

Second Party Opinion
Concerning Star Energy
Geothermal (Wayang
Windu) Limited
Annual Green Bond Report

February 2022



Prepared by:

**Carbon Trust Singapore Pte Ltd** 

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Star Energy Geothermal (Wayang Windu) Limited

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## The External Reviewer's Opinion

## Terms of Engagement and Scope

Carbon Trust Singapore Pte Ltd (the "External Reviewer") has been commissioned by Star Energy Geothermal (Wayang Windu) Limited (the "Issuer") as an independent External Reviewer to provide a Second Party Opinion ("SPO") on the alignment of its Annual Green Bond Report 2021 with the International Capital Markets Association's ("ICMA") 'Green Bond Principles ("GBP"), Voluntary Process Guidelines for Issuing Green Bonds' (the "ICMA GBP"), as contemplated by the ICMA 'Guidelines for Green, Social, Sustainability and Sustainability-Linked Bonds External Reviews' (the "ICMA Guidelines").

In order to provide this SPO, the External Reviewer has examined relevant documents to understand the organisation, its environmental objectives and use of the proceeds of the bonds. The External Reviewer also reviewed the Annual Green Bond Report 2021 against the Star Energy Geothermal (Wayang Windu) Green Bond Framework ("the Issuer's Framework") and the ICMA GBP. The Issuer Framework provides a forward-looking framework for issuing green bonds (the "Green Bonds"). This review process ensures that the annual green bond report for Star Energy Geothermal (Wayang Windu) Limited can be presented to stakeholders with confidence and remain in line with the ICMA GBP where applicable.

No opinion or assurance is provided regarding the financial performance of the green bond(s) or the value of any investments in the green bond(s), or any asset deriving value from the green bond(s) issued against the Issuer's Framework. The External Reviewer's objective has been to provide an opinion on whether the Annual Green Bond Report 2021 would meet the criteria described in the basis of opinion set out below.

## Carbon Trust Second Party Opinion Statement

Aligns with the Issuer's Framework and the ICMA GBP Core Components (June 2021) (the "ICMA GBP (2021)") Based on the work undertaken and the evidence provided by Star Energy Geothermal (Wayang Windu) Limited, we believe that its Annual Green Bond Report 2021 aligns with both its Framework and the core components of the ICMA GBP (2021), being:

- Use of Proceeds
- Process for Project Evaluation and Selection
- Management of Proceeds
- Reporting

This SPO shall be read in the context of the 'Basis of the Second Party Opinion', the inherent limitations of the 'Procedures', the respective responsibilities of the parties to the 'Second Party Opinion Statement', and this statement's intended use.



**Chris Stephens** 

Made

Director

Carbon Trust Singapore Pte Ltd

16th February 2022

This second opinion statement ("SPO") is given by Carbon Trust Singapore Pte Limited ("CTS") and is addressed solely to Star Energy Geothermal (Wayang Windu) Limited in accordance with the terms of the engagement contract between us and Star Energy Geothermal (Wayang Windu) Limited Those terms permit disclosure to certain other parties as set out therein and by publication on the website of the International Capital Markets Association Green Bond Resource Centre (the "GBRC") and/or, solely for the purpose of enabling Star Energy Geothermal (Wayang Windu) Limited to show that it has obtained a second opinion as contemplated by the ICMA GBP (2021) in connection with the Green Bonds. Under those terms, the External Reviewer has reserved the right to withdraw its consent to the continuance of such publication in certain circumstances and to make such withdrawal public. The External Reviewer has not consented to the inclusion or incorporation by reference of this SPO in any prospectus, listing particulars, or any other document drawn up for the purpose of offering or listing any securities. We have not considered the interest of any other party in the SPO. To the fullest extent permitted by law, we accept no responsibility and deny any liability to any other party for our work, for this statement or for the conclusions we have reached. CTS will not accept any form of liability for the substance of the SPO and/or any liability for damage arising from the use of the SPO and/or the information provided in it. As the SPO is based on information made available by Star Energy Geothermal (Wayang Windu) Limited, CTS does not warrant that the information presented in this SPO is complete, accurate or up to date. Nothing contained in this SPO shall be construed as to make a representation or warranty, express or implied, regarding the advisability of investing in any securities or any asset whose value is derived from any securities. Any person other than Star Energy Geothermal (Wayang Windu) Limited who obtains access to the SPO or a copy thereof and chooses to rely on it will do so at its own risk. Furthermore, this SPO shall in no event be interpreted and construed as an assessment of the economic performance and credit worthiness of Star Energy Geothermal (Wayang Windu) Limited or the Green Bonds. The issuance(s) and the performance of Star Energy Geothermal (Wayang Windu) Limited and the Green Bonds are outside the scope of our engagement. We have consented to the inclusion of the SPO on the GBRC or in such other manner as ICMA shall from time to time use for making second opinions rendered in respect of Green Bonds available to the public. We reserve the right to withdraw such consent at any time.

