

‘Second Opinion’ on Tadau Energy’s Green Sukuk Framework

24.July 2017

Summary

Tadau Energy's Green Sukuk Framework provides a sound framework for climate-friendly investments. The proceeds will support solar power development in Malaysia, which is a key technology supporting the transition to a low-carbon and climate-resilient society.

Tadau Energy is a private limited company established with the special purpose of constructing and operating solar projects. Tadau Energy has two shareholders, Kagayaki Energy and Edra Solar. The proceeds from the Green Sukuk will be used to finance one project comprised of two solar photovoltaic power plants in the district of Kudat. The issuer has no plans for additional projects under this framework.

Renewable projects, while key to a low carbon future, raise potential concerns regarding site selection, supply-chain emissions and local environmental impact during the construction phase and operations. Tadau Energy has informed us that they take life-cycle criteria into account when selecting suppliers, that they have a process for site selection that includes environmental consideration and that they have taken some steps to manage the local environmental impacts of the project construction. However, no Environmental Impact Assessment or independent review of Tadau Energy's environmental management has been undertaken.

The issuer has presented CICERO with relevant pieces of documentation, but no overarching policies or strategies that the special purpose company will follow. This lack of documentation presents some challenge when assessing the project. The issuer will report on use of proceeds through annual certificates, which are only available through the trustees of the sukuk or rating agencies. Transparency is key to build trust in the Green Sukuk market; CICERO encourages the issuer to adopt open and transparent communication practices to preserve investor confidence. CICERO notes that the issuer has not committed to impact reporting.

Based on the overall assessment of project type and the policies guiding the implementation Tadau Energy's Green Sukuk Framework is rated CICERO Dark Green.



°CICERO
Dark Green

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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 or 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 Tadau Energy Sdn Bhd (Tadau Energy) Green Sukuk Framework and policies for considering the environmental impacts of their projects. The aim is to assess the Tadau Energy Green Sukuk Framework as to its ability to support the objective of promoting the transition to low-carbon and climate resilient growth.

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

Expressing concerns with 'shades of green'

CICERO Second Opinions are graded dark green, medium green or light green, reflecting the climate and environmental ambitions of the bonds or sukuk 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 Tadau Energy:

- **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 fulfill the climate and environmental ambitions of the investment framework.

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

Tadau Energy is a Malaysian private limited company established with the special purpose of constructing and operating solar projects. Tadau Energy has two shareholders, Kagayaki Energy and Edra Solar. Kagayaki Energy is a Malaysian renewable energy and sustainable technology investment firm. Edra Solar is a wholly owned subsidiary of Edra Power Holdings, which is an independent power producer with a diversified portfolio of renewable and fossil fuel power plants. Edra Power Holdings is a subsidiary of CGN, a Chinese energy company that constructs and operates nuclear and renewable plants.

The Green Sukuk is being issued by Tadau Energy to fund a solar project in the Sabah region in Malaysia. The sukuk will follow Islamic banking and financing principles, specifically the concepts endorsed by the Shariah Advisory Council of the Securities Commission Malaysia.¹ For the purpose of this Second Opinion, the Green Sukuk framework created by Tadau Energy was assessed against the Green Bond Principles, voluntary process guidelines for issuers².

Policies:

Tadau Energy was established for the purpose of constructing and operating the solar plants, as such they do not have comprehensive corporate governance. The issuer has informed us that their goal is to contribute to Malaysia's commitments under the Paris Agreement and to support the Malaysian government's vision to reduce dependency on diesel and to replace diesel power generation with renewable energy. The issuer has also informed us that they actively work to reduce the consumption of natural resources in their work, and have installed a rooftop solar PV system on their office building as part of the implementation.

During the supplier selection process, Tadau Energy has relied on guidance from their shareholders. The issuer has informed us that they have considered environmental criteria during these processes, and have been guided by the practices and policies of their shareholders.

