

Green Sukuk

Allocation and Impact Report
March 2020



MINISTRY OF FINANCE
REPUBLIC OF INDONESIA

Foreword

The Minister of Finance of the Republic of Indonesia

Climate change remains one of the pressing global issues in the spotlight for both developed and emerging countries. The “United in Science” report by the Science Advisory Group at the UN Climate Action Summit 2019 reaffirms the scientific findings that 2019 was one of the warmest years on record and extreme weather events have hit the world’s populations all the way from Western Europe, the United States, Bahamas, to Australia and of course, Indonesia. At the same time, the International Monetary Fund found that increasing temperature would cause a loss to global Gross Domestic Product (GDP) as much as 20%.

The Government of Indonesia understands that determined and continuous effort is necessary for climate action to yield the desired results. ‘There is no better time to act than now.’ is an understatement. This is why, on top of the ratification of Paris Agreement and NDC submission in previous years, Indonesia is putting forward environmental development, disaster resilience and climate change as a national priority in the 2020-2024 National Medium Term Development Plan (RPJMN) and setting up an Environmental Fund Management Agency (BPLDH) to improve transparency and optimize environmental funds utilization. It is crucial to ensure that policy transformation, enabling environment and financial investments go hand-in-hand to support the national agenda. The Green Sukuk initiative has paved the way for capital flow for our sustainable future.

The Green Sukuk is a successful collaborative national effort to address climate change. It utilizes the results of climate budget tagging mechanism and channels investments towards and across green sectors with most climate change impacts and in accordance to our Green Bond and Green Sukuk Framework.

The appreciation from investors for the Green Sukuk issuance in 2018 has encouraged the Government to make further commitments to sustainable finance. In 2019, the sovereign green sukuk was issued twice in the global institutional market and in the domestic retail market respectively. We are proud that the issuance in the domestic retail market marks another milestone as the first green sukuk retail in the world. We are also delighted that the initiative has brought eight awards in total by the global community including Best ESG Deal from Finance Asia.

This report is the second annual green sukuk allocation and impact report, representing the government’s commitment to full transparency and accountability on the management and use of proceeds. The report reflects our continued effort to align sectors towards green growth and maintain Gol’s credibility as a government committed to creating a low carbon, climate resilient economy.

I would like to acknowledge all parties involved in the issuance of the green sukuk and who contributed to the completion of this report, including The National Development Planning Agency, The Ministry of Environment and Forestry, The Ministry of Transportation, The Ministry of Public Works and Settlement, The Ministry of Energy and Mineral Resources, United Nations Development Programme and the World Bank.



SRI MULYANI INDRAWATI

Executive Summary

The Government of Indonesia has issued two sovereign global green sukuk for two times, consecutively in February 2018 and 2019, with the total amount of **USD 2 Billion**

2019 Issuance
USD 750 million
(or IDR 11.25 trillion)¹

2018 Issuance
USD 1.25 billion
(or IDR 16.75 trillion)²

Each issuance is comprised of:

51% refinancing and **49% financing**
existing projects and new projects

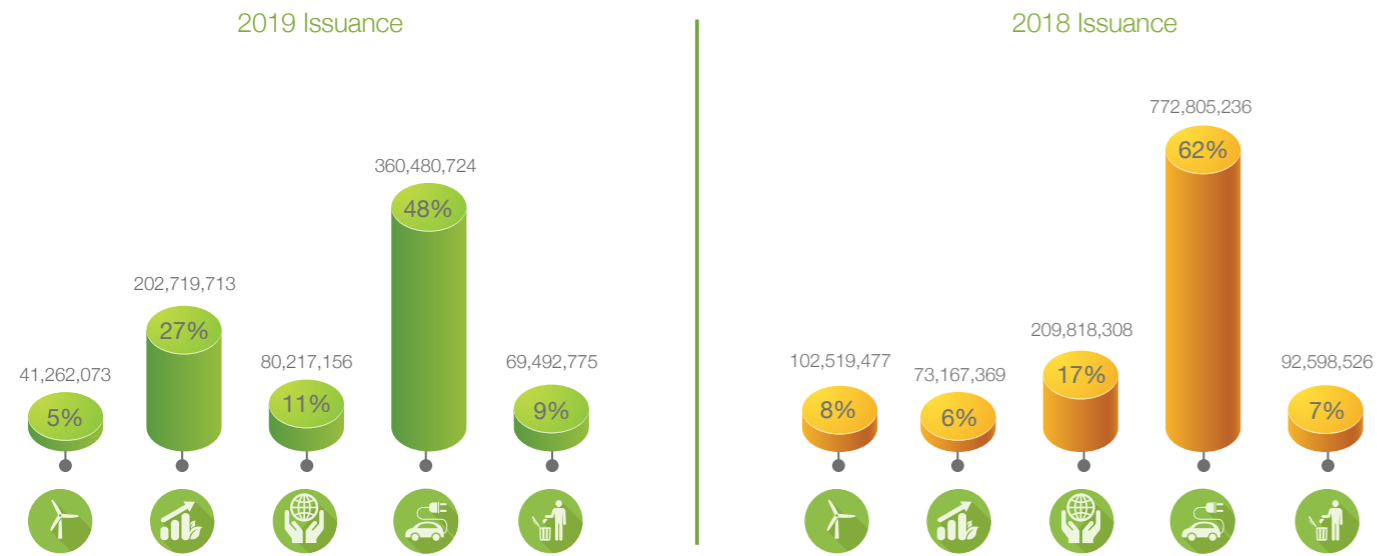
Net proceeds have been allocated to:

5 sectors³

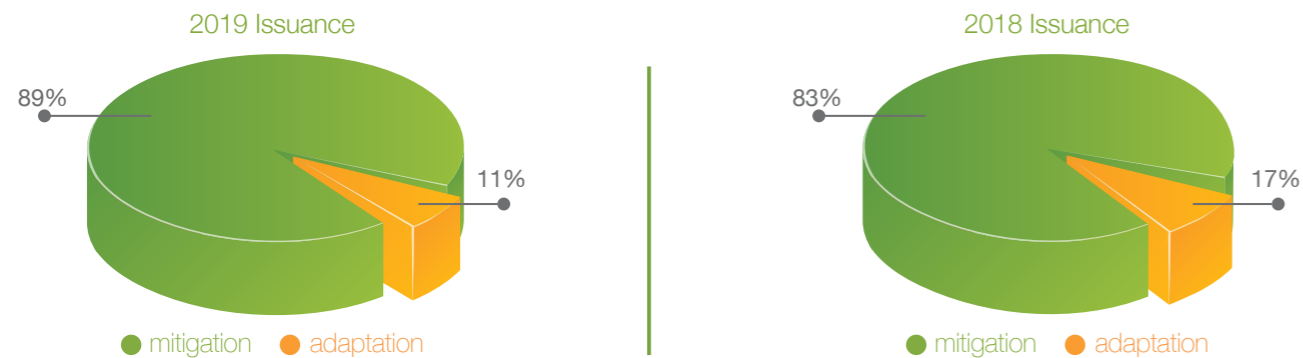
managed by 3 ministries:



Allocation by Sector



Allocation by Activity



¹ the exchange rate is using the 2019 State Budget USD Assumption that is 15,000 IDR per USD
² the exchange rate is using the 2018 State Budget USD Assumption that is 13,400 IDR per USD
³ according to the eligible sectors in the ROI's Green Bond and Sukuk Framework

