversity degradation from habitat fragmentation and direct or indirect land-use change driven by increased adjacent economic activities. Construction materials such as asphalt have links to fossil fuel inputs.
- Other investments in transportation infrastructure will include facilitating nonmotorized urban commutes with sidewalks, bicycle lanes, and pedestrian crossings; and upgrading rural bridges and ferry terminals to enhance the economic integration of remote locations.
- Investments in clean drinking water, sanitation and sewers have considerable health benefits, and address a lack of infrastructure in the country. Nearly 25 million people in Indonesia do not have immediate access to toilets. Open defecation and untreated wastewater contaminate water supply and facilitate the spread of diarrheal diseases such as cholera. A quarter of all children under five in Indonesia suffer from diarrhea, which is the leading cause of child mortality in the country. In 2023, 82% of Indonesian households had access to improved sanitation. The poorest Indonesians are being left behind, with significant gaps in access to sanitation among households in the two lowest wealth tiers of society--40% and 65% in urban areas and 36% and 65% in rural areas. More than 50 million of the country's population of 270 million lack access to facilities in the improved sanitation category. About 190 million Indonesians lack access to safe water. Water quality is poor regardless of socio-economic conditions. A 2017 survey of drinking water in Yogyakarta, a well-off urban center in Java, found that 89% of water sources and 67% of household drinking water were contaminated by fecal bacteria. Moreover, only 7% of wastewater in Indonesia is treated.
- Investments in transmission and distribution infrastructure address important, yet less pressing issues of access to power, which is a key economic enable, especially for remote communities. The electrification rate in Indonesia as of the end of 2023 was 99.78%, while the number of electricity customers increased to 88.4 million. The Directorate General of Electricity at the Ministry of Energy and Mineral Resources (ESDM) has the objective to improve the provision of electricity that is sufficient, reliable, sustainable, affordable, and equitable as mandated by the Law. The sufficient and reliable variables of the equation necessitate considerable investments in infrastructure. For instance, the country constructed substations accounting for 5,660 MVA (megavolt-amperes) and transmission networks of 3,520km last year. Indonesia has a long record of providing subsidies to electricity (73,609 GWh, i.e. 23% of total generation in 2023, for IDR64 trillion (US$3.9 billion) to address considerations of affordability and equity.
- While Bank Mandiri may encourage the development of renewable energy generation projects alongside T&D infrastructure investments, and the upgrade to the grid infrastructure to facilitate the integration of more renewable energy sources and improve overall energy efficiency, environmental considerations are a second and distant consideration.

**Access to essential services**

1. Health care

   Target population: underserved community

   a. Construction, development, or maintenance of public health care facilities, such as hospitals, clinics, health care centers, pharmacies etc. for those who are underserved in their locality

   b. Development or maintenance of eldercare facilities that are publicly owned or private not-for-profit underserved community

   c. Operation of community-based health care, mental health care, or social services

   d. Supply of health care equipment for underserved community
   e. Programs focusing on women's health, such as awareness programs for underserved communities

2. Education
   a. Construction or development of education facilities, such as public kindergartens, schools, vocational schools, training sessions, colleges, and/or universities for target populations
   b. Subsidized public education programs, particularly for low-income students, and educators
   c. Construction or development of free or public libraries

3. Financing and financial services

   Target population: underserved and marginalized populations

   a. Provision of access to banking and financial services in underserved populations
   b. Implementation of financial literacy programs

4. Cultural and recreational
   a. Construction or development of cultural centers, recreational centers, museums, parks, and other public spaces in underserved areas