No part of the SPO may be reproduced, transmitted or (other than as set out above) published in any form or by any means without the prior written permission of CTS.

Nothing in this SPO is intended, or should be construed, as commentary on whether or not any Green Issuance is, or is suitable for in a portfolio to support, a sustainable investment for the purposes of EU Regulation 2019/2088 (the Sustainable Finance Disclosure Regulation, "SFDR") or that they pursue environmentally sustainable objectives within the meaning of Regulation (EU) 2020/852 1 (Taxonomy Regulation) or similar law or regulation in any jurisdiction.

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## Summary of Key Findings

## Summary Characteristics of Star Energy Geothermal (Wayang Windu) Green Bond Framework

#### Key: Green highlighted cells reflect Framework attributes

#### The Issuer Framework maps to one (1) ICMA Green Project Categories



#### Renewable energy



**Energy efficiency** 



Climate change adaptation



Clean transportation



Sustainable water and wastewater management



Pollution prevention and control



Circular economy adapted products, production technologies and processes and/or certified eco-efficient products



Environmentally sustainable management of living natural resources and land use



Terrestrial and aquatic



Green buildings

#### The Issuer Framework maps one (1) ICMA Environmental Objectives

Climate change mitigation Clim

Climate change adaptation

Natural resource conservation

Biodiversity conservation

Pollution prevention & control

Other

Look Back Period	Nil	
	Installed geothermal energy production capacity (MW) and estimation of	
Impact Metrics	avoided carbon dioxide emissions versus baseline which is the carbon	
	emission of the local energy grid "Jamali"	
Geography	West Java, Indonesia  https://www.starenergygeothermal.co.id/wp-	
Links to Framework		
/other documentation	content/uploads/2020/09/WW-Green-Bond-Framework.pdf	



## Alignment with ICMA Green Bond Principles (June 2021)

#### **Core Components**

This section summarises the key results of the External Review<sup>1</sup> concerning the Annual Green Bond Report 2021, in respect of both required and recommended specifications<sup>2</sup> of the ICMA GBP Core Components<sup>3</sup>; being as set out in ICMA GBP (2021). Detailed findings can be found in Appendix 1.

For each component, the doughnut chart assesses how each of the sub-criteria scored according to the key provided.

<sup>&</sup>lt;sup>1</sup> An External Review being as contemplated by the ICMA Guidelines

<sup>&</sup>lt;sup>2</sup> The External Review differentiates between specifications identified in the ICMA GBP (2021) as "recommend" and "encourage", as compared to "should". The latter is identified as required specifications, and the former as recommended specifications. The External Review approach identifies recommended aspects that are met, as 'going beyond requirements' and recommended aspects that are not met, as meeting requirements but with opportunity for enhancement. Additional opportunities for enhancement may also be identified.

<sup>&</sup>lt;sup>3</sup>The four Core components of the ICMA GBP (2021) are: Use of Proceeds; Process for Project Evaluation and Selection; Management of Proceeds; Reporting.



Table 1 Summary of External Review key findings on the alignment of the Annual Green Bond Report against the Issuer's Framework and the ICMA GBP

**Key** ■ Meets and goes beyond requirements ■ Meets requirements ■ Does not meet requirements ■ Not relevant / applicable to the Issuer and/or External Review ○ Opportunity for enhancement

For each component, the doughnut chart presents how each of the sub-criteria scored according to the key above.

