MINISTRY OF FINANCE
REPUBLIC OF INDONESIA

2024

Green Sukuk Allocation and Impact Report

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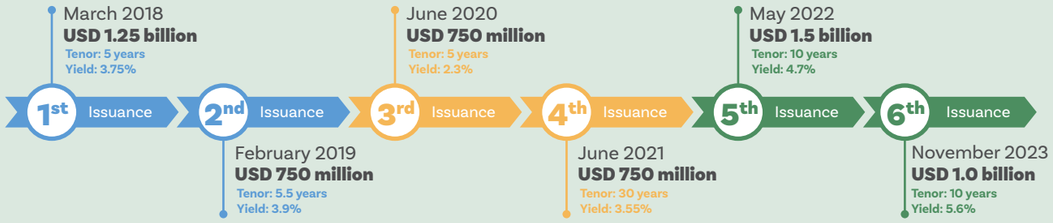
Republic of Indonesia's Green Sukuk Milestone

2018 – 2023 Green Sukuk Issuance

Cumulative Green Sukuk issuance value: USD 9.59 billion

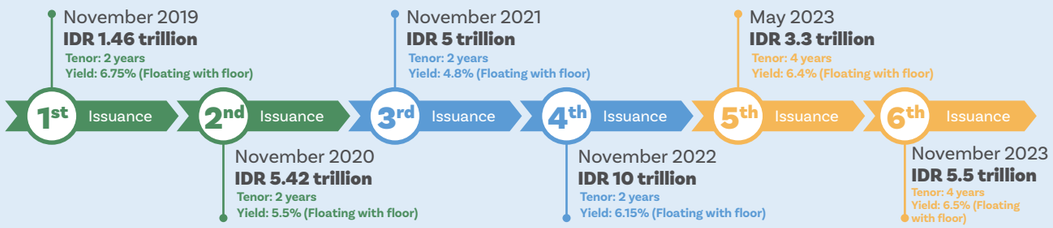
SNI Serie at Global Market

(Cumulative Issuance: USD 6 Billion)



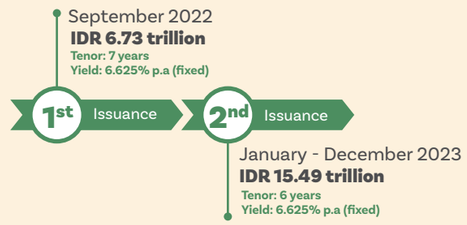
Domestic Retail Green Sukuk – ST

(Cumulative Issuance: IDR 30.68 trillion ~ USD 2.09 billion)



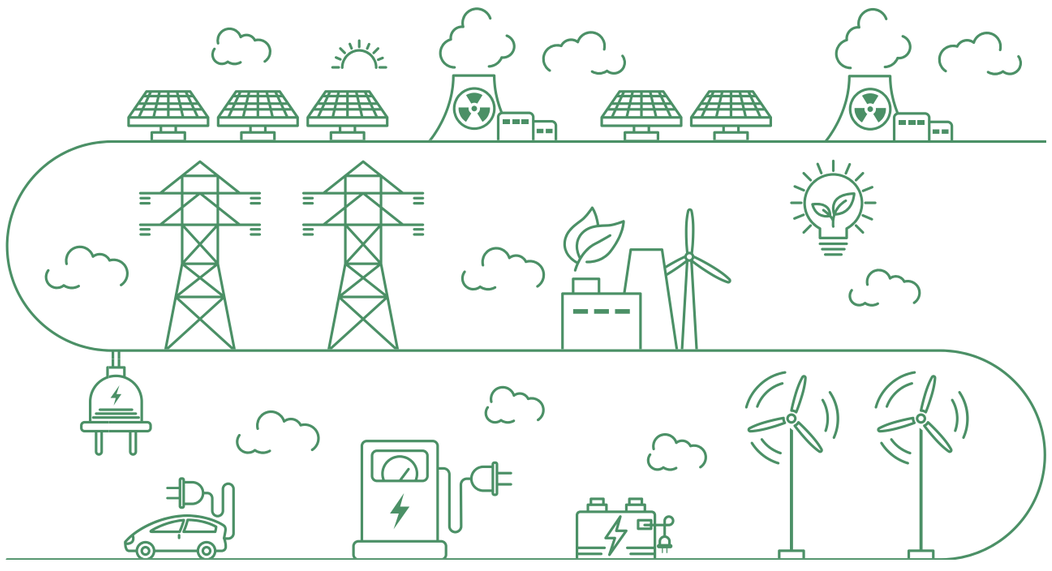
Domestic Wholesale Green Sukuk – PBSG 001

(Cumulative Issuance: IDR 22.22 trillion ~ USD 1.50 billion)



Awards

2018	**Asia Pacific Green/SRI Bond Deal of the Year** GlobalCapital, Euromoney	
2019	**SRI Bond, Islamic Issue** IFR Asia	**Indonesia Deal of the Year** Islamic Finance News
	SRI Capital Market Issue of the Year IFR Asia	**Sovereign Deal of the Year** Islamic Finance News
	Best ESG Deal Finance Asia	**Green Bond of the Year, Sovereign** Islamic Finance News
	Green Bond Pioneer Award Climate Bond Initiative	**Sovereign Sukuk/ Best Green Sukuk** The Asset Triple A
2020	**International Islamic Finance Awards 2020** The Asset Triple A	**3G Best Green Initiative of the Year 2020** Cambridge IFA
2021	**Best Green Bond** The Asset Triple A	**Largest Green Sukuk 2020** Climate Bond Initiative
2022	**Largest Green Sukuk 2021** Climate Bond Initiative	
2023	**Best Sovereign Green Sukuk of the Year** Alpha Southeast Asia	**Best Deal of the Year** IFN



Executive Summary

Latest Issuances

Global Green Sukuk (SNI 1133)

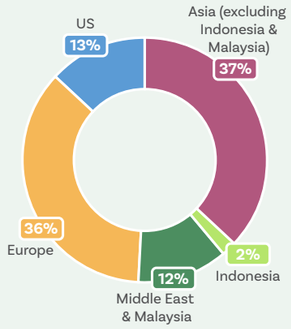
ISIN: US71567RAY27

Amount
USD 1.0 billion

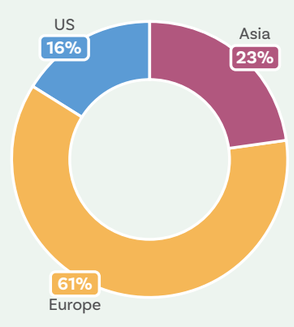
Coupon
5.6%

Tenor
10 years

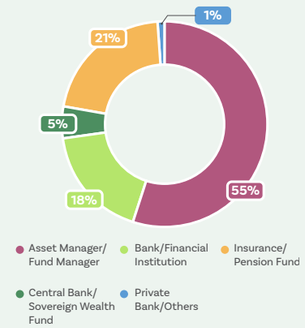
Distribution of Investors by Region



Distribution of Green Investors by Region



Type of Investors



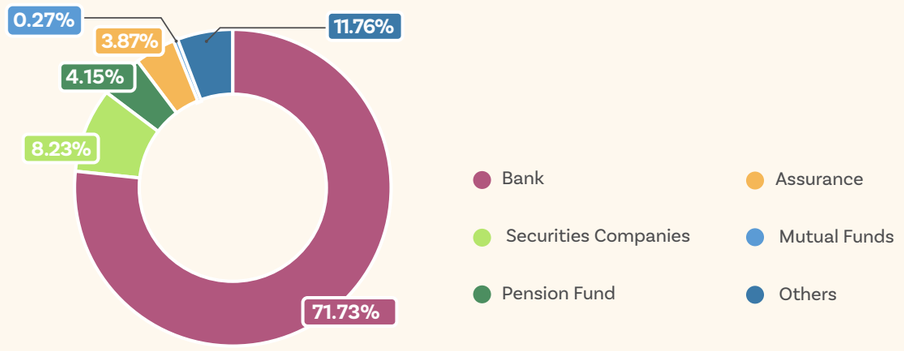
Domestic Wholesale Green Sukuk (PBSG 001)

Amount
IDR 15.49 trillion

Coupon
6.625% p.a (fixed)

Tenor
6 years

Type of Investors



Domestic Retail Green Sukuk (ST 010T4 & ST 011T4)

ST 010T4

Amount
IDR 3.3 trillion

Coupon
6.40%

Tenor
4 years

By Generation

Gen X	39.98%
Gen Baby Boomers	31.11%
Gen Y/Millenials	26.27%
Gen Traditional	1.78%
Gen Z	0.86%

By Occupation

Entrepreneur	41.00%
Private Sector Employee	26.90%
Housewife	10.05%
Civil Servant/Military Personnel/Police Officer	4.45%
Professional	3.40%
Student	2.50%
Retiree	2.44%
Authority/Institutional Employee	1.80%
Artist	0.12%
Others	7.34%

ST 011T4

Amount
IDR 5.5 trillion

Coupon
6.50%

Tenor
4 years

By Generation

Gen X	42.22%
Gen Baby Boomers	29.53%
Gen Y/Millenials	25.35%
Gen Traditional	1.82%
Gen Z	1.09%

By Occupation

Entrepreneur	34.08%
Private Sector Employee	27.83%
Housewife	11.35%
Civil Servant/Military Personnel/Police Officer	5.45%
Student	4.69%
Professional	3.39%
Retiree	2.62%
Authority/Institutional Employee	2.43%
Artist	0.06%
Others	8.10%

Use of Proceeds

Global Green Sukuk (SNI 1133)

Breakdown by Sector

Sustainable Water and Wastewater Management	82.77%
Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction	16.5%
Sustainable Transport	0.65%
Sustainable Management of Natural Resources on Land	0.06%
Energy efficiency	0.003%

Breakdown by Project Owner

Ministry of Public Work and Housing	99.29%
Ministry of Transport	0.65%
Ministry of Environment and Forestry	0.06%

Domestic Wholesale Green Sukuk (PBSG 001)

Breakdown by Sector

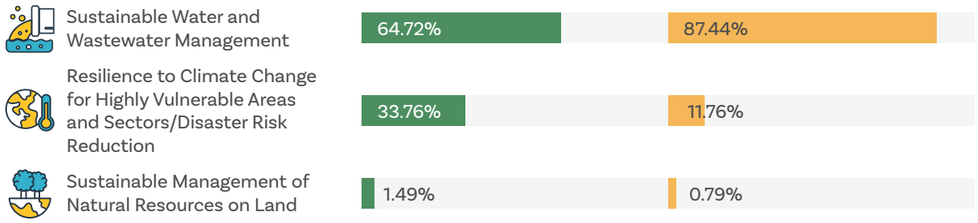
	FY 2023 Financing PBSG	FY 2022 Refinancing PBSG	FY 2021 Refinancing PBSG
Sustainable Water and Wastewater Management	54.93%	71.86%	66.18%
Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction	44.46%	24.61%	31.33%
Sustainable Transport	0.54%	1.87%	0.05%
Sustainable Management of Natural Resources on Land	0.04%	1.20%	0.47%
Green Building	0.02%	0.00%	1.40%
Energy efficiency	0.00%	0.47%	0.21%
Renewable Energy	0.00%	0.00%	0.36%

Breakdown by Project Owner

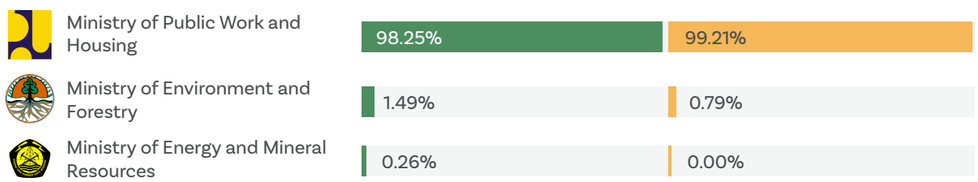
	FY 2023 Financing PBSG	FY 2022 Refinancing PBSG	FY 2021 Refinancing PBSG
Ministry of Public Work and Housing	98.63%	96.46%	98.90%
Ministry of Transport	0.54%	2.34%	0.26%
Ministry of Environment and Forestry	0.04%	1.2%	0.47%
Ministry of Energy and Mineral Resources	0.11%	0.00%	0.37%
Meteorology Climatology and Geophysics Agency	0.67%	0.00%	0.00%

Domestic Retail Green Sukuk (ST 010T4 & ST 011T4)

Breakdown by Sector



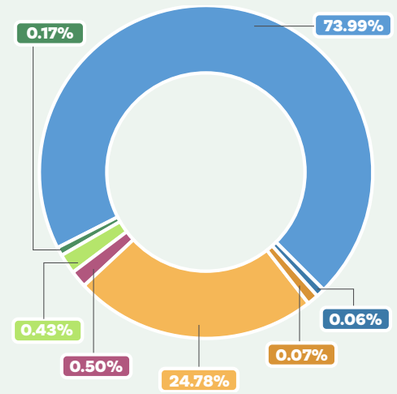
Breakdown by Project Owner



Cumulative Breakdown (2018-2023)

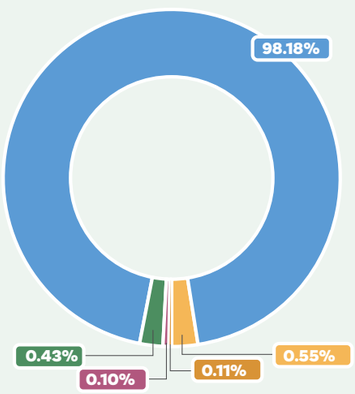
Global Green Sukuk

Breakdown by Sector



- Sustainable Water and Wastewater Management
- Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction
- Sustainable Transport
- Sustainable Management of Natural Resources on Land
- Green Building
- Energy efficiency
- Renewable Energy

Breakdown by Project Owner



- Ministry of Public Work and Housing
- Ministry of Transport
- Ministry of Environment and Forestry
- Meteorology Climatology and Geophysics Agency
- Ministry of Energy and Mineral Resources