**Analytical considerations**

- Health care projects improve patient access to essential medical care, and could translate into greater efficacy of existing health care infrastructure. Indonesia faces health challenges including the increase in noncommunicable diseases, ongoing infectious disease issues, maternal and child health, and undernutrition and overnutrition. In addition, the country's maternal mortality ratio of 173 deaths per 100,000 live births remains significantly higher than the average for the East Asia and Pacific region of 77. Likewise, it compares unfavorably in life expectancy and infant, under-five, and neonatal mortality, pointing to a need for improved mother and child health services.
- Target populations are primarily underserved community and marginalized populations, referencing the same definition.
- Eligible projects could support the country to achieve its targets of higher life expectancy and improved infrastructure quality, as part of the Indonesia Emas 2045 Roadmap. Community, proximity structures such as "Posyandu, Polindes, Poskesdes" facilities have a key role to play to enhancing the health of rural populations. The facilities funded will be freely accessible or under co-payments, depending on location and government regulations. Likewise, Program Keluarga Berencana is essential to protecting women's health, increasing awareness of contraception options, and controlling the rate of population growth. The World Health Organization (WHO) and the Indonesian Food and Drug Authority (BPOM) have in recent months taken targeted action to increase access to safe and effective medicines and medical products, with a focus on strengthening pharmacovigilance and good distribution practices. This included increasing training BPOM inspectors and increasing their number by 10%.
- Bank Mandiri will fund the construction or development of educational facilities in underserved communities, rural areas, and areas with limited access to quality education, subsidize public education programs and construct free public libraries, increasing target groups' financial and practical access to knowledge. According to the Organization for Economic Cooperation and Development (OCED)'s Education at a Glance 2023, Indonesia has one of the highest percentages of adults aged 25 to 64 with less than primary education (12.7%, ranked two out of 34). Similarly, more than three in four 15-year-olds in Indonesia did not meet minimum proficiency levels in mathematics and reading. Eligible projects could support the country's education reform agenda (Merdeka Belajar), covering early childhood to tertiary education and promoting equal education opportunities.
- Bank account ownership in Indonesia is 52% in 2021, compared to the worldwide rate of 76%, according to the World Bank's Global Findex Database. It suggests that gaps exist in financial access, especially for underserved populations. Meanwhile, financial literacy is an important skill in the context of societal empowerment individual welfare, consumer protection, and enhanced financial inclusion. The 2019 National Survey on Financial Literacy and Inclusion showed a financial literacy index of 38.03% (meaning that out of every 100 people there were around 38 well literate people), which is still relatively low. Notably, the financial literacy index in rural areas is lower than the overall index, at 34.53%. Eligible projects could support the National Strategy on Indonesian Financial Literacy 2021-2025, published by the Financial Services Authority (OJK).

- Cultural and recreational spending aim to increase access to creativity, expression, and skill-building, particularly for young people in underserved communities. Social benefits of such projects may not be as marked as those of projects covering basic needs.

### Affordable housing

Development and/or provision of affordable and low-income housing, shelters, community housing, student housing for low-income or marginalized communities according to local government definitions

**Analytical considerations**

- The development of affordable projects helps improve housing conditions for low-income households. Property prices have been going up sharply, sparking concerns over affordability. The government is considering extending the maximum home mortgage tenor to 35 years to provide more affordable monthly payments for lower-income households. Indonesia could be facing the threat of a housing crisis, with 12.7 million people or 16% of its households lacking homeownership as of 2022, according to the Housing and Real Estate Information System (HREIS) of the Ministry of Public Works and Housing. About 81 million millennials still do not have their own houses.
- Target populations are primarily low-income and marginalized communities, referencing the same definitions. Local housing regulations are also referenced to guide criteria for low-income communities and requirements for house acquisitions. As in Regulation of the Minister of Public Works and Public Housing Number 20/PRT/M/2019, housing for low-income communities are not subject to value-added tax thus relatively more affordable than commercial houses and the selling price does not exceed the predetermined price limit by government.
- Bank Mandiri could offer subsidized mortgage or loan products with lower interest rates or relaxed down payment requirements for low-income homebuyers. On the other hand, Bank Mandiri might collaborate with government agencies or NGOs that offer housing subsidies to low-income individuals or families. Currently Bank Mandiri also in active collaboration with Minister of Public Works and Public Housing on Housing Financing Liquidity Facility ('Fasilitas Likuiditas Pembiayaan Perumahan'/FLPP) program that aims to provide funds to support simple healthy home ownership loans for LIC to obtain houses through mortgage, in the context of channeling facilities and/or assistance for home ownership for low-income communities.
- Bank Mandiri would likely rely on established income thresholds set by government agencies to define target populations for low-income housing initiatives. In some cases, additional factors beyond just income, such as family size or number of dependents, might be considered to ensure inclusivity. Specific for subsidized loans, the target populations would be Indonesian citizens that do not own homes; with regular or irregular income that does not exceed the income limit set by the government. In addition, the person must have never received subsidies or housing finance assistance from the government related to home ownership credit/financing, and credit/financing for self-help housing construction.

