

**MARC**

MARC RATINGS BERHAD

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TNB POWER GENERATION SDN BHD

PRE-ISSUANCE SUSTAINABILITY SUKUK FRAMEWORK  
ASSESSMENT

APRIL 2022



SUSTAINABILITY SUKUK  
FRAMEWORK ASSESSMENT

MARC Ratings Berhad (MARC Ratings) has been engaged by TNB Power Generation Sdn Bhd as an independent external reviewer for its Sustainability Sukuk Framework. This external review was conducted according to the analytical framework in MARC Ratings' Impact Bond Assessment (IBA) methodology that is published on its website.

Photo: Artist Impression, 300MW Nenggiri Hydroelectric Project, Gua  
Musang, Kelantan

Contact: (+603) 2717 2915

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## SUMMARY

TNB Power Generation Sdn Bhd (TPGSB or the Issuer), a wholly-owned subsidiary of Malaysia's largest electricity utility Tenaga Nasional Berhad (TNB), is proposing to issue a Sustainability Sukuk to exclusively finance and/or refinance loans obtained to finance the development costs of an identified Eligible Project, in full or in part. The Eligible Project, known as the Nenggiri Hydroelectric Project (Project Nenggiri), is a 300MW impoundment hydroelectric power project located in the district of Gua Musang, Kelantan which will be undertaken by TPGSB's wholly-owned subsidiary, TNBPG Hydro Nenggiri Sdn Bhd (THNSB or Project Company).

TPGSB's IBA is a three-part analysis consisting of a primarily qualitative impact significance analysis of the project financed by the Sustainability Sukuk issued under its Sustainability Sukuk Framework (Framework); an assessment of alignment of the Framework with the core components of the ASEAN Sustainability Bond Standards (ASEAN SUS), the ASEAN Green Bond Standards (ASEAN GBS) and the ASEAN Social Bond Standards (ASEAN SBS) (collectively the ASEAN Standards) in addition to Securities Commission Malaysia's (SC) Sustainable and Responsible Investment (SRI) Sukuk Framework. We have also assessed the Framework's alignment with the four core components of International Capital Market Association's Green Bond Principles (GBP), Social Bond Principles (SBP) and Sustainability Bond Guidelines (SBG) 2021 (collectively the ICMA Principles).

In assigning the IBA, MARC Ratings has relied on public information gathered from public sources as well as information provided by the Issuer through documents and associated parties.

MARC Ratings is of the opinion that Project Nenggiri is consistent with the main sustainability issues within the electricity generation sector and the Issuer's priorities and commitments to sustainability, and that it could effectively contribute to the national sustainable development goals and priorities with regard to the decarbonisation of the national grid and electricity. The Eligible Project has the potential to provide clear environmental and/or social benefits which have been assessed and clearly described by the Issuer in the Framework. Project Nenggiri is expected to make an impactful contribution to Malaysia's energy transition plan of increasing the renewable energy's share of the country's power capacity mix to 40% by 2035. Besides electricity generation, the project is also expected to benefit the State of Kelantan in the area of flood mitigation, as well as the provision of cleaner water supply and raw water supply for irrigation.

The project is expected to advance the United Nations' Sustainable Development Goals (SDGs) 6; Clean Water and Sanitation, 7; Affordable and Clean Energy, 8; Decent Work and Economic Growth, 11; Sustainable Cities and Communities, 13; Climate Action and 17; Partnerships for the Goals. The project will also address a combination of sustainability objectives set out in paragraph 7.07 of the SRI Sukuk Framework, particularly, in promoting the use of renewable energy, reducing greenhouse gas emission and improving the quality of life of the society.

MARC Ratings assessed TPGSB's identification of the environmental and social (E&S) risks associated with the Eligible Project to be good overall. The project's potential environmental and social effects also appear to have been sufficiently considered alongside economic aspects in its feasibility and impact assessments, detailed design, Environmental Management Plans (EMPs) and Wildlife Management Plan (WMP). This, along with TNB's historical track record in E&S impact management and their effectiveness in applying the risk mitigation hierarchy to large hydroelectric power project provides a moderate to high level of assurance of THNSB's prospective management of Project Nenggiri's E&S risks. We consider this to be integral to develop and manage an environmentally, socially and economically sound hydropower project (HPP), particularly one that has a perceptible

impact on sensitive locations, including forestland, areas of archaeological or cultural significance, and indigenous settlements.

The governance and the process for the evaluation and selection of Project Nenggiri and the project's environmental sustainability and social objectives are clearly communicated in the Framework within the context of the overarching efforts by TPGSB and its corporate parent TNB to lead the national energy transition sustainably. Energy transition objectives that the project will address include reliability, resiliency, affordability and cleanliness of the energy that will be supplied by the project.

The process for the management of proceeds is clearly defined and is in line with market practice. The reporting processes and commitments appear to be good, covering both the funds allocation and the environmental and social impact of the Eligible Project.

Based on our review of the relevant documentation and assessment as per our IBA methodology, we have assigned TPGSB's Framework a **"Gold"** IBA. MARC Ratings also opines that the Framework is aligned with the core components of the ASEAN Standards, the SRI Sukuk Framework and the ICMA Principles.

## Company Profiles

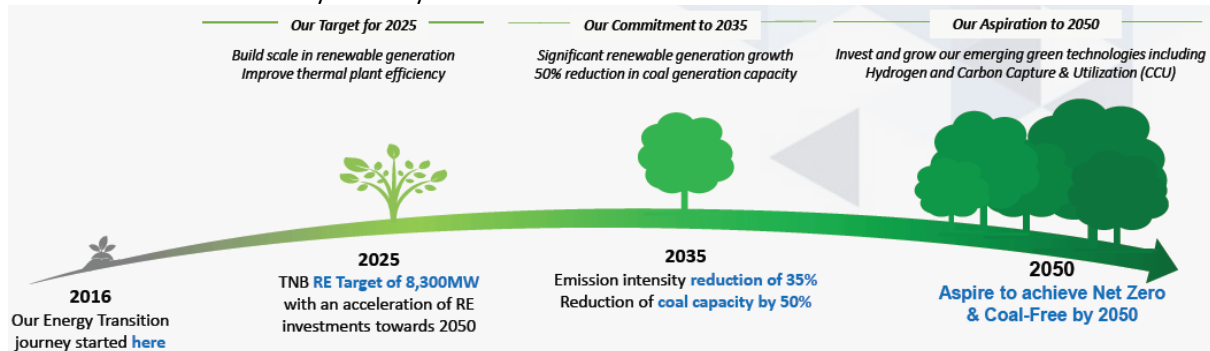
### Offtaker and Parent Entity of Issuer: TNB

TNB is the largest electricity utility company in Malaysia with total assets of RM181.4 billion and 35,576 employees as at end of 2020. Listed on the Main Market of Bursa Malaysia Securities Berhad, TNB has a market capitalisation of RM53.5 billion as at December 31, 2021. Government agencies own 69.3% of TNB as at end-December 2021. In an internal restructuring that was completed in 2020, TNB reorganised its vertically-integrated utility operations to house its domestic power generation and electricity retail businesses under new holding companies. TNB's principal activities now comprise operating the high voltage national grid and distributing electricity to customers, international power generation, and providing corporate and shared services to the two new holding companies.

TNB manages and operates the 24,607 km national grid in Peninsular Malaysia which the utility is upgrading into a smart, automated and digitally enabled network. TNB owns and operates 703,312 km of distribution lines to end users in Peninsular Malaysia. The utility sold 112,106.0 gigawatt-hour (GWh) of electricity to 9.2 million homes and businesses along the length and breadth of Peninsular Malaysia in 2020. Through its subsidiaries, TNB also engages in other energy-related operations, such as the manufacturing of transformers and the providing of consulting services.

TNB started its sustainability journey in 2016 when it launched its Reimagining TNB Strategic Plan to address the existential challenge of transitioning towards sustainability. TNB has been integrating social and environmental risks and opportunities through the incorporation of decarbonisation, decentralisation, digitalisation and deregulation considerations into operational and capital investment decisions to improve the sustainability of its business. As Malaysia's key electricity provider and distributor, TNB is expected to play a defining role in the country's transition towards a low carbon future, including improving access to reliable and clean energy. TNB made a commitment towards decarbonisation by announcing its aspiration to achieve net zero emission by 2050 in August 2021, four years after the utility undertook the first carbon footprint assessment in 2017. TNB's sustainability strategy seeks to balance the energy transition with financial sustainability.

Exhibit 1: TNB's Sustainability Pathway to 2050



Source: TNB's Q2 2021 Presentation to Analysts, 27th August 2021; Unaudited Consolidated Result for the 2nd Quarter FY2021 Ended 30th June 2021

While the majority of TNB's business operations are located in Malaysia, it also has international presence in seven countries as initiatives are underway to transform TNB into a regional renewable energy and utility player. This notably includes unlocking the substantial generation capacity of building stock in Malaysia through the expansion of rooftop solar PV and growing its renewable capacity in selected strategic markets with strong growth prospects. TNB's renewable energy arm recently partnered with Singapore's Sunseap Group to invest in rooftop solar installations in Vietnam's rapidly expanding power market.

Coal-related revenue made up about 19% of group revenue in 2021. TNB strives to ensure revenue from coal remains below 25%, towards longer-term aspiration. There are no new coal plant investments in the pipeline and TNB aims to reduce coal capacity by 50% by 2035 and to be coal-free by 2050. In 2021, coal accounted for 59.2% of the fuel generation mix for Peninsular Malaysia, while hydro and solar accounted for 5.4% and 0.9% respectively.