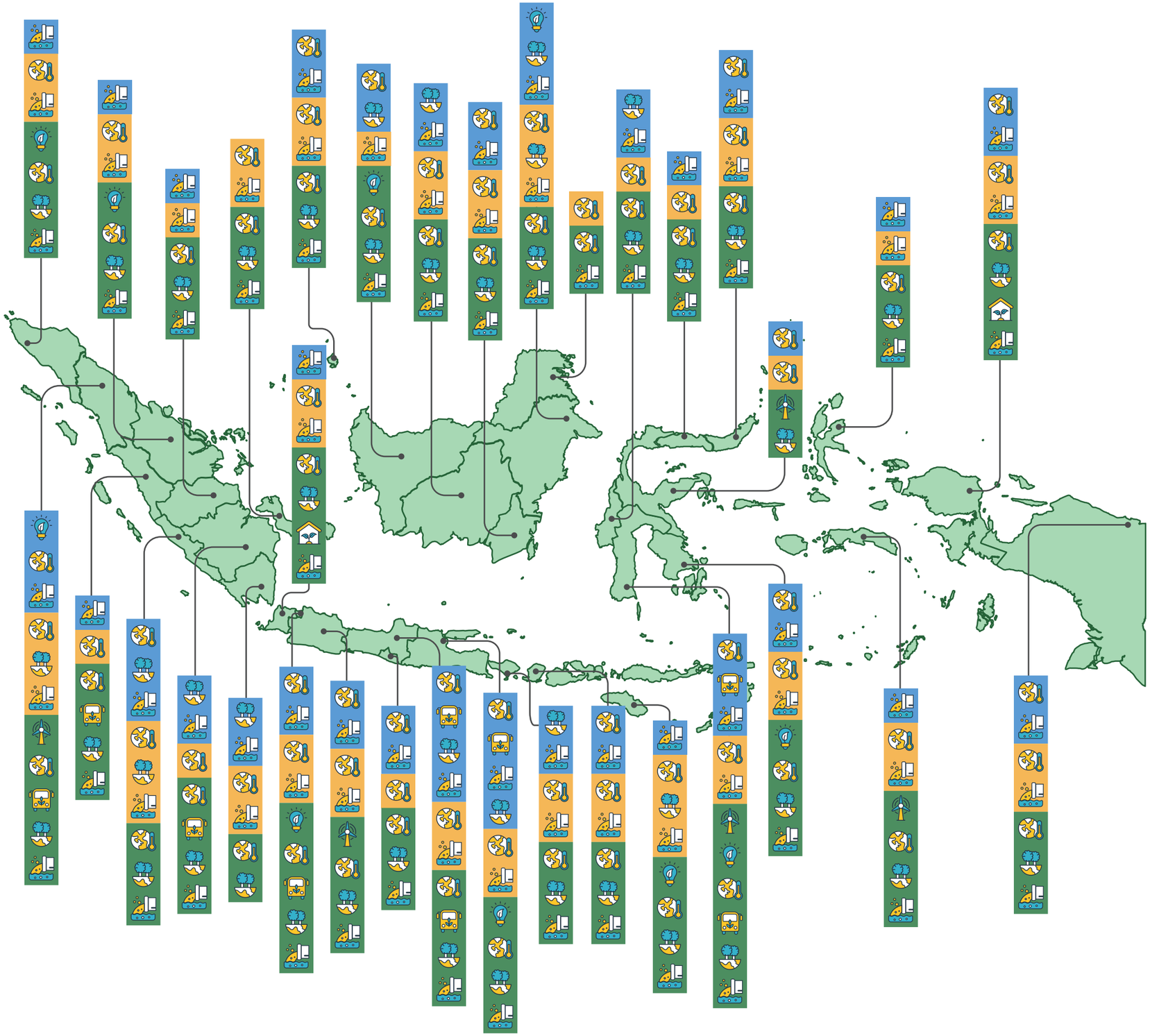
Projected Environmental and Social Impacts

The following impact data are accumulated from the projects financed and refinanced by the proceeds of the Global Green Sukuk (SNI 1133), Domestic Wholesale Green Sukuk (PBSG 001), Domestic Retail Green Sukuk (ST 010T4 & ST 011T4).

Renewable Energy	The annual GHG emission reduction has yet to be calculated.
	The project supports renewable energy development for geothermal resources by enhancing geophysical data quality, improving the validity of surveyed prospects, and reducing exploration risks.
Energy Efficiency	Contribute to the annual GHG emission reduction at **2,317 tCO2e** in 2021 and **1,884 tCO2e** in 2022 or **4,201 tCO2e** in total from the overall aids to marine navigation development and replacement
	The installation and replacement of navigation aids (SBNP) have improved maritime safety and efficiency.
Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	• Enhance the infrastructure service capacity of water management areas that are prone to floods and droughts through the development and/or maintenance of: • Flood Control Infrastructure: **145.48 km** and Coastal Protection Structures: **60.84 km** • Raw Water Infrastructures consisting of Intake Units: **32**; Raw Water Networks: **233.57 km**; Artificial Aquifers: **268**; Groundwater Irrigation Networks: **31.3 km**; Reservoirs: **10**; Wells: **459**; Long Storage Facilities: **6**; Rain-fed Water Storage: **18** • Water Supply infrastructure for Agricultural Areas consisting of Rivers: **12**; Flood Control Units: **2**; Water Surface/Groundwater Irrigation Networks: **1,655.79 km**; • Reservoir Storage infrastructures consisting of Rain-fed Water Storage: **94**; Weirs: **202**; Lakes: **2**; Springs: **3**
Sustainable Transport	Contribute to the annual GHG emission reduction at **2,777,421.09 tCO2e** in total from railway infrastructure development and improvement and **129.53 tCO2e** from the conversion of ICE to electric motorcycles
	The projects enhance railway transportation capacity, safety, efficiency, and regional connectivity through the construction, reactivation, and improvement of double-double tracks, double tracks, new lines, and the reactivation of existing railway lines which contribute to national and regional economic growth and enhances transportation accessibility in various regions. The conversion of ICE to electric motorcycles contribute to the government's program in the electric mobility promotion.
Sustainable Management of Natural Resources on Land	Contribute to the annual GHG emission reduction at **582.105 million tCO2e** in total from forest and land rehabilitation and **92.88 tCO2e** from PROPER assessment and compliance
	• Forest and Land Rehabilitation: ± **74,024 hectares** • Seedling Production: **39.677 million** seedlings • Peatland Rehabilitation: **2,150 hectares** • Disaster Management and Monitoring Systems: **63 monitoring systems** and **120 infrastructure units**
Green Building	The annual GHG emission reduction has yet to be calculated.
	The project will construct environmentally friendly and socially acceptable buildings, resulting in **2,523 room** units that contribute to sustainable development and community well-being.
Sustainable Water and Wastewater Management	• Total Drinking Water Treatment Capacity: ± **325 liters** per second (2021), ± **110 liters** per second (2023) • Total Reservoir and Water Storage Development: **65 dams, 30 rainfed storage units, 5 reservoirs, 2 sediment control units, 9.7 weirs, 4 ponds, 11 lakes, 1 pump station** • Total Domestic Wastewater Connections: to benefit **500 household** connections • Total Agricultural Water Supply: ± **108,182.76 hectares**, 78 canal blockings, **27,864.64 km** irrigation networks • Total Reservoir Storage Enhancement: **16.25 weirs, 11 dams, 14 water gates, 3 reservoirs**

Mitigation **Other Result**

Distribution of Geographic Locations



RF 2022 - Global Green Sukuk (SNI 1133)

Energy Efficiency
North Sumatra, East Kalimantan

Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction
North Sumatra, Bengkulu, Riau Islands, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, West Nusa Tenggara, West Kalimantan, South Kalimantan, South Sulawesi, Central Sulawesi, Southeast Sulawesi, North Sulawesi, Papua, West Papua

Sustainable Transport
Central Java, East Java, South Sulawesi

Sustainable Management of Natural Resources on Land
South Sumatra, Bengkulu, Lampung, Central Java, East Java, Bali, West Kalimantan, Central Kalimantan, East Kalimantan, West Sulawesi

Sustainable Water and Wastewater Management
Aceh, North Sumatra, West Sumatra, Bengkulu, South Sumatra, Riau, Riau Islands, Jambi, Lampung, Banten, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, Bali, East Kalimantan, Central Kalimantan, South Kalimantan, North Sulawesi, Gorontalo, West Sulawesi, Southeast Sulawesi, South Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, West Papua, Papua

RF 2021 - Domestic Retail Green Sukuk (ST 010T4 & ST 011T4)

Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction
Aceh, North Sumatra, South Sumatra, West Sumatra, Riau, Riau Islands, Bangka Belitung Islands, Bengkulu, Lampung, Banten, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, Bali, North Kalimantan, Central Kalimantan, East Kalimantan, South Kalimantan, Gorontalo, North Sulawesi, West Sulawesi, Central Sulawesi, Southeast Sulawesi, South Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Maluku, Papua, West Papua

Sustainable Management of Natural Resources on Land
North Sumatra, Bengkulu, East Kalimantan, East Nusa Tenggara

Sustainable Water and Wastewater Management
Aceh, North Sumatra, Riau, Jambi, Riau Islands, Bangka Belitung Islands, Bengkulu, West Sumatra, Lampung, Banten, DKI Jakarta, West Java, Central Java, East Java, Bali, Central Kalimantan, East Kalimantan, South Kalimantan, West Kalimantan, North Sulawesi, Southeast Sulawesi, South Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, Papua, West Papua

RF 2023 - Domestic Wholesale Green Sukuk (PBSG 001)

Renewable Energy
North Sumatra, West Java, Central Sulawesi, South Sulawesi, Maluku

Energy Efficiency
Aceh, DKI Jakarta, Riau, South Sulawesi, East Java, West Kalimantan, Southeast Sulawesi, East Nusa Tenggara

Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction
Aceh, North Sumatra, West Sumatra, South Sumatra, Riau, Jambi, Bangka Belitung Islands, Riau Islands, Bengkulu, Lampung, Banten, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, Bali, West Kalimantan, Central Kalimantan, North Kalimantan, East Kalimantan, South Kalimantan, West Sulawesi, South Sulawesi, Southeast Sulawesi, North Sulawesi, Gorontalo, Maluku, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua

Sustainable Transport
North Sumatra, West Sumatra, South Sumatra, DKI Jakarta, Central Java, South Sulawesi

Sustainable Management of Natural Resources on Land
Aceh, North Sumatra, West Sumatra, South Sumatra, Jambi, Bengkulu, Riau, Bangka Belitung Islands, Riau Islands, Lampung, Banten, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, Bali, West Kalimantan, Central Kalimantan, East Kalimantan, South Kalimantan, Gorontalo, West Sulawesi, Central Sulawesi, South Sulawesi, North Sulawesi, Southeast Sulawesi, Maluku, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua

Green Building
Banten, West Papua

Sustainable Water and Wastewater Management
Aceh, North Sumatra, West Sumatra, South Sumatra, Riau, Bengkulu, Jambi, Riau Islands, Bangka Belitung Islands, Banten, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, Bali, South Kalimantan, West Kalimantan, Central Kalimantan, East Kalimantan, North Kalimantan, South Sulawesi, North Sulawesi, Gorontalo, West Sulawesi, Southeast Sulawesi, Maluku, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua

I. Introduction

As we approach 2024, the global economy continues to confront significant challenges stemming from the aftermath of the COVID-19 pandemic, high inflation, and geopolitical uncertainties. In response, the Government of Indonesia is actively pursuing economic recovery through various stimulus measures and infrastructure investments, while reinforcing its commitment to sustainability and climate initiatives.

The country aims for a 31.89% reduction in greenhouse gas emissions through domestic efforts and a 43.2% reduction with international support by 2030, as outlined in the 2022 Enhanced Nationally Determined Contributions (NDC). Simultaneously, adaptation actions are focused on building resilience and reducing risks across sectors. As targets become more ambitious, the demand for funding increases significantly.

According to Climate Budget Tagging, from 2018 to 2023, Indonesia allocated IDR 227.83 trillion for climate mitigation in its State Budget, averaging IDR 37.97 trillion annually, which covers only 12.3% of the funding needs. In this context, innovative financing mechanisms, including the issuance of Green Sukuk, are increasingly vital to support the transition toward a greener and more sustainable economy.

In 2023, marking the sixth year of issuance of Green Sukuk, the Government of Indonesia successfully issued the SNI 1133 for the global market, raising USD 1 billion. Similarly, in the domestic market, Indonesia secured proceeds from the Domestic Retail Green Sukuk (ST 010T4 and ST 011T4) and project-based Domestic Wholesale Green Sukuk (PBSG 001), amounting to IDR 8.8 trillion and IDR 15.49 trillion, respectively. This success demonstrates strong interest from various investor segments in contributing to climate and sustainable financing initiatives in Indonesia.

In this sixth annual report, we present the distribution of spending proceeds and their positive environmental impacts, where ministries and agencies acting as project owners. Green Sukuk has financed green infrastructure projects across seven eligible sectors, with the largest shares coming from adaptation or resilient actions including Sustainable Water and Wastewater Management and Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction. As a part of mitigation, the Green Sukuk's proceeds cover Renewable Energy, Energy Efficiency, Sustainable Transport, Sustainable Management of Natural Resources on Land, and Green Building projects.

The Ministry of Public Works and Housing, as in previous years, remains the leading project owner among ministries and agencies followed by the Ministry of Transportation, Ministry of Environment and Forestry, and Ministry of Energy and Mineral Resources. Additionally, the Meteorological, Climatological, and Geophysical Agency has emerged as a new project owner, allocating proceeds for geological data, information, recommendations, and services related to groundwater and geothermal resources as renewable energy sources.

The issuance of Green Sukuk strengthens Indonesia's position in developing innovative and Sharia-compliant climate financing instruments. This process has enhanced planning and budgeting systems while improving coordination and cooperation among government institutions, leading to greater transparency and accountability in the allocation and impact reporting of Green Sukuk. Ultimately, this accomplishment reflects the Government of Indonesia's commitment to advancing sustainable development and addressing climate change mitigation and adaptation.

Lighthouse at Nipa Island, Kepulauan Riau Province

II. Summary of the Republic of Indonesia SDG Government Securities Framework

Indonesia's Green Sukuk issuances were preceded by the development of the Republic of Indonesia Green Bond and Green Sukuk Framework in 2017, which outlines the 9 (nine) eligible sectors, the process of project selection, the management of proceeds, and the reporting of the Sukuk. In 2021, the Framework was reviewed and enhanced to become the SDGs Government Securities Framework (the "SDGs Framework"). The SDGs Framework reflects the Government intention to issue Green and Blue Bonds and Sukuk ("Green Securities"), and Social and Sustainability Bonds and Sukuk ("SDGs Securities"), collectively referred as "Green and SDGs Securities" to fund projects that will deliver environmental and social benefits that support the Republic to achieve its 2030 sustainable development and climate change agenda. One of the major changes of the SDGs Framework is reflected on the eligible sector category and criteria that expand to projects with Green and Blue focus that may have Social co-benefits and those with Social focus that may have Green co-benefits.

Similar to the Green Bond/Sukuk Framework, the SDGs Framework received a Second Party Opinion evaluation of Sustainability Bond Principles, Social and Shade of Green assessments from CICERO and the IISD. The evaluation provided that the Framework is in alignment with the green bond principles, social bond principles, and sustainability bond guidelines, "Good" rate for the governance procedures, and CICERO Medium Green for green bond and sukuk issuances under this Framework. With such an improvement, the 2022 and consecutive issuances will follow the SDGs Framework accordingly.