Projected Environmental Benefits

2019 issuance⁴

3,218,014.41 tonnes
CO₂e emissions reduced, towards a low carbon future

Breakdown by Sector



691.4 km
of railway constructed, linking the nation

7,429 kWh
of additional power generation capacity

2,056,200
of households benefiting from improved waste management

2018 issuance⁵

5,776,497.49 tonnes
CO₂e emissions reduced, towards a low carbon future

Breakdown by Sector



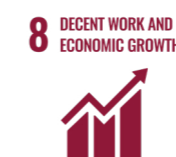
960,019 passengers
of average urban train passengers per day

7,348,180 kWh
of additional power generation capacity

3,453,241
of households benefiting from improved waste management

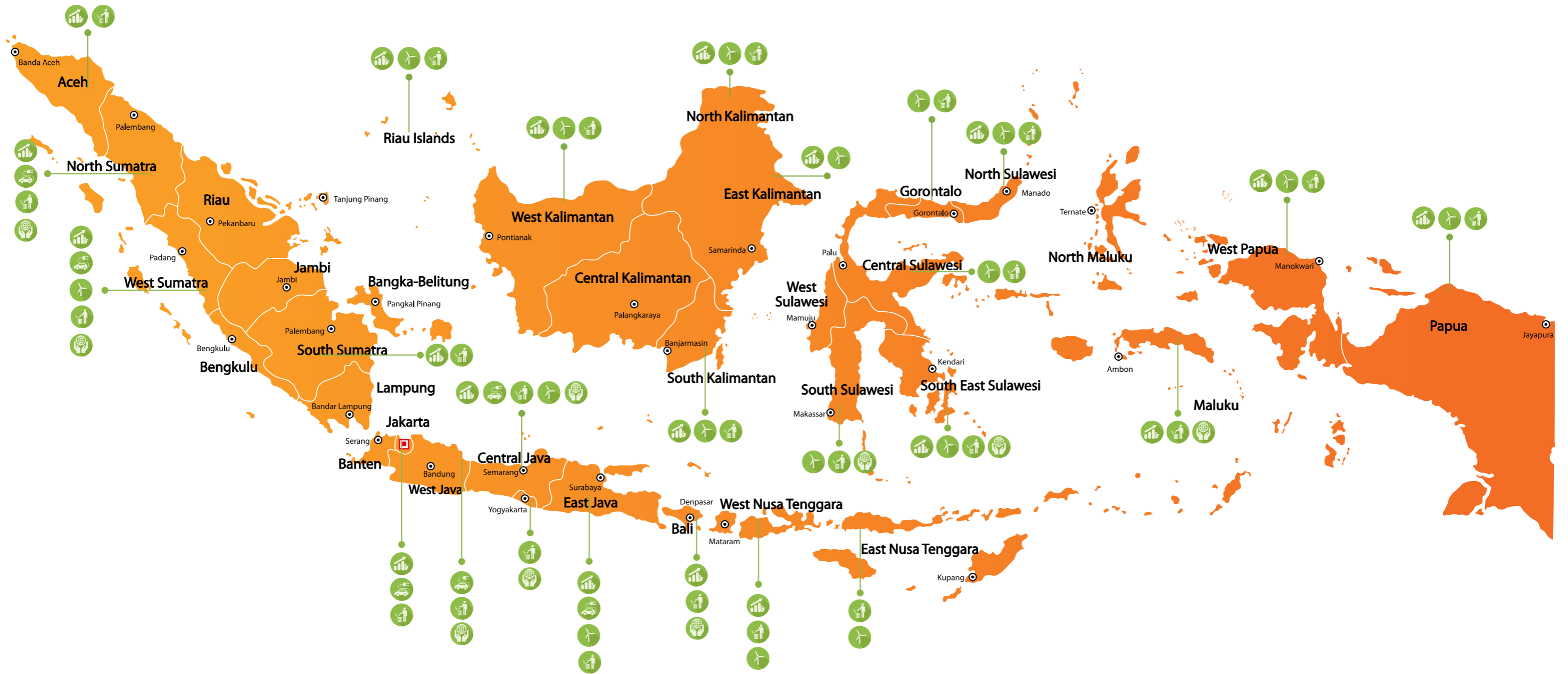
1,253.85 kWh Energy Saved due to Energy Efficiency
36 m³/ day of Biogas Production Capacity produced
2,571,569 Kilolitres of areas with Biodiesel Distribution

SUSTAINABLE DEVELOPMENT GOALS



⁴ Emissions reduction and other environmental benefit are from refinancing projects of 2019 issuance. Impacts of financing project will be included in future reporting.
⁵ Emissions reduction and other environmental benefit are from refinancing projects of 2018 issuance. Impacts of financing project will be included in future reporting.

Geographic Locations of Green Projects : 2019 issuance



Energy Efficiency Sector:

Jakarta, Central Java, East Java, Aceh, North Sumatera, West Sumatera, Riau, South Sumatera, West Kalimantan, South Kalimantan, East Kalimantan, North Kalimantan, North Sulawesi, South Sulawesi, South East Sulawesi, Maluku, Bali, East Nusa Tenggara, Papua, West Papua, West Java



Renewable Energy Sector:

Papua, West Papua, East Nusa Tenggara, South Sulawesi, Central Sulawesi, North Sulawesi, South East Sulawesi, South Kalimantan, North Kalimantan, East Kalimantan, West Sumatera, Riau, Gorontalo, West Kalimantan, North Sumatera, East Java, Central Java, Maluku, West Nusa Tenggara



Sustainable Transport Sector:

North Sumatera, West Sumatera, South Sumatera, Jakarta, West Java, Central Java, East Java



Waste and Waste to Energy Management Sector:

All provinces except East Kalimantan



Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction:

West Java, Central Java, Yogyakarta, North Sumatera, West Sumatera, South Sulawesi, Maluku, Bali

Introduction: Indonesia's Policy

Climate actions constitute critical priorities for Indonesia, especially with its archipelagic landscape. The country is highly vulnerable to the adverse effects of climate change with direct economic impacts. Since the country's voluntary pledge to reduce GHG emission in Copenhagen in 2009, Indonesia has adopted numerous regulations and policies in action to mitigate and adapt to the climate change.

This 2020 Annual Green Sukuk Impact Report discloses use and allocation of proceeds of Green Sukuk issuances by the Government of Indonesia (GoI). The GoI debuted its first green sukuk in March 2018 with a USD 1.25 billion offering. It issued a second one in February 2019 totaling USD 750 million. Additionally, in November 2019, GoI issued Savings Retail Sukuk, the first green sukuk retail in the world. The three instruments are indicative of the Government's serious commitment towards climate action.

These commitments include, among others, [the National Action Plan for Greenhouse Gas Emission Reduction \(RAN- GRK\)](#) adopted in 2011 and [National Action Plan on Climate Change Adaptation \(RAN-API\) in 2014](#) as well as the 2015-2020 Indonesian Biodiversity Strategy and Action Plan (IBSAP). This is complemented by the ratification of the Paris Agreement in 2016 including submitting an ambitious [Nationally Determined Contribution \(NDCs\)](#) with an unconditional reduction target of 29% against business as usual scenario by 2030 compared with a 2010 baseline. An additional 12% reduction is conditional on technology transfer, capacity building, results for payment and access to finance.

