

‘Second Opinion’ on PNB Merdeka Ventures Sdn. Berhad’s Green Sukuk Framework

October 30, 2017

Summary

PNB Merdeka Ventures Sdn. Berhad (“PNBMV” or the “Issuer”), a subsidiary of the Malaysian investment company Permodalan Nasional Berhad (“PNB”), was set up for the purpose of developing the Warisan Merdeka complex, a 118-storey mixed use high rise building, known as “Merdeka PNB 118 Tower”, a retail mall and service apartments. The issuer has informed us that proceeds of up to RM2 billion raised via the proposed green sukuk issuance (“Green Sukuk”) will go towards partial funding of the 83-storey office space of the Merdeka PNB 118 Tower (the “Office Tower”), the remainder of the proceeds will go towards supporting activities.

The Merdeka PNB118 Tower is pre-certified at the highest level (Platinum) under the Green Building Index (“GBI”) and GreenRE. PNBMV is also pursuing Leadership in Energy and Environmental Design (“LEED”) certification and has informed us that they expect to achieve a strong Gold or Platinum LEED certification. The Issuer has specified a number of green features including policies to manage the local environmental impacts of construction and strategies to manage the operational impact, including green leases.

Building certifications alone do not ensure energy efficient, low carbon or carbon neutral buildings. PNBMV has commissioned two energy models for the building to align with the different methodologies for GBI and LEED. While the energy models show an improved efficiency, the framework does not include an explicit energy target and there are no energy related targets at the corporate level. Neither PNBMV nor its parent company PNB have developed a sustainability strategy and as such, it is difficult to have a good understanding of how the Green Sukuk framework supports the overall corporate green strategy.

CICERO is encouraged by PNBMV’s commitment to annual impact reporting. Further, CICERO commends the use of an external auditor to review both the internal tracking method, the allocation of funds from the Green Sukuk and impact reporting. We encourage transparency on choice of specific metrics and methodologies, including baselines.

Overall, the PNBMV Green Sukuk framework provides a clear and sound framework for climate-friendly investments. Based on an overall assessment of the eligible projects, as well as governance and transparency considerations, PNBMV’s Green Sukuk framework is rated CICERO Medium Green.



°CICERO

Medium Green

Contents

Summary	2
1 Introduction and background	4
Expressing concerns with ‘shades of green’	5
2 Brief Description of PNBMV’s Green Sukuk Framework and rules and procedures for climate-related activities	6
Policies	6
Definition:	6
Management of proceeds:	7
Transparency and Accountability:	7
3 Assessment of PNBMV Green Sukuk framework and environmental policies	9
Eligible projects under the Green Sukuk Framework	9
Strengths	10
Weaknesses	11
Pitfalls	11
<i>Impacts beyond the project boundary</i>	11
Appendix: About CICERO	12

1 Introduction and background

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

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

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

This note provides a Second Opinion of PNBMV Green Sukuk framework and policies for considering the environmental impacts of their projects. The aim is to assess the PNBMV's Green Sukuk framework as to its ability to support the transition to low-carbon and climate resilient growth.

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

Expressing concerns with 'shades of green'

CICERO Second Opinions are graded dark green, medium green or light green, reflecting the climate and environmental ambitions of the Bonds and Sukuks and the robustness of the governance structure of the Green Bond or Sukuk framework. The grading is based on a broad qualitative assessment of each project type, according to what extent it contributes to building a low-carbon and climate resilient society.

This Second Opinion will allocate a 'shade of green' to the Green Sukuk framework of PNBMV:

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

The project types that will be financed by the green bond or sukuk primarily define the overall grading. However, governance and transparency considerations also factor in, as they can give an indication whether the institution that issues the green bond or sukuk will be able to fulfil the climate and environmental ambitions of the investment framework.