#### The green bond proceeds were used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset as per the Issuer's Framework The Geothermal Asset also aligns with the Renewable Energy project category, and the environmental objective of climate change mitigation as per the ICMA GBP The identified green asset provides clear and quantifiable Core component environmental benefits in the form of avoided carbon **Use of Proceeds** dioxide emissions In the External Reviewer's opinion, the Issuer's Annual Green Bond Report concerning the use of proceeds meets the requirements of the ICMA GBP Core Component One - Use of Proceeds and aligns with the Issuer's Framework. The Issuer clearly communicates environmental sustainability objectives in the Annual Green Bond Report The Annual Green Bond Report outlines clear eligibility criteria i.e., geothermal assets with emissions of less than 100g CO<sub>2</sub> per kWh estimated carbon intensity which is consistent with the Issuer's Framework. This threshold aligns with the Climate Bonds Taxonomy (September 2021) There was no project evaluation and selection conducted Core component in 2021 as the green bond proceeds are fully and entirely **Process for** used for the repayment of outstanding indebtedness under **Project Evaluation** the Existing Senior Debt Facilities of Wayang Windu and Selection **Geothermal Asset** Environmental and Social Impact Committee (ESIC) has been set up to discuss potential social and environmental risks In the External Reviewer's opinion, the Issuer's Annual Green Bond Report regarding project evaluation and selection satisfies the requirements of the ICMA GBP Core Component Two -



	Process for Project Evaluation and Selection and aligns with the Issuer's Framework.
Core component  Management of Proceeds	<ul> <li>✓ The Issuer has established relevant internal processes to enable the tracking of green bond proceeds in accordance with the ICMA GBP</li> <li>✓ The Annual Green Bond Report states that the proceeds and the outstanding bond amount are tracked via the internal Green Bond Register which is consistent with the Issuer's Framework</li> <li>In the External Reviewer's opinion, the Issuer's Annual Green Bond Report concerning the management of proceeds is in accordance with the requirements of the ICMA GBP Core Component Three – Management of Proceeds as well as the Issuer's Framework.</li> </ul>
Core component Reporting	<ul> <li>✓ The Issuer publishes an Annual Green Bond Report detailing the use of proceeds to be renewed annually until full allocation which is consistent with the ICMA GBP</li> <li>✓ The Annual Green Bond Report specifies the geothermal asset to which the green bond proceeds have been allocated, which is in accordance with the Issuer's Framework</li> <li>✓ The outstanding amount of green bond is updated yearly in the Annual Green Bond Report</li> <li>✓ The Annual Green Bond Report outlines quantifiable environmental benefits in the form of avoided carbon dioxide emissions as well as the key underlying methodology to derive the impact results</li> <li>In the External Reviewer's opinion, the Issuer's Annual Green Bond Report pertaining to reporting is in accordance with the requirements of the ICMA GBP Core Component Four - Reporting and the Issuer's Framework.</li> </ul>



## Basis of the Second Party Opinion

## Purpose of the External Review and this Report

#### **Context**

Wayang Windu is a wholly owned subsidiary of Star Energy Geothermal Pte Ltd and is the owner of the Wayang Windu geothermal energy generation facilities in West Java, Indonesia, approximately 40km south of Bandung.

Star Energy Geothermal (Wayang Windu) Limited issued senior secured notes on or April 24, 2018 (the "Bonds"). The Bonds were issued in accordance with the Star Energy Geothermal (Wayang Windu) Green Bond Framework. The net proceeds were used to repay all the Bond Issuer's existing senior indebtedness secured on the Facility in line with the Framework.

Carbon Trust Assurance Limited ("we" or "Carbon Trust") was previously commissioned to provide a second party opinion (previous SPO) regarding the issuance by the Bond Issuer of the Bonds in accordance with the Framework and the Bonds' alignment with the ICMA GBP. Carbon Trust's role was to act as a 'External Reviewer' as defined by the ICMA GBP and provide a second party opinion as contemplated by the ICMA GBP. In February 2020, Carbon Trust Assurance Limited (part of our group) was commissioned to review the Star Energy Geothermal (Wayang Windu) Limited Annual Green Bond Report 2019 and update our previous SPO based upon a verification of the report.