The NDCs indicate Indonesia's strong commitment to shift to a low carbon development (LCD) based approach to economic development and a more climate resilient path as reflected into the 2020-2024 medium-term development plan (RPJMN). The plan includes key priorities such as renewable energy and energy efficiency development, forest conservation and reforestation, waste management, land intensification, food security, as well as governance and institutionalization of investment and regulation.

Implementation of climate actions requires huge investment and cannot only be covered by the state budget. Since 2015, the Ministry of Finance, supported by the United Nations Development Programme, has developed the climate budget tagging (CBT) tool to track climate-related expenditure in the national budget. It identified ever-increasing state budget support to climate actions from 3.6% of the APBN (IDR 72.4 T, in 2016), to 4.7% (IDR 95.6 T, in 2017), to 4.9% (IDR 109.7 T, in 2018) and 4.1 % (IDR 95.8 T, in 2019). At the same time, the tagging process has also allowed the government to map out the financing gap to meet climate change target.

For this reason, Indonesia has developed various innovative financial instruments such as Green Sukuk and the SDGs Indonesia One (SIO) platform, and leveraged access to international financing facilities through the UNFCCC's Green Climate Fund (GCF) and MDBs as well as the recently established Environmental Fund platform (Badan Pengelola Dana Lingkungan Hidup / BPD LH).



Construction of the Martapura-Baturaja section of the Trans Sumatra Railway, South Sumatra.

Following the success of the green sukuk in March 2018, the Government of Indonesia issued another in February 2019 of USD 750 million. The two issuances follow the [Indonesia's Green Bond and Green Sukuk Framework](#) developed in 2017, with the support of HSBC and the UNDP. The Framework received [a Second Opinion Review by CICERO](#) and signed as Medium Green shade. The issuance has widened and diversified the investor base by taping global green investors (29%), as well as shown international's trust in Indonesia's commitment on climate action. Since 2018, the green sukuk has been awarded 8 global awards.

Additionally, in November 2019, Indonesia has issued a Savings Retail Sukuk, ST006 series, which is a green sukuk issued and sold to individual Indonesian citizens in domestic retail market through online platform. This green sukuk are in accordance to the Indonesia's Green Bond and Green Sukuk Framework and GoI intends to disclose its allocation and impacts in future reporting.

The SDGs Indonesia One, is an integrated funding collaboration platform launched through PT Sarana Multi Infrastruktur (PT. SMI) to support Indonesia's infrastructure development oriented towards the SDGs. It is a blended financing platform, managing a total of USD 2.34 billion from a mix of funding channels including philanthropy, donor, commercial banks, sovereign wealth funds and other institutional investors. Meanwhile, the Environment Fund (BPLDH) was established in October 2019 with the vision to create a trusted institution to attract national and international donors as well as effectively mobilize public and private fund in order to support environment protection programmes including climate actions, forest & land management, carbon trading and renewable energy development.

Various fiscal tax incentives have also been put in place in order to attract more and more investment in climate finance areas. This includes tax holiday for pioneer industry, tax allowance for geothermal activities, free import tax for goods and machinery for geothermal activities, and tax facilities including tax allowance for renewable energy activities.



Araskabu Station, part of the Trans-Sumatra Railway, North Sumatra.

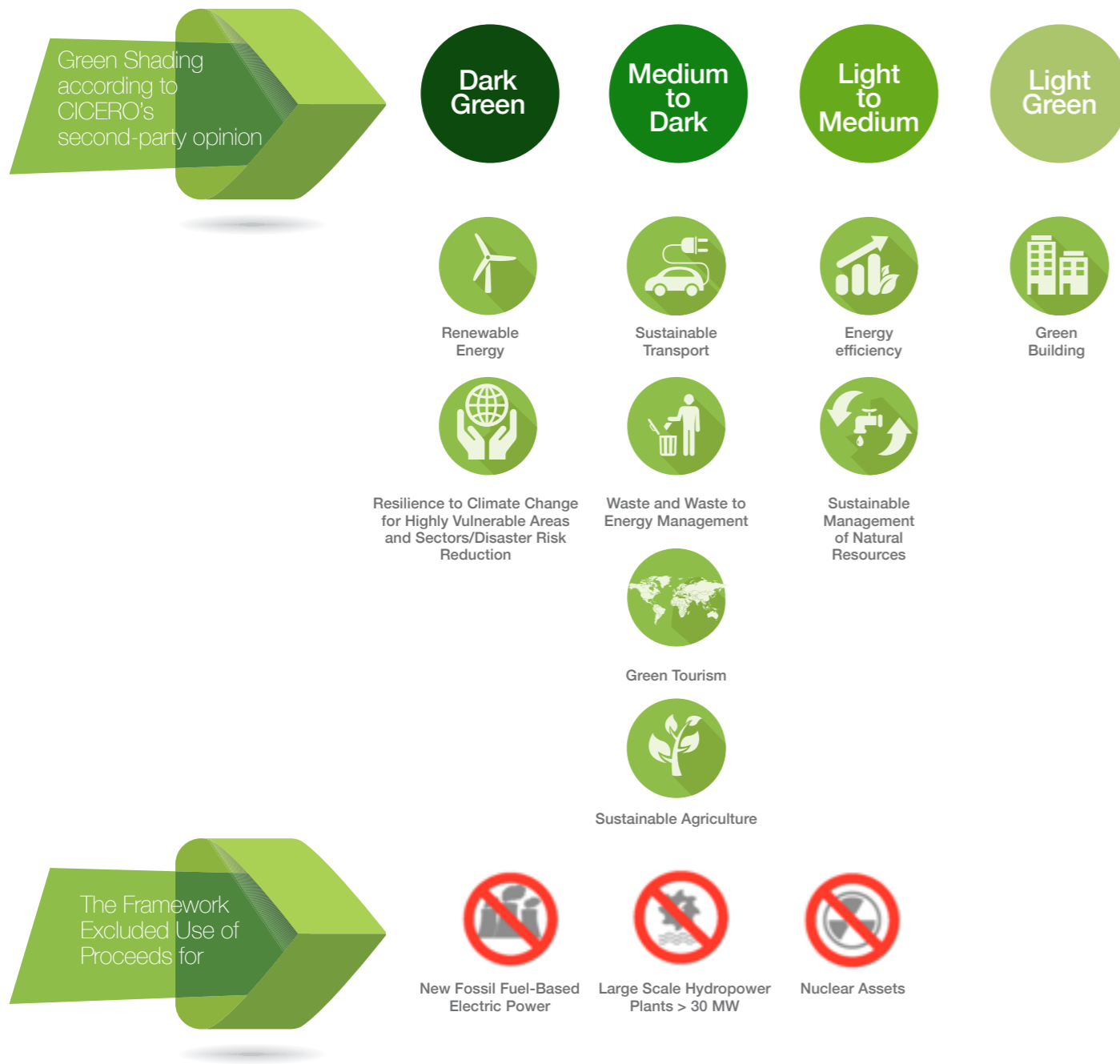
The government acknowledges the role of the private sector to support and fill in the gap of required financing schemes in climate action. The sustainable finance programme needs to stimulate business entities, as well as the private sector, to not only run their business for profit orientation, but also be responsive to the environment and sustainable development. Ultimately the paradigm shift of business entities on their investment policies and strategies will lead to an environmental and climate friendly investment.