Green Shading according to CICERO's Second-Party Opinion[1]

Dark Green

- Renewable Energy
- Resilience to Climate Change for Highly Vulnerable Areas and Sectors/Disaster Risk Reduction

Medium to Dark

- Sustainable Transport
- Waste to Energy and Waste Management

Medium Green

- Green Tourism

Light to Medium

- Energy Efficiency
- Sustainable Water and Wastewater Management
- Sustainable Management of Natural Resources on Land

Light Green

- Green Building
- Sustainable Management of Natural Resources on Ocean

1 While the SDGs Framework include both Green and Social categories, the Green Sukuk Impact Report mainly focuses on the Green Categories (and their respective shading) given that this report is focused solely on Green Sukuk issuance.

a. Selection Procedure

The Framework stipulates the project selection procedure of Green Sukuk follows the Climate Budget Tagging (CBT) mechanism. The CBT system has been embedded into the government's national budget system (ADIK system in 2016 and KRISNA system in 2018) - and was established to track and identify ministry expenditures/ projects that contribute towards climate change mitigation and adaptation, in accordance with Indonesia's climate targets.

The green projects eligible for financing or refinancing by the Green Sukuk are selected from tagged projects that fall under one of the nine eligible green sectors under the Framework. The Ministry of Finance selects projects that are suitable by timeline with the tenure of the Green Sukuk. The impact of each project—both environmental and non-environmental (social) impacts—are assessed and measured by the individual ministries as project owners together with the Ministry of National Development Planning (including the Secretariat of RAN-GRK and RAN-API), and are validated by the Ministry of Environment and Forestry to be consistent with RAN-GRK, RAN-API, and the Nationally Determined Contributions (NDCs). The assessment employs internationally accepted methodologies, where possible. Upon the verification by the Ministry of Environment and Forestry, the projected GHG emissions reduction and resilience indicators performance will be registered in the National Registry System on Climate Change Control (SRN).

b. Management of Proceeds

The Framework indicates that the proceeds of 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 proceeds allocation to eligible green projects are held in cash in the government's general account at *Bank Indonesia* (Central Bank of the Republic of Indonesia). The Ministry of Finance actively manages the processes for Green Sukuk proceeds allocation and is responsible to ensure that the proceeds are indeed directed to and used for investments in accordance with the Framework. Line ministries/agencies that utilise the Green Sukuk proceeds monitor and report the impacts of the eligible green projects within their respective portfolio to the Ministry of Finance.

Republic of Indonesia SDGs Government Securities Framework

The Government of Indonesia further cemented its sustainable development commitments by mainstreaming the SDGs into the Medium Term National Development Plan 2020 - 2024, and has adapted to the dynamics of the GSS bond market. Following successful issuances of Green Sukuk since 2018, a wider variety of Green and Social projects were identified to have stronger linkages to SDGs—and therefore are apt for the label of SDGs Bond. This has responded to the growing trends among investors who are increasingly embracing holistic approaches to sustainability and embedding the SDGs into their investment portfolios.

In 2021, the GOI developed the Republic of Indonesia SDGs Government Securities Framework (SDGs Framework) to demonstrate its intention to issue Green and Blue Bonds and Sukuk, and Social and Sustainability Bonds and Sukuk under a collective framework. The SDGs Framework was an expansion of the existing Republic of Indonesia Green Bond and Green Sukuk Framework with the inclusion of Blue and Social focus, in addition to the existing Green focus. The SDGs Framework allows for financing and refinancing of projects under 15 eligible sectors. Future issuances of GSS Securities will follow the SDGs Framework.

III. Featured Projects

a. Planning, Development, and Oversight of Renewable Energy and Energy Conservation Infrastructure

Under the planning, development, and oversight of renewable energy and energy conservation infrastructure project, the Ministry of Energy and Mineral Resources has implemented an activity to convert fossil-fuelled internal combustion engine (ICE) motorcycles to battery electric motorcycles. The proceeds from 2023 Green Sukuk issuance have been utilized to finance the conversion of 350 vehicles owned by various ministries and local governments. The conversion activity aims to accelerate the adoption of battery electric vehicles in Indonesia. In addition to this conversion program, the government has also encouraged the purchase of new battery electric motorcycles by providing subsidies to the general public.

To support the conversion initiative, the Ministry of Energy and Mineral Resources is also establishing enabling conditions, which include regulatory improvements to streamline the conversion process (Ministerial Regulation No. 13/2023), training for certification of conversion workshops, in collaboration with the Ministry of Transportation, digital platform development to facilitate information sharing and promote the conversion program, and awareness campaigns.

This initiative is part of the Government of Indonesia's measures to gradually fulfil its commitments toward low-carbon and climate resilience development. The target is to achieve a 31.89% reduction in emissions unilaterally, or 43.2% with international support by 2030, as well as to reach Net Zero Emissions by 2060 or sooner. The transportation sector remains the largest energy consumer, accounting for 42% of total energy use, which is primarily imported fossil fuels. In 2020, fuel imports reached 61 million barrels, resulting in foreign exchange expenditures of USD 2.7 billion, equivalent to IDR 40 trillion.

The electric motorcycle conversion program, financed by the allocation of proceeds from Green Sukuk, is projected to contribute to a reduction of 129.53 tonnes of CO_2e emissions annually. The government aims to convert 50,000 units by 2023, which will positively impact electricity consumption, increasing it by 15 GWh. This initiative is expected to reduce emissions by 30,000 tonnes of CO_2e and decrease fuel imports by 20,000 kilolitres, resulting in foreign exchange savings of USD 10 million.

Additionally, the program will create new jobs in both newly established and existing conversion workshops, as well as stimulate the development of component industries supporting this conversion. Furthermore, there is potential annual savings of IDR 18.6 billion from reduced subsidies for gasoline fuel.

b. Safety and Security of Maritime Transport

Aids to Marine Navigation (*Sarana Bantu Navigasi Pelayaran*) are facilities or systems designed to assist vessels in determining their position and direction while providing warnings about navigational hazards in the waters. The SBNP is a vital component in ensuring the safety and efficiency of navigation in Indonesian waters that is undertaken by the Directorate General of Sea Transportation of the Ministry of Marine Affairs and Fisheries.

Types of SBNP include a) lighthouses: Tall structures with strong lights at the top to guide ships from a distance; b) beacons: Smaller structures with lights to mark navigation channels or hazards; c) buoys: Floating markers to indicate the boundaries of channels or hazards. The green technologies employed include LED lights that replace conventional bulbs, saving up to 90% energy, lithium batteries that are more durable and environmentally friendly than lead-acid batteries, and an Energy Management System that optimizes the use of solar energy and batteries.

The transition to renewable energy has important environmental impacts, including a reduction in carbon emissions, as solar cells replace generators, decreasing reliance on fossil fuels and lowering greenhouse gas emissions from the SBNP operations. Solar power systems offer high energy efficiency and require minimal maintenance, enhancing long-term operational sustainability. In remote locations, solar cells ensure a stable and independent energy supply for the SBNP. Additionally, solar-powered SBNP operates more quietly, reducing noise pollution and disturbances to marine ecosystems, while durable components minimize waste and the frequency of replacements.

Economically, the SBNP reduces operational costs by decreasing reliance on expensive fossil fuels, and improved navigation allows for more efficient routes, reducing vessel fuel consumption. The development, maintenance, and operation of the SBNP exemplify investment in green technology for sustainable maritime infrastructure, which provides co-benefits in terms of supporting navigation safety and national maritime connectivity while contributing to climate change mitigation efforts.

Challenges of this implementation include high initial conversion costs to solar power, the need for personnel training for new system maintenance, and resilience to extreme weather conditions in some locations.

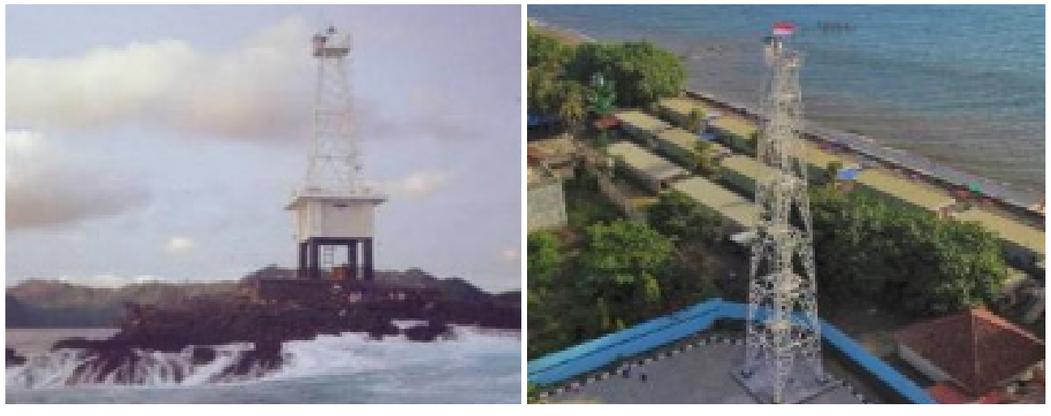
The proceeds of 2023 Green Sukuk issuance has refinanced the 2021 to 2022 projects on the development, maintenance, and operation of the SBNP executed by the Ministry of Marine Affairs and Fisheries. These activities cover several strategic areas in Indonesian waters, including the Traffic Separation Schemes (TSS) of the Sunda Strait and Lombok Strait, the Indonesian Archipelagic Sea Lanes (ALKI), DKI Jakarta, South Sulawesi, East Nusa Tenggara, and the replacement of the Ligeta Lighthouse and Raijua Port Buoy.

As of December 2023, the total number of operational SBNP units across Indonesia reached 3,016 units, comprising 284 lighthouses, 2,031 beacons, and 701 buoys. These units are distributed across 25 navigation districts covering all strategic maritime areas from Sabang to Merauke.

Contribute to the annual GHG emission reduction at 2,317 tCO2e in 2021 and 1,884 tCO2e in 2022 from the overall aids to marine navigation development and replacement.

Contribution to SDG: SDG 7 (Affordable and Clean Energy): Adoption of renewable energy in maritime infrastructure; SDG 9 (Industry, Innovation, and Infrastructure): Building resilient infrastructure, promoting inclusive and sustainable industrialization, and advancing innovation; SDG 13 (Climate Action): Reduction of carbon emissions from the shipping sector.

Solar Cell installation for Navigational Aids (SBNP) in the Strait of Malacca and Singapore



Solar Cell installation for Navigational Aids (SBNP) in the Lombok Strait

c. Provision of Geological Data, Information, Recommendation, and Services

Sector
RENEWABLE ENERGY

7 AFFORDABLE AND CLEAN ENERGY
13 CLIMATE ACTION

Physical Structure of Groundwater Monitoring Well

The 2023 Green Sukuk issuance has been allocated for refinancing this project from the 2021 fiscal year, which consists of three project components conducted by the Agency of Geology of the Ministry of Energy and Mineral Resources. These components include the development of groundwater monitoring network, construction of trial wells and monitoring wells for groundwater conservation, and procurement of survey equipment to support geothermal exploration programs.

The development of groundwater monitoring wells involves constructing wells to monitor the quality and quantity of groundwater. The monitoring equipment consists of Automatic Water Level Recorders (AWLR) powered by solar panels, equipped with maximum power point tracking and batteries connected to a central server via the internet. The Center for Groundwater and Environmental Geology (PATGTL) has established 33 units of monitoring well across 10 locations in Banten Province, 3 in West Java, 8 in Central Java, 2 in Yogyakarta Special Region, and 10 in East Java. Additionally, the Groundwater Conservation Office (BKAT) constructed 3 units of monitoring wells in the strategic area of groundwater basin around Greater Jakarta, specifically in Bekasi, Depok, and South Tangerang Cities.

The system is essential for supporting groundwater conservation and maintaining the resilience of water resources and the environment, ensuring the availability of clean water for various household, industrial, and agricultural needs. The data obtained can inform better spatial planning and policy development related to groundwater management, such as identifying appropriate locations for industrial or residential development. This initiative aligns with national priorities outlined in the Medium-Term Development Plan (RPJMN), focusing on “Strengthening Economic Resilience for Quality and Equitable Growth,” with a priority program aimed at “Increasing Water Quantity/Resilience to Support Economic Growth.”

Magnetotelluric and gravimeter for geophysical survey

The Center for Mineral, Coal, and Geothermal Resources (PSDMBP) procured equipment to support geothermal exploration programs aimed at mitigating upstream exploration risks in 2021 fiscal year. The 2023 Green Sukuk issuance has been allocated for refinancing the procurement of survey equipment, including Magnetotellurics - Time Domain Magnetotellurics (MT-TDEM) and gravimeters.

The geothermal exploration had been conducted at 20 selected locations for the 2021 fiscal year, involving the addition of geological, geochemical, and geophysical (3G) data, along with slim hole exploratory drilling. The use of MT-TDEM and gravimeters is expected to enhance the quality of geoscience data, particularly geophysical data, thereby increasing the validity of geothermal prospects and minimizing exploration risks, which could potentially boost geothermal development in Indonesia. This initiative supports the development goals of the Energy and Mineral Resources sector, prioritizing improvements in energy infrastructure, energy sovereignty, energy efficiency, and renewable energy.