### Food security and sustainable food systems

1. Food security
    a. Programs of enhancing access to nutrition, including food and clean drinking water, to address malnutrition concerns for target populations in areas experiencing significant challenges related to food security
    b. Investment in the manufacture, logistics, provision and distribution of food and nutritional supplements in rural areas or target populations
    c. Educational programs focusing on nutrition, healthy eating habits, and food preparation skills to promote healthier lifestyles
2. Sustainable food systems
    a. Provision of technical capacity building and agricultural training programs for smallholder farmers to improve nutritional quality and adoption of efficient farming practices using the latest technology

b. Provision of equipment and facilities that help to prevent food loss and waste, improve productivity, and increase market access to smallholder producers

**Analytical considerations**

- Projects aim to improve both access to, and quality of, food. Both are important social considerations in the country. According to the World Food Program, Indonesia faces challenges in terms of limited food access and malnutrition. Nearly 23 million people are unable to meet their dietary requirements and 21.6% of children under five are stunted. There is a higher prevalence among families reliant on subsistence farming or who live in slums. The lack of affordability of diverse and nutritious diets is leading to the burden of malnutrition in Indonesia. The country aims to decrease the proportion of households experiencing moderate to severe food insecurity to 4%, the prevalence of undernourishment to 5%, and stunting among children under five to 14% by 2024, as stated in its National Medium-Term Development Plan 2020-2024. Eligible activities are consistent with the national policies.
- Based on Constitutional Court Decision Number MK 99/PUU-X/2012, smallholder farmers are those who work daily in the agricultural sector with an income that is just enough to meet their living needs. The average smallholder household consists of five or six household members with the household head having an average educational level of six years. Smallholder agriculture in Indonesia is often practiced without the benefit of modern tools or improved seed varieties. Moreover, the vulnerability of rice farming to climate change has made its production less attractive to smallholders. Higher yields and diversification, for example, into high value fruits is key to stabilize incomes and reduce poverty. Small farms have an average size below 1 hectare. A third of Indonesian farmers are more than 54 years old and only 10% are aged between 25 and 34. In 1976, two thirds of workers were employed in the agricultural sector, but by 2019 that number had dropped to 28%. In the absence of mechanization and access to scientific farming, labor shortage affects production processes, volumes and quality of agricultural products.
- Modern techniques will include precision agriculture, drip irrigation, composting and sustainable soil management practices, and pest management.
- Such projects could involve some land conversion to agriculture in the Central Government and Regional Governments' agricultural cultivation areas in spatial plans. Likewise, spending could cover chemical pesticides and fertilizers. While these products will have to be registered, labeled, and meet domestic quality standards, they may have a negative impact on the environment.

**Socioeconomic advancement and empowerment, and employment generation**

Target populations: unreserved and marginalized population

1. Programs that support MSMEs growth and market competitiveness, including SME financing and micro financing, residing in socioeconomically disadvantaged
2. Programs that promote gender equality, women's rights, and economic empowerment
3. Training and development programs aimed to improve the employability and upskilling of target populations. Focused on underserved populations, including females and youth borrowers

**Analytical considerations**

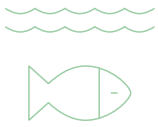
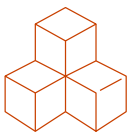
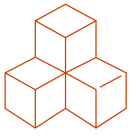
- MSMEs play significant roles in Indonesia's economy and GDP growth. The government estimated that there are 64.2 million MSMEs in 2022, contributing to 61% of the country's GDP and absorbing 97% of its total workforce. However, only 17.5 million MSME players enters the digital ecosystem and take advantage of e-commerce. They face challenges such as access to local and global markets, access to financial products or services to support business expansion, and improvement of competitiveness and productivity.
- The definition of MSMEs adheres to the Law No. 20 of 2008. Micro enterprises have an annual turnover up to IDR300 million (US$18,267), and assets of up to IDR50 million (US$3,044); small enterprises have an annual turnover between IDR300 million (US$18,267) to IDR2.5 billion (US$152,243), and assets of between IDR50 million (US$3,044) to IDR500 million (US$30,449); medium enterprises have an annual turnover between IDR2.5 billion (US$152,243) to IDR50 billion (~US$3 million), and assets between IDR500 million (US$30,449) to IDR10 billion (US$608,987).