2 Brief Description of PNBMV's Green Sukuk Framework and rules and procedures for climate-related activities

PNBMV is a wholly-owned subsidiary of PNB, a Malaysian investment company. PNBMV was set up for the purpose of developing the Warisan Merdeka complex, a 118-storey mixed-use high-rise building, a retail mall, and service apartments. All proceeds from this Green Sukuk will go towards funding the Office Tower, a part of the high-rise building Merdeka PNB118 Tower.

The structure of Malaysian sukuk must comply with approved Shariah rulings, principles and concepts endorsed by the Shariah Advisory Council of the Securities Commission Malaysia ("the SC")¹. The SC has set out requirements for the issuance of Sustainable and Responsible Investment ("SRI") Sukuks².

For this Second Opinion, the Green Sukuk framework created by PNBMV was assessed against the Green Bond Principles, voluntary process guidelines for issuers³.

Policies

PNBMV was established for the sole purpose of developing the Warisan Merdeka complex and does not have an established sustainability governance. The parent company, PNB does not at present have a sustainability policy and does not currently disclose any sustainability related information. The Warisan Merdeka development has a set of separate sustainability policies and procedures for the building construction and operations. These policies form the basis of this assessment.

The Issuer has implemented sustainable construction practices and, as per the green certification procurement credits, they have policies promoting the procurement of materials with recycled content, regional materials, and wood certified by the Forest Stewardship Council ("FSC"). For the operations phase, PNBMV has retained a facilities management consultant to prepare an operator design report suggesting specific sustainability approaches, governance, and practices. The Issuer intends to integrate sustainability considerations and requirements into tenant leases, so-called "green leases". The facilities management consultant has also suggested a tenant engagement program to educate tenants about sustainability and motivate them to act more sustainably.

Definition:

The Issuer has informed us that the Merdeka PNB118 Tower will include 83 floors of office space (the Office Tower), 16 floors of six-star hotel, 7 floors of podium and amenities, and 9 floors of sky lobbies, mechanical and

¹ Sukuk as defined in Guidelines on Unlisted Capital Market Products under the Lodge and Launch Framework issued by Securities Commission Malaysia ("Guidelines on LOLA Framework"). <https://www.sc.com.my/legislation-guidelines/lodge-and-launch-framework/>

² The requirements are specified in the Guidelines on LOLA Framework <https://www.sc.com.my/legislation-guidelines/lodge-and-launch-framework/>

³ The 2017 Green Bond Principles: <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GreenBondsBrochure-JUNE2017.pdf>

facilities management floors and 3 floors of observation deck and food services. The Issuer has further informed us that the proceeds from the Green Sukuk will go towards the Office Tower.

The Issuer is planning to certify the building under three environmental buildings certification systems:

1. Leadership in Energy and Environmental Design (“LEED”) 2009 Core and Shell
2. Green Building Index (“GBI”)
3. GreenRE

Merdeka PNB118 Tower aspires to be triple-certified platinum. GBI and GreenRe both offer pre-certification, and the building has been certified at the highest level (Platinum) in both systems. LEED does not offer pre-certification. The latest draft scorecard from the LEED consultant projects a possible LEED Platinum certification with a low margin. The Issuer has informed us that they expect to achieve a strong Gold or Platinum LEED certification.

Management of proceeds:

The proceeds from the Green Sukuk will be deposited in a Shariah compliant Proceeds Account⁴. This account will also capture equity contributions from PNB, any amount or payment paid by PNB arising from the call of completion guarantee and any facilitation fund proceeds. Subsequently, transfers will be made from the proceeds account to the Project Account to meet the construction cost; the Profit & Expense Account to meet the recurring fees, profit payment obligations and the completion guarantee fee⁵, and to the Finance Service Reserve Account to meet the Minimum Required Balance, which is equivalent to the next six (6) months profit payment amount to be deposited 14 days prior to the scheduled completion date. The issuer has informed us that the Facility Agent will keep track of the flow of proceeds under the Designated Accounts.