In 2021, Star Energy Geothermal (Wayang Windu) Limited has appointed Carbon Trust Singapore Pte Ltd, as a suitably qualified and experienced independent external review service provider, to review Star Energy Geothermal (Wayang Windu) Limited Annual Green Bond Report 2021 and provide the SPO.

The ICMA GBP are a set of voluntary process guidelines for issuing Green Bonds that "enable capital-raising and investment for new and existing projects with environmental benefits". The External Reviewer's role in reviewing the Annual Green Bond Report 2021 was to provide a second party opinion as contemplated by the ICMA GBP.

#### **Basic information**

Issuer names: Star Energy Geothermal (Wayang Windu) Limited.

Issuer Green Bond Framework Name: Star Energy Geothermal (Wayang Windu) Green Bond Framework

Green Issuances ISIN: Restricted Global Note, ISIN: US85511XAC48

Regulation S Global Note, ISIN: USG84393AC49

Sustainability standard applicable: ICMA Green Bond Principles, Voluntary Process Guidelines for

Issuing Green Bonds (June 2021)



#### **Role of Independent External Review Provider**

$\boxtimes$	Second Party Opinion	Certification
	Verification	Scoring/Rating
	Other (please specify):	

#### **Scope of Review**

The review assessed the following elements and confirmed their alignment with the ICMA GBP:

$\boxtimes$	Use of Proceeds	$\boxtimes$	Process for Project Evaluation and Selection
$\boxtimes$	Management of Proceeds	$\boxtimes$	Reporting

#### **Publication of the External Review**

The full version of the Second Party Opinion and associated documents will be available on Star Energy Website (<a href="https://www.starenergygeothermal.co.id/green-document/">https://www.starenergygeothermal.co.id/green-document/</a>) as with past Second Party Opinion Reports. The External Reviewer has, under the terms of its engagement, reserved the right in certain circumstances to withdraw its consent to the continued availability of the Second Party Opinion and to make public such withdrawal.

## Applicable standards concerning the External Review

#### **ICMA Green Bond Principles, ICMA GBP**

The Issuer has established the Issuer Framework to underpin the Green Bond Issuances and provide evidence that they are structured to meet the principles and criteria laid out in the ICMA GBP.

The ICMA GBP is a set of voluntary process guidelines for issuing green bonds; a green bond being a type of bond instrument "exclusively applied to finance or re-finance, in part or in full, new and/or existing eligible Green Projects", the latter being "projects that contribute to environmental sustainability". The ICMA GBP is comprised of four core components and two recommendations. It is against these guidelines and the Issuer's Framework that the External Reviewer has reviewed the alignment of the Annual Green Bond Report 2021 and the related supporting documentation.



## Management Responsibilities

Wayang Windu has identified a few roles and responsibilities as stipulated in the Star Energy Geothermal (Wayang Windu) Green Bond Framework.

Wayang Windu's Treasury Department is responsible for proposing green projects which could be considered eligible use of proceeds for green bonds issued under its Framework.

After initial project evaluation and selection, the Environmental and Social Impact Committee ("ESIC") is tasked to validate the selection decision or by the use of its veto power, decline final selection in the event that there is a mismatch between the chosen projects and the eligible project categories under the Framework.

The ESIC comprise of the following members:

- Head of Treasury
- Two members of the technical team responsible for the Wayang Windu geothermal power plant
- One member responsible for Wayang Windu's Annual Sustainability Report

The ESIC is also in-charge of any potential future updates of the Issuer's Framework and if there is no extraordinary reason, meet on a semi-annual basis to discuss any potential environmental and social impact issues related to the company's outstanding green bond(s).

## External Reviewer Responsibility

The External Reviewer's responsibility is to plan and perform work to form an opinion on whether the Annual Green Bond Report 2021 has been prepared in accordance with the Issuer's Framework and the ICMA GBP, as described in the 'Basis of Opinion', and to report to the Issuer in the form of a 'Second Party Opinion' based on the work undertaken and the evidence obtained. The External Reviewer has not performed any work, and does not express any conclusion regarding the ongoing effectiveness of the application of the Procedures.

