CICERO
Center for International
Climate Research

‘Second Opinion’ on The Republic of Indonesia’s Green Bond and Green Sukuk Framework

January 23rd, 2018

Summary

The Republic of Indonesia's Green Bond and Green Sukuk Framework provides a robust structure for climate-aligned investment. The framework is in alignment with the Green Bond Principles, the ASEAN Green Bond Standards, and the new regulations of the Republic of Indonesia Financial Services Authority for green bonds (December 2017).

The framework is aligned to support Indonesia's Nationally Determined Contribution (NDC) to the UNFCCC, covering a broad range of mitigation and adaptation project types. The framework explicitly excludes new fossil fuel based electric power generation capacity and expenditure related to the improvement in the efficiency of fossil fuel based electric power generation, as well as large-scale hydropower plants and nuclear–related assets.

The selection process for inclusion in the pool of Eligible Green Projects is two-fold; the activities of line ministries are first tagged as mitigation or adaptation activities, and then screened against the criteria outlined in the Green Bond and Green Sukuk framework. The budget tagging process involves climate and environmental experts and requires the agreement of the line ministry, the Ministry of Finance, the National Development Planning Agency (BAPPENAS) and the Ministry of Environment and Forestry.

There is a possibility that some Eligible Green Projects include an element of deforestation. The issuer has informed us that there will be no deforestation in the sustainable agriculture category. As per Indonesian regulation, it is mandatory to undertake an Environmental Impact Assessment (AMDAL) for all projects that have a boundary overlap with, or may impact on, any of the classifications of protected area including forest area, national parks and reserves. We encourage the issuer to avoid deforestation in all project categories when implementing the AMDAL Procedures.

The framework includes transparent reporting, including a list of projects and environmental impacts. We are encouraged by the issuer's use of external auditors to review the annual use of proceeds and impact reporting.

Based on an overall assessment of the activities that will be financed and the governance of the framework, the Republic of Indonesia (ROI)'s Green Bond and Green Sukuk Framework is awarded the Medium Green shading. This sovereign Green Bond and Green Sukuk Framework includes a broad range of project categories across a range of line ministries to support its NDC. This allows for the possibility of light, medium and dark green project types, all of which are necessary to meet the climate change challenge.

Contents

1 Introduction and background

As an independent, not-for-profit, research institute, CICERO (Center for International Climate and Environmental Research - Oslo) provides Second Opinions on institutions' framework and guidance for assessing and selecting eligible projects for green bond investments, and assesses the framework's robustness in meeting the institutions' environmental objectives. The Second Opinion is based on documentation of rules and frameworks provided by the institutions themselves (the client) and information gathered during meetings, teleconferences and e-mail correspondence with the client.

CICERO is independent of the entity issuing the bond, its directors, senior management and advisers, and is remunerated in a way that prevents any conflicts of interests arising as a result of the fee structure. CICERO has established the global Expert Network on Second Opinions (ENSO), a network of independent non-profit research institutions on climate change and other environmental issues, to broaden the technical expertise and regional experience for Second Opinions. CICERO works confidentially with other members in the network to enhance the links to climate and environmental science, building upon the CICERO model for Second Opinions. In addition to CICERO, ENSO members currently include Basque Center for Climate Change (BC3), International Institute for Sustainable Development (IISD), Stockholm Environment Institute (SEI), and Tsinghua University's Institute of Energy, Environment and Economy. A more detailed description of CICERO can be found at the end of this report. ENSO encourages the client to make this Second Opinion publically available. If any part of the Second Opinion is quoted, the full report must be made available.

CICERO's Second Opinions are normally restricted to an evaluation of the mechanisms or framework for selecting eligible projects at a general level. CICERO does not validate or certify the climate effects of single projects, and thus, has no conflict of interest in regard to single projects. CICERO is neither responsible for how the framework or mechanisms are implemented and followed up by the institutions, nor the outcome of investments in eligible projects.

This note provides a Second Opinion of The Republic of Indonesia (ROI) Green Bonds Framework and policies for considering the environmental impacts of their projects. The aim is to assess the Republic of Indonesia's Green Bonds Framework as to its ability to support The Republic of Indonesia `s stated objective of promoting the transition to low-carbon and climate resilient growth.