- President Joko Widodo's administration has taken various measures to support MSMEs, such as easing the process to create legal entities and lowering the income tax burden for small businesses. The government expects the number of MSMEs in the country to grow to 83.3 million within 10 years. However, only 19% of bank loans went to small businesses in 2023, compared to the government's 30% target. Despite government subsidies provided through the micro credit program (KUR), data suggest financial institutions remain selective and that many MSMEs may be struggling to obtain affordable funding.
- Microfinance refers to providing financial services like loans, savings accounts, and money transfer services to low-income entrepreneurs or individuals who wouldn't qualify for traditional bank loans. However, Bank Mandiri does not have restrictions on the sectors in which these MSMEs operate.
- Training could cover skills such as entrepreneurship, digital literacy, and communication. The framework's definition is broad, and the bank has provided no indication on how these spending would take place (direct or through service providers) or information about affordability considerations.
- Indonesia's Global Gender Gap Index ranking improved from 92 in 2022 to 87 in 2023, including an increase in the share of women in legislative, senior, and managerial roles to over 30.0% today. In 2022, Indonesia enacted the Law on the Crime of Sexual Violence, which addresses physical and nonphysical sexual harassment in employment and provides for criminal penalties and civil remedies, a major step to protect women on the workplace. Indonesia faces a 28.6% gender gap due to the stagnant female labor force participation rate of 53.3% over the past two decades, compared to 81.9% for men. Such gap suggests a difference in income distribution and limits women's potential growth. The country has committed to reducing the gender gap in labor force participation by 25% by 2025. Women hold 8.3% of board seats, 5.2% of board chair positions, and 3.1% of CEO roles, indicating a notable gender gap in corporate leadership. Likewise, the percentage of women in senior and middle management positions is at a low 19.4%, compared to men at 80.6%, and women are underrepresented in business ownership.
- Programs to support women entrepreneurs include mentorship, tailored financial products, training on business skills, financial management, and marketing. specifically for women entrepreneurs. There is no resource cap for women entrepreneurs to benefit from such schemes. This means funds may not be channeled in priority to the females most in need for support.

# Mapping To The U.N.'s Sustainable Development Goals

Where the Financing documentation references the SDGs, we consider which SDGs it contributes to. We compare the activities funded by the Financing to the International Capital Markets Association (ICMA) SDG mapping and outline the intended linkages within our SPO analysis. Our assessment of SDG mapping does not impact our alignment opinion.

This framework's green and social projects intend to contribute to the following SDGs:

| Use of proceeds | SDGs | | |
|---|---|---|---|
| Electricity, gas, steam and air conditioning supply |  **7. Affordable and clean energy** |  **13. Climate action** | |
| Agricultural and farming |  **9. Industry, innovation and infrastructure** |  **12. Responsible consumption and production** |  **13. Climate action** |
| Forestry |  **13. Climate action** |  **14. Life below water** |  **15. Life on land** |
| Transportation |  **7. Affordable and clean energy** |  **9. Industry, innovation and infrastructure** | |
| Construction |  |  |  |

| | 7. Affordable and clean energy | 9. Industry, innovation and infrastructure | 11. Sustainable cities and communities |
|---|---|---|---|
| Oil and gas industry |  **7. Affordable and clean energy** | | |

*The eligible project categories link to these SDGs in the ICMA mapping.

# Related Research

- Analytical Approach: Second Party Opinions: Use of Proceeds, July 27, 2023
- FAQ: Applying Our Integrated Analytical Approach for Use-of-Proceeds Second Party Opinions, July 27, 2023
- Analytical Approach: Shades of Green Assessments, July 27, 2023
- S&P Global Ratings ESG Materiality Maps, July 20, 2022

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