IV. List of Projects

Table 1 - Refinancing Projects of 2022 Global Green Sukuk Allocation

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
1	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	Safety and security of maritime transport	This activity involves the conversion of Aids to marine navigation equipment (SBNP) from reliance on fossil fuel-powered generator sets to renewable energy sources, specifically solar cell technology. This transition aims to reduce GHG emissions while enhancing energy efficiency and cost-effectiveness, particularly due to rising fuel prices that significantly affect operational costs for SBNP. The initiative is under the responsibility of the Directorate General of Sea Transportation, Ministry of Transport.	North Sumatra, East Kalimantan	384,371,700	25,971	10 years	Contributing to a reduction of GHG emissions by 1,884 tCO2e for the overall SBNP projects.	Enhancing the smooth operation and safety of navigation as well as the cost efficiency of the SBNP that allows reallocation of budget for fossil fuel to other priority activities, such as the development of additional aids to marine navigation infrastructure.	7, 9, 13	Ministry of Transport
2	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Research leading to technology innovation with sustainability benefits (Provision of climate change data and information)	Climate change adaption	Dissemination and technical guidance on climate change vulnerability and risk levels for local governments aim to enhance understanding, and enabling informed decision-making and effective adaptation strategies.	DKI Jakarta	5,100,000	345	3 years	Adaptation/ resilience	Fosters collaboration among stakeholders and boosts community resilience to climate change impacts.	13, 17	Ministry of Environment & Forestry
3	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Flood mitigation	Flood and lava control, major urban drainage management, and coastal protection	Development and rehabilitation of flood control and coastal protection infrastructure, which are designed to enhance resilience against climate change and natural disaster impacts. This activity aims to safeguard communities, protect livelihoods, and ensure sustainable development in vulnerable areas.	North Sumatra, Bengkulu, Riau Islands, West Java, Central Java, In Yogyakarta, East Java, West Kalimantan, South Kalimantan, South Sulawesi, Central Sulawesi, Southeast Sulawesi, North Sulawesi, Papua, West Papua	1,987,731,269,492	134,306,167	10-20 years	Adaptation/ resilience	A reduction of flood-prone areas by 2,886.88 hectares, which was achieved through the construction and rehabilitation of coastal protection structures covering 173.56 hectares and extending 16.01 kilometers, as well as flood control structures covering 2,713.32 hectares and extending 43.89 kilometers.	3, 9, 13, 14	Ministry of Public Work and Housing
4	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Drought management	Groundwater and raw water network development	Construction of raw water distribution networks and supporting infrastructure for the groundwater irrigation network system (JIAT). The project aims to improve access to raw water for various uses, including drinking, agriculture, and industry, while supporting sustainable water resource management.	Central Java, West Nusa Tenggara, West Papua	457,147,066,718	30,888,315	10-20 years	Adaptation/ resilience	Increased capacity for raw water services through the construction of a raw water distribution network with a flow rate of 0.03 m^3/ second over 26.40 km and the development of 1.5 km of supporting infrastructure for the groundwater irrigation network system (JIAT).	3, 9, 13, 14	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
5	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway connectivity infrastructure in Java and Sumatra.	The construction of the double-track railway on the Southern Java route from Mojokerto to Sepanjang spans 33 km. The project includes the installation of ballast, concrete sleepers, switches and rails, as well as bridges and box culverts. It also involves the establishment of five new stations: Sepanjang, Boharan, Krian, Kedinding, and Tarik. This project is part of the National Strategic Projecta aimed at upgrading the railway network from single to double track, particularly in East Java. Other project include supervision for the construction of overpasses in Purwokerto, and consultancy services and supervision of level crossing maintenance in Java and Sumatra.	Central Java, East Java	44,725,544,542	3,021,996	10 years	Contribute to the GHG emission reduction of Java and Sumatra railways of passenger trains in 2022 at 710,596.56 and 29,455.40 tonnes CO2e, respectively	The double track reduces travel time for trains, increases frequency and carrying capacity, and minimizes the potential for operational disruptions that often occur on single-track routes.	8, 9, 11, 13	Ministry of Transport
6	Sustainable Transport	Developing clean transportation systems	Development of railway connectivity infrastructure in Sulawesi	The construction of the signaling and telecommunication system for Segment 3 of the Makassar - Parepare railway (Makassar - Barru) supports railway development in South Sulawesi, which is anticipated to have the highest passenger and freight travel patterns on the island. This project marks the first phase of the National Trans Railway Network development in Sulawesi and is part of the National Strategic Projects.	South Sulawesi	51,230,340,121	3,461,509	10 years	Segment 3 track line has not yet been activated	To improve railway safety and telecommunication system in the context of railway construction	8, 9, 11, 13	Ministry of Transport
7	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/ increases carbon sequestration	Planning and oversight of watershed management, development of forest seedling production, and forest rehabilitation.	Planning, monitoring, and evaluating watershed management through the development of a real-time data and information system; vegetative rehabilitation of forests and land, including planting and establishing community nurseries; and the production and distribution of high-quality and productive seedlings.	South Sumatra, Bengkulu, Lampung, Central Java, East Java, Bali, West Kalimantan, Central Kalimantan, East Kalimantan, West Sulawesi	8,390,831,875	566,948	5-10 years	Contribute to the GHG emission reduction at 1.485 million tCO2e per year in 2022 in total from forest and land rehabilitation	Five flood early warning and water management monitoring systems for disaster-prone watersheds have been established to support real-time watershed information. A total of 8,090 hectares have been rehabilitated, including planting over 7,340 hectares and establishing 750 hectares of community nurseries. Additionally, 3,758,000 high-quality, productive seedlings have been produced and distributed.	13, 15	Ministry of Environment & Forestry

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
8	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of dams, lakes, and other water storage structures.	The construction and revitalization of natural and artificial water storage structures, including the development of reservoirs (embung) and dams, as well as the rehabilitation of ponds and lakes.	Jambi, Lampung, Banten, Special Capital of Jakarta, West Java, Central Java, Special Region of Yogyakarta, East Java, Bali, East Kalimantan, South Kalimantan, North Sulawesi, Gorontalo, West Sulawesi, Southeast Sulawesi, South Sulawesi, West Nusa Tenggara, East Nusa Tenggara	9,781,411,335,423	660,906,171	10-20 years	Adaptation/ resilience	Enhanced water resource storage capacity through the construction of two reservoirs, the development of 33 dams, the rehabilitation of one pond, and the revitalization of one lake.	6, 13	Ministry of Public Work and Housing
9	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of water surface, swamp and non-ricefield irrigation networks	The development and rehabilitation of water resource infrastructure for irrigation areas include the construction of weirs, dam embankments, silt bags, and irrigation networks, which encompass the construction and rehabilitation of water gates and weirs, as well as canal blocking.	Aceh, North Sumatra, West Sumatra, Jambi, Bengkulu, South Sumatra, Riau, Riau Islands, Lampung, West Java, Special Region of Yogyakarta, East Java, Bali, Central Kalimantan, East Kalimantan, South Kalimantan, Gorontalo, West Sulawesi, Central Sulawesi, Southeast Sulawesi, South Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Maluku, North Maluku, West Papua, Papua	2,468,974,709,855	166,822,616	10-20 years	Adaptation/ resilience	The total area of rehabilitated irrigation land increased by 53,123.35 hectares through: Construction of weirs: 9,601.75 hectares; 0.25 km of dam embankments; 1.7 km of silt bags; 1.70 weirs, construction of Irrigation network: 18,856.31 hectares; 129.97 km; 14 water gates, Canal blocking: 100.00 hectares; 2.40 km; Rehabilitation of weirs: 2 weirs, Rehabilitation of irrigation networks: 22,490.29 hectares; 244.00 km, Rehabilitation of swamp irrigation networks: 2,075.00 hectares; 79.60 km; 15 units	6, 13	Ministry of Public Work and Housing

Remarks:

a. The type of projects refers to 15 eligible sectors under the Republic of Indonesia SDGs Government Securities Framework.

b. The projects may be implemented in multiple spots on each provincial location mentioned.

c. The currency exchange rate is based on the State Budget Assumption for 2023 budget year of IDR 14,800 per USD.

d. Based on durability of the output or financial life of project.

e. Methodology and assumptions are disclosed in Annex.

f. Additional indicators of the direct impact of the green projects.

g. Most relevant or direct social and/or Sustainable Development Goals impacts, as a result of the project.

Table 2 - Financing Projects of 2023 Project-Based Green Sukuk Allocation

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
1	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Flood mitigation	Flood and lava control, major urban drainage management, and coastal protection	The development and rehabilitation of infrastructures for urban flood control and coastal protection. The flood control enhancement includes sediment control and polders; and coastal protection structures.	Aceh, North Sumatra, West Sumatra, Riau, Jambi, Riau Islands, Bengkulu, Lampung, DKI Jakarta, West Java, Central Java, East Java, West Kalimantan, Central Kalimantan, East Kalimantan, West Sulawesi, South Sulawesi, North Sulawesi, Maluku , North Maluku, West Nusa Tenggara	1,909,232,765,184	129,002,214	10-20 years	Adaptation/ resilience	Potential areas prone to flooding have been reduced by 2,283.59 hectares through the development and rehabilitation of flood control structures, which extend 20.91 km and include 4 sediment control units and 3 polders managing a flood area of 1,787.44 hectares; and coastal protection structures extending 15.98 km safeguard a coastal area of 496.16 hectares.	3, 9, 13, 14	Ministry of Public Work and Housing
2	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Drought management	Groundwater and raw water network development	The development of groundwater and raw water facilities includes development of raw water networks, artificial aquifer for rainwater storages (ABSAH), wells, rainfed water storages; and rehabilitation of weirs, rainfed water storages, raw water intake and pump house, and reservoirs.	Aceh, North Sumatra, West Sumatra, Bangka Belitung Islands, Riau Islands, Riau, Bengkulu, Banten, West Java, Central Java, DI Yogyakarta, West Kalimantan, South Kalimantan, West Sulawesi, South Sulawesi, Southeast Sulawesi, North Sulawesi, Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua	781,207,954,730	52,784,321	10-20 years	Adaptation/ resilience	The service capacity discharge of raw water structures and infrastructure has been increased by 1.56 m^3/s, supported by the development of: 1 artificial aquifers for rainwater storage (ABSAH); 137.62 km raw water networks, 10 rainfed water storages, 36 wells, 2 pump houses, 8 units of raw water facilities extending 22.824 km (capacity at 0.306 m^3/s), and the rehabilitation of 1 weir, rainfed water storage (capacity at 0.087 m^3/s), 1 unit intake and pump house, 5 km long reservoir (capacity at 0.013 m^3/s).	3, 9, 13, 14	Ministry of Public Work and Housing
3	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Research leading to technology innovation with sustainability benefits (development of decision support system in atmospheric dynamics)	Management of climate change information and management of applied climate information services	Observation and collection of information on climate change and variability, as well as climate and atmospheric chemistry, which are disseminated to local governments. Additionally, air pollution monitoring equipment are procured to enhance the operational system for air quality information.	Bangka Belitung Islands, West Java, DKI Jakarta, East Java, DI Yogyakarta, West Kalimantan, South Sulawesi, Papua	41,199,018,840	2,783,717	5 years for the air pollution monitoring unit	Adaptation/ resilience	The service capacity for delivering information on climate change and variability, as well as climate and atmospheric chemistry, has been enhanced. Additionally, 31 units of air pollution monitoring equipment have been procured.	3, 13	Meteorology Climatology and Geophysics Agency

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
4	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway connectivity infrastructure and railway service in Sumatra	The procurement of boom lifts for the maintenance of South Sumatra Light Rapid Transit (LRT) facilities is aimed at enhancing the operational efficiency and safety of maintenance activities. These boom lifts will enable maintenance personnel to access elevated areas of the transit infrastructure, such as overhead lines, signaling systems, and station structures, more easily and safely.	South Sumatra	2,644,233,850	178,664	10 years	Contribute to the annual GHG emission reduction of Palembang LRT in 2023 at 3,798.35 tonnes CO2e	This investment enhances service quality for passengers, contributes to the longevity and sustainability of the transit infrastructure, supports the region's transportation goals, and boosts public confidence in the LRT system.	8, 9, 11, 13	Ministry of Transport
5	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway connectivity infrastructure and railway service in Java	Reactivation of the railway line connecting Semarang Tawang Station to Tanjung Emas Port in Semarang of Central Java, which extend 2.55 km to connect with the Batang Regency's Integrated Industrial Zone (KITB). The scope of activities includes improvements of railway horizontal track geometry, constructions of box culverts, level crossings with safety gates and early warning systems (EWS).	Central Java	21,495,635,000	1,452,408	10 years	The track line has not yet activated	The reactivation of this railway line is expected to enhance logistics connectivity in Central Java, increase cargo transport capacity to and from the port, shorten transportation times for goods, and reduce road congestion.	8, 9, 11, 13	Ministry of Transport
6	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway connectivity infrastructure and urban railways in Greater Jakarta	The reactivation of the 56 km Rangkasbitung-Labuan railway line is expected to commence in 2025. Activities for FY2023 include land acquisition and regulation, marking of state-owned assets, and operational and supporting expenses for the land procurement process (BOBP). Additionally, state-owned assets were marked along the Citayam-Nambo and Jatinegara-Bekasi lines.	DKI Jakarta	2,961,011,973	200,068	10 years	The track line has not yet activated	This reactivation of this railway is expected to improve goods and passengers' connectivity particularly in Banten Province, increase cargo capacity, benefiting local industries and reducing reliance on road transport, and decrease road congestion by a shifting of freight to the railway.	8, 9, 11, 13	Ministry of Transport
7	Sustainable Transport	Developing clean transportation systems	Development of railway connectivity infrastructure in South Sulawesi	The activities involve the acquisition of land in Makassar City, Maros Regency, Barru Regency, and Parepare City to facilitate the construction of the railway line connecting Makassar to Parepare. Additionally, measures to safeguard state-owned land assets (BMN) throughout the project were taken.	South Sulawesi	6,150,683,028	415,587	10 years	Since operations began in early 2023, the annual GHG emission reduction has not yet been possible.	Land acquisition for railway development in South Sulawesi is expected to support regional access through transportation hubs, enhance the local economy, and improve the smooth flow of passengers and goods.	8, 9, 11, 13	Ministry of Transport