This Second Opinion is based on the Green Bond and Green Sukuk Framework presented to CICERO by the issuer. Any amendments or updates to the framework require that CICERO undertake a new assessment. CICERO takes a long-term view on activities that support a low-carbon climate resilient society. In some cases, activities or technologies that reduce near-term emissions result in net emissions or prolonged use of high-emitting infrastructure in the long-run. CICERO strives to avoid locking-in of emissions through careful infrastructure investments, and moving towards low- or zero-emitting infrastructure in the long run. Proceeds from green bonds may be used for financing, including refinancing, new or existing green projects as defined under the mechanisms or framework. CICERO assesses in this Second Opinion the likeliness that the issuer's categories of projects will meet expectations for a low carbon and climate resilient future.

Expressing concerns with 'shades of green'

CICERO/ENSO Second Opinions are graded dark green, medium green or light green, reflecting the climate and environmental ambitions of the bonds and the robustness of the governance structure of the Green Bond and Green Sukuk Framework. The grading is based on a broad qualitative assessment of each project type, according to what extent it contributes to building a low-carbon and climate resilient society. The shading methodology also aims at providing transparency to investors when comparing Green Bond and Green Sukuk Frameworks exposure to climate risks. A dark green project is less exposed to climate risks than a lighter green investment.

This Second Opinion will allocate a 'shade of green' to the Green Bond and Green Sukuk Framework of The Republic of Indonesia's:

- **Dark green** for projects and solutions that are realizations today of the long-term vision of a low carbon and climate resilient future. Typically, this will entail zero emission solutions and governance structures that integrate environmental concerns into all activities.
- **Medium green** for projects and solutions that represent steps towards the long-term vision, but are not quite there yet.
- **Light green** for projects and solutions that are environmentally friendly but do not by themselves represent or is part of the long-term vision (e.g. energy efficiency in fossil-based processes).
- **Brown** for projects that are irrelevant or in opposition to the long-term vision of a low carbon and climate resilient future.

The project types that will be financed by the green bond primarily define the overall grading. However, governance and transparency considerations are also important because they give an indication whether the institution that issues the green bond will be able to fulfil the climate and environmental ambitions of the investment framework. Investments in all shades of green projects are necessary in order to successfully implement the ambition of the Paris agreement. The overall shading reflects an ambition of having the majority of the project types well represented in the future portfolio, unless otherwise expressed by the issuer.

2 Brief Description of The Republic of Indonesia's Green Bond and Green Sukuk Framework and rules and procedures for climate-related activities

Indonesia is the fourth most populous country in the world. As climate change becomes a reality, Indonesia seeks a balance between its current and future development and poverty reduction priorities. Based on Indonesia's First Biennial Update Report submitted to UNFCCC in January 2016, national greenhouse gas (GHG) emissions was 1.453 Gt CO_2e in 2012, which represents an increase of 50 percent from year 2000. The main contributing sectors were land use change and forestry including peat fires and energy.

Being the largest archipelagic country in the world and having extensive tropical rainforests with high biodiversity Indonesia is a key country in the global efforts to combat climate change and environmental preservation. Indonesia is vulnerable to natural disaster that likely will be exacerbated by climate change, especially in low-lying areas throughout the archipelago.

Indonesia was the first developing country to voluntarily pledge to reduce Greenhouse Gas emissions at COP 15 in Copenhagen in 2009. Indonesia translated its commitment into Presidential Regulation number 61/2011 on National Action Plan for GHG Emissions Reduction, focusing on the sectors of Energy, Waste, Industrial Processes and Product Use, Agriculture and Forestry. In 2014, Indonesia developed the national action plan on climate adaptation (RAN-API). Following Paris Agreement, in 2016 Indonesia sets in its Nationally Determined Contribution (NDC) an unconditional reduction target of 29% against a business as usual scenario by 2030. An additional 12% reduction is conditional on technology transfer, capacity building, results for payment, and access to finance. Indonesia will publically report on progress through submissions to the UNFCC on a biennial basis.