This report is the second annual impact report to the investors, incorporating the 2019 issuance, in compliance with the Green Bond Principles by ICMA. PwC Singapore was appointed to express a limited assurance conclusion on the compliance of the Ministry of Finance's Process for Project Evaluation and Selection with the Framework and the allocation of the amount committed to Eligible Green Projects for the period from 20 February 2019 (date of issuance of the 2019 Green Sukuk) to 31 December 2019 in accordance with the Framework. (Refer to PwC Singapore's report on page [20]). The report is produced by the Ministry of Finance, in close cooperation with relevant line ministries owning the projects receiving green sukuk proceeds. [The first annual impact report can be accessed here.](#)

Summary of Republic of Indonesia's Green Bond/Sukuk Framework

Prior to the issuance of Green Sukuk, the Republic of Indonesia published a Green Bond and Green Sukuk Framework which indicates the Eligible Green Projects to receive the proceeds. The Framework was developed based on the Green Bond Principles (GBP). It received a Second Party Opinion by CICERO and is awarded Medium Green Shade.

Eligible Sectors



Selection Procedure

The framework proposes a selection procedure based on Climate Budget Tagging (CBT) mechanism. The CBT system is embedded into government's national budget system (ADIK system in 2016 and KRISNA system in 2018) and is established to track and identify expenditures of projects delivering environmental benefits in accordance with Indonesia's climate change targets.

The green projects funded by Green Sukuk are selected from tagged projects that fall into one of the nine Eligible Green Sectors under the framework. The Green Sukuk proceeds are used for both financing and re-financing Eligible Green Projects. Ministry of Finance selects projects that are timeline consistent with the tenure of the Green Sukuk. The environmental benefits of each project are accessed by the individual ministries together with the Ministry of National Development Planning (including RAN-GRK and RAN-API Secretariat), and are validated by the Ministry of Environment and Forestry to be consistent with Indonesia's Nationally Determined Contribution.

The assessment employs internationally accepted methodologies, where possible. Upon the verification by the Ministry of Environment and Forestry, results of the GHGs emissions reduction and resilience indicators performance will be registered in the National Registry System on Climate Change Control (SRN).



Marine Aid to Navigation with Solar Cells.

Management of Proceeds

The Framework indicates that proceeds of the Green Sukuk should be managed within the Government's general account. The proceeds are credited to a designated account of relevant ministries to exclusively fund the projects, as defined in the Framework. Pending application to Eligible Green Project proceeds are being held in cash in the Government's general account at Bank Indonesia.

Ministry of Finance has been managing the processes for allocation of the Green Sukuk and is responsible to ensure that the proceeds are used in accordance with the Framework.

The respective ministries utilizing the proceeds track and report the environmental benefits of the Eligible Green Projects in their portfolio to the Ministry of Finance.

Featured Projects

1. Development of New, Renewable Energy and Energy Conservation Infrastructure

Sector: Renewable Energy

Given the significant contribution of the energy sector towards Indonesia's emissions, Indonesia needs to reconcile the need to improve provision of electricity in areas outside current coverage with meeting commitment set at the Paris Agreement. To keep up with the commitment, the Government of Indonesia sets target to increase the proportion of renewables to 23% of electricity generation by 2025.⁶

To fulfill this target, this project is undertaken in 2017 and 2019, and involves the construction of new and renewable energy infrastructure, with a focus on areas outside the current electricity coverage. It aims to improve the electrification ratio in off-grid areas across the country, and therefore stimulate economic activity and improve distribution of economic growth. Energy efficient lamps are installed to improve the energy efficiency of the infrastructure. The project in 2017 involves the construction of solar power plants, solar-diesel hybrid power plants, microhydro power plants, and minihydro power plants, as well as biogas facilities and photovoltaic street lighting, with locations spread across 17 provinces. The 2019 development of such infrastructure are spread across all provinces, and includes the revitalization and maintenance of existing renewable energy infrastructure. The project contributed to an increase of 15,067 electrified households in 2017 while generating 7,429 kW of electricity, reducing the use of diesel-powered generators in areas that are not covered under the national electricity grid, therefore improving the electrification ratio while reducing emissions.⁷

Reducing emissions by:



134,872.41 tonnes CO2e

Contributing towards SDGs:



Solar Power Plant, Selayar Islands Regency, South Sulawesi



2. Construction of Flood Control Facilities

Sector: Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction

The National Action Plan for Climate Change Adaptation (RAN-API) mentions increased vulnerability to extreme weather events as one of the main risks for Indonesia.¹⁰ As rainfall intensity increases due to increasing daily rainfall by up to 2.5mm in 2020-2035 period¹¹, some areas become more prone to risk of flooding. This is intensified with land use changes and narrowing rivers causing a higher number of run-offs and storm water. The national action plan

for adaptation has designated flood control as one of the main strategic adaptation activities.¹² Flood control networks in Indonesia require significant upgrades to cope with extreme weather events.¹³ This project, undertaken in 2019, seeks to improve the resilience of communities that are highly vulnerable to these intensified effects and to achieve a target of 200,000 hectares of land protected from flooding¹⁴, through the construction and upgrading of dykes, retention ponds, flood canals, check dams, the maintenance of existing infrastructure as well as natural features such as rivers and cliffs.

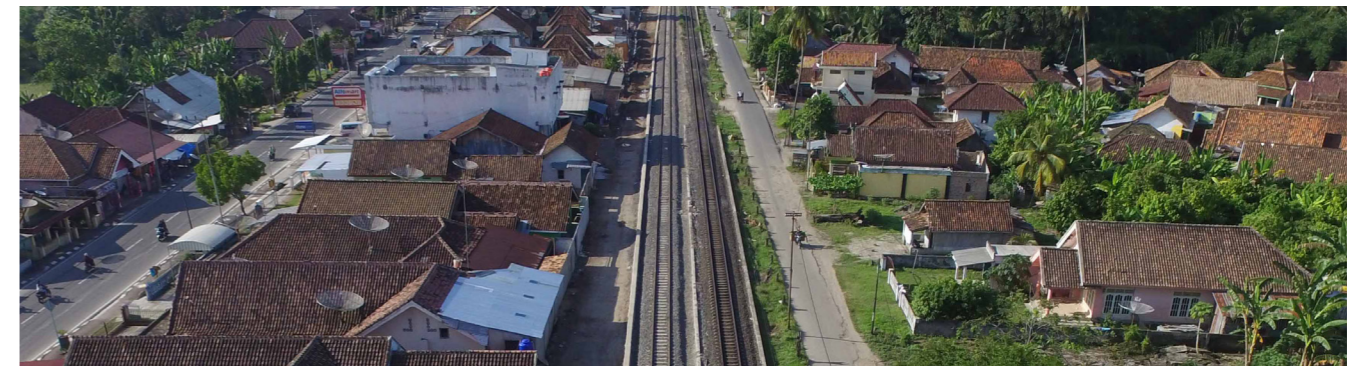
Contributing towards SDGs:



3. Construction and Management of Railways Infrastructure and Supporting Facilities – Development of Jabodetabek Urban Train

Sector: Sustainable Transport

Construction of railway infrastructure is a part of the government's main strategic activities for climate change mitigation, as outlined in the National Action Plan for Climate Change Mitigation (RAN-GRK). Given the modal share for mass transportation of only 27%¹⁵ in 2017 in a metropolitan area as populous as the Greater Jakarta region, the development of mass transit infrastructure has been named as one of the main policies to support RAN-GRK. The Greater Jakarta Urban Train, which is fully electrified, is a commuter train that serves railway transportation services for the citizens of Jakarta, Depok, Bogor, Tangerang, and Bekasi. As of June 2018, the Greater Jakarta Urban Train reached an average of 1,001,438 passengers on weekdays, with a record of 1,154,080 users in one day. PT. Kereta Commuter Indonesia



Construction of the Martapura-Baturaja section of the Trans Sumatra Railway, South Sumatra.