**Issuer and Parent Entity of Project Company: TPGSB**

TPGSB was incorporated as a wholly-owned subsidiary of TNB on August 1, 2019 to house the domestic power generation business of the utility pursuant to an internal reorganisation. TPGSB operates and maintains TNB Group's portfolio of thermal and hydroelectric power plants in Peninsular Malaysia. Currently TPGSB owns six gas-fired power plants, five coal-fired plants, three hydroelectric power schemes and two large scale solar plants with total installed capacity of 12GW. Apart from the ownership, management and operation of domestic power plants, and renewable energy generation business, TPGSB's principal activities also include the power plant operation and maintenance business as well as dry bulk terminal operations business.

As highlighted in the Framework, TPGSB will play an important role in TNB's commitment towards decarbonisation. TPGSB plans to contribute to emission reductions through adopting greener, cleaner and more efficient power generation technology. Specifically, TPGSB is seeking to increase its business in new energy sources and improving the performance of its existing thermal generation fleet. TPGSB is looking to forge partnerships with other adjacent industry sectors such as the oil and gas sector to pilot industrial-scale projects in new energy sources such as green hydrogen and ammonia which will support and speed up the transition to climate neutrality.

The three main hydroelectric schemes and five mini hydro plants in Peninsular Malaysia owned and operated by TPGSB carry a total installed capacity of 1.9GW. Two hydroelectric power plants, namely SJ Hulu Terengganu (265MW) and SJ Ulu Jelai (372MW) hydroelectric power plants are currently pending transfer from TNB. Project Nenggiri, undertaken by TPGSB's wholly-owned subsidiary THNSB, will add 300MW to its renewable installed capacity. In line with its corporate parent TNB, TPGSB is taking concrete steps to pursue green growth, mitigate climate risk and reduce operations emissions.

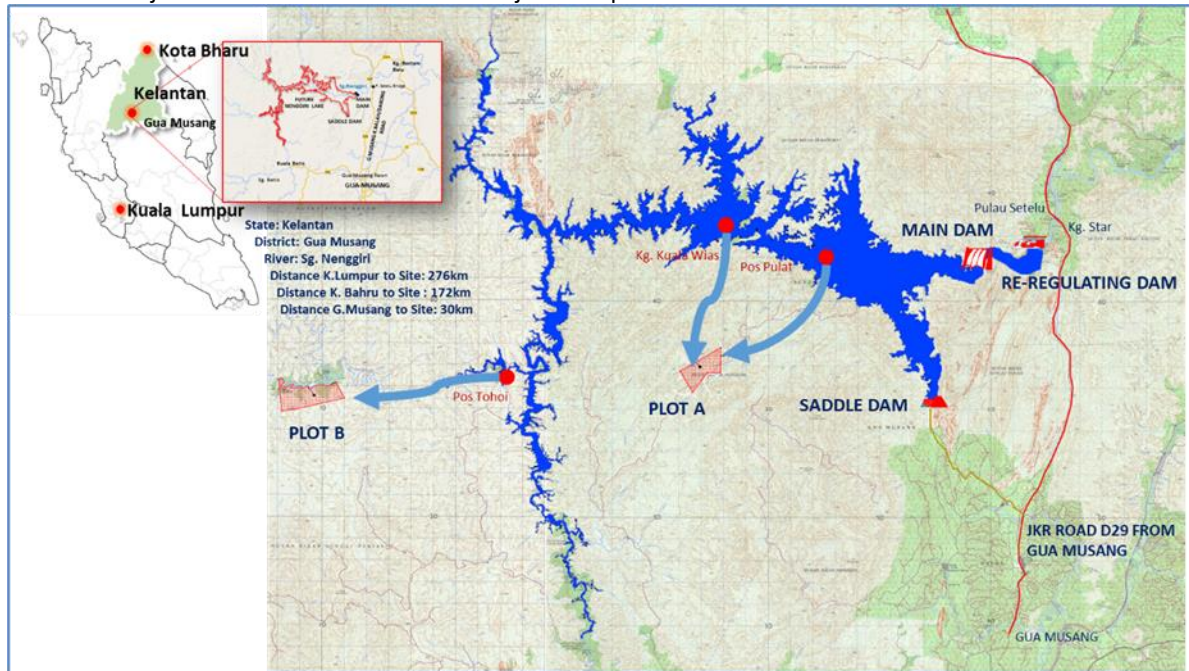
**Project Company: THNSB**

THNSB is a wholly-owned subsidiary of TPGSB incorporated on August 3, 2021 to undertake the project.

## The Project

The Nenggiri Project is a 300MW hydroelectric power project proposed by TPGSB, to be sited in the north-eastern state of Kelantan, within the Sungai Nenggiri catchment in Jajahan Gua Musang. As an impoundment hydroelectric power project, Nenggiri HPP would have the capability to generate electricity when it is most needed and most valuable to the grid in a short period of time.

Exhibit 2: Project Site and Location of Main Project Components



The power station is intended to operate for five days a week for five hours per day as a peaking hydropower station. When completed, the project will provide 600 GWh of average energy annually. The evaluation of the project's feasibility was first undertaken in 1986 and updated in 2005.

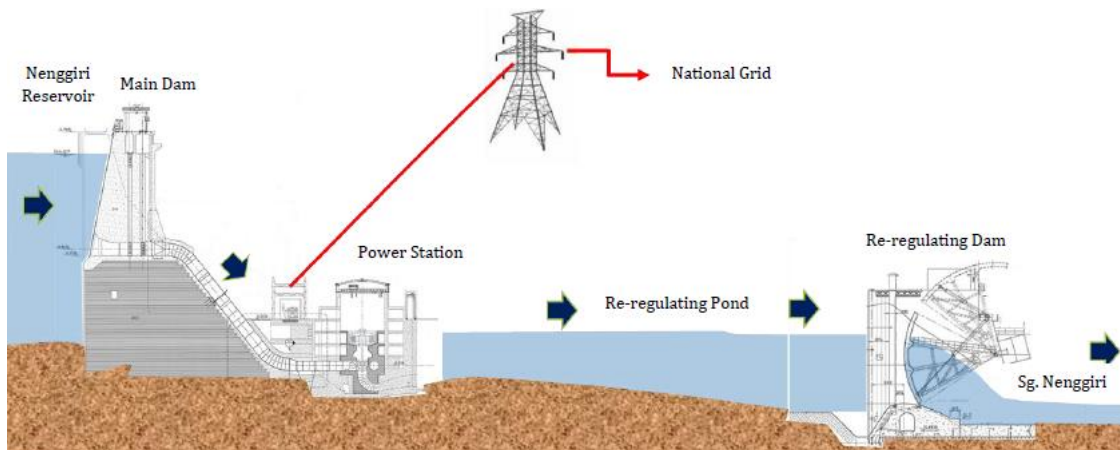
In July 2016, a consortium comprised of SMEC International, Tokyo Electric Power Services Corporation Limited (TEPSCO) and SMEC Malaysia was engaged by TNB to commence design of the project, manage the project and supervise its construction. SMEC also provided the design and construction supervision services for TNB's 372MW Ulu Jelai Hydroelectric Project which was commissioned in 2016. The Environmental Impact Assessment (EIA) was completed by EIA consultant UKM Pakarunding Sdn Bhd in January 2018.

The project will be split into three main construction work packages: Lot CW - Civil and Associated Works; Lot EM – Electrical, Mechanical and Associated Works; and Lot RVP – Resettlement Villages, Plantation and Associated Works. MARC Ratings understands that the Engineering, Procurement, and Construction (EPC) contractors have been selected on the basis of their technical and financial capabilities. The construction works are estimated to take five years to complete with the Scheduled Commercial Operation Date (SCOD) expected to be on June 1, 2027.

## Project Components

The main project components are an 88-metre-high roller-compacted concrete (RCC) main dam, two penstocks, a 56-metre-high saddle dam, a 29-metre-high concrete gravity re-regulating dam and a power station. The re-regulating dam is designed to smooth out large flow fluctuations from the main powerhouse during the generation of peaking energy. The project will also include the construction of access roads and related infrastructure, the installation of turbines, transformers and two 150 MW generators, and the laying of transmission lines to export power to the main 275 kV transmission system.

Exhibit 3: Cross-section of Nenggiri hydroelectric dam



### Multiple Use Benefits

Compared to run-of-river projects, storage HPPs can better control the amount and timing of when electricity is generated and are particularly well suited to meet the peaks in electricity demand. As a storage hydropower plant, Nenggiri HPP will also retain water during high flows and release water during low flows. It will provide water services in addition to its contribution towards improvements in the national grid's reliability and resiliency, with a designed reservoir storage capacity of 640 million cubic meters. Nenggiri HPP will also play an important role in flood control and water flow management given that the project site has experienced monsoon floods almost every year according to the EIA. The water stored in the reservoir will also be used for other purposes such as irrigation and water supply.

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## APPENDIX

### COMPLIANCE REVIEW FORMS



## 01 IMPACT SIGNIFICANCE ANALYSIS

Our qualitative analysis of impact is conducted in the context of the United Nations' Sustainable Development Goals (SDGs). As a globally accepted guidepost for the transition to sustainable development, the SDGs serve as a useful framework of reference for project impact analysis. The 17 SDGs are at the heart of the global sustainability agenda covering three broad areas of economic, social, and environmental development to be reached by 2030. The prominence given to SDGs in the national development agenda and how the national planning framework facilitates qualitative assessment as to whether the project has a credible impact on national SDGs are of the highest relevance.

The project is expected to contribute towards the achievement of national environmental management priorities, particularly those relating to transitioning the country's energy infrastructure to cleaner sources and commitments made pursuant to the Paris Agreement, flood resilience, and also to national growth and poverty eradication.