Use of Proceeds:

According to the framework, the proceeds of each Green Bond or Green Sukuk will be used exclusively for spending in the form of budget allocation, subsidies or project funding of Eligible Green Projects. The framework includes a broad range of sectors which promote the transition to low-emission economy and climate resilient growth, including climate mitigation, adaptation, and biodiversity. Projects will only be included in the pool of Eligible Green Projects if they meet relevant Indonesian environmental regulations and have been identified as mitigation or adaptation projects in the "Budget Tagging Process" as summarized in the section on project selection. The proceeds of the Green Bonds and Green Sukuks can be used both for new projects and refinancing of Eligible Green Projects.

New fossil fuel based electric power generation capacity, large-scale hydropower plants and nuclear and nuclear–related assets will not be eligible under the framework. Fossil fuel infrastructure is also excluded from eligibility for energy efficiency projects.

Selection:

The selection process for inclusion in the pool of Eligible Green Projects is two-fold; the activities of line ministries are first tagged" as mitigation or adaptation activities, then screened against the criteria outlined in the Green Bond and Green Sukuk framework. As per Indonesian law, all projects must also comply with the AMDAL regulation, requiring environmental clearance before implementation.

In 2015, the Republic of Indonesia introduced a system for "tagging" of ministry budgets (Budget Tagging Process) to identify expenditures that deliver specified climate change benefits in accordance with the Republic of Indonesia's climate objectives. Currently, the tagging process includes the following ministries: Ministry of Agriculture, Ministry of Energy and Mineral Resources, Ministry of Transportation, Ministry of Industry, Ministry of Environment and Forestry, Ministry of Public Works and Housing. In 2018, the process will be expanded to include climate change adaptation, with the exception of the Ministry of Industry, which will continue to only tag mitigation projects. Additional ministries will adopt the tagging process in 2018[1].

The Budget Tagging Process was developed with the support of the UN Development Programme. The issuer has informed us that they are committed to continuously improve the process, and that stakeholder feedback is activity sought and included. A "peer review" process is underway, including external parties, such as the University of Indonesia and the World Bank, to ensure appropriateness and efficacy of the budget tagging process.

The Budget Tagging Process is an integrated process involving the individual ministries responsible for the individual projects as well the Ministry of Finance. The Ministry of Finance will first identify a suggested list of potential mitigation and adaptation related activities funded by State Budget and submit this to each line ministry. The line ministries will review each individual project that delivers specified climate change benefits in accordance with the Republic of Indonesia's climate objectives. The climate change benefits are assessed by the individual ministries involving the Climate Change Secretariat of National Development Planning Agency (BAPPENAS) and validated by the Ministry of Environment and Forestry to be consistent with Indonesia's NDC. The decision to "tag" any project as a mitigation or adaptation project is made by consensus by the line ministry, Ministry of Finance, BAPPENAS and the Ministry of Environment and Forestry. Budget tagging is endorsed by the Ministry of Finance, verified ministry activities will then be included in the State Budget by the Ministry of Finance.

Eligible Green Projects will be selected from the pool of mitigation and adaptation projects. Respective ministries will identify potential Eligible Green Projects in accordance with the criteria and process set out in the Framework. Final inclusion in the Eligible Green Project pool is decided with the consensus of individual ministries together with the National Development Planning Agency (BAPPENAS), the Ministry of Environment and Forestry, and endorsed by the Ministry of Finance.

[1] Complete list of line ministries that are adopting the Budget Tagging Process on Adaptation: (i): Ministry of Agriculture; (ii) Ministry of Environment and Forestry; (iii) Ministry of Maritime Affairs and Fisheries; (iv) Ministry of Energy and Mineral Resources; (v) Ministry of Transportation; (vi) Ministry of Public Works and Housing; (vii) Ministry of Health; (viii) Ministry of Home Affairs; (ix) Ministry of Agrarian Affairs and Spatial Planning/National Land Agency; (x) Ministry of Law and Human Rights; (xi) Indonesian Institute of Sciences; (xii) National Institute of Aeronautics and Space; (xiii) Geospatial Information Board; (xiv) Assessment and Application of Technology Agency; (xv) Indonesian Agency for Meteorology, Climatology and Geophysics; (xvi) Indonesian Central Board of Statistics; and (xvii) National Development Planning Agency (BAPPENAS). The tagging process may also be adopted by other ministries.