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
8	Sustainable Transport	Procurement of electric and hybrid vehicles for public transportation	Planning, development, and oversight of renewable energy and energy conservation infrastructure	The project promotes the conversion of fossil fuel-powered internal combustion engine (ICE) motorcycles to battery-based electric vehicles for government offices and operations within ministries and central government agencies. The goal is to enhance the adoption of battery-based electric vehicles, targeting the conversion of 350 units by the end of the 2023 fiscal year.	DKI Jakarta	6,779,500,000	458,074	5 years according to the battery's technical lifespan	Contribute to the GHG emission reduction 129.53 tonnes CO2e	The conversion of motorcycles involves collaboration with small and medium-sized enterprises (SMEs) specializing in workshops, which aids in the development of conversion workshops. This initiative contributes to reducing fuel consumption and lowering emissions and pollution.	7, 8, 9, 11, 13	Ministry of Energy and Mineral Resources
9	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/increases carbon sequestration	Ecosystem rehabilitation	The procurement of vehicles for monitoring and processing field data supports ecosystem rehabilitation efforts. This rehabilitation focuses on seagrass and coral reef ecosystems in Togean Islands National Park, as well as forest ecosystems in the new capital city of Nusantara (IKN) area. These activities aim to ensure the effectiveness of ecosystem recovery and facilitate ongoing oversight of environmental conditions.	East Kalimantan, Central Sulawesi	2,745,224,000	185,488	3-5 years	GHG emission reduction has not yet been calculated.	The community-based rehabilitation of seagrass and coral reef ecosystems has restored 13.8 hectares, while in the new capital city of Nusantara (IKN) has rehabilitated 500 hectares.	13, 15	Ministry of Environment and Forestry
10	Green Building	Developing green buildings in line with Greenship Standard	Provision of access to decent housing	The construction of buildings that adhere to green building standards and performance indicators established by the government includes the development of apartment complexes for civil servants (ASN) and the procurement of furniture in Serang City. This initiative aims to promote sustainable practices in urban development, ensuring that the buildings are environmentally friendly, energy-efficient, and conducive to a healthy living environment for residents.	Banten	1,064,544,900	71,929	10 years	GHG emission reduction has not yet been calculated.	Forty-four fully furnished apartment units have been developed.	9, 11, 13	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
11	Sustainable Water and Wastewater Management	Construction and improvement of public water distribution and treatment facilities	Provision of decent drinking water system	The project includes a) the development and supervision of the Regional Main Distribution Network for the water supply system in Mebidang, North Sumatra; b) enhancement of the capacity of drinking water laboratories and workshops through the procurement of drinking water technology, as well as renovating laboratories and supporting facilities to improve drinking water management at the Drinking Water Technology Center (BTAM).	North Sumatera, West Java	118,418,002,080	8,001,216	10-20 years	Adaptation/ resilience	The project increased the capacity of the drinking water supply system (SPAM) by 100 liters per second in the main distribution network of Mebidang SPAM (North Sumatra) and enhanced the testing capacity of the laboratory at the Drinking Water Technology Center (BTAM) to 10 liters per second through the deployment of new technology and facility improvements.	6, 13	Ministry of Public Work and Housing
12	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of dams, lakes, and other water storage structures	The development and rehabilitation of natural and artificial water storage infrastructures include constructions of dams, counterweights, and rehabilitation of lakes, ponds and reservoirs.	Aceh, North Sumatra, South Sumatra, Jambi, Bengkulu, Banten, DKI Jakarta, West Java, East Java, South Kalimantan, East Kalimantan, South Sulawesi, Southeast Sulawesi, North Sulawesi, East Nusa Tenggara	2,025,830,790,910	136,880,459	10-20 years	Adaptation/ resilience	The capacity for water resource storage has been enhanced through the construction of 5 dams, the installation of counterweights for 1 dam and 1 lake, and the rehabilitation of 5 dams, 4 lakes, 1 ponds, and 1 reservoir.	6, 11, 13	Ministry of Public Work and Housing
13	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of surface water, swamp, and non-rice irrigation networks	The development and rehabilitation of water resource infrastructure for irrigation areas include the construction of irrigation networks, and rehabilitation of weirs, surface water and swamp irrigation networks.	West Sumatra, South Sumatra, Aceh, Bengkulu, Riau, Riau Islands, Jambi, West Java, Central Java, East Java, DI Yogyakarta, South Sulawesi, Gorontalo, North Maluku, East Nusa Tenggara, West Papua	1,230,653,603,221	83,152,270	10-20 years	Adaptation/ resilience	The area of rehabilitated irrigation has increased through the construction of irrigation networks extending 21.73 km and covering 8,085.05 hectares, the rehabilitation of 4 weirs, the rehabilitation of irrigation networks extending 31.83 km and covering 18,133.00 hectares, and the rehabilitation of swamp irrigation networks extending 26.400 km and covering 1,300.00 hectares.	6, 11, 13	Ministry of Public Work and Housing

Remarks:

a. The type of projects refers to 15 eligible sectors under the Republic of Indonesia SDGs Government Securities Framework.

b. The projects may be implemented in multiple spots on each provincial location mentioned.

c. The currency exchange rate is based on the State Budget Assumption for 2023 budget year of IDR 14,800 per USD.

d. Based on durability of the output or financial life of project.

e. Methodology and assumptions are disclosed in Annex.

f. Additional indicators of the direct impact of the green projects.

g. Most relevant or direct social and/or Sustainable Development Goals impacts, as a result of the project.

Table 3 - Refinancing Projects of 2022 Project-Based Green Sukuk Allocation

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
1	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	Safety and security in maritime transportation	The aids to marine navigation (SBNP) developed or refurbished by the Directorate General of Sea Transportation now use solar cell technology for lighting, enhancing operational cost efficiency. Previously dependent on fossil fuel-powered generator sets, these aids faced rising operational costs due to increasing fuel prices as well as emitting GHGs. By utilizing solar energy, SBNP now operates more efficiently and environmentally friendly, reducing the GHG emissions. This activity has resulted in the construction and rehabilitation of 2 lighthouses and 4 navigation buoys.	DKI Jakarta, South Sulawesi, East Nusa Tenggara	14,119,533,826	954,023	10 years	Contribute to the GHG emission reduction at 1,884 tonnes CO2* in total for the overall SBNP projects.	The installation and replacement of navigation aids (SBNP) have enhanced maritime navigation safety and efficiency. This operational cost effectiveness has enabled a portion of the budget previously allocated for fossil fuel to be redirected toward priority activities, such as developing navigation infrastructure for improved maritime safety.	7, 9, 13	Ministry of Transport
2	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Flood mitigation	Flood and lava control, major urban drainage management, and coastal protection	The development and rehabilitation of infrastructures for urban flood control and coastal protection.	Bengkulu, Bali, Central Java, Lampung, East Nusa Tenggara, West Sulawesi, North Sulawesi	725,163,462,834	48,997,531	10-20 years	Adaptation/ resilience	The area at risk of flooding has been reduced through the construction and rehabilitation of flood control and coastal protection infrastructure, including 10.75 km of coastal protection covering 20.56 hectares, and 3.95 km of flood control structures covering 500.00 hectares.	3, 11, 13, 15	Ministry of Public Work and Housing
3	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Drought management	Groundwater and raw water network development	The development of raw water and groundwater infrastructure includes the construction of raw water supply facilities and the development of groundwater irrigation network system (JIAT infrastructure. This construction activity for the 2022 fiscal year is focused on Special Economic Zones (KEK) as part of the National Economic Recovery Program (PEN).	North Sulawesi	10,896,950,855	736,280	10-20 years	Adaptation/ resilience	The capacity of raw water infrastructure services has been successfully enhanced through the construction of a 24 km raw water network and the development of 4.8 km of JIAT infrastructure, effectively serving an area of 10 hectares.	3, 13, 14, 15	Ministry of Public Work and Housing
4	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Operation and maintenance of public water distribution and treatment facilities	Operation and maintenance of water resource infrastructure and emergency response to disasters	The operation and maintenance of infrastructure of water resources and irrigation networks include the management and upkeep of weirs and water resource networks, encompassing both groundwater irrigation systems and surface irrigation networks.	North Sumatra, Central Java, South Sulawesi, North Sulawesi, Gorontalo, East Nusa Tenggara	5,059,886,648	341,884	10-20 years	Adaptation/ resilience	The improvement of operation and maintenance of water resources and irrigation networks encompasses 149 weirs, 163.85 km of groundwater irrigation networks, and 793.37 km of surface irrigation networks.	3, 6, 13, 14	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
5	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Research leading to technology innovation with sustainability benefits (development of decision support system in atmospheric dynamics)	Climate change adaption	Dissemination and technical guidance on climate change vulnerability and risk levels for local governments aim to enhance understanding, and enabling informed decision-making and effective adaptation strategies.	DKI Jakarta	43,401,000	2,933	3 years	Adaptation/ resilience	Fosters collaboration among stakeholders and boosts community resilience to climate change impacts.	3, 13, 15	Ministry of Environment and Forestry
6	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway connectivity infrastructure and railway service in Sumatra	The enhancement of railway connectivity infrastructure includes the overcapping of structures and the implementation of effective drainage systems at the Payakabung warehouse, as well as upgrading the hydraulic system of the river along the Binjai-Besitang line to ensure safe and efficient water flow for railway operations. Additionally, the environmental permit process has been completed for the railway corridor between Padang-Pulau Aie and Muaro Kalaban-Muaro to ensure compliance with environmental regulations.	North Sumatra, West Sumatra, South Sumatra	20,889,236,535	1,411,435	10 years	Contribute to the GHG emission reduction of Sumatra railway of passenger trains in 2022 at 29,455.4 tonnes CO2e	The expected outcomes include improved safety and efficiency of railway operations, enhanced flood management in railway areas, and adherence to environmental standards, promoting sustainable infrastructure development.	8, 9, 11, 13	Ministry of Transport
7	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway connectivity infrastructure and railway service in Java	The maintenance of railway connectivity infrastructure includes emergency response measures for landslides along the Cepu-Bojonegoro railway line. These include slope stabilization, drainage improvement and supervision.	Central Java	199,160,000	13,457	10 years	Contribute to the GHG emission reduction of Java line of passenger trains in 2022 at 710,596.56 tonnes CO2e	The safety and reliability of the railway line has been improved while minimizing the risk of landslides	8, 9, 11, 13	Ministry of Transport
8	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway connectivity infrastructure and urban railways in Greater Jakarta	This project comprises several activities aimed at enhancing railway connectivity infrastructure in Greater Jakarta. These activities include the revitalization and relocation of the Tambun station building, the construction of railway infrastructure along the Bekasi-Cikarang route, and the detailed engineering design (DED) for traction substations on the Bekasi and Serpong lines.	DKI Jakarta (Jabodetabek / Greater Jakarta)	34,675,311,411	2,342,926	10 years	Contribute to the GHG emission reduction of Greater Jakarta Commuter Line (KRL) in 2022 at 242,689.23 tonnes CO2e	The project has enhanced the efficiency, safety, and sustainability of the railway system in Greater Jakarta.	8, 9, 11, 13	Ministry of Transport
9	Sustainable Transport	Developing clean transportation systems	Development of railway connectivity infrastructure in South Sulawesi	This activity encompasses a study to assess the equipment and maintenance facility needs for railway maintenance at the Maros Depot, along with a design review for the construction of additional platforms at the Marang, Labakkang, Pangkajene, and Rammang-Rammang stations. These efforts aim to support the operationalization and maintenance of the railway line across South Sulawesi.	South Sulawesi	588,413,900	39,758	10 years	South Sulawesi track line has not yet been activated	The project aims to enhance regional access through the development of transportation hubs, thereby improving the community economy and facilitating a smoother flow of passengers and goods.	8, 9, 11, 13	Ministry of Transport

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
10	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/increases carbon sequestration	Ecosystem rehabilitation	The forest and watershed management activities include management information system development to support planning and supervising watershed management, forest rehabilitation, development of forest seed production, and conservation of soil and water resources. These initiatives aim to promote sustainable forest management, enhance ecological resilience, and support the regeneration of vital ecosystems.	Aceh, North Sumatra, West Sumatra, South Sumatra, Jambi, Bengkulu, Bangka Belitung Islands, Riau Islands, Riau, West Java, Central Java, East Java, DI Yogyakarta, Bali, West Kalimantan, South Kalimantan, Central Kalimantan, East Kalimantan, West Sulawesi, Central Sulawesi, Southeast Sulawesi, North Sulawesi, Gorontalo, Maluku, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua	36,062,953,753	2,436,686	5-10 years	Contribute to the GHG emission reduction at 1.485 million tCO2e per year in 2022 in total from forest and land rehabilitation mitigation actions	The project has established 57 information systems for monitoring watershed management and flood early warning systems in disaster-prone areas, supporting a real-time watershed information system. Additionally, 36,134 hectares of forest have been rehabilitated vegetatively, comprising 31,284 hectares from planting efforts, 3,100 hectares in maintenance phase, 1,000 hectares of village seed gardens, and 750 hectares of community seed gardens. A total of 26,789,000 quality and productive seedlings have been produced and distributed, alongside the construction of 120 units of soil and water conservation infrastructure.	13, 15	Ministry of Environment and Forestry
11	Sustainable Water and Wastewater Management	Construction and improvement of public water distribution and treatment facilities	Provision of decent drinking water system	This project encompasses several key components aimed at improving drinking water supply systems (SPAM), which include a) the expansion of the SPAM at the district and city level through the optimization of drinking water facilities in the Cipta Karya Building, under the Ministry of Public Works and Public Housing; b) the development of the Jatiluhur Regional SPAM, which includes the procurement of land for water treatment installation; c) technology and equipment development, which include the development of a multifunctional building, improvements to the mixing tank, sedimentation tank, and waste meter tank, and d) technical training and support for drinking water management provided by the Water Technology Center (BTAM).	DKI Jakarta, West Java	2,324,119,170	157,035	10-20 years	Adaptation/ resilience	The project resulted in the optimization of city and regional-scale SPAM facilities; enhance buildings and facilities at the Water Technology Center (BTAM) and increased the technical capacity of 890 SPAM operators through targeted training and support provided by the BTAM.	6, 13	Ministry of Public Work and Housing
12	Sustainable Water and Wastewater Management	Construction and improvement of public water distribution and treatment facilities	Provision of decent sanitation system	The implementation of a centralized domestic wastewater management system at the residential scale in Kemayoran area of DKI Jakarta through physical construction, along with technical oversight and supervision.	DKI Jakarta	5,050,000,000	341,216	10-20 years	Adaptation/ resilience	500 households have been connected to the centralized domestic wastewater management system at the residential scale in Kemayoran area, improving sanitation and environmental health in the area.	6, 13	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
13	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of dams, lakes, and other water storage structures	The development and revitalisation of natural and artificial water storage infrastructures include constructions of dams and rainfed water storage, and rehabilitation of lakes including the vicinity area, and ponds.	Aceh, North Sumatra, South Sumatra, Riau Islands, Banten, West Java, Central Java, Maluku, South Sulawesi, North Sulawesi	1,756,982,574,709	118,715,039	10-20 years	Adaptation/ resilience	The capacity for water resource storage has been increased through the construction of 1 reservoir and 8 dams, as well as the rehabilitation of 2 dams and the development of 2 reservoirs.	6, 11, 13	Ministry of Public Work and Housing
14	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of surface water, swamp, and non-rice irrigation networks	Development and rehabilitation of structures and infrastructures of water resources for non-ricefield irrigation network including irrigation civic structures and networks, swamp reclamation networks, canal blocking, dams including dam gate and irrigation networks.	Aceh, West Sumatra, Riau, Bengkulu, Jambi, Bangka Belitung Islands, Central Java, East Java, West Kalimantan, South Kalimantan, East Kalimantan, North Kalimantan, South Sulawesi, Maluku, Papua	399,897,310,100	27,020,089	10-20 years	Adaptation/ resilience	The area of irrigated land has expanded through the construction and rehabilitation of various infrastructure, including an irrigation network spanning 48.82 km with a service coverage of 4,189.59 hectares, a 5 km reclamation network serving 300 hectares, and 44 canal blocking units extending 1.40 km with a coverage of 401 hectares. Additionally, the rehabilitation of 4 weirs with 6 gates and an irrigation network of 94.30 km has increased coverage to 6,797.90 hectares.	6, 11, 13	Ministry of Public Work and Housing

Remarks:

a. The type of projects refers to 15 eligible sectors under the Republic of Indonesia SDGs Government Securities Framework.

b. The projects may be implemented in multiple spots on each provincial location mentioned.

c. The currency exchange rate is based on the State Budget Assumption for 2023 budget year of IDR 14,800 per USD.

d. Based on durability of the output or financial life of project.

e. Methodology and assumptions are disclosed in Annex.

f. Additional indicators of the direct impact of the green projects.

g. Most relevant or direct social and/or Sustainable Development Goals impacts, as a result of the project.