#### **Assurance Standards**

The type of External Review undertaken is a Second Party Opinion as identified in the ICMA GBP. The Carbon Trust's services are aligned to the ICMA Guidelines. The Second Party Opinion concerns the Annual Green Bond Report 2021. The External Reviewer has reviewed the Annual Green Bond Report 2021 to confirm alignment with the Issuer's Framework and the four components of the ICMA GBP, as set out in the Basis of Opinion.



The External Reviewer has worked in accordance with its assurance methodology which is based on the International Framework on Assurance Engagements 3000 ("ISAE 3000 (Revised)"), **noting that this Second Party Opinion is not an assurance opinion in accordance with ISAE 3000 (Revised)**.

## The External Reviewer's Competence and Independence

#### Who we are

The Carbon Trust is a trusted, expert guide to Net Zero, bringing purpose led, vital expertise from the climate change frontline. We have been pioneering decarbonisation for more than 20 years for businesses, governments and organisations around the world.

We draw on the experience of over 300 experts internationally, accelerating progress and providing solutions to this existential crisis. We have supported over 3,000 organisations in 50 countries with their climate action planning, collaborating with 150+ partners in setting science-based targets, and supporting cities across five continents on the journey to Net Zero.

#### **Competence and credentials**

The Carbon Trust is a leader in the evaluation and certification of sustainability and environmental frameworks, practices and projects, providing an independent point of view to help on the decision-making in connection with Green Bonds and Sustainability Bonds.

The Carbon Trust is an Observer to the ICMA Principles approved by the Secretariat as contemplated in the Governing framework Section 4.2 (<a href="https://www.icmagroup.org/green-social-and-sustainability-bonds/governance-framework/">https://www.icmagroup.org/green-social-and-sustainability-bonds/governance-framework/</a>) and provides regular inputs to updates and other matters put to public comment by ICMA with regards to the Principles. Since October 2020, the Carbon Trust has been nominated to sit on the ICMA GBP and Social Bond Principles (SBP) Advisory Council.

With regards Green Bonds for which the primary objectives for underlying projects is climate change mitigation and/or climate change adaptation, the Carbon Trust is an approved *Climate Bonds Initiative* verifier for carrying out Green Bond assessments and verifications under the *Climate Bonds Standard* methodology, which has incorporated the *Green Bond Principles*. Consult: <a href="https://www.climatebonds.net/standards/assurance/approved-verifiers">https://www.climatebonds.net/standards/assurance/approved-verifiers</a>.

The Carbon Trust evaluates our competency and suitability to perform the External Review given the objective, scope of the work and the particulars of the Green Bond and eligible projects. The Carbon Trust ensures the selection of appropriate professionals to carry out the work in order to give this Second Party Opinion Statement, based on their qualifications, training and experience. This includes the combination of multidisciplinary teams as appropriate, including team members with suitable financial expertise and environmental and sustainability expertise as required.

#### Independence and conflict of interest policy



We, the Carbon Trust, maintain our independence from our clients and objectivity with regards to engagements, by maintaining, and adhering to appropriate governance processes that reflect industry best practice for assurance and independent review services. We evaluate potential conflicts and threats to our independence and objectivity, introduce suitable mitigants where these are relevant, and represent to the Issuer concerning these issues.

Our commitment to impartiality and quality assurance is established in our policies, procedures and management structure and reflect international standards for quality management. As a result, the conclusions in this report reflect an impartial undertaking of the scope of the engagement.

The outcome of all verification and certification assessments is internally reviewed by senior management to ensure that the approach is rigorous and transparent. We have undertaken this Independent External Review guided by the fundamental ethical and professional principles of integrity, objectivity, professional competence, due care, appropriate confidentiality and professional behaviour throughout.

## External Review procedures

The Carbon Trust planned and performed the work to obtain all the information and explanations considered necessary to provide a basis for its opinion. The Carbon Trust's work included, but was not restricted to, the following activities:

- Request information and evidence from the Bond Issuer and key staff responsible for the
  arrangement of the Green Bonds to obtain an understanding of the organisation, its
  environmental objectives and use of proceeds of the bonds;
- Review the Bond Issuer's Framework, including processes, systems and controls in place for management of proceeds; and
- Conduct a verification of the annual green bond report and prepare a second party opinion, incorporating the findings, conclusions and relevant information gathered during the evaluation process.