Allocation of proceeds are within the authority of the Financing Directorate within the Ministry of Finance. The Directorate is responsible to also conduct the final projects selection process, monitoring and any replacement of assets/projects.

All projects undergo environmental clearance via the AMDAL Procedure. There are three levels of clearance. The lowest level of clearance requires submission of a 'statement of management and environmental monitoring ability', whereas the highest level of clearance requires an Environmental Impact Assessment that must be prepared by 'suitably trained and registered experts'.

An AMDAL Environmental Impact Assessment is mandatory for projects that involve the following:

- alteration of landform and landscape;
- exploitation of both renewable and non-renewable natural resources;
- processes and activities that potentially lead to waste, pollution and environmental degradation, and the deterioration of natural resources in their utilization;
- processes and activities whose outcomes affect the natural environment, the artificial environment, and the social and cultural environment;
- processes and activities whose results will affect the conservation of resource conservation areas and / or protection of cultural heritage;
- introduction of plant species, animal species, and types of microorganisms;
- manufacture and use of biological and non-biological materials;
- technological advances that are expected to have considerable potential to affect the environment;
- activities that have a high risk, and or affect the state defense.

Management of proceeds:

According to the framework, net proceeds of the Green Bonds and Sukuk will be managed within the issuer's general treasury account in accordance with sound and prudent treasury management policy. Upon request from the Line Ministries, the Green Bond and Sukuk proceeds will be credited to a designated account of the relevant ministries for funding exclusively projects as defined in the Framework. Disbursement of proceeds and proceeds allocation will be tracked with a system managed by the Ministry of Finance. Each eligible green project will be identified through a unique budget code number by which the process of disbursement can be traced. Pending application to Eligible Green Project proceeds will be held in cash in the Government's general account at Bank Indonesia. The issuer has informed us that they are committed to maintaining an eligible green project pool larger than the expected outstanding issuance amount.

The proceeds can be used for financing of new projects and refinancing. If proceeds are used for refinancing, the issuer will disclose the ratio of the proceeds used for refinancing to the total proceeds.

The Ministry of Finance shall manage the processes for allocation of the proceeds of each Green Bond and Green Sukuk issuance, and ensure that the proceeds are used in accordance with this Framework. As a part of state budget monitoring, the Ministry of Finance, regularly conducts monitoring of project progress with the involvement of related line ministries. The issuer has informed us that a continuous monitoring process will be put in place to ensure the compliance of the Eligible Green Project pool. The monitoring will be governed by the Ministry of Finance, involving line ministries, BAPPENAS and the Ministry of Environment and Forestry. In the event that projects are identified as non-compliant during the tenor of the issuance, the projects will be replaced by other eligible green project of the same amount. In case of asset divestment, the Republic of Indonesia will mark the net proceeds as "unallocated" until the net proceeds are used to finance or refinance another Eligible Green Projects.

A Green Bonds and Green Sukuk allocation register (the "Register") will be established to record the allocation of Green Bonds and Green Sukuk proceeds. The Register will contain, for each Green Bonds and Sukuk issued, information including: details of Green Bonds and Green Sukuk such as ISIN, pricing date, maturity date, and a list of Eligible Green Projects, including:

- Summary of projects details
- Amount of proceeds allocated to each eligible projects
- Expected climate and/or environmental impacts of eligible projects
- Aggregate amount of proceeds of Green Bonds and Green Sukuk allocated to eligible projects
- Remaining balance of unallocated proceeds

CICERO finds the management of proceeds to be in compliance with the Green Bond Principles.

Reporting:

The Ministry of Finance of the Republic of Indonesia will prepare and publish a Green Bond and Green Sukuk Report ("the Report") annually on the allocation and impact of use of proceeds of each Green Bond and Green Sukuk outstanding. The Report will contain:

- A list of all projects to which Green Bond and Green Sukuk proceeds have been allocated, and whether the project was funded through Green Bond or Green Sukuk issuance
- The amount of Green Bond and Green Sukuk proceeds allocated (allocated amount) to such projects
- An estimation of the environmental benefits arising from the implementation of Eligible Green Projects aggregated by sector (project category).