Table 4 - Refinancing Projects of 2021 Project-Based Green Sukuk Allocation

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
1	Renewable Energy	Research and development of products or technology ("R&D") for renewable energy generation	Provision of geological data, information, recommendations, and services.	The procurement of geothermal survey equipment includes Magnetotelluric (MT) , Time Domain Magnetotellurics (TDEM), and gravimeters. This equipment aims to support the government's geothermal exploration program, which seeks to mitigate exploration risks (resource risks). The exploration activities are conducted at 20 selected prospective geothermal locations, focusing on the collection of additional 3G data (geology, geochemistry, and geophysics), involving slim hole exploratory drilling at some sites.	North Sumatra, West Java, Central Sulawesi, South Sulawesi, Maluku	22,917,547,200	1,548,483	10 years	Contribute to the renewable energy development	These equipment, specifically MT-TDEM and gravimeters, are intended to support renewable energy development, particularly for geothermal resources at the upstream level. Their use will enhance the quality of geoscience data (3G), especially geophysical data, which will improve the validity of surveyed geothermal prospects and ultimately reduce exploration risks at the upstream stage.	7, 13	Ministry of Energy and Mineral Resources
2	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	Safety and security in maritime transportation	The aids to marine navigation (SBNP) developed or refurbished by the Directorate General of Sea Transportation now use solar cell technology for lighting, enhancing operational cost efficiency. Previously dependent on fossil fuel-powered generator sets, these aids faced rising operational costs due to increasing fuel prices as well as emitting GHGs. By utilizing solar energy, SBNP now operates more efficiently and environmentally friendly, reducing the GHG emissions. This activity has resulted in the construction and rehabilitation of 8 buoy markers and 14 navigation buoys.	Aceh, Riau, East Java, West Kalimantan, Southeast Sulawesi, East Nusa Tenggara	12,995,538,314	878,077	10 years	Contribute to the GHG emission reduction at 2,317 tonnes CO2* in total for the overall SBNP projects	The installation and replacement of navigation aids (SBNP) have enhanced maritime navigation safety and efficiency. This operational cost effectiveness has enabled a portion of the budget previously allocated for fossil fuel to be redirected toward priority activities, such as developing navigation infrastructure for improved maritime safety.	7, 9, 13	Ministry of Transport
3	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Flood mitigation	Flood and lava control, major urban drainage management, and coastal protection	The development and rehabilitation of urban flood control include construction of drainage system and water gates, and coastal protection infrastructure as well as rehabilitation of pump houses.	Aceh, Bengkulu, West Sumatra, South Sumatra, Jambi, Riau, Bangka Belitung Islands, Riau Islands, Lampung, Banten, DKI Jakarta, West Java, Central Java, East Java, DI Yogyakarta, Bali , Gorontalo, West Kalimantan, Central Kalimantan, North Kalimantan, South Sulawesi, Southeast Sulawesi, North Sulawesi, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua	979,410,357,267	66,176,375	10-20 years	Adaptation/ resilience	The project successfully reduced the flood-prone area by constructing and rehabilitating flood control and coastal protection infrastructure, including a) the construction of flood control structures extending 45.71 km, covering an area of 707.09 ha, along with a flood control building featuring 1 sluice gate covering 36.29 ha and drainage systems spanning 4.46 km; b) the construction of coastal protection structures measuring 1.15 km with a coverage of 10.15 ha; and c) the rehabilitation of 1 pump station.	3, 9, 13, 14	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
4	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Drought management	Groundwater and raw water network development	The development of groundwater and raw water facilities includes development of artificial aquifer for rainwater storages (ABSAH), rainfed water storages, forest and land fire prevention structures; development and rehabilitation of raw water networks and intake, wells and its networks, groundwater irrigation networks (JIAT), and long storages; as well as rehabilitation of reservoirs.	Aceh, West Sumatra, South Sumatra, North Sumatra, Bangka Belitung Islands, Riau Islands, Jambi, Bengkulu, Lampung, Riau, Banten, DI Yogyakarta, DKI Jakarta, West Java, Central Java, Java East, Bali, West Kalimantan, South Kalimantan, Central Kalimantan, East Kalimantan, North Kalimantan, Gorontalo, West Sulawesi, South Sulawesi, Central Sulawesi, Southeast Sulawesi, North Sulawesi, Maluku, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua , West Papua	991,438,307,926	66,989,075	10-20 years	Adaptation/ resilience	The project enhanced the capacity of raw water supply infrastructure by constructing 21 intake units and 76.88 km of raw water networks (0.96 m^3/second), 199 ABSAH points, 6 reservoirs, 30 fire prevention infrastructures, 207 wells (0.06 m^3/second) covering 80.00 ha with 8.00 km of well networks, and 8 JIAT units spanning 30 km covering 285.00 ha, as well as 5 long storage facilities with a capacity of 90,000 m^3. Additionally, it rehabilitated 4.62 km of intake and raw water networks (0.20 m^3/ second), 1 long storage facility, 1 intake unit and 34.86 km of raw water networks (1.20 m^3/second), 9 ha of reservoirs, 139 wells, and 8 JIAT units over 14.20 km covering 224.00 ha.	3, 9, 13, 14	Ministry of Public Work and Housing
5	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Operation and maintenance of public water distribution and treatment facilities	Operation and maintenance of water resource infrastructure and emergency response to disasters	This project consists of three components: a) Operation and maintenance of water resource and irrigation infrastructure, which includes facilitating and empowering river maintenance, operating and maintaining reservoirs, weirs, flood control units, and lakes, as well as developing maintenance plans for water sources and training personnel involved in river operations. b) Operation and maintenance of water resource network infrastructure, covering the operation and maintenance of raw water networks, flood control systems, and irrigation networks, along with monitoring and evaluating the irrigation system. c) Disaster management operations, which involve emergency response to disasters and facilitating the preparation and implementation of monitoring and evaluation activities.	North Sumatra, Central Java, Central Kalimantan, South Sulawesi, North Sulawesi, Gorontalo, Maluku, East Nusa Tenggara	10,721,518,200	724,427	10-20 years	Adaptation/ resilience	The operational and maintenance of water resource infrastructure has been enhanced through a) the management of 12 rivers, 94 rainfed water storages, 53 weirs, 2 flood control units, 2 lakes, and 3 springs, with capacity building for operational personnel in 11 rivers. b) Additionally, 35 km of raw water networks, 346.5 km of flood control networks, and 287.07 km of irrigation networks have been maintained, alongside monitoring and evaluation of 30 km of irrigation. c) In the disaster management sector, the project included 1 emergency response operation, preparation facilitation for monitoring and evaluation, and 6 monitoring and evaluation operations.	6, 13	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO_2e)	Other results *f	Social / SDGs*g	
6	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Post-disaster resilient infrastructure development	Implementation of infrastructure development for housing	This project focuses on disaster management operations within the framework of infrastructure development for settlements. It involves emergency response measures through the mobilization of equipment, machine, and personnel during and post crises. The project aims to ensure that built infrastructure effectively supports timely aid delivery, restores essential services, and protects affected communities.	Aceh, South Sumatra, Banten, DKI Jakarta, Bali, Central Kalimantan, Riau Islands, Southeast Sulawesi, North Sulawesi,	23,980,057,798	1,620,274	10-20 years	Adaptation/ resilience	The local communities disaster response capacity and resilience in vulnerable areas is enhanced.	9, 11, 13	Ministry of Public Work and Housing
7	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Research leading to technology innovation with sustainability benefits (Provision of climate change data and information)	Provision of geological data, information, recommendations, and services.	The construction of groundwater monitoring wells in Groundwater Basin areas equipped with the Automatic Water Level Record technology. The technology is complemented by the development of conservation technology to facilitate the technical team in obtaining data quickly and in real-time. These wells serve as infrastructure for monitoring and overseeing groundwater, aiming to conserve water in response to increasing groundwater extraction, especially in urban areas. Thus, their development is a government effort to provide services that protect groundwater and the environment.	Banten, West Java	717,342,384	48,469	Monitoring wells are lifetime, as long as annual maintenance and calibration are performed; physical building: 8 - 10 years; Automatic Water Level Recorder (AWLR) device: 3 - 6 years	Adaptation/ resilience	Monitoring wells aid climate change adaptation by providing critical data on groundwater levels and quality, enhancing water resource management. They support early warning systems for droughts and floods, inform sustainable extraction practices, and foster community engagement in monitoring efforts, ultimately strengthening resilience against climate impacts.	6, 11	Ministry of Energy and Mineral Resources
8	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Research leading to technology innovation with sustainability benefits (development of decision support system in atmospheric dynamics)	Climate change adaption	The enhancement of infrastructure for forest and land fire control includes providing data and information on vulnerability and climate change risks through the Vulnerability Index Data Information System (SIDIK), improvement of its fire control infrastructure, as well as planning and collaboration in the forest and land fire management, alongside early detection and warning systems.	DKI Jakarta	45,615,000	3,082	1 year	Adaptation/ resilience	The project has facilitated capacity building for community groups in 76 villages and implemented 200 disaster response operations.	3, 13,15	Ministry of Environment and Forestry

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
9	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway connectivity infrastructure and railway services in Sumatra.	Preparation of the Environmental Impact Analysis (AMDAL) Monitoring Report, including the Environmental Management Plan and Environmental Monitoring Plan (RKL-RPL) for the Muaro Kalaban - Muaro Line in West Sumatra, to support the reactivation of the railway line.	West Sumatra	95,589,230	6,459	10 years	Contribute to the GHG emission reduction of Java and Sumatra railway of freight trains mostly in Sumatra at 884,107.73 tCO2e in total	The project has opened regional access through transportation hubs, improved the local tourism and economy, and facilitated the smooth flow of passengers and goods.	8, 9, 11, 13	Ministry of Transport
10	Sustainable Transport	Transportation network upgrade to higher climate resilient design standards	Development of railway transportation connectivity infrastructure and railway services in Java.	Social impact mitigation to support the development of the Solo - Semarang Double Track Phase I from Solo Balapan to Kadipiro in Central Java. The process involves the following stages: socialization, data collection, verification and validation, announcement, and evaluation conducted by a Public Appraisal Office.	Central Java	859,234,070	58,056	10 years	Contribute to the GHG emission reduction of Java Line and Sumatra railways of passenger trains at 906,773.82 tCO2e in 2021	The project enhances regional connectivity, reduces travel time, and improves passenger comfort. It supports economic growth by facilitating the efficient transport of goods and services.	8, 9, 11, 13	Ministry of Transport
11	Sustainable Transport	Developing clean transportation systems	Development of railway transportation connectivity infrastructure in South Sulawesi.	The project includes three studies that support the operation of South Sulawesi Railway Line: a) the road subsidence mitigation at KM 95 between Barru and Takkalasi along the Makassar-Parepare route, b) the integration of freight transport from Mangilu Station to Tonasa Cement Factory, and c) the design of access roads to Maros Station, Barru Station, Pangkajene Station, and Ramang-Ramang.	South Sulawesi	2,283,483,000	154,289	10 years	The South Sulawesi track line is not yet operational.	The project enhances regional connectivity, reduces travel time, and improves passenger comfort. It supports economic growth by facilitating the efficient transport of goods and services.	8, 9, 11, 13	Ministry of Transport
12	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/increases carbon sequestration	Rehabilitation and reclamation of forests, land rehabilitation, soil and water conservation, development of forest seed production, management of protected forest areas, and watershed management implementation.	The project encompasses several activities, including planning, control, and evaluation of watershed management through an up-to-date real-time data and information system. It also involves vegetative rehabilitation of forests and land, which includes planting, maintenance, and the establishment of community nurseries and modern seedbeds. Additionally, the project provides quality and productive seedlings through the production and distribution of high-quality seeds. Support for the management of protected forests is facilitated through technical guidance, supervision, monitoring, and evaluation.	Bengkulu, South Sumatra, North Sumatra, Bangka Belitung Islands, Riau Islands, Lampung, DKI Jakarta, West Java, Central Java, DI Yogyakarta, Bali, West Kalimantan, Central Kalimantan, East Kalimantan, Gorontalo , West Sulawesi, North Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua	9,043,726,070	611,063	5-10 years	Contribute to the GHG emission reduction at 580.62 million tCO2e per year in 2022 in total from forest and others land use sector	The area rehabilitated spans 25,125 ha, including 13,875 ha for planting, 2,100 ha for maintenance, 750 ha for community nurseries, and 8,400 ha for modern seedbeds. A total of 9.13 million quality and productive seedlings have been produced and distributed.	13, 15	Ministry of Environment and Forestry

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
13	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/increases carbon sequestration	Environmental pollution control, environmental quality monitoring, and the recovery of environmental damage	The procurement includes a) automatic ambient air quality monitoring equipment, b) equipment for supporting the integration of the Continuous Emission Monitoring System (CEMS) conducted by industries into the Information System on CEMS (SISPEK), Public Disclosure Program for Environmental Compliance (PROPER) assessment through the Environmental Electronic Reporting Information System (SIMPEL), and technical support for environmental damage control complaints, c) Nano Bubble Plasma for monitoring river water quality, d) equipment for supporting the capacity development of Land-Based Clean Seas Pollution Control Initiatives, and e) equipment for supporting the restoration of damaged former mining lands.	DKI Jakarta	1,132,244,760	76,503	1 year	Contribute to the GHG emission reduction at 92.88 tCO2e resulted from PROPER assessment and compliance.	The project significantly enhances public awareness and decision-making through a) the provision of Air Pollutant Standard Index (ISPU) data, which informs on air quality conditions; b) In 2021, the PROPER program achieved significant environmental improvements, including energy efficiency: 392.76 Giga Joules, GHG emission reduction: 92.88 tons, conventional emission reduction: 5.01 tons, water efficiency improvements: 215.09 m^3, and water pollution load reduction: 26.67 tons. Additionally, 103 social innovations were generated, focusing on women's empowerment through digital marketing, scientific applications, cultivating odot grass for livestock feed processing, clean water services and herbal medicine development for indigenous communities, and wildfire disaster mitigation. The rehabilitation of ex mining lands has provided environmentally friendly facilities for local communities, supporting social activities and economic development.	3, 6, 9, 11, 13, and 15	Ministry of Environment and Forestry
14	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/increases carbon sequestration	Environmental quality monitoring, recovery of environmental damage, rehabilitation and reclamation of forests, land rehabilitation, and soil and water conservation, particularly in peatland and mangrove areas.	Conservation and rehabilitation activities are focused on peatlands and mangrove forests in 7 priority provinces prone to forest fires. These activities include the rewetting of peatlands and other supporting restoration measures, as well as facilitating community-based 'Independent Peat Care Villages' Program through education and outreach. Mangrove rehabilitation is carried out through planning, evaluation, and the provision of necessary resources.	DKI Jakarta	1,163,603,400	78,622	1 year	Contribute to the GHG emission reduction at 580.62 million tCO2e per year in 2021 in total from forest and others land use sector	2,150 hectares of peatland have been restored, accompanied by the provision of 83,000 supporting units for mangrove forest rehabilitation and a facilitation program including education and training in 75 villages.	13, 15	Ministry of Environment and Forestry