### POSITIVE IMPACTS

Fundamental to the delivery of the following identified positive impacts would be the assessed sustainability of the project, in terms of project economics as well as climate change resilience (weather risk). As the only non-intermittent renewable energy source, hydropower will, going forward, play an important role in addressing Malaysia's climate change and energy security concerns. Hydro accounted for 3.8% of Peninsular Malaysia's fuel generation mix in 2020 (fossil fuels: 95.5%; solar: 0.7%). It should be noted however that the resource potential for the project could change as a result of positive or negative changes in precipitation and runoff arising from climate change.

Benefits of implementing the project include enabled access to an affordable source of renewable energy; reduced peak discharges in flood-prone downstream areas; and the ability to meet Peninsular Malaysia's existing and future needs for peak capacity and energy. As a hydropower project coupled with reservoir capacity, the project will also deliver non-energy related services, including flood mitigation, water supply, irrigation, fisheries, and tourism.

TNB has committed to purchase the project's hydro energy under a power purchase agreement (PPA), providing a stable flow of revenues for 30 years. The long-term contract with a creditworthy offtaker help mitigate offtake and revenue risks, as well as associated credit risks.

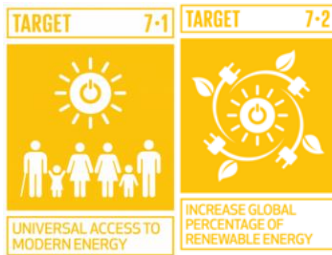
### SDG Impact Assessment: Primary SDGs

#### 7 AFFORDABLE AND CLEAN ENERGY



While large HPP are highly capital-intensive, they provide electricity competitively compared to fossil fuel-fired plants whose fuel costs significantly affect their levelized cost of electricity (LCOE) and have the longest lifetime of any generation plant. Volatile fossil fuel prices are the key driver for fossil fuel substitution to renewable energy sources which offer, along with environmental benefits, greater stabilisation of electricity costs. Fuel price volatility not only affects rates, but also impacts affordability and cost recovery with respect to customers and electricity providers respectively.

Where system flexibility is required, as in the case of the Nenggiri HPP to meet peak demands for electricity, hydropower appears to be the most cost-effective electricity generation options. Hydropower is also a mature and proven technology.



The project will have a direct positive impact on the achievement of SDG 7 and its targets as follows:

Target 7.1 which is aimed at providing universal access to affordable, reliable and modern energy services.

Target 7.2 which is to increase the share of renewable energy in the global energy mix by 2030.

Given the project’s important role in the integration of other intermittent renewable sources such as solar into the supply grid, it will make an impactful contribution to Malaysia’s energy transition plan of increasing the renewable energy’s share of the country’s power capacity mix to 40% by 2035. Of this, 32% will come from Peninsular Malaysia where the project is also located. Increased domestic deployment of renewable energy is essential for the government to build a sustainable energy supply system, enhance national energy security and reduce fossil fuel dependency.

**13 CLIMATE ACTION**



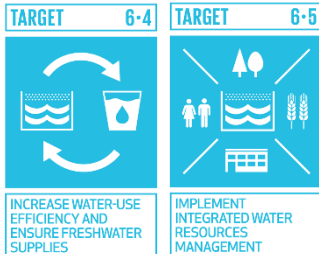
According to the International Energy Agency (IEA), energy production and use is the largest source of Greenhouse Gas (GHG) emissions, driven largely by fossil fuel use. Electrification with renewable power is paramount to mitigating climate change. In helping to decarbonise the national electricity grid, the project will contribute towards Malaysia’s delivery of the emissions reduction required by the Paris climate agreement to keep temperature increases resulting from heat-trapping emissions to less than 2°C.

The flood control and irrigation functions of the project will also contribute to SDG 13’s target 13.1 of strengthening resilience and adaptive capacity to climate-related hazards. Expected climate change impacts include changes in rain patterns, increased flood risk, and more frequent extreme weather events with a significant corresponding increase in the number of people exposed annually to flood risk. Around 16% and 37% of the reservoir’s active storage capacity of 640 million cubic metres is expected to be used for flood detention during the dry (February through September) and wet (October through January) seasons, respectively. Importantly, protection from flooding impacts will also be provided for downstream communities along the river post dam construction by the reduced peak flow of flood waters. Downstream peak flows are expected to be reduced by 30% for a five-year average recurrence-interval (ARI) flood and by 25% for a 100-year ARI flood. (A 100-year ARI flood corresponds to a flood that has a 1% chance of occurrence in a given year.)



From 2013 to 2017, flood damage costs exceeded RM60 million annually on average based on statistics published by Kelantan state’s Department of Irrigation and Drainage. With floods occurring almost every year in the state of Kelantan due to heavy Northeast Monsoon rainfall, improving flood control is vital to address current flood risk as well as the rising risk of climate-induced catastrophic floods. The project will also have a direct positive impact on meeting the aspirations of SDG 13’s target 13.3 on building knowledge and capacity on climate change mitigation, adaptation and impact reduction.

**6 CLEAN WATER AND SANITATION**



The dams will also contribute towards achieving water security and the targets of SDG 6, in particular ensuring safe access to water for all and its sustainable management. Sustainable management of freshwater resources is essential to sustain economic growth in the agriculture industry and to meet the rising demand for water for domestic use, especially against a backdrop of climate change.

Large hydroelectric projects such as Project Nenggiri allow the use of integrated water resources management strategies, especially related to conflict mitigation and the sustainable and equitable provision of both water and energy resources. Given the significant water withdrawals in the agriculture sector, drought and water shortages can seriously affect agriculture and food production. The development of irrigation systems is fundamental to meeting national food security goals and the food production needs of a growing population that is required by 2050.

**8 DECENT WORK AND ECONOMIC GROWTH**



The interconnected nature of all the SDGs and their targets underscores a mutual interdependence in that the progress towards achieving SDGs 6, 7 and 13 will also contribute to the achievement of SDG 8. Likewise, Project Nenggiri is expected to benefit the economic sustainability of the State of Kelantan, TPGB and TNB.

Also, employment for the locals will be generated during plant construction as well as in operations and maintenance. The project will likely contribute to SDG 8 targets 8.1 and 8.4. Resettlement assistance provided to households to be displaced will help improve or at least to restore pre-project living standards, income-earning capacities, and to build viable communities. Further developments beyond the project such as sustainable eco-tourism are likely to be facilitated within the project's surrounding area. The project will also improve resource efficiency in consumption and production to decouple economic growth from environmental degradation.

**17 PARTNERSHIPS FOR THE GOALS**



A project at the scale and development impact of Project Nenggiri can only be realised with inclusive partnerships at the national, state and local levels as communicated in the Framework.

SDG Impact Assessment: Related SDGs

**11 SUSTAINABLE CITIES AND COMMUNITIES**



The project will also foreseeably have indirect positive impacts on the achievement of other SDGs including SDG 11 as communicated by the Framework.

## IDENTIFICATION AND MITIGATION OF NEGATIVE IMPACTS

As project proponent of a prescribed activity under the Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 2015 (2015 Order), TPGSB is required to obtain approval for the project's EIA prior to its implementation. Other than the EIA, impact assessments that have been conducted include a Social Impact Assessment (SIA) and a Heritage Impact Assessment (HIA) in 2018. Nenggiri HPP's EIA is accessible by the public through the Department of Environment's (DOE) website as is required for prescribed activities falling within the Second Schedule of the 2015 Order. These assessments identify E&S impacts and risks of importance to the project, as well as mitigation approaches prior to project approval and implementation.

In Malaysia, the development of large HPPs has generally been undertaken by the utility companies. TNB has also played the role of project sponsor in past large HPPs in Peninsular Malaysia. Malaysia has a comprehensive environmental conservation legislation to protect the environment, encompassing public health as well as conservation, pollution control, and land use control. Matters relating to land, rivers, forests, local government, and town and country planning are within the jurisdiction of the state authorities concerned. Even so, the requirements of the EIA, which is a federal environmental legislation, are applicable to the construction of dams in Peninsular Malaysia.

Given the magnitude of potential consequences associated with failure to manage the project's environment and social risks, the project proponent's and project owner's E&S impact management approach and their effectiveness in applying the risk mitigation hierarchy (avoid, mitigate or offset) are key to the realisation of the project's expected positive impacts.

## ENVIRONMENTAL RISKS

### Land Use Change and Greenhouse Gas Emissions

Land use change is a key issue for a large project involving land and forest clearing and impoundment because of the potential environmental effects of the dam(s) and reservoir during its life cycle. Emissions result from the conversion of forests and forest degradation, the flooding of soil and vegetation, as well as from the construction of the dams and the transmission lines. Dams and reservoirs can affect indigenous plants and animals in and around the water, and cause biodiversity loss. Also, environmental changes can affect a much larger area than the area that is to be flooded.

Significant amounts of GHG emissions will also be contributed by the impoundment of the reservoir for hydropower generation and water resource development. The GHG footprint of a large hydropower project will depend on project-specific circumstances which include climatic conditions, pre-impoundment land cover characteristics, the reservoir's depth, and size, among others. Lifecycle GHG emissions also arise during the manufacturing of the steel and concrete used in hydropower dams, as well as during the decommissioning stages of the project where the GHG emitted by accumulated sediments upon the decommissioning of the dams can be significant.

For the purpose of comparison with other energy sources, MARC Ratings has been provided with an estimate of Nenggiri HPP's total lifetime net greenhouse gas (GHG) emissions. At 72.7 gCO<sub>2</sub>e/kWh, this satisfies the present-day reference carbon intensity for sustainable electricity production of less than 100 gCO<sub>2</sub>e/kWh. This is significantly lower than the median values for gas and coal GHG emission intensities of 490 gCO<sub>2</sub>e/kWh and 820 gCO<sub>2</sub>e/kWh respectively. Emissions level for newly-built CCGT plants without carbon capture is around 350 kgCO<sub>2</sub>e/kWh.