The issuer has informed us that for mitigation projects, the reduction in greenhouse gas emissions will be reported in accordance with the National Registry System on Climate Change (SRN) methodology[2]. For adaptation projects, a Resilience Index Information System (Sistem Informasi Indeks Inventarisasi Kerentanan SIDIK) has been developed by the Ministry of Environment and Forestry. The issuer has informed us that SIDIK is a measure of resiliency where climate change impact is a function of exposure, sensitivity and capacity of the ecosystem[3]. Additional impact metrics may include reduction in resource consumption, the number of parties that benefit from projects funded and other appropriate measures taking into account the nature of the project. The issuer has informed us that the calculation methodology for GHG emissions and the resiliency index will be publically available.

The Green Bond and Green Sukuk Report will be published on the Ministry of Finance website (www.djppr.kemenkeu.go.id).

The Republic of Indonesia will engage an independent third party to provide assurance on its annual Green Bond and Green Sukuk report and the compliance of each Green Bond and Green Sukuk issued with this Green Bond and Green Sukuk Framework.

[2] SRN website: http://ditjenppi.menlhk.go.id/srn/#stat
[3] SIDIK website: http://sidik.menlhk.go.id/

The table below lists the documents that formed the basis for this Second Opinion:

Document Number	Document Name	Description
1	Green Bond and Sukuk Framework dated January 23rd 2018	
2	First National Determined Contribution Republic of Indonesia (November 2016)	Description of NDC
3	Budget tagging manual for climate change mitigation – Ministry of finance	Description of budget tagging process
4	Development of monitoring, evaluation and reporting for adaptation plan	PowerPoint presentation from workshop of advancing national adaptation planning in Asia Pacific (Jakarta, 29 October 2015)
5	Climate Finance Policy and Climate Budget Tagging Mechanism	PowerPoint presentation; Center for Climate Finance and Multilateral Policy at the Fiscal Policy Agency (Ministry of Finance ROI) (Jakarta, 9 October 2017)
6	Precedential regulation of ROI number 61 2011 on the national action plan for greenhouse gas emissions reduction	National regulation on GHG reduction
7	Strategic Plan Sustainable Tourism and Green Jobs for Indonesia, Ministry of Tourism and Creative Economy of the Republic of Indonesia in cooperation with the International Labour Organization	Overview of sustainability goals for tourism development
8	AMDAL Procedure	Summary overview of select Indonesian environmental regulation
9	MoEF, 2015, National Forest Reference Emission Level for REDD+ In the Context of Decision 1/CP.16 Paragraph 70, Directorate General of	Emission baseline for REDD+ projects

	Climate Change. The Ministry of Environment and Forestry. Indonesia	
10	Roadmap Pengembangan Panas Bumi 2025	Estimates of emissions reductions from geothermal energy
11	Development of Smart Street Lighting Initiative (SSLI) Awang Riyadi, Directorate General of New Renewable Energy and Energy Conservation, Ministry of Energy and Mineral Resources	Presentation of the SSLI held at UNEP NAMAs Regional Workshop HaLong - Vietnam, 1-3 October 2014
12	Implementation Diagram of Waste Management Policy	Diagram of waste management
13	Greenship New Building v1.1 (February 2012)	Description of New Building certification requirements

Table 1. Documents reviewed

3 Assessment of The Republic of Indonesia Green Bond and Green Sukuk framework and environmental policies

Overall, the Republic of Indonesia's Green Bond and Green Sukuk Framework provides a sound framework for climate-friendly investments.

The framework and procedures for the Republic of Indonesia's green bond and green sukuk investments are assessed and their strengths and weaknesses are discussed in this section. The strengths of an investment framework with respect to environmental impact are areas where it clearly supports low-carbon projects, whereas the weaknesses are typically areas that are unclear or too general. Pitfalls are also raised in this section to note areas where issuers should be aware of potential macro-level impacts of investment projects.