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
15	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/increases carbon sequestration	Environmental impact prevention, and forest area designation and management.	This project aims to support the development of policies for improving the environmental quality and sustainable forest management. It includes: a) the preparation of the National Environmental Protection and Management Plan (RPPLH); b) the creation of geospatial information documents for areas with high environmental service index, participatory field verification documents for these areas within BPKH, and identification and mapping of environmental impacts from business activities in areas with high environmental service index; and c) policy recommendations for a forest city concept to promote sustainable development in the new capital city of IKN area, along with reviews of spatial planning documents for forest areas and the land allocation for the capital within forest zones.	North Sumatra, Riau, DKI Jakarta	1,618,741,890	109,374	3 years	Contribute to the GHG emission reduction at 580.62 million tCO2e per year in 2021 in total from forest and others land use sector	Mapping of areas with a high environmental service index covering an area of 65 hectares.	13, 15	Ministry of Environment and Forestry
16	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/increases carbon sequestration	Forest and land fire control	The project focuses on enhancing facilities and infrastructure for forest and land fire control, which includes providing data and information on vulnerability and climate change risks through the Vulnerability Index Data Information System (SIDIK). It also involves improving fire control infrastructure, planning and collaboration in fire management, and strengthening detection and early warning systems.	South Sumatra, DKI Jakarta, Central Kalimantan, South Sulawesi	6,143,857,592	415,126	3 years	Contribute to the GHG emission reduction at 580.62 million tCO2e per year in 2021 in total from forest and others land use sector	Facilitation and capacity building for community groups have been conducted in 76 villages, along with 200 disaster response operations.	13, 15	Ministry of Environment and Forestry
17	Sustainable Management of Natural Resources on Land	Habitat and biodiversity conservation (through sustainable management of land use change, sustainable management of agriculture/ forestry, pest management	Species and genetic conservation	The provision of facilities for habitat protection and wildlife conflict management includes the construction of transit guard fences for plants and wildlife, as well as the acquisition of GPS devices, densiometers, camera traps, transit cages, and other supporting equipment.	Aceh, South Sumatra, North Sumatra, Bengkulu, Jambi, Riau, Banten, DKI Jakarta, West Java, East Java, DI Yogyakarta, Bali, South Kalimantan, Central Kalimantan, North Kalimantan, South Sulawesi, Central Sulawesi, North Sulawesi, Maluku	5,063,403,175	342,122	1-3 years	Contribute to the GHG emission reduction at 580.62 million tCO2e per year in 2021 in total from forest and others land use sector	The project enhanced the effectiveness of monitoring activities aimed at protecting priority wildlife habitats.	13, 15	Ministry of Environment and Forestry

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
18	Sustainable Management of Natural Resources on Land	Habitat and biodiversity conservation (through sustainable management of land use change, sustainable management of agriculture/ forestry, pest management	Conservation area management	The provision of facilities and infrastructure for conservation area protection aims to enhance management effectiveness, including the construction of guard posts, patrol vehicles, drones, and forest fire pumps.	Aceh, Jambi, Riau, Lampung, Banten, DKI Jakarta, West Java, Central Java, DI Yogyakarta, East Java, West Kalimantan, Central Kalimantan, East Kalimantan, South Kalimantan, North Sulawesi, Central Sulawesi, Southeast Sulawesi, South Sulawesi, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua	5,616,633,276	379,502	1-3 years	Contribute to the GHG emission reduction at 580.62 million tCO2e per year in 2021 in total from forest and others land use sector	The project improved the effectiveness of field activities, enabling faster and more accurate monitoring of the overall work area, particularly in hard-to-reach regions.	13, 15	Ministry of Environment and Forestry
19	Green Building	Developing green buildings in line with Greenship Standard	Management of housing and building	“The project involves the construction, management, and oversight of sports and entrepreneurship infrastructure at the University of Papua in Manokwari, and planning, supervision, and management of building development in the Sorong Correctional Facility area. The project focuses on the development and management of building infrastructure that meets green building criteria. It encompasses physical activities such as construction and design that prioritize sustainability, alongside administrative tasks to ensure compliance with regulations. “	West Papua	64,464,742,471	4,355,726	10 years	GHG emission reduction has not yet calculated	The project includes the construction of environmentally friendly and socially acceptable buildings covering an area of 2,523 room units.	9, 11, 13	Ministry of Public Work and Housing
20	Sustainable Water and Wastewater Management	Construction and improvement of public water distribution and treatment facilities	Provision of decent drinking water	The project involves the development and improvement of drinking water supply system (SPAM) infrastructure at the city and regional levels, which includes the development, enhancement, and expansion of SPAM. It also facilitates the advancement of technology and equipment management in the drinking water sector, focusing on the development and maintenance of equipment.	West Sumatra, North Sumatra, Riau, Banten, West Java, Central Java, West Kalimantan, North Kalimantan, Central Sulawesi, Maluku, West Papua	70,851,542,698	4,787,266	10-20 years	Adaptation/ resilience	The project enhanced the capacity of the drinking water supply system (SPAM) by constructing the Water Treatment Plant (IPA) and SPAM piping network in Karo Regency with a capacity of 20 liters per second, SPAM in Serang City with a capacity of 25 liters per second; construction of the SPAM piping network in the Gunung Seriang area (Bulungan Regency), SPAM KSPN (National Tourism Strategic Area) Borobudur, and SPAM Haria Induk (Central Maluku Regency); as well as procurement of laboratory and inspection equipment.	6, 13	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
21	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of dams, lakes, and other water storage structures	The project focuses on the construction and revitalization of natural and artificial water storage infrastructure, which includes: a) the construction of dams and related infrastructure, reservoirs, water catchments, and sediment control systems; b) the rehabilitation of weirs, water catchments, ponds, lakes, pump houses, and dam facilities.	Aceh, North Sumatra, West Sumatra, South Sumatra, Jambi, Bangka Belitung Islands, Riau, Banten, Bengkulu, DKI Jakarta, West Java, Central Java, East Java, DI Yogyakarta, Bali, South Kalimantan, Central Kalimantan, East Kalimantan, Kalimantan North, West Sulawesi, South Sulawesi, Southeast Sulawesi, North Sulawesi, Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua	3,516,193,774,277	237,580,660	10-20 years	Adaptation/ resilience	The project enhance water resource storage capacity through the construction of 9 dams with 3,700 m long of dam infrastructure, 10 rainfed water storage, 1 reservoir, and 1 sediment control unit. Additionally, it included the enhancement of 1 rainfed water storage and the rehabilitation of 2 weirs, 2 ponds, 3 lakes, 1 pump station, and 1 dam facility.	6, 11, 13	Ministry of Public Work and Housing
22	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of surface water, swamp, and non-rice irrigation networks	The development and rehabilitation of water resource infrastructure for irrigation areas include the construction and rehabilitation of irrigation networks, construction and rehabilitation of weirs, construction of canal blocking.	Aceh, North Sumatra, West Sumatra, South Sumatra, Bangka Belitung Islands, Riau Islands, Banten, DKI Jakarta, West Java, Central Java, East Java, DI Yogyakarta, Gorontalo, West Kalimantan, South Kalimantan, Central Kalimantan, East Kalimantan, Kalimantan North, West Sulawesi, South Sulawesi, Central Sulawesi, Southeast Sulawesi, Maluku, North Maluku, West Nusa Tenggara, East Nusa Tenggara, Papua, West Papua	600,922,722,320	40,602,887	10-20 years	Adaptation/ resilience	The project enhance the rehabilitated irrigation coverage area by a) the construction of 1 unit of weir, 27.50 km long of irrigation networks with 1,951.60 ha coverage area, 33 units of canal blocking, and b) the rehabilitation of 680.37 km long of irrigation networks with coverage area at 12,655.29 ha, along with 4 weirs.	6, 11, 13	Ministry of Public Work and Housing

Remarks:

a. The type of projects refers to 15 eligible sectors under the Republic of Indonesia SDGs Government Securities Framework.

b. The projects may be implemented in multiple spots on each provincial location mentioned.

c. The currency exchange rate is based on the State Budget Assumption for 2023 budget year of IDR 14,800 per USD.

d. Based on durability of the output or financial life of project.

e. Methodology and assumptions are disclosed in Annex.

f. Additional indicators of the direct impact of the green projects.

g. Most relevant or direct social and/or Sustainable Development Goals impacts, as a result of the project.

Table 5 - Refinancing Projects of 2021 Retail Green Sukuk (ST 010T4) Allocation

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
1	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Flood mitigation	Flood and lava control, major urban drainage management, and coastal protection	The development and rehabilitation of urban flood control and coastal protection infrastructure include the construction of weirs, strengthening riverbanks, creating polder systems, improving drainage, and building coastal protection structures.	North Sumatra, South Sumatra, Riau, Riau Islands, Bangka Belitung Islands, Lampung, DKI Jakarta, Central Java, DI Yogyakarta, Bali, North Kalimantan, Central Kalimantan, East Kalimantan, North Sulawesi, West Sulawesi, Central Sulawesi, Southeast Sulawesi, South Sulawesi, East Nusa Tenggara, Maluku	675,585,485,630	45,647,668	10-20 years	Adaptation/ resilience	Potential areas prone to flooding have been reduced by 1,099.87 hectares through the development and rehabilitation of flood control structures, which extend 18.30 km and include 1 weir unit and 1 polder managing a flood area of 991.40 hectares; and coastal protection structures extending 15.98 km safeguard a coastal area of 108.47 hectares.	3, 9, 13, 14	Ministry of Public Work and Housing
2	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Drought management	Groundwater and raw water network development	The development and rehabilitation of raw water and groundwater facilities include the construction of pump houses, various types of reservoirs (such as getakan reservoir, multipurpose reservoirs, base reservoirs, and raw water reservoirs), infrastructure for intake and transmission pipelines, as well as the construction of wells for groundwater and raw water.	Aceh, Riau, Bengkulu, Lampung, Banten, West Java, Central Java, East Java, Bali, Central Kalimantan, East Kalimantan, South Kalimantan, Gorontalo, West Sulawesi, Central Sulawesi, East Nusa Tenggara, Papua, West Papua	430,935,146,682	29,117,240	10-20 years	Adaptation/ resilience	The service capacity discharge of raw water structures and infrastructure has been increased by 1.56 m^3/s, supported by the development of: 52 artificial aquifers for rainwater storage (ABSAH) over 0.03 km; 18 units of rain-fed water storage (with a capacity of 0.77 m^3/s); 10 points of raw water intake (0.17 m^3/s); 48.85 km of raw water channel networks (0.33 m^3/s); 4 groundwater irrigation networks (JIAT) covering 110 hectares over 7.26 km; 31 raw water facilities (0.04 m^3/s); and 84 wells (0.13 m^3/s). Additionally, the rehabilitation includes 17.96 km of raw water networks, 19 wells (0.12 m^3/s), and 5 points of groundwater irrigation networks (JIAT) over 7.85 km, covering 109 hectares.	3, 9, 13, 14	Ministry of Public Work and Housing
3	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Post-disaster resilient infrastructure development	Implementation of infrastructure development for housing	This project focuses on disaster management operations within the framework of infrastructure development for settlements. It involves emergency response measures through the mobilization of equipment, machine, and personnel during crises. The initiative aims to ensure that built infrastructure effectively supports timely aid delivery, restores essential services, and protects affected communities.	West Sumatra	32,890,000	2,222	1 year	Adaptation/ resilience	The local communities disaster response capacity and resilience in vulnerable areas is enhanced.	9, 11, 13	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
4	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Research leading to technology innovation with sustainability benefits (Provision of climate change data and information)	Provision of geological data, information, recommendations, and services.	The construction of groundwater monitoring wells in Groundwater Basin areas equipped with the Automatic Water Level Record technology. The technology is complemented by the development of conservation technology to facilitate the technical team in obtaining data quickly and in real-time. These wells serve as infrastructure for monitoring and overseeing groundwater, aiming to conserve water in response to increasing groundwater extraction, especially in urban areas. Thus, their development is a government effort to provide services that protect groundwater and the environment.	West Java	8,429,904,619	569,588	Groundwater monitoring devices have a lifespan of 5 years, while physical structures have a lifespan of 10 years.	Adaptation/ resilience	Establishing these monitoring wells is crucial for sustainable water resource management and ensuring safe, clean water availability for various needs.	3, 9, 13, 14	Ministry of Energy and Mineral Resources
5	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/ increases carbon sequestration	Implementation of watershed management, forest rehabilitation and reclamation, land rehabilitation, and soil and water conservation.	Planning, controlling, and evaluating watershed management through the development of a real-time data and information system; vegetative rehabilitation of forests and land.	North Sumatra, Bengkulu, East Kalimantan	49,314,265,826	3,332,045	5-10 years	Contribute to the GHG emission reduction at 580.62 million tCO2e per year in 2021 in total from forest and others land use sector	One flood early warning and water management monitoring system for disaster-prone watersheds have been established to support real-time watershed information. A total of 3,000 hectares have been rehabilitated.	13, 15	Ministry of Environment & Forestry
6	Sustainable Water and Wastewater Management	Construction and improvement of public water distribution and treatment facilities	Provision of decent drinking water	The development of the Drinking Water Supply System (SPAM) at the district and city levels, which is carried out through physical construction, technical supervision, and the network expansion.	Aceh, Jambi, Bangka Belitung Islands, DKI Jakarta, West Java, Papua	200,835,658,837	13,569,977	10-20 years	Adaptation/ resilience	The water treatment capacity has been enhanced including at Batu Mentas SPAM (Kep. Bangka Belitung) by 50 liters/second; Tanah Miring district SPAM (Papua) by 80 liters/second; capital city of Panga Subdistrict (IKK) SPAM (Aceh) by 20 liters/second; Sesko TNI Bandung City (West Java) by 20 liters/second; RSCM hospital area SPAM (DKI Jakarta) by 0.001 liters/second; IKK Pulau Temiang (Jambi) SPAM by 10 liters/second. The expansion of the piping network at IKK Panga SPAM (Aceh) with 2314 household connection; IKK Sukaresik Tasikmalaya District (West Java) with 800 household connection: ; IKK Cisarua SPAM (West Java) with 1600 household connection.	6, 13	Ministry of Public Work and Housing