(KCI) serves as the operator of the infrastructure, and the train currently serves 79 stations in the Greater Jakarta area as well as Banten and Cikarang, with a route coverage of 418.5 km. As of June 2018, PT. KCI utilizes 900 units of trains. In order to fulfil ever-increasing passenger demand, PT. KCI has added 60 trains to its rolling stock in 2017. Up to 9.6 km of double-double track and electrification was constructed in the Jabodetabek Urban Railway network, including the Manggarai – Cikarang and the Maja - Rangkasbitung sections.¹⁷ Due to double-double track development, increased rail capacity for commuter trains allow for more frequent commuter train services, causing a mode shift from private to public transportation.

Reducing emissions by:



778,000 tonnes CO2e

Contributing towards SDGs:



⁶ Indonesia's 1st Nationally Determined Contribution, Government of Indonesia, 2016. p. 3 (https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Indonesia%20First/First%20NDC%20Indonesia_submitted%20to%20UNFCCC%20Set_November%20202016.pdf)

⁷ Laporan Kinerja Dirjen EBTKE, Ministry of Energy and Mineral Resources, 2017. p. 41 (<http://ebtke.esdm.go.id/post/2018/10/08/2030/laporan.kinerja.dirjen.ebtke.tahun.2017>)

⁸ Presidential Regulation No. 59 on SDGs, 2017. p. 43-68 (<http://litantropi.or.id/pubs/uploads/files/Lampiran%20Perpres%20Nomor%2059%20Tahun%202017.pdf>)

⁹ Presidential Regulation No. 59 on SDGs, 2017. p. 57.

¹⁰ National Action Plan for Climate Change Adaptation (RAN-API), Government of Indonesia, 2013. p. 23 (<http://sekretariat-ranapi.org/storage/app/media/RAN-API.pdf>)

¹¹ Low Carbon Development Initiative (LCDI), Ministry for National Development Planning, 2019. p. 91

¹² National Action Plan for Climate Change Adaptation (RAN-API), Government of Indonesia, 2013. p. 45

¹³ Low Carbon Development Initiative (LCDI), Ministry of National Development Planning, 2019. p. 135

¹⁴ Annual Performance Report, Directorate General of Water Resources, Ministry of Public Works and Housing. (2018). p. 37. (http://sda.pu.go.id/produk/newsmain_view.php?editid=207)

¹⁵ Presidential Regulation No. 59 on SDGs, 2017p. 43-68

¹⁶ Data Collection Report, Sustainable Urban Transport Index (SUTI), Greater Jakarta. UNESCAP, 2017. p. 19 (<https://www.unescap.org/sites/default/files/Greater%20Jakarta%20-SUTI%20Report.pdf>)

¹⁷ Directorate General of Railways Annual Report, 2017. P. 3 – 12-13 ([http://djka.dephub.go.id/uploads/201908/LAPTAH_DJKA_Tahun_2017\(1\).pdf](http://djka.dephub.go.id/uploads/201908/LAPTAH_DJKA_Tahun_2017(1).pdf))

¹⁸ Presidential Regulation no. 59 on SDGs, 2017. p. 45-68

List of Projects

This section includes list of projects funded by the green sukuk issuance in 2019. Through this report, it is confirmed that there are no changes to the allocation of the 2018 issuance. While the Government of Indonesia is making its best effort to collect and report material environmental and social impact, it is not feasible to collect or estimate impact metrics for several projects utilizing the 2018 issuance until closer to or at project completion.

Table 1.1 Refinancing project of 2019 green sukuk allocation. This table includes projected impacts reported for refinancing projects.¹⁹

No	Sector	Type of Project ^a	Project Name	Brief Description	Location ^b	Amount Committed (in USD) ^c 20	Average Project Lifetime ^d	Impacts ^e			Project Owners
								Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results ^f	Social /SDGs ⁹	
Project refinancing (2017) - 2019 issuance											
1	Renewable Energy	Generation and transmission of energy from renewable energy sources	Development of New, Renewable Energy and Energy Conservation Infrastructure	Construction of new and renewable energy infrastructure, with a focus on areas outside current electricity coverage. The project aims to improve the electrification ratio in off-grid areas across the country. Power generation is sourced from solar, mini hydro, and micro hydro power plants.	Papua, West Papua, East Nusa Tenggara, South Sulawesi, Central Sulawesi, North Sulawesi, South East Sulawesi, South Kalimantan, North Kalimantan, East Kalimantan, West Sumatera, Riau, Gorontalo, West Kalimantan, North Sumatera, East Java, and Central Java, West Java and Riau Islands	31,074,978	5-20 Years	134,872.41 tonnes	15,607 households with electricity, 7,429 kW power generated. Improves electrification ratio.	7, 8, 9, 11, 13	Ministry of Energy and Mineral Resources
2	Renewable Energy	Generation and transmission of energy from renewable energy sources	Installation of Energy-Saving Solar Energy Lights in the Rural Area	Installation of energy saving solar-powered lamps in areas with limited or no electricity facilities. These lamps would improve accessibility to lighting for off-grid areas while reducing use of diesel generators.	Papua, West Papua, Maluku, West Nusa Tenggara, and Riau	8,549,387	3 Years	1,184,748 tonnes	79,556 Units installed, providing households with lighting.	7, 11, 13	Ministry of Energy and Mineral Resources
3	Waste and Waste to Energy Management	Improving waste management	Improvement of Municipal Solid Waste Management System	Improvement of basic waste management infrastructure services through the development of city, regional and special area-scale of final disposal sites.	All provinces except East Kalimantan	63,125,075	5 Years	In order to achieve 48,000,000 tonnes target set in RAN-GRK	2,056,200 households served.	11, 13	Ministry of Public Works and Housing
4	Energy Efficiency	Improvement of the energy efficiency of infrastructure	Installation of Navigation Facilities	Construction, rehabilitation and replacement of marine navigation aids and the installation of solar cells to power marine navigation aids. The shift towards solar powered marine navigation aids reduces the use of fossil-fuel sources of power.	Jakarta, Central Java, East Java, Aceh, North Sumatera, West Sumatera, Riau, South Sumatera, West Kalimantan, South Kalimantan, East Kalimantan, North Kalimantan, North Sulawesi, South Sulawesi, South East Sulawesi, Maluku, Bali, East Nusa Tenggara, Papua, West Papua and Riau Islands	94,171,985	5 Years	141,800 tonnes	2,459 units constructed, improvement in marine transport safety.	7, 9, 13	Ministry of Transportation
5	Energy Efficiency	Improvement of the energy efficiency of infrastructure	Improvement of Land Transportation Traffic Management Services	Installation of road traffic equipment such as traffic signs, area traffic control systems (ATCS) and navigation aids for river and lake crossings (SBNP) with energy-saving sensors.	Jakarta, West Java, Central Java, Yogyakarta, East Java	15,099,959	5 Years	203,116 tonnes	Reducing traffic congestion and improve safety in river and lake crossings.	7, 9, 13	Ministry of Transportation
6	Sustainable Transportation	Developing Clean Transportation Systems	Construction and Management of Railways Infrastructure and Supporting Facilities in Sumatera	Construction of the Trans Sumatra Railway from Aceh to Lampung province. The Trans Sumatra Railway causes a mode shift from road transport to rail transport and logistics.	North Sumatera, West Sumatra, South Sumatra	67,658,651	10 Years	213,000 tonnes	Construction of 343.2 km of railways, shifting mode in logistics and passenger transport.	8, 9, 11, 13	Ministry of Transportation
7	Sustainable Transportation	Developing Clean Transportation Systems	Construction and Management of Double Track Railways Infrastructure and Supporting Facilities in Java North Line	The construction of the double track railway project in the Trans Java railway's northern section, upgrading the single-track railway.	North Java Line	7,472,090	10 Years	552,000 tonnes	Upgrading of 338.6 km of doubletrack railway, cut travel time and therefore reduce fuel usage.	8, 9, 11, 13	Ministry of Transportation
8	Sustainable Transportation	Developing Clean Transportation Systems	Development of Jabodetabek Urban Train	Construction of double-double track of the Jabodetabek urban railway network.	Jabodetabek (Jakarta, Bogor, Depok, Tangerang, Bekasi)	2,820,503	10 Years	778,000 tonnes	Shifting mode from private to public transport, with 314,317,883 trips in 2017.	8, 9, 11, 13	Ministry of Transportation
9	Energy Efficiency	Improvement of the energy efficiency of infrastructure	Construction, Rehabilitation and Maintenance of Airport Infrastructures	The installation of solar-powered street lights and solar power plants. It improves the energy efficiency of airports and ensure electricity is sourced from renewable sources.	Jakarta, West Java, Central Java, East Java, Aceh, North Sumatera, West Sumatera, Riau, South Sumatera, Lampung, West Kalimantan, Central Kalimantan, South Kalimantan, East Kalimantan, North Kalimantan, North Sulawesi, Central Sulawesi, South Sulawesi, South East Sulawesi, West Sulawesi, Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, Bengkulu, North Maluku, Bangka Belitung Islands, Gorontalo, Riau Islands, West Papua,	93,447,768	5 Years	10,478 tonnes	Usage of renewable energy to power lighting in airports.	7, 9, 13	Ministry of Transportation