Selection:

The proceeds from the Green Sukuk will be used to finance solar photovoltaic power plants within the district of Kudat. The framework specifies one project comprised of two specific power plants to be financed, with no plans for additional projects under this framework. Two power purchase agreements (PPAs) have been entered into with the utility Sabah Electricity Sdn Bhd (SESB) for 2MW and 48MW, respectively. Under the agreements, SESB will be the sole off-taker of the electricity generated from the plants.

The planned total capacity of 50 MW is to be located on three sites within Kudat. The issuer has informed us that the location was chosen for the area's high solar radiation, and all sites are located within 8 km of the

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

² The 2017 Green Bond Principles: <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/GreenBondsBrochure-JUNE2017.pdf>

interconnection facilitates. Tadau Energy has signed lease agreements with the landowners. Tadau informed us that they took environmental considerations in site selection, choosing sites with appropriate topography to reduce the need for leveling, and avoiding sites of high ecological value. As per local regulation, the sites were required to be rezoned to light industrial use. As a part of this process, outside consultants prepared rezoning reports (Planning briefs).

The EPC contractor appointed is SPIC Energy Malaysia Sdn Bhd. SPIC Energy Malaysia Sdn Bhd is a wholly owned subsidiary of CPI Power Engineering Co. Ltd., which in turn is a wholly owned by State Power Investment Corporation. State Power Investment Corporation is an integrated energy group based in China and one of China's largest state-owned energy providers. During the construction and operation of the project, the EPC contractor must comply with local environmental law and certain specific requests from the issuer. The EPC contractor also follows its own health, safety and environmental management system.

Management of proceeds:

In line with the Green Bond Principles³, the Green Sukuk proceeds will be placed in a designated disbursement account. The account is jointly controlled and operated by the agent bank and Tadau Energy. Funds will be withdrawn from the disbursement account based on project documentation submitted by Tadau Energy to the agent bank. Examples of documentation include invoices from suppliers and certification of progress billings from EPC Contractor by the Independent Technical Advisor, Jacobs Engineering Group Malaysia Sdn Bhd. The issuer has informed us that during the construction of the plant and post issuance of the sukuk, the Independent Technical Advisor will provide certification on the progress billings from the EPC Contractor supporting each release of funds from the Disbursement Account. Upon completion of the project and fulfillment of all payment obligations to the EPC Contractor, the disbursement account will be closed and balances will be transferred to the revenue account.

Pending the utilization of proceeds, Tadau Energy will invest the proceeds in Shariah-compliant short-term investments.

Transparency and Accountability:

As per the local guidelines, Tadau Energy will report to sukuk holders on:

- a) The original amount earmarked for the solar power project financed by the Green Sukuk
- b) The amount utilized for the project financed by the Green Sukuk
- c) The amount unutilized and where such unutilized amount is placed or invested pending utilization
- d) The impact objective of the project financed by the Green Sukuk, to the extent feasible

Tadau Energy will include the above information in the annual certificate to the sukuk trustee acting on behalf of sukuk holders, and also disclose this information to the rating agency. The reporting will not be reviewed or verified. The issuer has not committed to impact reporting, but will report on the impact objective to the extent feasible. The issuer has informed us that the impact objective underlying the project financed by the Green Sukuk is that Tadau Energy is committed to contributing to reducing the nation's dependence on fossil fuel based power. Through the use of energy generated from this project, Tadau Energy's goal is to conserve the environment by providing an environmentally friendly, clean and sustainable power supply and being part of creating a sustainable world.

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

The issuer has confirmed that they are committed to setting up a website as a channel for public communication. They are committed to publishing information about the project as well as this second opinion on the site within six months of issuance.