We also take note that Nenggiri HPP is one of the few economically viable hydroelectric sites in Peninsular Malaysia left to develop as fast-responding capacity to meet peak demand for electricity. Most locations on rivers in Peninsular Malaysia that are economically viable in comparison to fossil fuel generation have already been developed. Other remaining undeveloped sites tend to be environmentally sensitive or costly to develop for the expected output.

### **Biodiversity Impacts**

Around 20% to 30% of the land that will be inundated to create Nenggiri's dams is logged-over forestland (2,145 ha) with the balance accounted for by rubber and oil palm cultivated plantations. The impact to wildlife is correspondingly less than for a pristine forest. The phased clearing of the forest area and its gradual inundation by water will allow wildlife time to migrate to adjacent forests. A Wildlife Management Plan (WMP) has been developed to support responsible management of the project's biodiversity impacts to fauna. The WMP provides an outline of the actions required during the project's pre-construction, construction, inundation and operation phases, including wildlife rescue procedures and the mitigation of potential impacts on protected species.

A similar rescue and salvage operation for high conservation value flora during vegetation clearing is provided in the EMPs. Continuous monitoring of biodiversity throughout the project cycle, such as the International Union for Conservation of Nature's (IUCN) Red List studies that are being conducted at Hulu Terengganu Hydroelectric Station, Temenggor Dam and Pergau Dam will facilitate adaptive management of biodiversity risks and biodiversity reporting.

### **Environmental Flow Impacts**

Artificially induced flow and level variations that occur during the operation of HPP can translate into a number of negative impacts or risks to downstream aquatic and riparian ecosystems and habitats, as well as livelihoods. To mitigate the E&S risks associated with modified flow patterns downstream, the re-regulating dam allows for controlled release of water at a minimum flow rate of 39 m<sup>3</sup>/s into the downstream flowing river to maintain the ecosystem and to meet irrigation needs of the project area. This ensures that quality and quantity of freshwater flows are maintained at levels necessary to sustain present aquatic ecosystems and local community livelihoods.

### **Climate Change Vulnerability**

The HPP can be affected in a variety of ways by climate change, including changes in hydrology which leads to more extreme fluctuations in reservoir water levels. While the concrete main and re-regulating dams are unlikely to become particularly vulnerable to climate change, the composite saddle dam may become less resilient to erosion. Overflow structures and spillways may also be affected by the increasing frequency and size of flows and catchment impacts. Adaptation measures, including monitoring and preventative or reactive maintenance would foreseeably assume an increasing importance.

## **SOCIAL RISKS**

### **Stakeholder Engagement and Management**

A broad set of public stakeholders comprising government agencies, statutory environmental authorities, civil society and affected communities were consulted during the project's permitting stage. Community dialogue was conducted at the planning stage with information provided to impacted communities and meetings convened with the support of the state's District Office to discuss and resolve issues. Input from the impacted Orang Asli (indigenous) communities had also been sought in the planning of the resettlement to ensure their concerns were considered in the development of decision criteria and options. To date, meetings have been conducted with the impacted communities since 2016, the most significant of which was in respect of the selection of resettlement sites. We consider the project proponent's engagement and management of stakeholders and its public participation processes to be satisfactory.

### **Community Displacement and Resettlement**

Resettlement assistance will be provided to households from three Orang Asli villages (Pos Tohoi, Pos Pulat and Kg. Wias) to help improve or at least to restore pre-project living standards, income-earning capacities, and to build viable communities. The resettlement plan entails the construction of two new townships with associated infrastructure such as roads, electricity reticulation, water and

sewerage. Rubber plantations will also be established to provide an income source for the resettled people. These interventions, along with requisite local government support and commitment to the resettlement's sustainability, are key to ensuring that the individuals and communities that are physically displaced by the project are not also socially and economically marginalised and disadvantaged post-resettlement.

While a majority (80%) of the directly affected Orang Asli are supportive of the project's implementation and the planned resettlement, a minority are still opposed and have reiterated their stand at an engagement session mediated by national human rights institution SUHAKAM. TNB intends to engender a higher level of support and stakeholder participation through ongoing engagement with the affected communities.

#### **Loss of Cultural Heritage Assets**

A Heritage Impact Assessment (HIA) was commissioned by TNB to identify impacted designated archaeological sites, as well as new non-designated sites and cultural villages having potential as archaeological sites, assess the project's likely impact on heritage assets, and identify possible mitigation strategies. Nine of 15 sites that will be impacted by the project, including well-known heritage site Gua Cha, are identified as having very high archaeological potential. Mitigation procedures that will be put into place to conserve cultural heritage assets include archaeological rescue excavations as required by the National Heritage Department (or Jabatan Warisan Negara) and the display of collections of discovered artifacts and ecofacts in a mini gallery to be sited at Gua Musang.

#### **Dam Failure**

Complete or partial dam failure could result in sudden downstream flooding that is accompanied by casualties, major destruction and property damage. Risk mitigating factors with respect to dam failure include the design of the dams to minimise risks commensurate with their failure consequences, the low incidence of concrete dam failures and the project's siting in a region of low seismic activity. The main and saddle dams, being high hazard large dams, are designed to withstand the Probable Maximum Flood (PMF). As non-erodible concrete structures, the vulnerability of the main and re-regulating dams to failures is evaluated to be low. The main dam is an RCC concrete gravity dam founded on competent rock while the re-regulating dam is a concrete gravity dam.

The EIA details an assessment of potential dam failure modes that are considered credible, including the calculation of probability of failure, the simulation of the failure process, as well as an evaluation of consequences of dam failure. These assessments, along with the recommended risk mitigation measures to avert structural failures and dam overtopping risk, guide the selection of appropriate standards for dam design, construction, operation and monitoring.

#### **Occupational Health and Safety (OH&S) Risks**

TNB's integrated Health, Safety and Environment Management System (HSEM) promotes compliance with environment, security and health regulations and supports continuous OH&S performance improvement. The project-level commitment to OH&S is expected to align with TNB's assessment and acknowledgment of Safety, Health and Well-Being as a material ESG topic. MARC Ratings understands that risk mitigation measures during construction and operation including that of OHS risks will be integrated in contracts and/or subcontracts.

Overall, the identification of material environmental and social risks associated with the Eligible Project is considered to be good. We consider this to be integral to develop and manage an environmentally, socially and economically sound HPP, particularly one that has a perceptible impact on sensitive locations, including forestland, areas of archaeological or cultural significance, and indigenous settlements. The project's potential environmental and social effects also appear to have been sufficiently considered alongside economic aspects in its feasibility and impact assessments, detailed design, EMPs and WMP.

The EMPs and the environmental management team that will be put in place to ensure proper planning and implementation of the EMPs provide reasonable assurance of the implementation of appropriate mitigation, management and monitoring of E&S risks, including the pollution prevention and mitigation measures recommended in the EIA Report and DOE approval conditions during the project's construction and operation.

### Overall Impact Significance

<input checked="" type="checkbox"/>	<b>Very Significant</b>	<b>This level of impact significance is assigned where underlying projects are expected to generate very visible positive ground level impact. Projects at this level support the realisation of long-term integrated visions of sustainable development that are consistent with global sustainability goals, as well as national sustainable development goals and priorities.</b>
<input type="checkbox"/>	<b>Significant</b>	<b>This level of impact significance is assigned where underlying projects are expected to generate a visible positive ground level impact. Projects at this level have the potential to facilitate adjustments towards a more sustainable development trajectory and to meaningfully advance national level sustainable development goals.</b>
<input type="checkbox"/>	<b>Fairly Significant</b>	<b>This level of impact significance is assigned where underlying projects are expected to generate a ground level impact which, although at a lower magnitude than that expected for higher assessment levels, is still considered noteworthy.</b>
<input type="checkbox"/>	<b>Marginal</b>	<b>This level of impact significance is assigned where underlying projects are expected to generate a positive but limited ground level impact.</b>
<input type="checkbox"/>	<b>Not Significant</b>	<b>This level of impact significance is assigned where underlying projects are expected to have negligible ground level impact.</b>

## 02 ALIGNMENT WITH THE ASEAN STANDARDS, SRI SUKUK FRAMEWORK AND ICMA PRINCIPLES



### Utilisation of Proceeds

The net proceeds of the Sukuk will be solely allocated to a single Eligible Project which has already been selected by the Issuer. The proceeds would be used to finance and/or refinance loans obtained to finance the development costs related to the planning, design, engineering and construction of Project Nenggiri, a 300MW hydroelectric power plant sited within the Sungai Nenggiri catchment in Jajahan Gua Musang, Kelantan.

The project will advance national sustainable development goals and priorities with regard to the decarbonisation of the national grid and electricity. It will make an impactful contribution to Malaysia's energy transition plan of increasing the renewable energy's share of the country's power capacity mix to 40% by 2035. Besides electricity generation, the project is also expected to benefit the State of Kelantan in the area of flood mitigation, as well as the provision of cleaner water supply and raw water supply for irrigation.

The project is expected to advance SDGs 6; Clean Water and Sanitation, 7; Affordable and Clean Energy, 8; Decent Work and Economic Growth, 11; Sustainable Cities and Communities, 13; Climate Action and 17; Partnerships for the Goals. The project will also address a combination of sustainability objectives set out in paragraph 7.07 of the SRI Sukuk Framework, particularly, in (c) promoting the use of renewable energy, (d) reducing greenhouse gas emission and (f) improving the quality of life of the society. The Sukuk falls into the category of Standard Sustainable Use of Proceeds Bond under ICMA's Green Bond Principles.