Overall shading

Based on the project category shadings detailed below, and consideration of the governance structure of the Republic of Indonesia (ROI) in terms of management and use of proceeds, we rate the framework CICERO Medium Green. This sovereign Green Bond and Green Sukuk Framework includes a broad range of project categories across a range of line ministries to support its NDC. This allows for the possibility of light, medium and dark green project types, all of which are necessary to meet the climate change challenge.

Eligible projects under the Green Bond and Green Sukuk Framework

At the basic level, the selection of eligible project categories is the primary mechanism to ensure that projects deliver environmental benefits. Through selection of project categories with clear environmental benefits, green bonds aim to provide certainty to investors that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the "overall environmental profile" of a project should be assessed and that the selection process should be "well defined".

Category	Eligible project types	Green Shading and some concerns
Renewable Energy	• Generation and transmission of energy from renewable energy sources: include offshore and onshore wind, solar, tidal, hydropower[4], biomass and geothermal • Research and development of products or technology ("R&D") for renewable energy generation, include turbines and solar panels	**Dark green** ✓ The issuer has informed us that no projects involving the burning of peat will be financed under the framework. Consider life cycle emissions, and avoid negative impacts on biodiversity. ✓ It might be possible that some projects include an element of deforestation. However, as per Indonesian regulation it is mandatory to undertake an Environmental Impact Assessment (AMDAL) for all projects or businesses that have a boundary overlap with, or may impact on, any of twenty classifications of protected area including forest area, national parks and reserves. ✓ Consider emissions from construction phase, landscape issues and mass deposits. The issuer notes that environmental assessment reports will be provided if feasible for the manufacture of components. ✓ Renewable energy projects can have potential negative impacts on biodiversity, nature, and local communities. The issuer has informed us that all projects have to conform to the AMDAL procedures ✓ The issuer has informed us that broader environmental impacts are considered for geothermal projects, and that there is no expected heavy metal pollution in the geothermal sector.
Energy Efficiency	• Improvement of the energy efficiency of infrastructure, which results in an energy consumption of at least 10% below the average national energy consumption of an equivalent infrastructure • Research and development of products or technology ("R&D") and their implementation that reduces energy consumption of	**Light to Medium green** ✓ The issuer has informed us that no fossil-fuel based infrastructure could be financed ✓ Be aware of lock-in of obsolete technologies. Careful consideration should be taken in assessing projects to ensure the best possible technology is utilized ✓ Be aware of rebound effects.

[4] Hydropower greater than 30 MW is excluded

	underlying asset, technology, product or system(s); include LED lights, improved chillers, improved lighting technology, and reduced power usage in manufacturing operations	
Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	• Research leading to technology innovation with sustainability benefits • Food security • Flood mitigation • Drought management • Public health management	**Dark green** ✓ Important given climate change scenarios and higher frequency of extreme weather conditions. ✓ The issuer has informed us that no fossil-fuel based infrastructure could be financed ✓ Consider potential emissions from the construction phase and take care to avoid lock-in, including e.g. rerouting roads that could increase personal vehicle usage. ✓ Consider potential negative impacts on wildlife, nature and lifecycle pollution. Avoid negative impacts on biodiversity.
Sustainable Transport	• Developing clean transportation systems • Transportation network upgrade to higher climate resilient design standards	**Medium to dark green** ✓ Both electric and fossil fuel driven public transportation can be financed. ✓ The issuer has informed us that the first phase will be to increase the share of public transportation, with a target of 30% according to the National Energy Plan. Indonesia is also developing electric rail solutions. ✓ To avoid lock in of obsolete technologies we encourage seeking zero emission technologies where feasible.
Waste to Energy and Waste to Management	• Improving waste management • Transforming waste to renewable energy source • Rehabilitation of landfills area	**Medium to dark green** ✓ The issuer has informed us that the types of projects to be funded include landfill gas recovery, increase in composting utilization, increase number of waste-based power plants ✓ Waste incineration is best combined with ambitious recycling policies. ROI has strategies in place to increase recycling rates. The issuer has informed us that all plastics will be sorted and will not be burned in projects financed under the framework