Transparency and Accountability:

The Issuer will provide an annual investor letter with use of proceeds and impact reporting. PNBMV has committed to reporting on the following environmental impacts: energy and CO₂, water and waste. The Issuer will report on the buildings actual energy and water usage from the Building Management System (“BMS”).

PNBMV’s external auditor will conduct an annual verification of: the internal tracking method, the allocation of Green Sukuk proceeds and the investor letter. The annual investor letter and the opinion of the external auditor will be publically available through being published on PNBMV’s website.

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

Document Number	Document Name	Description
1	PNB Merdeka Ventures Sdn. Berhad Green Sukuk framework	The Green Sukuk framework dated 07 August 2017

⁴ This account is operated by the security agent and monitored by the facility agent

⁵ During the construction period

2	Operator Design Report No. 2 Sustainability for PMV iconic building at Warisan Merdeka	Suggested sustainability strategy for including governance structure and operational practices
3	Tenant Sustainability Language for PNBMV's iconic building at Warisan Merdeka	Suggested manual for ensuring continued sustainability performance and strategies for tenant engagement. This is a draft green building tenant manual which will go into the over-all Tenant Fit out Manual which is part of the tenant agreement contractual document.
4	GBI Scorecard Submission	Overview over points submitted for GBI certification April 2013
5	GBI Workshop Presentation – GBI Scoring Updates	Scoring updated as per Nov 2012
6	Energy modeling report for Proposed 118 storey building for PNBMV	Results of energy modeling completed by the air-conditioning and engineering services firm Kaer Sdn Bhd for the building in September 2012. Completed as part of the submission to GBI
7	Kuala Lumpur Tower LEED Energy Model Report	Results of energy modeling completed by Cadmus in April 2013. Completed as part of the LEED submission.
8	Provisional GBI Platinum certificate	Provisional GBI certificate awarding the project with the Platinum certification dated January 2014
9	Draft LEED Scorecard prepared by Terrapin Bright Green	Draft LEED scorecard filled in by consultant Terrapin Bright Green
10	DIVISION-01-KL118-TWR-BP03-PTA11.docx	General requirements to the Main Contractor, reviewed the section on Sustainability Certification Project Requirement

Table 1. Documents reviewed

3 Assessment of PNBMV Green Sukuk framework and environmental policies

Overall, the PNBMV Green Sukuk framework provides a detailed and sound framework for climate-friendly investments.

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

Eligible projects under the Green Sukuk Framework

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

Category	Eligible project	Green Shading and some concerns
Green Building	<p>Merdeka PNB118 Tower, a 118 storey high-rise building.</p> <ul style="list-style-type: none"> The building has been pre-certified according to Green Building Index (GBI) and GreenRe at the Platinum level. The building will be certified according to Leadership in Energy and Environmental Design (LEED) 2009 Core and Shell at the Gold or Platinum level. Building energy performance is estimated to be over 30 percent more efficient than the baseline of ASHRAE 90.1-2007 	<p>Medium Green</p> <ul style="list-style-type: none"> ✓ The three certifications and defined sustainability features include many important environmental aspects ✓ These certification levels alone, however, do not necessarily ensure passive or plus housing. The expected energy performance is a step in this direction, but no energy targets are set and the building is still in the design phase. As such, there is no assurance for the final energy performance ✓ The Issuer has policies in place to manage local environmental impacts

Table 2. Eligible project categories

Strengths

PNBMV has comprehensive green building policies in place governing the construction phase and building operations. The policies are largely set up to satisfy green building certification requirements or credits and therefore the Issuer is actively tracking progress against targets.

The general requirements to the construction contractor stipulates a number of environmental requirements including mitigation of local air pollution, waste management and recycling. To meet green procurement credits, PNBMV targets that 30 percent of installed materials have recycled content, that 20 percent are regional materials, and that at least 50 percent of wood-based materials are FSC certified. The main contractor has implemented a system for tracking sustainable procurement and reports quarterly on progress to PNBMV. The Issuer has informed us that the current projection is that the targets will be met.