### Process for Project Evaluation and Selection

The proceeds will be fully allocated to Project Nenggiri. As such, the issue of post-issuance project evaluation and selection does not arise. The Issuer has outlined the climate, environmental, and social considerations in the Framework in evaluating Project Nenggiri's eligibility for sustainable finance funding.

The Issuer has positioned this information within the context of the Issuer's and parent TNB's sustainability strategies, focus SDGs, and its processes relating to environmental and social sustainability. The Issuer has also provided information on approvals the project has received for mandatory environmental, heritage and social impact assessments and corresponding plans related to the mitigation of potentially material E&S risks associated with the selected project. MARC Ratings considers this to be in line with market practice.





### Management of Proceeds

The amount equal to net proceeds of the Sukuk will be deposited into TPGSB's bank account for the interim period before being disbursed to the project company as and when required. As Sukuk proceeds are disbursed to the project company, the disbursements are tracked by internal accounting systems and accounted for either in the income statement or in the balance sheet of the project company.

The processes for management of proceeds are in line with market practice. The disbursement of proceeds to the project company are linked to the presentation of payment certificates prepared and executed by the project company's authorised signatories. Unallocated proceeds shall be invested by TNB on TPGSB's behalf into Shariah-compliant marketable instruments and/or fixed deposits in accordance with TNB's liquidity and investment policy. This is in line with market practice.



### Reporting

Annually, as long as the Sukuk are outstanding, the Issuer will publish a Sustainability Sukuk Report which provides information on the allocation of the Use of Proceeds as well as relevant impact metrics. The allocation reporting will include the amount of proceeds allocated to Project Nenggiri, including a broad description of the utilisation, the unutilised amount and where such unutilised amount is placed or invested pending utilisation.

With regard to impact reporting, the Issuer will provide information on the environmental and social impact of Project Nenggiri and include impact or key performance indicators (KPIs) proposed in the Framework on a best-efforts basis and subject to data availability. Reported environmental and social indicators may include renewable energy capacity installed (in MW), annual renewable energy generation (in MWh), percentage of contract value awarded to local contractors and annual CO<sub>2</sub> emissions avoided (in tonnes of CO<sub>2</sub>).

## Overall Assessment

	Clarity of Issuance Process and Disclosure	Total Score
<input checked="" type="checkbox"/>	High	10- 12 points
<input type="checkbox"/>	Good	7 -9 points
<input type="checkbox"/>	Satisfactory	4 – 6 points
<input type="checkbox"/>	Low	Below 4 points

Equal weighting is given to each of the four principles in arriving at the total score which is then expressed on the above four-point descriptive scale which ranges from High to Low.

Assessment Grade	High	Good	Satisfactory	Low
	3	2	1	0

### 03 ANALYSIS OF SUSTAINABILITY PERFORMANCE

MARC Ratings considers TNB's broader sustainability and business strategy, ESG risk management track record, and transparency on ESG priorities and progress to be material and relevant to Nenggiri HPP's and TPGSB's sustainability performance. A review of these aforementioned areas has been undertaken to assess the sustainability-related performance of project proponent, TPGSB, and project company THNSB. TPGSB's relatively short corporate history is mitigated by established legacy operations that collectively make up TNB's electricity generation business.

TNB is increasingly integrating sustainability within its corporate governance model to futureproof its long-term growth. TNB's sustainability strategy is centred on its most material ESG issues and its focus SDGs of Goal 7 (Affordable and Clean Energy), Goal 8 (Decent Work and Economic Growth), Goal 13 (Climate Action) and Goal 17 (Partnerships for the Goals). TNB continues to integrate climate risks and sustainability considerations in its corporate strategy, operations and investments, and has been evolving its sustainability disclosures to demonstrate accountability and progress on ESG issues that are material to its sector and stakeholders. For example, its 2016-2025 corporate strategy was refreshed through the lens of sustainability to provide clarity around its strategic direction with regard to leading the energy transition in Malaysia.

TNB has yet to establish quantitative interim climate and environmental targets but has communicated its aim to set targets for the reduction of Scope 1 and Scope 2 GHG emissions in line with the International Energy Agency's (IEA) net zero by 2050 emissions roadmap for the global energy sector. Despite not having developed quantified interim targets to reach this goal, TNB has already identified areas where decarbonisation can be achieved. TNB's sustainability pathway prioritises climate action and energy efficiency through low-carbon generation and grid future-proofing. Specifically, TNB is growing its low carbon and RE generation, and strategically making smart grid investments to build a more sustainable and secure energy supply system. As the entity that operates and maintains TNB's portfolio of power generating assets, TPGSB will play an important role in contributing to TNB's decarbonisation trajectory. In 2020, 80% and 19% of TNB's total domestic generation capacity of 13,110.53 MW were represented by fossil fuel-fired generation and large hydro respectively. MARC Ratings views Nenggiri HPP as highly consistent with TNB's disclosed strategic sustainable development priorities and the mitigation of TPGSB's transition and physical climate risk exposures.

MARC Ratings notes the considerable potential sustainability risks linked to the value chain of large-scale hydropower projects such as Nenggiri HPP. The project's environmental performance during construction will be affected by the compliance of its main contractors, subcontractors and suppliers with environmental requirements, among others. TPGSB will seek to mitigate the project's exposure to environmental compliance risks during the construction phase by way of inclusion of corresponding obligations on its main contractors, subcontractors and suppliers, as applicable, in all tender or contract documents. Potential environmental impacts and corresponding mitigation and control measures to prevent or minimise those impacts have been identified in EMPs. The EIA, SIA, HIA, WMP and EMPs drawn up for the project's main civil works and resettlement works suggest appropriate diligence was performed to understand the ecosystem components and function within the project's zone of influence, minimise negative impacts through siting and design, include mitigating measures for issues of concern during construction, and to monitor and respond to issues as they arise. This and TNB's track record of developing and operating 2,536.10 MW of large hydro capacity in Peninsular Malaysia, along with ongoing efforts underway towards biodiversity conservation at three of its existing hydroelectric sites, provide reasonable assurance of THNSB's capacity to manage long-term

high impact infrastructure development through sound planning, siting, design, mitigation, monitoring and adaptive management of significant emerging sustainability risks during the development phase and throughout the life of the HPP.




TNB has made a formalised commitment to the safety, health and well-being of its employees and has more recently pledged to promote occupational health and safety, and human rights in its supply chain. In 2017, a Sustainability Development Committee (SDC) was formalised to review, evaluate and advise on sustainability. The SDC is chaired by TNB's Chief Executive Officer. TNB's ISO 37001 certified Anti-Bribery Management System provides a high level of assurance of ethical and responsible practice in respect of THNSB's procurement function and processes.

### Sustainability Performance Assessment

<input type="checkbox"/>	<b>Excellent/Highest Assurance</b>	The issuer positions itself as a sustainability leader in its industry, ranking in the "top tiers" of performance across multiple categories of engagement, ranging from supply chain management to environmental performance. Sustainability-related risks and opportunities are integrated with the business strategy. Well-defined sustainability policies and practices are augmented by strong accountability systems which allow for a benchmarking of the issuer's performance against stated objectives and the incorporation of external assurance in its sustainability reporting framework.
<input checked="" type="checkbox"/>	<b>Very Good/High</b>	The issuer has integrated risk-based sustainability considerations in its operations and has a robust process for assessing significant sustainability risks exposures to minimise adverse impacts on its business. The focus of the issuer's sustainability performance monitoring and evaluation is on managing risk exposures to minimise downside risk. Globally-recognised best practice reporting frameworks guide the issuer's sustainability reporting.
<input type="checkbox"/>	<b>Good/Medium</b>	The issuer has adopted a CSR-centric sustainability strategy that prioritises stakeholder engagement and goodwill building. Sustainability is a small part of the issuer's business strategy, nonetheless there is evidence to suggest that its sustainability performance has progressed beyond maintaining regulatory compliance. The issuer has implemented general sustainability reporting to investors.
<input type="checkbox"/>	<b>Fair/Basic</b>	The issuer has a policy of regulatory compliance but has yet to incorporate sustainability considerations into its business operations. At this performance level, the goal of sustainability management is to achieve and maintain compliance with health, safety, and environmental requirements mandated by government laws and regulations.
<input type="checkbox"/>	<b>Poor/Weak</b>	The issuer has a record of poor sustainability performance or operates in unsustainable industries.

MARC Ratings' assessment of the issuer's sustainability implementation capabilities and performance is expressed on a five-level descriptive scale that runs from "Excellent" to "Poor" which corresponds to five levels of assurance (Highest, High, Medium, Basic and Weak). The assurance level can be interpreted as a measure of MARC Ratings' confidence in the issuer's continuing performance of its sustainability obligations in line with marketplace expectations and in compliance with its sustainability framework for the Sustainability Sukuk issuance.

## 04 RATING SCALE

GRADE	DESCRIPTION
 <p data-bbox="312 483 381 510">GOLD</p>	<p data-bbox="469 405 1300 593">Bonds assessed at this level are judged to offer very significant environmental and/or social sustainability impact based on the projects supported or expected to be supported by the bond issuance. The processes used or to be used for the allocation and administration of proceeds, decision making process of eligible projects and the reporting of performance indicators are consistent with the core principles of the GBP and/or SBP and applicable market guidance or standards and should support high standards of accountability and transparency.</p>
 <p data-bbox="304 743 389 770">SILVER</p>	<p data-bbox="469 667 1300 855">Bonds assessed at this level are judged to offer significant environmental and/or social sustainability impact based on the projects supported or expected to be supported by the bond issuance. The processes used or to be used for the allocation and administration of proceeds, decision making process of eligible projects and the reporting of performance indicators are consistent with the core principles of the GBP and/or SBP and applicable market guidance or standards and should support good standards of accountability and transparency.</p>
 <p data-bbox="304 967 405 994">BRONZE</p>	<p data-bbox="469 896 1300 1106">Bonds assessed at this level are judged to offer fairly significant environmental and/or social sustainability impact based on the projects supported or expected to be supported by the bond issuance. The processes used or to be used for the allocation and administration of proceeds, decision making process of eligible projects and the reporting of performance indicators are consistent with the core principles of the GBP and/or SBP and applicable market guidance or standards and should support satisfactory standards of accountability and transparency. Minor shortcomings exist in the areas assessed but none of major concern.</p>

## MARC RATINGS BERHAD

MARC Ratings Berhad was incorporated as a public limited company to undertake the business of providing credit rating services, as well as economic and fixed-income research publications, on behalf of the MARC group of companies.