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO_2e)	Other results *f	Social / SDGs*g	
7	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of dams, lakes, and other water storage structures	The development and rehabilitation of natural and artificial water storage infrastructures including constructions of dams, rainfed water storages, sedimentation dredging, and rehabilitation of ponds dan rainfed water storage.	Bengkulu, West Sumatra, Lampung, DKI Jakarta, West Java, Central Java, East Java, Bali, Central Kalimantan, East Kalimantan, South Kalimantan, North Sulawesi, Southeast Sulawesi, South Sulawesi, West Nusa Tenggara, East Nusa Tenggara, West Papua	1,400,351,075,295	94,618,316	10-20 years	Adaptation/ resilience	The water storage infrastructures have been increased supported by the development of: 2 dams, 18 rainfed water storage (embung), sedimentation dredging at 95,000 m3, and rehabilitation of 1 lake and 1 rainfed water storage.	6, 11, 13	Ministry of Public Work and Housing
8	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of surface water, swamp, and non-rice irrigation networks	The development and rehabilitation of water resource infrastructure for irrigation areas include the construction and rehabilitation of irrigation networks, the construction and rehabilitation of weirs, the development of bypass channels, and the rehabilitation of swamp irrigation networks.	Aceh, North Sumatra, West Sumatra, Jambi, Riau, Bangka Belitung Islands, West Java, Central Java, East Java, West Kalimantan, South Sulawesi, West Nusa Tenggara, North Maluku, Papua, Papua Barat	534,523,970,085	36,116,484	10-20 years	Adaptation/ resilience	The area of rehabilitated irrigation has increased by 10,054.05 hectares through: the rehabilitation of 5,915.55 hectares of irrigation over 94.13 km; the rehabilitation of 1,306 hectares of swamp irrigation over 47.43 km; the rehabilitation of three weirs; the construction of irrigation networks covering 2,827.50 hectares over 61.07 km; the development of a bypass channel spanning 5 hectares over 1.20 km; and the construction of 0.55 weirs.	6, 11, 13	Ministry of Public Work and Housing

Remarks:

a. The type of projects refers to 15 eligible sectors under the Republic of Indonesia SDGs Government Securities Framework.

b. The projects may be implemented in multiple spots on each provincial location mentioned.

c. The currency exchange rate is based on the State Budget Assumption for 2023 budget year of IDR 14,800 per USD.

d. Based on durability of the output or financial life of project.

e. Methodology and assumptions are disclosed in Annex.

f. Additional indicators of the direct impact of the green projects.

g. Most relevant or direct social and/or Sustainable Development Goals impacts, as a result of the project.

Table 6 - Refinancing Projects of 2021 Retail Green Sukuk (ST 011T4) Allocation

No	Sector	Type of Project*a	Project Name	Brief Description	Location*b	Amount Committed (in IDR)*c	Amount Committed (in USD)*c	Average Project Lifetime*d	Impacts*e			Project Owners
									Mitigation (Annual GHG Emission Avoided, in CO2e)	Other results *f	Social / SDGs*g	
1	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Flood mitigation	Flood and lava control, major urban drainage management, and coastal protection	The development and rehabilitation of infrastructures for urban flood and sediment control and coastal protection. The flood control enhancement includes strengthening riverbanks, sediment control and drainage construction and rehabilitation; lava control enhancement includes the construction of check dams, and coastal protection structures.	Aceh, Riau, Riau Islands, DKI Jakarta, West Java, DI Yogyakarta, North Sulawesi, Gorontalo, Southeast Sulawesi, West Nusa Tenggara, Papua	452,261,084,927	30,558,181	10-20 years	Adaptation/ resilience	The area at risk of flooding has decreased by 296.97 hectares through the construction of drainage systems spanning 1.44 km (managing area of 13.70 hectares), the development of coastal protection structures along 0.97 km (protecting area of 1.90 hectares), and the construction of 15 flood control units over 12.72 km (managing 281.37 hectares). Additionally, one sediment control unit managing 108,000 m^3 and two lava control units managing 100,000 m^3 were implemented.	3, 9, 13, 14	Ministry of Public Work and Housing
2	Resilience to Climate Change for Highly Vulnerable Areas and Sectors/ Disaster Risk Reduction	Drought management	Groundwater and raw water network development	The development of groundwater and raw water facilities includes development of raw water networks, artificial aquifer for rainwater storages (ABSAH), wells, rainfed water storages; and rehabilitation of sprinkler irrigation networks.	Central Java, DI Yogyakarta, East Java, West Kalimantan, East Nusa Tenggara, North Maluku,	194,939,162,242	13,171,565	10-20 years	Adaptation/ resilience	The capacity for raw water services has increased by 0.17 m^3/second through various developments, including the construction of 10 km of raw water infrastructure (0.03 m^3/ second), the establishment of 8 raw water network points (0.02 m^3/second), the construction of 17 ABSAH units (0.02 m^3/second), and the development of 10 wells (0.10 m^3/second). Additionally, four reservoirs were built, 5 km of the groundwater irrigation network (JIAT) covering 10 hectares was rehabilitated, and 23 km of sprinkler irrigation networks covering 230 hectares were improved.	3, 9, 13, 14	Ministry of Public Work and Housing
3	Sustainable Management of Natural Resources on Land	Sustainable management of natural resources which substantially avoids or reduces carbon loss/ increases carbon sequestration	Implementation of watershed management, forest rehabilitation and reclamation, land rehabilitation, and soil and water conservation.	The conservation of forest areas and ecosystem encompasses a comprehensive approach to restoring and protecting forest and land areas. This includes vegetative rehabilitation efforts aimed at revitalizing degraded forests and lands through strategic planting initiatives and modern nursery development.	East Nusa Tenggara	43,587,534,191	2,945,104	5-10 years	Contribute to the GHG emission reduction at 580.62 million tCO2e per year in 2021 in total from forest dan others land use sector	The area of rehabilitated forest and land covers 1,175 hectares, including both planting efforts and the establishment of modern nurseries.	13, 15	Ministry of Environment & Forestry

4	Sustainable Water and Wastewater Management	Construction and improvement of public water distribution and treatment facilities	Provision of decent drinking water	Development, improvement and expansion of drinking water supply system facilities through the procurement of mobile water treatment plants and water tankers to anticipate drought disaster response.	DKI Jakarta	35,994,000,000	2,432,027	10-20 years	Adaptation/ resilience	10 mobile water treatment units and 22 water tankers have been deployed that serves as a proactive measure to anticipate drought hazards to improve community access to clean water, and strengthens the community's resilience to climate impacts.	6, 13	Ministry of Public Work and Housing
5	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of dams, lakes, and other water storage structures	The development and rehabilitation of natural and artificial water storage infrastructures include constructions and revitalisation of dams, lakes, rainfed water storages, and sedimentation control structures.	Aceh, Riau Islands, West Java, East Java, North Sulawesi, Southeast Sulawesi, West Nusa Tenggara,	4,659,581,064,919	314,836,558	10-20 years	Adaptation/ resilience	The capacity for water resource storage has been increased through the construction of 9 dams, the revitalization of 1 lake, and the rehabilitation of 1 reservoir with a total capacity of 240,000 m^3, along with the establishment of 1 sediment control unit.	6, 11, 13	Ministry of Public Work and Housing
6	Sustainable Water and Wastewater Management	Development of agricultural infrastructure for efficient water management	Development of surface water, swamp, and non-rice irrigation networks	The development and rehabilitation of water resource infrastructure for irrigation areas include the construction and rehabilitation of irrigation networks and weirs; and the rehabilitation of swamp irrigation networks.	Aceh, Banten, West Java, East Java, Southeast Sulawesi, Maluku	115,145,702,820	7,780,115	10-20 years	Adaptation/ resilience	The area of rehabilitated irrigation has increased by 2,880.42 hectares through the rehabilitation of one dam and irrigation network spanning 24.09 km, impacting 1,440.42 hectares, and the construction of an irrigation network over 19.07 km, which also affects 1,440.00 hectares.	6, 11, 13	Ministry of Public Work and Housing

Remarks:

a. The type of projects refers to 15 eligible sectors under the Republic of Indonesia SDGs Government Securities Framework.

b. The projects may be implemented in multiple spots on each provincial location mentioned.

c. The currency exchange rate is based on the State Budget Assumption for 2023 budget year of IDR 14,800 per USD.

d. Based on durability of the output or financial life of project.

e. Methodology and assumptions are disclosed in Annex.

f. Additional indicators of the direct impact of the green projects.

g. Most relevant or direct social and/or Sustainable Development Goals impacts, as a result of the project.

Lighthouse at Lengkuas Island, Belitung Regency, Bangka Belitung Islands Province

V. Interpreting Reported Results

The 2024 Republic of Indonesia Green Sukuk Allocation and Impact Report is developed as a form of transparency and accountability of the issuer, and allows investors to access the details of eligible green projects in accordance with the 2021 ROI's SDGs Government Securities Framework, which updated the 2018 ROI's Green Bond/Sukuk Framework. The report also serves to provide information on the relevant impacts for both climate mitigation and adaptation projects generated through allocation of proceeds from the Green Sukuk issuance.

Several key result indicators have been selected and quantified where possible, but it is important to take into account the inherent limitations of the data reported. The main considerations applied to adequately interpret the results are as follows:

1. 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.

2. 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. Behavioral changes and/ or shifts in baseline conditions can cause deviations from projections.

3. Comparability

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

4. Partial Project Eligibility

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

5. 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 provided in the report. Therefore, putting exclusive focus on the reported indicators will omit other important development impacts. Where quantitative data is unavailable, qualitative indicators have been included to illustrate other benefits.

6. Source of Data

All reported results are derived from the Government of Indonesia's internal data as well as publicly available sources

Annex: Impact Measurement Methodology and Indicators

To ensure that the Green Sukuk investment generates sustainable environmental and/or social outcomes alongside financial returns, the Government of Indonesia is committed to conduct a transparent reporting on the amount of proceeds allocated and utilized as well as the environmental and social impact and progress of the green projects selected as underlying assets, in accordance with the Republic of Indonesia Green Bond and Green Sukuk Framework.

Data Evaluation and Selection

The Green Sukuk impact report leverages the established national development planning and budgeting system. As mentioned above, proceeds from the 2023 Global Green Sukuk (SNI 1133) issuance are allocated to refinance the government's 2022 Fiscal Years green projects - whilst the proceeds from the Domestic Wholesale Green Sukuk (PBSG 001) are allocated to finance the government's 2023, 2022, and 2021 Fiscal Year green projects, and the Domestic Retail Green Sukuk (ST 010T4 & ST 011T4) are allocated to finance the government's 2021 Fiscal Year green projects. The underlying projects, allocated budget and performance information reporting data are extracted from the KRISNA performance-based budgeting system. KRISNA is an application designed for the Collaboration of Planning and Budget Performance Information, which integrates systems from three ministries: the Ministry of National Development Planning (BAPPENAS), the Ministry of Finance, and the Ministry of Administrative and Bureaucratic Reform. KRISNA supports the processes of planning, budgeting, and reporting performance information.

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

For refinancing projects (2021 and 2022), the data reported are based on audited numbers by BPK (Supreme Audit Agency) on 31 May 2022 and 24 May 2023 respectively, for accountability purposes. For financing 2023 projects, data reported are based on audited numbers by BPK (Supreme Audit Agency) on 21 May 2024.

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, which aims to serve as a platform of data and information management for mitigation and adaptation activities 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 and social impacts in green finance. As one of the Parties to the UNFCCC, Indonesia has proactively initiated the development of frameworks to conduct monitoring, reporting, and verification system for the progress and achievement of the National Determined Contributions covering mitigation actions and adaptation actions, as well as of the Sustainable Development Goals' indicators. There are five "themes" to categorize the indicators which are 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 methodology employed for calculating greenhouse gas (GHG) emissions adheres to the methods established by the Intergovernmental Panel on Climate Change (IPCC) Guidelines, specifically the IPCC Guidelines 2006. The application of this methodology is outlined in the Minister of Environment and Forestry Regulation Number P.73/MenLHK/Setjen/Kum.1/12/2017.

Emissions reductions and/or GHG absorption are assessed based on the decrease in actual emission levels compared to baseline conditions. This reduction results from the implementation of mitigation measures. In accordance with the mandate of Presidential Regulation Number 98 of 2021, the calculation of GHG emissions reductions for the energy, industrial processes and product use (IPPU), agriculture, forestry, and waste sectors are based on methodologies established by the Director General of Climate Change Control at the Ministry of Environment and Forestry.

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-kilometers (or tonne-kilometers) are also presented. The Ministry of Transportation applies the Tier 1 approach, with general methodology for calculating CO_2 emissions in sub-sectors under its management (land, railways, sea, and air transports), which multiplies the estimated fuel consumed (sold) by a 2006 IPCC default CO_2 emission factor.

Sustainable Transport: Default CO_2 emission factors used by sub-sector

Sub-Sector	Full Type	CO_2 9kg/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, Ministry of Transportation

Forestry and Other Land Use

The methodology used for calculating emissions in this Forestry and Other Land Use sector follows the guidelines established by the Intergovernmental Panel on Climate Change (IPCC) in the IPCC Guidelines 2006. Specifically, it employs the gain and loss method, where net emissions are measured by summing emissions and carbon absorption across each category and subcategory. In the forestry and other land use sector, GHG emissions and absorption are categorized according to the six land use categories outlined in the IPCC Guidelines 2006.

Resilience Index

The National Vulnerability Index (SIDIK) has been developed by the Ministry of Environment and Forestry to define the vulnerability degree of certain administrative areas or sectors, while the National Resilience Index engaging potential economic loss and the vulnerability is currently being developed by the Ministry of National Development Planning. The index 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 the volume of infrastructure developed and the beneficiaries that benefit from the projects. The framework will be further updated for the next reporting.

SDGs Indicators

Indonesia is highly committed to the achievement of the Sustainable Development Goals. The Government has linked and integrated SDGs targets and indicators to the national mid-term development plan (RPJMN), which ensures the implementation of SDGs in the country. As mentioned in the previous section of the report, the Green Sukuk proceeds have contributed towards the achievement Goal 1 (No Poverty), Goal 2 (Zero Hunger) of Goal 3 (Good Health and Well-Being), Goal 5 (Gender Equality), Goal 6 (Clean Water and Sanitation for All), Goal 7 (Affordable and Clean Energy), Goal 8 (Decent Work and Economic Growth), Goal 9 (Industry, Innovation, and Infrastructure), Goal 10 (Reduced Inequalities), Goal 11 (Sustainable Cities and Communities), and Goal 13 (Climate Action).

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