For the operation phase, PNBMV's facilities management consultant has prepared an operator design report suggesting specific sustainability approaches, governance, and practices. The Issuer intends to use "green leases", leases that incorporate sustainability language guiding the operations and management of the space. The green lease language suggested by PNBMV's facilities management consultant includes environmental requirements for the tenant out-fit and use-phase. Requirements for the tenant out-fit include an energy efficiency fit-out manual and specifications for water efficient fixtures. The tenant is also required to select energy-efficient office equipment and source low VOC paint, coating, carpet, flooring, adhesives and sealants. PNBMV will conduct a post occupancy commissioning to ensure that the system is performing according to the energy efficiency design. PNBMV will also include tenant sub metering to provide accountability for energy consumption. Tenants are also required to support center waste management objectives including participation in segregating waste streams for recycling. The facilities management consultant has also suggested a tenant engagement program to educate tenants about sustainability and motivate them to act more sustainably. The building will also include a public display of building sustainability features and metrics.

The triple certification targeted by PNBMV covers many important sustainability features. CICERO is encouraged by the Issuer's ambition to target triple platinum (the highest level), and transparency around the uncertainty of achieving LEED platinum. A Platinum GBI, Platinum GreenRE and high LEED Gold is also a significant sustainability achievement. Green building certifications allow for a high level of flexibility. The Issuer has provided information on specific building features in the categories: Sustainable Site Planning and Management, Water Efficiency, Energy and Atmosphere, Material Resource Conservation, Indoor Environmental Quality and Sustainable Construction⁶. Among the features is easy access to public transportation including an in-building Mass Rapid Transit ("MRT") station and water efficient fixtures, grey water collection, and rainwater harvesting. The building plans include a solar electric system and a solar thermal domestic hot water system. The production from these systems is estimated to be equivalent to 1.8% of the total building energy.

The building has some resilience features, it has been assessed for extreme wind and there is a flood mitigation plan in place.

CICERO is encouraged by PNBMV's commitment to annual impact reporting. Further, CICERO commends the use of an external auditor to review both the internal tracking method, the allocation of funds and impact reporting. We encourage transparency on choice of specific metrics and methodologies, including baselines.

⁶ For a list of the specified features, see the Green Sukuk framework

Weaknesses

There are no obvious weaknesses in PNBMV's Green Sukuk framework.

Pitfalls

Neither PNBMV nor its parent company PNB have developed a sustainability strategy and as such, it difficult to have a good understanding of how the Green Sukuk framework supports the overall corporate green strategy.

The Warisan Merdeka development and associated Green Sukuk framework may be either a singular project or part of a strategic shift towards a low-carbon, climate resilient business model.

Building certifications alone do not ensure energy efficient, low carbon or carbon neutral buildings. PNBMV has commissioned two energy models for the building to align with the different methodologies for GBI and LEED. One of the energy models estimated the final energy performance of the Office Tower portion of the building to be 124 KWh/m².yr. The LEED specific model estimated that the energy use for the building as a whole will be 32.7 % more efficient than the baseline, ASHRAE 90.1-2007⁷. The Issuer has informed us that the models, from 2012 and 2013 respectively, represent a conservative estimate for energy use. An updated model will account for an added Thermal Energy Storage Tank and LED lighting in all fixtures, two energy efficiency initiatives. While the energy models show an improved efficiency, the framework does not include an explicit energy target. Transparent impact reporting will allow investors to follow up on actual energy usage and partially alleviate this concern.

Impacts beyond the project boundary

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

⁷ ASHRAE 90.1-2007 is a energy standard for buildings expect low-rise residential buildings. The standard is the preferred benchmark of the LEED green building certification system. The standard can be accessed here: [https://ashrae.iwrapper.com/ViewOnline/Standard_90.1-2016_\(IP\)](https://ashrae.iwrapper.com/ViewOnline/Standard_90.1-2016_(IP))

Appendix: About CICERO

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

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

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

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

cicero.oslo.no/greenbonds