#### Relevant documentation

#### **Issuer documentation**

The following information and documents, provided by the Issuer, have been reviewed in order to form the basis of the SPO (the "Issuer Documentation"):

- > Star Energy Geothermal (Wayang Windu) Annual Green Bond Report 2019, 2020 and 2021
- Star Energy Geothermal (Wayang Windu) Green Bond Framework (February 2018)
- Star Energy Geothermal (Wayang Windu) Green Bond Register
- > Star Energy Geothermal (Wayang Windu) Sustainability Report 2020
- Star Energy Geothermal (Wayang Windu) Bond Offering Memorandum
- > Star Energy Geothermal (Wayang Windu) Minutes of the Meeting of the Environmental and Social Impact Committee (30 September 2021)



#### Other documentation

> ICMA Green Bond Principles (June 2021)

#### Limitations of the External Review

Our External Review work (in relation to the Scope) was undertaken at post-issuance stage, and our procedures have been confined to the reviewer activities set out in this document, including the accuracy of the data and impact results reported. We did not examine the supporting data behind the figures and information beyond the stipulated scope and reviewer activities as defined in this Report.

The Second Party Opinion Statement is based on information and data available, and the results of our assessment carried out, on or before the 27<sup>th</sup> January 2022 and no further information and data subsequent to that date was considered or further assessment carried out.



# Appendix 1: Detailed External Reviewer Opinion in line with the ICMA Green Bond Principles (June 2021)

Set out below are our component specific findings and statements in relation to each of the four ICMA GBP core components, as they relate to the Issuer Framework. These are integrated with the suggested ICMA template.

## Core Component One – Use of Proceeds

#### Overview

#### Use of proceeds categories as per ICMA GBP:

×	Renewable energy	Energy efficiency
	Pollution prevention and control	Environmentally sustainable management of living natural resources and land use
	Terrestrial and aquatic biodiversity conservation	Clean transportation
	Sustainable water and wastewater management	Climate change adaptation
	Eco-efficient and/or circular economy adapted products, production technologies and processes	Green buildings
	Unknown at issuance but currently expected to conform with the ICMA GBP categories, or other eligible areas not yet stated in the ICMA GBP	Other (please specify):



#### Review

The proceeds of the bond should be used to finance or refinance Green Projects which should be appropriately described in the legal documentation of the financial security. All designated Green Project categories should provide clear environmental benefits, which will be assessed and, where feasible, quantified by the issuer. Eligible project categories and Green Projects are indicatively described in the ICMA GBP.

Further recommendations pertain to the Bond Issuer providing information regarding re-financing where all or a portion of proceeds may be used for re-financing and further guidance that may be sought by Bond Issuers with regards to categories and criteria for Green Projects.

Table 2 Detailed review of Issuer alignment to ICMA GBP Core Component One – Use of Proceeds

<b>Key</b> Meets and goes beyond requirements	Meets requirements	Does not meet requirements
Not relevant / applicable to the Issuer and	/or External Review	Opportunity for enhancement

ICMA GBP specification	Issuer practice	Assessment result
Designated eligible Green Projects should provide clear environmental benefits which will be assessed and, where feasible, quantified by the issuer	The Annual Green Bond Report 2021 is consistent with the Issuer's Framework which defines eligible projects as geothermal energy generation facilities that support the objectives of the Indonesian government's sustainability strategy, which includes the commitment to decrease greenhouse gas emissions by 29% by 2030. Proceeds of Bonds issued in accordance with the Framework will only be used in connection with assets with emissions of less than 100g CO <sub>2</sub> per kWh estimated carbon intensity. This compares favourably to the local grid (Jamali) average emission factor for electricity of over 870g CO <sub>2</sub> per kWh in 2019.	
	The Annual Green Bond Report 2021 states that the green bond proceeds are used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset. The existing geothermal field in the Wayang Windu area with a total installed capacity of 227 MW yields direct emissions of less than 100 gCO <sub>2</sub> /kWh	