¹⁹ Refinancing projects of 2019 Green Sukuk Allocation are projects implemented in 2017. Per 31 December 2019, the total amount allocated to refinancing is 51% of the 2019 Green Sukuk proceeds (USD 750 million). Any amount exceeding the Green Sukuk proceeds is financed by other sources of fund available in the general treasury account.

²⁰ Denotes PwC limited assurance on the allocation of the amount committed. The Republic of Indonesia Green Bond and Green Sukuk Framework against which the allocation of the amount committed was assessed is available at <https://www.djppr.kemendek.go.id/page/load/2058>.

Table 1.2. Financing projects of 2019 green sukuk allocation. For impacts that is yet to be reported here, will be added in the next year report.²¹

No	Sector	Type of Project ^a	Project Name	Brief Description	Location ^b	Amount Committed (in USD) ^c 22	Average Project Lifetime ^d	Impacts ^e			Project Owners
								Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results ^f	Social /SDGs ⁹	
Project financing (2019) - 2019 issuance											
1	Renewable Energy	Generation and transmission of energy from renewable energy sources	Planning, Development and Supervision of New, Renewable Energy and Energy Conservation Infrastructure	Construction of new and renewable energy infrastructure, with a focus on areas outside current electricity coverage. The project aims to improve the electrification ratio in off-grid areas across the country. Power generation is sourced from solar and biogas power plants.	Aceh, Bali, Bangka Belitung Islands, West Sumatera, North Sumatra, Bengkulu, Jambi, South Sumatra, Lampung, D.I. Yogyakarta, Central Java, East Java, West Java, West Kalimantan, South Kalimantan, East Kalimantan, Central Kalimantan, North Kalimantan, Maluku, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua, Riau, South East Sulawesi, East Sulawesi, West Sulawesi, South Sulawesi, Central Sulawesi, Gorontalo	4,305,470	5-20 Years	tbc	tbc	7, 8, 9, 11, 13	Ministry of Energy and Mineral Resources
2	Sustainable Transport	Developing Clean Transportation Systems	Construction and Management of Railways Infrastructure and Supporting Facilities in Sumatera	Construction of the Trans Sumatra Railway from Aceh to Lampung province. The Trans Sumatra Railway causes a mode shift from road transport to rail transport and logistics.	North Sumatra, West Sumatra, and South Sumatra	12,744,867	5 Years	tbc	tbc	8, 9, 11, 13	Ministry of Transportation
3	Sustainable Transport	Developing Clean Transportation Systems	Construction and Management of Double Track Railways Infrastructure and Supporting Facilities in Java Line	Construction of the double track railway project in the Trans Java railway's northern and southern sections, upgrading the single-track railway.	North and South Java Line	276,028,810	5 Years	tbc	tbc	8, 9, 11, 13	Ministry of Transportation
4	Waste to Energy and Waste Management	Improving waste management	Improvement of Municipal Solid Waste Management System	Improvement of basic waste management infrastructure services through the development of city, regional and special area-scale of final disposal sites.	Central Java, East Java, North Sumatra, Riau, Lampung, East Kalimantan, North Sulawesi, Central Sulawesi, South East Sulawesi, West Nusa Tenggara, Bengkulu	10,826,773	10 Years	tbc	tbc	11, 13	Ministry of Public Works and Housing
5	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction	Flood mitigation	Construction of Flood Control Facilities	Construction of retention ponds/ polders, flood canals, dikes, checkdam, and river maintenance and normalization. It aims to reduce the risk of flooding due to increased rainfall intensity and land use changes.	West Java, Central Java, Yogyakarta, North Sumatra, West Sumatera, South Sulawesi, Maluku, Bali	96,572,073	5 Years	tbc	tbc	8, 9, 11, 13	Ministry of Public Works and Housing

²¹ Please note that the total amount allocated is based on the 2019 Allocated (Pagu) State Budget (APBN). Per 31 December 2019, the total amount allocated to financing new projects is 49% of the 2019 Green Sukuk proceeds (USD 750 million). Any amount exceeding the Green Sukuk proceeds is financed by other sources of fund available in the general treasury account.

²² Denotes PwC limited assurance on the allocation of the amount committed. The Republic of Indonesia Green Bond and Green Sukuk Framework against which the allocation of the amount committed was assessed is available at <https://www.djppr.kemendek.go.id/page/load/2058>.

Notes

- The types of projects refers to the further details of the 9 eligible sectors in the Green Bond/Sukuk framework. For full details, please refer to Annex 2 of the 2018 report.
- There can be multiple spots on each location mentioned.
- The currency exchange rate is based on the State Budget Assumption for 2019 budget year of IDR 15,000 per USD
- Based on financial life of project.