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

Document Number	Document Name	Description
1	TADAU ENERGY SDN BHD – GREEN SUKUK FRAMEWORK	The Green Sukuk framework
2	CPI Power Engineering Co. Ltd., Occupation, healthy, safety and environment responsibility management regulation	The occupation, health, safety and environmental management system that the EPC contractor will adhere to
3	Product Carbon Footprint Report of JA Solar	Assessment of the life cycle analysis of the PV solar panel manufacturer
4	Huawei Evaluation Report of Environmental Directives Compliance	Environmental Compliance report completed on behalf of the solar inverter manufacturer
5	Planning brief for rezoning of C.L. 055022485, C.L.055026830 and C.L. 055022529 at Jalan Tai Cheong of Kudat District (Yong West sites)	Rezoning report for three lots of land recommending rezoning to light industrial use
6	Planning brief for rezoning of C.L. 055025824 and C.L. 055322953 at Kudat Old Settlement (Yong East sites)	Rezoning report for two lots of land recommending rezoning to light industrial use
7	Planning brief for rezoning of C.L. 055028192 at Jalan Bak-Bak of Kudat District (Bak-Bak sites)	Rezoning report for a lot of land recommending rezoning to light industrial use

8	Public Notice of proposal to rezone C.L. 055025824 and C.L. 055322953 from “Public”, “Community facilities” and “Commercial” to Industrial Zone	Copy of the public notice of rezoning posted in local newspaper
9	Company profile of Kagayaki Energy	Overview of the corporate strategy of Kagayaki Energy
10	Edra, subsidiary of CGN	Overview of Edra and parent company CGN
11	Sustainable Development Report, 2013 – 2015 for the Upstream Ayeyawady Confluence Basin Hydropower Co., Ltd.	CSR report produced by the EPC contractor parent company for hydro project development in Myanmar (currently suspended)
12	2MW Site Progress Photographs	Before and after photos from the Yong East Site construction site
13	The Start, Kudat set to be model for renewable energy generation	Press coverage of the project
14	National Renewable Energy Policy & Action Plan	The Malaysian government’s policy on renewable energy

Table 1. Documents reviewed

3 Assessment of Tadau Energy Green Sukuk framework and environmental policies

Overall, the Tadau Energy Green Sukuk framework provides a sound framework for climate-friendly investments.

The framework and procedures for Tadau Energy'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 bonds aim to provide certainty to investors that their investments deliver environmental returns as well as financial returns. The Green Bonds Principles (GBP) state that the "overall environmental profile" of a project should be assessed and that the selection process should be "well defined".

Category	Eligible project types	Green Shading and some concerns
Renewable energy	Solar power <ul style="list-style-type: none"> The financing, design, engineering, procurement, construction, installation, testing, commissioning, ownership, operation, and maintenance of solar photovoltaic plants Associated interconnection facilities 	Dark Green <ul style="list-style-type: none"> ✓ Solar power is key to a low-carbon transition. Supportive activities for solar power generation include e.g. financing, design, and interconnection. ✓ Potential concerns regarding supply-chain emissions partially addressed through the use of life cycle criteria in supplier selection ✓ Potential concerns regarding site selection partially addressed through selection process and rezoning reports. An Environmental Impact Assessment ("EIA") could have provided assurance to

-
- investors of the environmental soundness of the site selection and construction phase
 - ✓ All construction projects can have adverse local environmental impacts
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Table 2. Eligible project categories

Strengths

Selection

The Green Sukuk proceeds will fund solar power, a key technology for the low-carbon transition. The issuer has informed us that fossil fuel lock-in is not applicable to their framework.

Supplier selection: CICERO is encouraged by the issuer’s claim to include environmental considerations in supplier selection. Tadau Energy has informed us that one of their criteria for supplier selection is whether the suppliers have taken a lifecycle approach to assess the environmental impact of their products. The manufacturer of solar panels has conducted a simplified lifecycle assessment (LCA)⁴ covering stages such as raw materials acquisition, production, transportation, use, disposal, and recycling. Documentation of an environmental evaluation was also presented for the solar inverter manufacturer. CICERO notes that while the issuer explained that life cycle criteria were taken into account, no documentation was presented to show how the issuer took this information into consideration.

Site Selection: Tadau Energy has informed us that they have a process for site selection that includes environmental considerations. Kudat is one of the cities with the highest irradiance in Malaysia, and all sites are located in proximity to SESB interconnection facilities. Potential sites were identified after posting advertisements in local newspapers, and lease agreements have been signed with landowners. Tadau Energy explained that they avoid activities in or near protected areas. The areas surrounding potential sites were also assessed to identify areas where the usage of the sites for a solar power plant would not create an undue disturbance. The topography and the terrain of the sites were assessed as suitable for construction of solar power plants.