Sustainable Management Natural Resources	• Sustainable management of natural resources which substantially avoids or reduces carbon loss / increases carbon sequestration (through planting of new forest areas and/or replanting of degraded areas, the use of drought / flood / temperature resistant species). • Habitat and biodiversity conservation (through sustainable management of land use change, sustainable management of agriculture/fisheries/forestry, protection of coastal and marine environments, pest management)	**Light to dark green** ✓ ROI is a signatory to the Convention on Biological Diversity, and the ASEAN Agreement on the Conservation of Nature and Natural Resources ✓ This is a broad category of green projects, including re-forestation and afforestation projects that are important for a 2050 climate solution. It might also be possible that some projects include an element of deforestation. However, as per Indonesian regulation it is mandatory to undertake an Environmental Impact Assessment (AMDAL) for all projects or businesses that have a boundary overlap with, or may impact on, any of twenty classifications of protected area including forest area, national parks and reserves. We encourage that habitat and biodiversity conservation projects tagged as adaption avoid GHG emissions including deforestation, and that mitigation projects take into account biodiversity considerations.
Green Tourism	• Developing new tourism areas in line with Green Tourism Principles • Optimization of supporting infrastructure to support green tourism (i.e. water treatment, energy efficiency) • Developing tourism resiliency against climate change risk	**Medium to dark green** ✓ The Ministry of Tourism and Creative Economy has developed a Strategic Plan for Sustainable Tourism and Green Jobs for Indonesia in cooperation with the ILO. The Plan highlights developing sustainable tourism, and lists as an example eco-tourism based on REDD + forest management. ✓ Tourism projects should be climate resilient and avoid significant GHG emissions.
Green Building	• Developing green buildings in line with Greenship developed by Green Building Council Indonesia ("GBC Indonesia"), which contains six categories: Appropriate Site Development Energy Efficiency and Conservation, Water conservation, Material & resources cycle, Air quality &	**Light green** ✓ Green building certifications include many important environmental aspects. However, these certifications alone do not necessarily ensure improved energy performance. For example, it is possible to achieve a Bronze or a Silver Greenship certificate with no energy efficiency credits.

	leisure air (water indoor health & comfort), Building & environment management	✓ The issuer has informed us that the Green Buildings financed under the framework will be restricted to buildings in urban areas.
Sustainable Agriculture	• Developing sustainable agriculture management and methods, such as organic farming, less pesticides, Research and Development ("R&D") on climate resilient seeds, and energy efficient on agriculture • Subsidy mechanism for agricultural insurance	**Medium to dark green** ✓ The issuer has informed us that the sustainable agriculture projects funded through this framework will not support or finance the development of new agricultural land through deforestation. ✓ The issuer has informed us that no palm oil projects can be funded ✓ Agricultural insurance provides an important support for farmers impacted by climate change and is best complimented with polices that support or incentivize adaptation of agricultural practices. The issuer has informed us that the agriculture insurance provides an incentive to encourage farmers to adopt sustainable agriculture methods, such as by reducing the use of chemical fertilizers and encouraging increased utilization of compost fertilizer (organic fertilizer). If farmers do not meet the sustainable agriculture criteria, the farmer is not eligible for the subsidy insurance facility. ✓ Sustainable agriculture projects tagged as adaptation should avoid GHG emissions.

Table 2. Eligible project categories

Strengths

The framework is aligned to support Indonesia's Nationally Determined Contribution to the UNFCCC. In addition, social and biodiversity aspects are considered.

The framework explicitly excludes new fossil fuel based electric power generation capacity and expenditure related to the improvement in the efficiency of fossil fuel based electric power generation, which is a clear strength. The framework also excludes large-scale hydropower plants (>30 MW capacity) and nuclear–related assets.

Based on the exclusion of fossil fuel generation projects, the framework is in alignment with the ASEAN Green Bond Standards (November 2017), as well as following the Green Bond Principles. In addition, the Republic of

Indonesia Financial Services Authority regulates the issuance and requirements of a green bond (December 2017). It is our understanding that this framework is in alignment with the regulation, and it will be the issuer's responsibility to meet the transparency and other requirements of the regulation going forward.