- Methodology and assumptions is disclosed in Annex 2. Tbc: to be confirmed - data for the 2019 projects will be provided in the next annual report.
- Additional indicators of the direct impact of the green projects.
- Most relevant or direct social and/or Sustainable Development Goals impacts, as a result of the project.

Interpreting Reported Results



2019 Republic of Indonesia Green Sukuk Allocation and Impact Report has been developed to help investors compass the details of eligible green projects on which coherent to the Indonesia's Green Bond and Green Sukuk framework and relevant impacts for both mitigation and adaptation projects.

Several key results indicators have been selected and where possible quantified, but it is important to appreciate the inherent limitations of data reported. The main considerations to adequately interpret results are:

- **Scope of results**

Reporting is based on "ex-ante" estimates of climate and environmental impacts at the time of project appraisal and mostly for direct project effects.

- **Uncertainty**

In general, consideration in estimating impact indicators and projecting results is based on assumptions which are reasonable due to information available at the time for the actual environmental impact of the projects. Behavioural changes and/or shifts in baseline conditions can cause deviations from projections.

- **Comparability**

Caution should be taken in comparing projects, sectors, or whole portfolios because baselines (and base years) and calculation methods may be varied.

- **Partial Project Eligibility**

In cases where a project is only partially green Sukuk eligible, the committed amount reported reflects the output level Climate Budget Tagging mechanism presented by Project Owners (Line Ministries).

- **Omissions**

It is worth to note that projects may display benefits across a much wider range of indicators than the ones captured in the impact assessment here. Therefore, specifically concentrating on the reported indicators will omit other important development impacts. Where quantitative data is unavailable, qualitative indicators have been included to illustrate other beneficial impacts.

- **Source of Data**

All reported results are from a combination of Government of Indonesia's internal data and publicly available sources.

Annex : Impact Measurement Methodology

In order to ensure that the investment made by the Green Sukuk generates sustainable environmental and/or social outcomes alongside financial returns, the Government of Indonesia is committed to transparent reporting of the amounts of proceeds allocated and utilized, environmental and social impacts and progresses of the green projects assigned as underlying assets, in accordance with the Green Bonds and Green Sukuk Framework.

Data Evaluation and Selection

The Green Sukuk impact report takes benefit of the established national development planning and budgeting system. As aforementioned above, proceeds of the 2019 Green Sukuk are utilized to refinance the government's Fiscal Year 2017 and to finance the 2019 green projects. The underlying projects, allocated budget and performance information reporting data are extracted from the performance based budgeting system (2016 ADIK system, revised to 2018 KRISNA system).

The data mentioned for this report are those have been identified and tagged as climate change contributing projects through Climate Budget Tagging (CBT) mechanism. This mechanism applied by related line ministries/agencies, which refer to the mitigation and adaptation policy documents of both national and each line ministry. The collected budget data consist of budget ceiling and realization, together with the expected outputs and further clarification from the related line ministries, as project owners. The review and approval processes are coordinated by Ministry of Finance and Ministry of National Development Planning. The project outputs, environmental benefits, and other outcomes are then verified and validated by Ministry of Environment and Forestry and Ministry of National Development Planning.

For refinancing projects (2017), the data reported are based on audited number by BPK (Supreme Audit Agency) as per 29 March 2018 for accountability purpose. However, for the 2019 projects, data reported are amount allocated and committed as of 31 December 2019, which later will be audited by 31 March 2020. To that end, the 2019 project data will be updated in the future 's reporting. This year report has also include the impact data of the 2018 green sukuk allocation's impact data that was yet to be included in last year report.

The selected and reported projects will be registered to the National Registry System on Climate Change Control (SRN). The SRN sits under the Ministry of Environment and Forestry, as the national focal point to the UNFCCC, aiming to become a platform of data and information management for mitigation and adaptation actions in Indonesia.

Impact Analysis Methodology

The Green Sukuk report refers to the existing national framework and the Harmonized Framework for Impact Reporting (2015) developed by International Capital Market Association (ICMA) for assessing environmental & social impacts in green finance. As one of the Parties to the UNFCCC, Indonesia has been proactively developing frameworks to conduct monitoring, reporting, and verification system for the progress

and achievement of the national mitigation actions (RAN GRK), and adaptation actions (RAN API), and of the Sustainable Development Goals' indicators.

There are five “themes” to categorize indicators which is used in the report, where applicable. These include 1) Mitigation, as primary indicators, 2) Adaptation, primary, 3) Environment (SDG related) – secondary, 4) Social/Economic (SDG-related) – tertiary, and 5) Governance/safeguards-tertiary.

Mitigation Indicators

The primary indicator for the mitigation projects is GHG emissions reduction metrics. The calculation methodology is provided from technical guidelines prepared by Ministry of National Development Planning and related line ministries. Methodology also covers land-based, energy and industry, transport and waste management sectors. The guidelines mainly follow the criteria and formula of the IPCC Guidelines for National Greenhouse Gas Inventories, and other internationally accepted standards.

• Energy Efficiency and Renewable Energy

The core indicators for energy efficiency and renewable energy, which follow the Harmonized Framework for Impact Reporting, include:

- a. Energy Efficiency - 1) Annual energy savings in MWh/GWh (electricity) and GJ/TJ (other energy savings); and 2) Annual GHGs emissions reduced/avoided in tonnes of CO2 equivalent.
- b. Renewable Energy - 1) Annual GHGs emissions reduced/avoided in tonnes of CO2 equivalent /b; 2) Annual renewable energy generation in MWh/GWh (electricity) and GJ/TJ (other energy); and 3) Capacity of renewable energy plant(s) constructed or rehabilitated in MW.

• Sustainable Transport

General indicators for sustainable transport may include transport emissions, renewables, energy efficiency, impacts on environmental resources and environmental risk and damages. Another unit of transport procured and passenger-kilometres (or tonne-kilometres) are also presented. The Ministry of Transportation applies Tier 1 approach, with general methodology for calculating CO2 emissions in sub-sectors under its management (land, railways, sea, and air transports) which is multiplying estimated fuel consumed (sold) by a 2006 IPCC default CO2 emission factors.

Sustainable Transport : Default CO2 emission factors used by sub-sector

Sub-Sector	Full Type	CO2 (kg/TJ)	CH4 (kg/TJ)	N2O (kg/TJ)
Road Transport	Gasoline	69300	33	3.2
Road Transport	Diesel	74100	39	3.9
Sea Transport	Marine Diesel Oil	74100 3190 (kg/ton)*	0.3 (kg/ton)*	0.08 (kg/ton)*
Railway	Diesel	74100	4.15 (2*)	28.6 (1.5*)
Civil Aviation	Avtur	74100	2	1.5

Source: IPCC 2006 Mobile Combustion; *=from Ministry of Transportation

• Waste Management

Development of landfill and its supporting facilities in districts/cities funded by the Green Sukuk is relatively new. Therefore, the waste generation and potential methane is still relatively small. In reference to the IPCC 2016 category, most of the developed disposal sites fall into the shallow deep (<5m in depth) category. The current policy of the Ministry of Public Work and Housing, however, requires semi-aerobic management by venting methane gas to manage the production of methane. For the landfills management in several small cities, methane gas is used for gas cooking purpose. Waste to energy facilities are currently in development phase in larger city landfills such as Bandung.

In general, landfills has the potential for methane generation. The project is only operating from 2017 onwards - therefore the impact measurement is yet to be calculated due to limited data at this point. However the government is committed to provide the information on the next report when more data are available.