As required by local law, the sites were required to be rezoned to “light industrial zones”. A consultant was hired to provide rezoning reports. These rezoning reports provide details of the prior land use. According to the reports, 126 acres of land was zoned for agricultural use, and the prior use was oil palm plantations. Of these, 72 acres of the oil palm plantation was currently not in active use and left vacant. The remaining sites of approximately 18 acres were vacant land zoned as a combination of public zone, community facilities zone, commercial zone and primary school zone. A public notice for the proposed rezoning was posted in a local newspaper by the Kudat Town Board. The issuer has informed us that no objection has been voiced for of the proposed rezoning.

Management of local environmental impacts: Tadau has taken some steps to manage the local environmental impacts of the project construction. They have requested that the EPC Contractor refrains from major excavating and filling to maintain the original site terrain. The issuer has also informed us that they work to identify the

⁴ The calculations were conducted by the global technical services organization TUV SUD

environmental, health and safety risks associated with the solar plant's operations, and implement appropriate measures.

The EPC contractor also follows its own health, safety, and environmental management system during the construction and operation of the project. The system outlines responsibilities and procedures for that implementation of laws, regulation, and requirements from the project owner. In addition, the EPC contractor has a process for identifying and methodology for assessing environmental risks, and a process for implementing control measures.

Weaknesses

Transparency and Accountability:

Overall, Tadau Energy's Green Sukuk framework provides a sound framework for climate-friendly investments. However, the Green Sukuk framework is unclear on transparency and reporting. The framework states that the issuer shall provide annual reporting, via newsletters, website updates, annual report or other communication channels to the investors. While the issuer will report on use of proceeds through annual certificates, these are only available through the trustees of the sukuk or rating agencies⁵. CICERO is encouraged by the issuers' commitment to establishing a website with information about the project. Transparency is key in order to build trust in the Green Sukuk market and CICERO therefore encourages the issuer to follow best practice and make the annual reports publicly available. CICERO also notes that the issuer has not committed to impact reporting.

Pitfalls

The issuer has presented CICERO with relevant pieces of documentation, but no overachieving policies or strategies that the special purpose company will follow. This lack of documentation presents some challenges when assessing the project. CICERO encourages the issuer to adopt open and transparent communication practices to preserve investor confidence.

Policies

While the issuer has been forthcoming in explaining internal processes, no substantial environmental policies were presented for Tadau Energy's operations. CICERO strongly encourages documented environmental policies and strategies, and encourages these to be publically disclosed.

Selection:

Renewable power plants, while positive for the climate, can be controversial from a land-use and local environmental impact perspective⁶. The issuer has informed us that there were no prior inhabitants on the sites and that there is no publicly voiced opposition towards the project.

Tadau Energy relies heavily on local environmental law and the EPC contractors' own policies to manage local environmental impacts. CICERO notes that Malaysia is not on the Equator Principle list of Designated Countries. Designated Countries are those countries deemed to have robust environmental and social governance, legislation systems and institutional capacity designed to protect their people and the natural

⁵ Ad hoc reporting may be also be announced on the FAST website, if required. Fully Automated System for Issuing /Tendering (FAST) maintained by a subsidiary of Bank Negara Malaysia (Malaysian Central Bank), whereby all ringgit-denominated corporate bond or sukuk must be issued and/or tendered

⁶ These concerns are more pronounced with large-scale hydro, including the Upstream Ayeyawady Confluence Basin Hydropower, in which the EPC contractor's parent company has a key role.

environment.⁷ While not required by law, an Environmental Impact Assessment (“EIA”) would have provided assurance to investors of the environmental soundness of the site selection and construction phase.

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 List of Designated Countries <http://www.equator-principles.com/index.php/ep3/designated-countries>

4 References

IPCC (2013). Climate Change 2013: The Physical Science Basis, Fifth Assessment Report, Intergovernmental Panel on Climate Change

Appendix

About CICERO

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

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

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

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

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