The selection process includes several layers of screening, including the budget tagging process and the AMDAL Procedures. The budget tagging process involves climate and environmental experts and requires their consensus. In addition, the Ministry of Finance plans to continuously improve the process through stakeholder feedback. All projects undergo some form of environmental clearance via the AMDAL Procedure, and projects that impact any land falling under the classifications of protected area, which include forest area, national parks and reserves, must undergo an AMDAL environmental impact assessment.

The framework includes transparent reporting, including a list of projects and environmental impacts. ROI will use external auditors to review the annual use of proceeds and impact reporting. The issuer has informed us that the methodologies for reporting will be publically available.

Weaknesses

There are no obvious weaknesses in the Green Bond and Green Sukuk Framework.

Pitfalls

The tagging process for eligible projects to be conducted by the Ministry of Finance is based on input from many respective ministries. Despite the tagging manual, the reporting could be subject to varying implementation of the methods in different ministries. Projects can be tagged for climate that also have other objectives, for example, green tourism projects can also have an economic development objective. This makes impact reporting even more important to understand the climate impacts of Eligible Projects. We are encouraged by ROI's commitment to impact reporting and the use of external auditors to verify impacts.

There is a possibility that some Eligible Green Projects include an element of deforestation. The issuer has informed us that there will be no deforestation in the sustainable agriculture category. Under Republic of Indonesia Government Regulation (Decree of the Ministry of Environment No. 05/2012), it is mandatory to undertake an Environmental Impact Assessment (AMDAL) for all projects or businesses that have a boundary overlap with, or may impact on, any of twenty classifications of protected area including forest area, national parks and reserves. Under the AMDAL process, potential negative and positive environmental impacts are assessed and measures to prevent, minimize and compensate for adverse impacts and improve environmental performance are incorporated into an environmental management plan. We encourage the issuer to avoid deforestation in all project categories when implementing the AMDAL Procedures. The issuer has committed to publically listing all funded projects, providing transparency to investors.

We encourage that resiliency to changing climate is considered in all mitigation projects (e.g. renewable energy), and that GHG emissions are considered in all adaptation projects (e.g. flood resiliency).

Impacts beyond the project boundary

Due to the complexity of how socio-economic activities impact the climate, a specific project is likely to have interactions with the broader community beyond the project borders. These interactions may or may not be climate-friendly, and thus need to be considered with regards to the net impact of climate-related investments.

Rebound effects

Efficiency improvements may lead to rebound effects. When the cost of an activity is reduced there will be incentives to do more of the same activity. From the project categories in Table 2, an example is energy efficiency. The Republic of Indonesia's should be aware of such effects and possibly avoid Green Bond and Green Sukuk funding of projects where the risk of rebound effects is particularly high.

Appendix: About CICERO

CICERO Center for International Climate Research is Norway's foremost institute for interdisciplinary climate research. We deliver new insight that helps solve the climate challenge and strengthen international climate cooperation. We collaborate with top researchers from around the world and publish in recognized international journals, reports, books and periodicals. CICERO has garnered particular attention for its work on the effects of manmade emissions on the climate and the formulation of international agreements and has played an active role in the UN's IPCC since 1995.

CICERO is internationally recognized as a leading provider of independent reviews of green bonds, since the market's inception in 2008. CICERO received a Green Bond Award from Climate Bonds Initiative for being the biggest second opinion provider in 2016 and from Environmental Finance for being the best external review provider (2017).

CICERO Second Opinions are graded dark green, medium green and light green to offer investors better insight in the environmental quality of green bonds. The shading, introduced in spring 2015, reflects the climate and environmental ambitions of the bonds in the light of the transition to a low-carbon society.

CICERO works with both international and domestic issuers, drawing on the global expertise of the Expert Network on Second Opinions. Led by CICERO, ENSO is comprised of trusted research institutions and reputable experts on climate change and other environmental issues, including the Basque Center for Climate Change (BC3), the Stockholm Environment Institute, the Institute of Energy, Environment and Economy at Tsinghua University and the International Institute for Sustainable Development (IISD). ENSO operates independently from the financial sector and other stakeholders to preserve the unbiased nature and high quality of second opinions.

cicero.oslo.no/greenbonds