Resilience Index

The national resilience index is currently being developed by Ministry of National Development Planning and Ministry of Environment and Forestry. It consists of five general systems, covering water security, coastal stability, maritime safety, food security (rice) and community health (Dengue haemorrhagic fever case). In this case, the resilience to climate change project impact is measured by general indicators, such as volume of infrastructure developed and the beneficiaries that benefits for the projects. Further framework will be updated for the next reporting.

SDGs Indicators

Indonesia has embraced the Sustainable Development Goals. The Government has been linking SDGs targets and indicators to the national mid-term development plan (RJPMN), which ensure the implementation of the SDGs. The Green Sukuk proceeds have been in particular supporting the Goal 7: Affordable and clean energy, Goal 8: Decent work and economic growth, Goal 9: Industry, Innovation, and Infrastructure, Goal 11: Sustainable cities and communities, and Goal 13: Climate action.



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Attention: The Director General of Budget Financing and Risk Management

24 February 2020

Our ref: ASR 02558243 / FEL / GP (13)
(When Replying Please Quote Our Reference)

INDEPENDENT PRACTITIONER'S LIMITED ASSURANCE REPORT IN RESPECT OF:

- **THE "PROCESS FOR PROJECT EVALUATION AND SELECTION" PER THE FRAMEWORK; AND**
- **THE ALLOCATION OF THE AMOUNT COMMITTED TO ELIGIBLE GREEN PROJECTS, PER TABLE 1.1 AND 1.2 OF THE GREEN SUKUK REPORT FOR THE PERIOD FROM 20 FEBRUARY 2019 (DATE OF ISSUANCE OF THE 2019 GREEN SUKUK) TO 31 DECEMBER 2019**

Dear Sirs

We have been engaged by the Ministry of Finance of the Republic of Indonesia ("the Ministry") to undertake a limited assurance engagement in respect of the Process and the Selected Information from the 2019 Green Sukuk – Allocation and Impact Report ("the Green Sukuk Report") of the Ministry described below for the period from 20 February 2019 (date of issuance of the 2019 Green Sukuk) to 31 December 2019.

Our assurance engagement was with respect to the period from 20 February 2019 (date of issuance of the 2019 Green Sukuk). We have not performed any procedures with respect to (i) earlier periods and (ii) any other elements included in the Ministry's Green Sukuk Report, and in the website and other publications, and therefore do not express any conclusion thereon.

The Ministry's Responsibility

The Ministry is responsible for developing the Republic of Indonesia Green Bond and Green Sukuk Framework available at <https://www.djppr.kemenkeu.go.id/page/load/2058> ("the Framework") and the preparation of the Green Sukuk Report in accordance with the Framework. This includes designing, implementing and maintaining internal controls over information relevant to the preparation of the Green Sukuk Report that is free from material misstatement, whether due to fraud or error, as well as ensuring that the Process for Project Evaluation and Selection ("the Process") complies with the Framework.

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Practitioner's Independence and Quality Control

We have complied with the independence and other ethical requirements of the Accounting and Corporate Regulatory Authority (ACRA) Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities (ACRA Code), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies Singapore Standard on Quality Control 1 and, accordingly, maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Practitioner's Responsibility

Our responsibility is to express a limited assurance conclusion on the compliance of the Ministry's Process with the Framework and the allocation of the amount committed to Eligible Green Projects as set out in Table 1.1 and Table 1.2 of the Green Sukuk Report marked with the symbol # ("the Selected Information") in accordance with the Framework based on the procedures we have performed and the evidence we have obtained. We performed our limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) – Assurance Engagements other than Audits or Reviews of Historical Financial Information ("Standard"). This Standard requires that we plan and perform our work to form the conclusion. The extent of our procedures depends on our professional judgment and our assessment of the engagement risk.

A limited assurance engagement involves assessing the risks that the Process is not designed and implemented to comply with the Framework and the risks of material misstatement of the Selected Information whether due to fraud or error, and responding to the assessed risks as necessary in the circumstances. A limited assurance engagement is substantially less in scope than a reasonable assurance engagement in relation to both the risk assessment procedures, including an understanding of internal control, and the procedures performed in response to the assessed risks.

The procedures performed included inquiries, observation of processes performed, inspection of documents and agreeing or reconciling with underlying records. Given the circumstances of the engagement, we also performed the following:

- (a) interviews with relevant staff responsible for providing the information in relation to the design and implementation of the Process;
- (b) agreeing the allocation of the amount committed to Eligible Green Projects on a sample basis to corresponding information in the relevant underlying sources which are internally prepared by the Ministry; and
- (c) considered the disclosure of the Selected Information in the Report.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance in a limited assurance engagement is substantially lower than the assurance that would



have been obtained had a reasonable assurance engagement been performed. Accordingly, we do not express a reasonable assurance opinion about whether:

- (a) the Process complies, in all material respects, with the Framework; and
- (b) the Selected Information has been prepared, in all material respects, in accordance with the Framework.

Inherent Limitations and Exclusions

In designing these procedures, we considered the system of internal controls in relation to the Selected Information and reliance has been placed on internal controls where appropriate. Because of the inherent limitations in any accounting and internal control system, errors and irregularities may nevertheless occur and not be detected.

We have not been engaged to:

- (a) verify the operating effectiveness of the Process;
- (b) verify the use of the funds to the nominated project by the Ministry of Transportation, Ministry of Energy and Mineral Resources and Ministry of Public Works and Housing (“the Line Ministries”) who are responsible for the individual projects;
- (c) verify the tracking, monitoring and reporting of the environmental benefits of the Eligible Green Projects by the Line Ministries to the Ministry; and
- (d) verify the average project lifetime and impact from the implementation of Eligible Green Projects included in Table 1.1 and Table 1.2 of the Green Sukuk Report.

Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that:

- (a) the Process related to the period from 20 February 2019 (date of issuance of the 2019 Green Sukuk) to 31 December 2019 does not, in all material respects, comply with the Framework; and
- (b) the Selected Information for the period from 20 February 2019 (date of issuance of the 2019 Green Sukuk) to 31 December 2019 has not been prepared, in all material respects, in accordance with the Framework.

Purpose and Restriction on Distribution and Use

Without modifying our conclusion, we draw attention to the fact that the Selected Information was prepared for inclusion in the Green Sukuk Report by the Ministry as required by the Framework (“Purpose”). As a result, the Selected Information may not be suitable for another purpose.

Our report is intended solely for the Purpose set forth in the paragraph above and should not be used for any other purpose. Save for the disclosure of our report in the Green Sukuk Report and disclosure of our report in investor roadshow materials related to the Green Sukuk Report which have been approved by the Ministry, neither this report nor its contents or any part thereof may



be distributed to, discussed with or otherwise disclosed to any third party without our prior written consent. The Ministry is responsible for information other than our report and our report does not cover this other information, and we do not express any form of assurance conclusion thereon. To the fullest extent permitted by law, we do not accept any liability or assume any responsibility to anyone other than the Ministry for our work or this report except where terms are expressly agreed between us in writing. Any reliance placed on this report by any third party is entirely at its own risk.

Yours faithfully


PricewaterhouseCoopers LLP
Public Accountants and Chartered Accountants

Singapore



MINISTRY OF FINANCE
REPUBLIC OF INDONESIA

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