Effective January 1, 2022, Malaysian Rating Corporation Berhad (MARC) transferred its regulatory license as a credit rating agency with the SC and the Bank Negara Malaysia-accredited External Credit Assessment Institution (ECAI) status under Basel II to its wholly-owned subsidiary MARC Ratings. MARC Ratings continues to adopt practices and procedures for Domestic Credit Rating Agencies based on the guidance on the Code of Conduct Fundamentals provided by the International Organisation of Securities Commissions (IOSCO) and the Association of Credit Rating Agencies in Asia (ACRAA). MARC Ratings continues to consult international best practices and the International Capital Market Association's Guidelines for Green, Social and Sustainability Bonds External Reviews in its conduct of external reviews, particularly in relation to the organisation and content of external reviews.

Following a series of outreach and external reviewer capacity building initiatives jointly undertaken by domestic market regulators and World Bank Group, MARC published its proposed criteria for rating green, social or sustainability bonds in April 2018. The version that was adopted in July 2018 after public consultation can be accessed on MARC's corporate website at [https://www.marc.com.my/images/Rating\\_Methodologies/201912\\_/Impact-Bonds-Assessment-Criteria-201912-newlogo-.pdf](https://www.marc.com.my/images/Rating_Methodologies/201912_/Impact-Bonds-Assessment-Criteria-201912-newlogo-.pdf). As explained in the criteria, the analytical framework consists of three components that provide insights to the green, social and sustainability credentials of green, social and sustainability bonds: (1) an assessment of environmental and/or social benefits of the underlying funded project(s); (2) an assessment of compliance with internationally recognised principles and market standards for the evaluation of such bonds; and (3) an evaluation of the issuer's sustainability strategy and performance. Bonds which meet the minimum thresholds in each of the three analytical components will be rated Gold, Silver or Bronze.

For more information, visit <https://www.marc.com.my/> or contact us at [ratings@marc.com.my](mailto:ratings@marc.com.my).

## Review of Compliance with ASEAN Standards 2018 and SRI Sukuk Framework 2021

**TNB Power Generation Sdn Bhd (TPGSB) Sustainability Sukuk Framework**  
**Key Additional Features to complied with:**

- The proceeds allocated for the Project must not be used for ineligible projects specified by the ASEAN GBS (i.e. fossil fuel power generation projects) as well as the ASEAN SBS (i.e. projects which involve activities that pose a negative social impact related to alcohol, gambling, tobacco and weaponry).
- Continuous accessibility of information on use of proceeds, process for project evaluation and selection, and management of proceeds to investors throughout the tenure of the sukuk.
- Periodic reporting on the allocation of the sukuk proceeds.
- The external reviewer's credentials and scope of review conducted to be made publicly accessible from a website designated by the Issuer throughout the tenure of the sukuk.

<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p><b>Issuer</b></p> <p><u>ASEAN Standards</u></p> <p>3.1 The issuer must be an ASEAN issuer, or the eligible green and/or social project(s) must be in an ASEAN country.</p> <p><u>SRI Sukuk Framework</u></p> <p>7.02 The proceeds (of Sukuk) will be applied exclusively for funding of any activities or transactions relating to the Eligible SRI projects.</p> <p>7.04 An issuer who wishes to issue an SRI sukuk must establish policies and processes to ensure compliance with the SRI Sukuk Framework as set out in these Guidelines.</p> <p><b>Eligible Projects</b></p> <p>7.07 An eligible SRI project refers to a project that seeks to achieve any one or a combination of the following objectives:</p> <p>(a) Preserving and protecting the environment and natural resources;</p> <p>(b) Conserving the use of energy;</p> <p>(c) Promoting the use of renewable energy;</p> <p>(d) Reducing greenhouse gas emission;</p> <p>(e) Addressing or mitigating a specific social issue or seeking to achieve positive social outcomes especially but not exclusively for a target population; or</p> <p>(f) Improving the quality of life of the society.</p>	<p>TPGSB (or the Issuer) is an ASEAN issuer.</p> <p>The net Sukuk proceeds will exclusively be allocated to finance and/or refinance loans obtained to finance the development costs of an Eligible SRI project.</p> <p>The Issuer has established policies and processes to ensure compliance with the SRI Sukuk Framework.</p> <p>The net proceeds of the Sukuk will be solely allocated to a single SRI project that seeks primarily to achieve a combination of objectives set out in paragraph 7.07 of the SRI Sukuk Framework, in particular, (c) promoting the use of renewable energy, (d) reducing greenhouse gas emission and (f) improving the quality of life of the society.</p>	<p>The Project Nenggiri is identified by the Framework as the eligible SRI project; it is a 300MW impoundment hydroelectric power project located in the district of Gua Musang, Kelantan.</p>

<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p><b>7.08</b> The Eligible SRI projects may include:</p> <p>(a) Green projects that relate to, among others—renewable energy; energy efficiency; pollution prevention and control; environmentally sustainable management of living natural resources and land use; clean transportation; sustainable water and wastewater management; climate change adaptation; eco-efficient and/or circular economy adapted products; and green buildings which meet regional, national, or internationally recognised standards or certifications.</p> <p>(b) Social projects that relate to, among others—affordable basic infrastructure; access to essential services; affordable housing; employment generation including the potential effect of SME financing and microfinance; food security; and socioeconomic advancement and empowerment.</p> <p>(c) Projects which are the combination of Green and Social projects as described in (a) and (b) above; and</p> <p>(d) Waqf projects that relate to the development of waqf properties or assets.</p>	<p>The identified Eligible SRI project provides environmental, social and economic benefits simultaneously and helps build climate resilience. The project aligns with the following green and social project categories recognised by the SRI Sukuk Framework: renewable energy; sustainable water and wastewater management; climate change adaptation and employment generation.</p>	
<p><b>Use of Proceeds</b> <u>ASEAN Standards</u></p> <p><b>4.1</b> <b>4.1.1</b> The utilisation of issue proceeds must be described in the documentation for issuance.</p> <p><b>4.1.2</b> The Issuer must disclose: The categories of eligible Green and/or Social Projects to which the issue proceeds will be allocated; and/or the information on specific Green and/or Social Projects in the case where the issuer has identified the specific Green and/or Social Projects to which the issue proceeds will be allocated.</p>	<p>The utilisation of issue proceeds is clearly described in the Framework.</p> <p>Based on the Framework, the Issuer will issue a Use of Proceeds Sustainability Sukuk, the proceeds of which will fund a single eligible project that delivers both environmental and socioeconomic benefits.</p>	

<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p>4.1.3 All designated Green and/or Social Projects must provide clear environmental/social benefits, which will be assessed and, where feasible, quantified by the Issuer.</p> <p>4.1.4 In the event that all or a proportion of the proceeds are or may be used for refinancing, it is recommended that Issuers provide an estimate of the share of financing and refinancing, and where appropriate, also clarify which investments or project portfolios may be refinanced and, to the extent relevant, the expected look-back period for refinanced projects.</p>	<p>The identified eligible project provides clear environmental and social benefits.</p> <p>Proceeds from the sukuk will be largely used to finance the construction and related expenses incidental to Project Nenggiri over the course of five years. The issuer has not identified any refinancing requirement at this juncture. The share of refinancing, if applicable, will be updated in the annual reporting.</p>	<p>The project will advance national sustainable development goals and priorities and supports the realisation of long-term integrated visions of sustainable development that are consistent with global sustainability goals. Specifically, they support Malaysia's commitments as a signatory to the Paris Agreement and the United Nations Sustainable Development Goals (SDGs). The expected environmental and social benefits of the project are overall clear, and quantifiable by the Issuer.</p>
<p><b>Process for Project Evaluation and Selection</b> <u>ASEAN Standards</u></p> <p>4.2 4.2.1 The issuer must clearly communicate to investors:</p> <p>(i) The environmental/social sustainability objectives;</p> <p>(ii) The process by which the Issuer determines how the projects fit within the identified eligible project categories; and</p> <p>(iii) The related eligibility criteria, including, if applicable, exclusion criteria or any other process applied to identify and manage potentially material environmental and social (E&amp;S) risks associated with the selected projects.</p>	<p>The Issuer has clearly communicated:</p> <p>The project's environmental and social sustainability objectives;</p> <p>Having already selected Project Nenggiri as the eligible project under the Framework, the Issuer has, instead, outlined the sustainability objectives of the project and the corresponding mapping of these objectives to the SDGs in the Framework to convey the sustainability credentials of the project.</p> <p>The Issuer has described the project governance oversight and monitoring arrangements in the Framework, which will encompass the management of potentially material environmental and social (E&amp;S) risks associated with the selected project.</p>	



<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p>4.2.2 <i>The Issuer must establish the process for project evaluation and selection prior to the issuance of the Bonds and disclose the same to investors in the documentation for the issuance of the Bonds.</i></p> <p>4.2.3 <i>Issuers are encouraged to position this information within the context of the Issuer's overarching objectives, strategy, policy and/or processes relating to environmental and social sustainability. Issuers are also encouraged to disclose any green and social standards or certifications referenced in project selection.</i></p> <p>4.2.4 <i>It is recommended that the Issuer's process for project evaluation and selection be supported by an external review.</i></p> <p>4.2.5 <i>The Issuer must make the following publicly available on a website designated by the Issuer at the time of the issuance and throughout the tenure of the Bonds:</i> <i>(i) The process for project evaluation;</i> <i>(ii) The use of proceeds; and</i> <i>(iii) External review report on the process (if any)</i></p>	<p><i>As the process for project evaluation and selection had preceded Framework development, the Issuer has, instead, outlined the climate and environmental, as well as social considerations considered in the evaluating its eligibility for sustainable finance funding.</i></p> <p><i>The Issuer has positioned this information within the context of the Issuer's and parent TNB's sustainability strategies, focus SDGs, and its processes relating to environmental and social sustainability. The Issuer has also provided information on approvals the project has received for mandatory environmental, heritage and social impact assessments and corresponding plans related to the mitigation of potentially material E&amp;S risks associated with the selected project.</i></p> <p><i>The Issuer has appointed MARC Ratings as external reviewer for its Framework.</i></p> <p><i>The Issuer has committed to make the required information available on its corporate website at <a href="https://www.tnbgenco.com.my">https://www.tnbgenco.com.my</a>.</i></p>	<p><i>Review of the Issuer's Framework.</i></p>
<p><b>Management of Proceeds</b> <u>ASEAN Standards</u></p> <p>4.3 4.3.1 <i>Prior to the issuance of the Bonds, the Issuer must disclose to investors in the documentation for the issuance of the Bonds the process for managing the net proceeds from the Bonds.</i></p> <p>4.3.2 <i>The net proceeds of the Bonds, or an amount equal to these net proceeds, must be credited into a sub-account, moved to a sub-portfolio or otherwise tracked by the Issuer in an appropriate</i></p>	<p><i>Prior to issuance, the Issuer will make its Framework available to investors. The Framework describes the process for managing the net proceeds from the Sukuk.</i></p> <p><i>The Issuer has described the process for monitoring and tracking proceeds. The proceeds will be tracked and managed via established internal accounting systems.</i></p>	<p><i>Pending the allocation of net proceeds of the Sukuk, TNB will invest the proceeds on behalf of the issuer into Shariah-compliant marketable instruments and/or fixed deposits in accordance with TNB's liquidity and investment policy.</i></p>

<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p>manner and attested to by a formal internal process. The total amount deployed from the net proceeds for the eligible projects need not occur simultaneously.</p> <p>4.3.3 As long as the Bonds are outstanding, the balance of the tracked net proceeds must be periodically adjusted to match allocations to eligible projects made during that period.</p> <p>4.3.4 The Issuer must also disclose to investors in the documentation for the issuance of the Bonds the intended types of temporary placement for the balance of unallocated net proceeds.</p> <p>4.3.5 It is recommended that the Issuer's management of proceeds be supplemented by the use of an auditor, or other third party, to verify the internal tracking method and the allocation of funds from the Bonds proceeds.</p> <p>4.3.6 Where the Issuer appoints an auditor or other third party to verify the Issuer's management of proceeds, the Issuer must make the report produced by the auditor or other third party publicly available on a website designated by the Issuer at the time of the issuance of the Bonds.</p>	<p>The Issuer has identified one sole project, Project Nenggiri, as the eligible project for the purposes of allocating the entire Sukuk net proceeds.</p> <p>The Framework discloses to investors the intended types of temporary placement for the balance of unallocated net proceeds.</p> <p>The Issuer has yet to determine whether it will employ the use of an auditor or other third party to verify the internal tracking method and the allocation of funds from the Sukuk proceeds.</p> <p>In the event any third-party is appointed to verify the internal tracking method, the Issuer will make such information publicly available in the relevant annual reporting and/or on the Issuer's website.</p>	
<p><u>SRI Sukuk Framework</u></p> <p>7.13 An issuer must ensure that the proceeds allocated for the Eligible SRI projects are credited into a designated account or otherwise tracked in an appropriate manner.</p>	<p>The Issuer will monitor the allocation of the Sukuk proceeds for the Eligible SRI project internally.</p>	
<p><b>Reporting</b></p> <p><u>ASEAN Standards</u></p> <p>4.4 4.4.1 Issuers must report to investors at least on an annual basis and are encouraged to make more frequent reporting on the use of proceeds until full allocation, and on a timely basis in the case of material developments. The annual report should include a list of the projects to which the Bonds</p>	<p>Annually, as long as the Sukuk are outstanding, the Issuer will publish a Sustainability Sukuk Report which follows the ASEAN Standards' guidance for Use of Proceeds reporting.</p>	

<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p>proceeds have been allocated, as well as a brief description of the projects and the amounts allocated, and their expected impact.</p> <p>4.4.2 Where confidentiality agreements, competitive considerations, or a large number of underlying projects limit the amount of detail that can be made available, the Issuer may present the information in generic terms or on an aggregated portfolio basis (e.g. percentage allocated to certain project categories).</p> <p>4.4.3 It is recommended that Issuers use qualitative performance indicators, and where feasible, quantitative performance measures and disclose the key underlying methodology and/or assumptions used in the quantitative determination.</p> <p>4.4.4 It is recommended that the Issuer's annual reporting on the use of proceeds be supplemented by a confirmation of such use of proceeds by an external reviewer along with any relevant updates of the external review.</p> <p>4.4.5 The Issuer must provide to investors the annual reporting and the external review on the annual reporting, if any, through a website designated by the Issuer and/or annual reports throughout the tenure of the Bonds.</p>	<p>Not applicable; there is only one project that will be funded under the Framework.</p> <p>The Issuer has included a set of impart reporting metrics in its Framework which are clear and relevant.</p> <p>Updates of the external review are encouraged by the ASEAN Standards but are strictly voluntary.</p> <p>The Issuer commits to publish annually and throughout the tenure of the Sukuk an Annual Sustainability Sukuk Report on its corporate website at <a href="http://www.tnbgenco.com.my">www.tnbgenco.com.my</a>.</p>	
<p><b>Disclosure Requirements</b></p> <p><u>SRI Sukuk Framework</u></p> <p>7.14 An issuer must provide the following information to the sukukholders annually through a designated website:</p> <ul style="list-style-type: none"> <li>a) The original amount allocated for the Eligible SRI projects;</li> <li>b) The amount utilised for the Eligible SRI projects;</li> <li>c) The unutilised amount and where such unutilised amount is placed or invested pending utilisation; and</li> </ul>	<p>The Issuer has committed to provide information items (a) through (d) annually through its corporate website in its progress report under its Framework.</p>	

Criteria	Compliance with criteria	Remarks/Scope of Work Undertaken
<p>d) <i>The list of the Eligible SRI projects in which the SRI sukuk proceeds have been allocated to and a brief description of the said Eligible SRI projects and their impact or expected impact, including the key underlying methodology or assumptions used to determine the impact or expected impact.</i></p> <p>7.15 <i>Where an issuer is unable to make available comprehensive information as specified in paragraph 7.14 above due to confidentiality agreements or competitive considerations, such issuer may provide the information in generic terms or on an aggregated portfolio basis (e.g. percentage allocated to certain project categories).</i></p> <p>7.16 <i>The following information must be included:</i></p> <p>a) <i>The overall SRI objectives that the issuer intends to achieve;</i></p> <p>b) <i>The utilisation of proceeds from the issuance of the SRI sukuk. Where all or part of the proceeds are used for refinancing, an issuer must provide the amount of proceeds being allocated for refinancing and which Eligible SRI projects to be refinanced;</i></p> <p>c) <i>The Eligible SRI projects in which the proceeds will be allocated;</i></p> <p>d) <i>The details of the Eligible SRI projects and to the extent possible, impact objectives from the Eligible SRI projects;</i></p> <p>e) <i>The criteria used by the issuer to identify and manage material environmental or social risks associated with the Eligible SRI projects;</i></p> <p>f) <i>The processes used by the issuer to manage the proceeds from the issuance of the SRI sukuk; and</i></p> <p>g) <i>A statement that the issuer has complied with the relevant environmental, social and governance standards or recognised best practices relating to the Eligible SRI projects.</i></p>	<p><i>Complied. Refer to the assessment of compliance with ASEAN Standards 4.4.2.</i></p> <p><i>Complied. Refer to the assessment of compliance with ASEAN Standards 4.2.1.</i></p> <p><i>Complied. Refer to the assessment of compliance with ASEAN Standards 4.1.1. and 4.1.4.</i></p> <p><i>Complied. Refer to the assessment of compliance with ASEAN Standards 4.1.2.</i></p> <p><i>Complied. Refer to assessment of compliance with ASEAN Standards 4.1.3</i></p> <p><i>Complied. Refer to assessment of compliance with ASEAN Standards 4.2.</i></p> <p><i>Complied. Refer to assessment of compliance with ASEAN Standards 4.2.</i></p> <p><i>Complied. Issuer has included the statement in Section 2.2 of Framework.</i></p>	

<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p><b>External Review</b> <u>ASEAN Standards</u></p> <p>5.1 <i>Issuers are recommended to appoint external review providers for the bond issuances or programmes.</i></p> <p>5.2 <i>The external review may be partial, covering only certain aspects of the bonds framework or full, assessing alignment with all four core components as stated in the relevant standards.</i></p> <p>5.3 <i>The external review provider must have the relevant expertise and experience in the components of the Bonds which they are reviewing.</i></p> <p>5.4 <i>The external review provider must also disclose their relevant credentials and expertise, and the scope of the review conducted in the external review report.</i></p>	<p><i>MARC Ratings has been engaged as independent external reviewer for the Framework.</i></p> <p><i>The review conducted by MARC Ratings is a full review and addresses alignment with all four components of the relevant standards.</i></p> <p><i>MARC Ratings is registered with the Securities Commission Malaysia as a credit rating agency and has conducted the external review according to the analytical framework in MARC Ratings' Impact Bond Assessment (IBA) methodology.</i></p> <p><i>Disclosure of the external review provider's relevant credentials and expertise, and the scope of the review will be made in the external review report.</i></p>	<p><i>MARC Ratings has established a transparent score-based framework for its green, social and sustainability bond assessments analysis that is published on the agency's website. The differentiated approach taken recognises that some projects offer more environmental and/or social benefits than others.</i></p>

## Review of Compliance with ICMA’s Green Bond Principles, Social Bond Principles and Sustainability Bond Guidelines 2021

Criteria	Compliance with criteria	Remarks/Scope of Work Undertaken
<p><b>Use of Proceeds</b></p> <p><i>The utilisation of the Green/Social/Sustainability Bond proceeds should be appropriately described in the legal documentation of the security.</i></p> <p><i>All designated eligible Green and/or Social Projects should provide clear environmental and/or social benefits, which will be assessed and, where feasible, quantified by the issuer.</i></p> <p><i>In the event that all or a proportion of the proceeds are or may be used for refinancing, it is recommended that issuers provide an estimate of the share of financing vs. re-financing, and where appropriate, also clarify which investments or project portfolios may be refinanced, and, to the extent relevant, the expected look-back period for refinanced eligible Green and/or Social Projects.</i></p>	<p><i>As identified in the Framework, the Sukuk will be used to finance and/or refinance loans obtained to finance the development costs related to the planning, design, engineering and construction of Project Nenggi.</i></p> <p><i>The environmental and social benefits of the project are clearly outlined in the Framework. Section 3.2 of the Framework identifies the key benefits of the project while Section 4.2 outlines the project’s alignment with the United Nations Sustainable Development Goals (SDGs). Specifically, Environmental Use of Proceeds impacts are linked to SDGs 6; Clean Water and Sanitation, 7; Affordable and Clean Energy, and 13; Climate Action while Social Use of Proceeds impacts are linked to SDGs 8; Decent Work and Economic Growth, and 11; Sustainable Cities and Communities.</i></p> <p><i>The share of financing vs. re-financing is not identified in the Framework. However, it is implied in the Framework that the financing proportion is substantially larger than refinancing based on the project’s expected Schedule Commercial Operation Date of June 1, 2027 and five-year construction timeline.</i></p>	<p><i>The Sukuk falls into the category of Sustainable Use of Proceeds; the Sukuk will be a senior obligation with recourse to TPGSB and not to the eligible project. The Sukuk proceeds will be channeled to a special purpose project company through shareholders’ loans and/or advances and/or through the subscription of equity instruments.</i></p> <p><i>The Use of Proceeds set out in the Framework have clear Green and Social benefits, and SDG linkages that reflect the expected environmental and social (E&amp;S) impacts resulting from the project.</i></p>

<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p><b>Process for Project Evaluation and Selection</b></p> <p>The following should be clearly communicated to investors:</p> <ul style="list-style-type: none"> <li>• The environmental sustainability and/or social objectives of the eligible Green and/or Social Projects;</li> <li>• The process by which the issuer determines how the projects fit within the eligible Green and/or Social Projects categories; and</li> <li>• Complementary information on processes by which the issuer identifies and manages perceived social and environmental risks associated with the relevant project(s).</li> </ul> <p>Issuers are also encouraged to:</p> <ul style="list-style-type: none"> <li>• Position the information communicated above within the context of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental and/or sustainability.</li> <li>• Provide information, if relevant, on the alignment of projects with official or market-based taxonomies (as applicable to Green Projects), related eligibility criteria, including if applicable, exclusion criteria; and also disclose any green and/or social standards or certifications referenced in project selection.</li> <li>• Have a process in place to identify mitigants to known material risks of negative social and/or environmental impacts from the relevant project(s).</li> </ul>	<p>This is clearly defined.</p> <p>The net proceeds of the Sukuk will be solely allocated to a pre-identified single Eligible Project.</p> <p>The Issuer has provided information on processes by which it identifies and manages perceived social and environmental risks associated with the relevant project(s).</p> <p>The information communicated above within the context of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental and/or sustainability.</p> <p>The Framework references the emissions threshold of 100 gCO<sub>2</sub> e/kWh proposed for electricity generation in the EU Taxonomy to establish the project's sustainability credentials in terms of impact on GHG emissions.</p> <p>The project company has a process in place to identify mitigants to known material risks of negative social and/or environmental impacts from the relevant project(s).</p>	
<p><b>Management of Proceeds</b></p> <p>The net proceeds of the Green/Social/Sustainability Bond, or an amount equal to these net proceeds, should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the issuer in an appropriate manner, and attested to by the issuer in a formal internal process linked to the issuer's lending and investment operations for eligible Green and/or Social Projects.</p> <p>So long as the Green/Social/Sustainability Bond is outstanding, the balance of the</p>	<p>The Issuer will internally track and monitor the proceeds which will be managed within its bank account and disbursed to the bank account of the project company as and when required. As Sukuk proceeds are disbursed to the project company, the disbursements are tracked by internal accounting systems and accounted for either in the income statement or in the balance sheet of the project company.</p> <p>All proceeds will be allocated to Project Nengiri.</p>	

<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p><i>tracked net proceeds should be periodically adjusted to match allocations to eligible Green and/or Social Projects made during that period.</i></p> <p><i>The issuer should make known to investors the intended types of temporary placement for the balance of unallocated net proceeds.</i></p> <p><i>It is recommended that the management of proceeds be supplemented by the use of an external auditor, or other third party, to verify the internal tracking method and the allocation of funds from the Green/Social/Sustainability Bond proceeds.</i></p> <p><b>Reporting</b></p> <p><i>Issuers should make, and keep, readily available up to date information on the use of proceeds to be renewed annually until full allocation, and on a timely basis in case of material developments.</i></p> <p><i>The annual report should include a list of the projects to which Green/Social/Sustainability Bond proceeds have been allocated, as well as a brief description of the projects, the amounts allocated, and their expected impact.</i></p> <p><i>Where confidentiality agreements, competitive considerations, or a large number of underlying projects limit the amount of detail that can be made available, it is recommended that information be presented in generic terms or on an aggregated portfolio basis (e.g. percentage allocated to certain project categories).</i></p> <p><i>The use of qualitative performance indicators is recommended and, where feasible, quantitative performance measures and disclosure of the key underlying methodology and/or assumptions used in the quantitative determination.</i></p>	<p><i>The Issuer has disclosed that all temporary investments will be held in Shariah-compliant marketable instruments or fixed deposits in accordance with TNB's liquidity and investment policy.</i></p> <p><i>The Issuer has not determined whether it will employ the use of an auditor or third party to verify the management of proceeds. In the event any third-party is appointed to verify the internal tracking method, the Issuer will make such information publicly available in the relevant annual reporting and/or on the Issuer's website.</i></p> <p><i>The Issuer has committed to annual reporting on the Sustainability Sukuk allocations for as long as the Sukuk remains outstanding.</i></p> <p><i>The annual report will include the amount of proceeds allocated to Project Nenggiri including a broad description of utilisation and the relevant areas of E&amp;S impact.</i></p> <p><i>The net proceeds of the Sukuk will be solely allocated to a single Eligible Project.</i></p> <p><i>The Issuer intends to provide qualitative and where possible quantitative impact reporting. Impact reporting will include impact indicators or key performance indicators relevant to the project's supported SDGs on a best efforts basis.</i></p>	



<b>Criteria</b>	<b>Compliance with criteria</b>	<b>Remarks/Scope of Work Undertaken</b>
<p><b>External Review</b></p> <p><i>External review providers are encouraged to disclose their credentials and relevant expertise and communicate clearly the scope of the review(s) conducted.</i></p> <p><i>Issuers should make external reviews publicly available on their website and/or through any other accessible communication channel as appropriate.</i></p>	<p><i>The disclosures will be made in MARC Ratings' external review report.</i></p> <p><i>The Issuer has committed to make external reviews publicly available on its website.</i></p>	

## THE UN SUSTAINABLE DEVELOPMENT GOALS



**GOAL 1:** End poverty in all its forms everywhere



**GOAL 2:** End hunger, achieve food security and improved nutrition and promote sustainable agriculture



**GOAL 3:** Ensure healthy lives and promote well-being for all at all ages



**GOAL 4:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



**GOAL 5:** Achieve gender equality and empower all women and girls



**GOAL 6:** Ensure availability and sustainable management of water and sanitation for all



**GOAL 7:** Ensure access to affordable, reliable, sustainable and modern energy for all



**GOAL 8:** Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



**GOAL 9:** Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation



**GOAL 10:** Reduce inequality within and among countries



**GOAL 11:** Make cities and human settlements inclusive, safe, resilient and sustainable



**GOAL 12:** Ensure sustainable consumption and production patterns



**GOAL 13:** Take urgent action to combat climate change and its impacts



**GOAL 14:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development



**GOAL 15:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



**GOAL 16:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels



**GOAL 17:** Strengthen the means of implementation and revitalize the global partnership for sustainable development

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19-07, Level 19, Q Sentral, 2A Jalan Stesen Sentral 2, Kuala Lumpur Sentral, 50470 KUALA LUMPUR  
Tel: [603] 2717 2900 Fax: [603] 2717 2910 Email: [www.marc.com.my](mailto:www.marc.com.my)  
Website: [www.marc.com.my](http://www.marc.com.my)