	estimated carbon intensity. Therefore, the Geothermal Assets generates environmental benefits in the form of avoided carbon dioxide emissions.  In addition, the Annual Green Bond Report 2021 stipulates that the following projects will	
	not be eligible to be financed by green bonds issued under its Framework namely, oil and gas power plant; clean coal or any other fossil fuel-related technologies; nuclear and nuclear related technologies; large-scale hydropower plant as well as infrastructure that facilitates the above forms of energy generation.	
The use of proceeds may align with the non-exhaustive explicitly-recognised project categories in the ICMA GBP advancing environmental objectives such as: climate change mitigation, climate change adaptation, natural resource conservation, biodiversity conservation, and pollution prevention and control	The Issuer's Framework themes align with one (1) of the ICMA GBP green project categories, namely renewable energy. The activities associated with geothermal energy generation should lead to advancing one (1) of the ICMA GBP environmental objectives of climate change mitigation.	
The use of proceeds may refer to other taxonomies and nomenclatures as guidance as to what is considered green and eligible, and draw upon (appropriate) independent definitions, analysis, advice and guidance on the quality of different green solutions and environmental practices	The eligible project category listed in the Issuer's Framework and Annual Green Bond Report 2021 refers to the ICMA GBP. The threshold for eligible geothermal assets that is, emissions of less than $100g\ CO_2$ per kWh estimated carbon intensity, aligns with the Climate Bonds Taxonomy (September 2021).	
The Use of Proceeds should be appropriately described in the legal documentation of the security	The Use of Proceeds has been described in the Annual Green Bond Report 2021 and this is consistent with the description in the Issuer's Framework and Bond Offering Memorandum.	



	In the Annual Green Bond Report 2021, the Bond Issuer described that they applied the entire proceeds of US\$580 million from the issues of the Notes towards the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset. The remaining balance of the outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset and associated repayment expenses was repaid using their existing cash.	
	The Use of Proceeds was documented in the Issuer's Framework: 'For Wayang Windu's inaugural Green Bond transaction in February 2018, the net proceeds from the issuance of the Bonds (the "Green Bond Proceeds"), after deducting fees, commissions and other estimated offering expenses, are expected to fund the Debt Service Account and repay all outstanding indebtedness under the Bond Issuer's 'Existing Senior Debt Facilities' and pay associated repayment expenses, and for general working capital purposes of eligible geothermal energy generation facilities based in West Java, Indonesia.'	
	The Use of Proceeds was also documented in the Bond Offering Memorandum to investors: 'We intend to apply the net proceeds from the issue of the Notes towards the repayment of outstanding indebtedness under the Existing Senior Debt Facilities and associated repayment expenses.'	
If refinancing, the issuer should provide an estimate of the share of financing vs. refinancing, and where appropriate, also clarify which investments or project portfolios may be refinanced	The entire proceeds of US\$580 million from the issues of the Notes was applied towards the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.	
If refinancing and to the extent relevant, the issuer should define the expected look-back period for refinanced eligible Green Projects	The Annual Green Bond Report 2021 does not state the look-back period for refinanced eligible Green Projects because the entire proceeds of US\$580 million from the issues of the Notes was applied towards the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.	



Where issuers wish to finance projects towards implementing a net zero emissions strategy aligned with the goals of the Paris Agreement, guidance from the ICMA 'Climate Transition Finance Handbook' may be sought

The Annual Green Bond Report 2021 does not indicate projects related to implementing a net zero emissions strategy.

#### Core component opinion

Aligns with the ICMA GBP

Core Component One – Use of Proceeds, and
the Issuer's Framework

The Annual Green Bond Report 2021 is consistent with the Issuer's Framework regarding the allocation of the green bond proceeds towards the Wayang Windu Geothermal Asset; it also aligns with one of the ICMA GBP green project categories which is renewable energy.

In the External Reviewer's opinion, the Issuer's Annual Green Bond Report 2021 concerning the use of proceeds meets the requirements of the ICMA GBP Core Component One – Use of Proceeds and the Issuer's Framework.



## Core Component Two – Process for Project Evaluation and Selection

#### Overview

#### **Evaluation and selection**

$\boxtimes$	Credentials on the issuer's environmental sustainability objectives	$\boxtimes$	Documented process to determine that projects fit within defined categories
$\boxtimes$	Defined and transparent criteria for projects eligible for Green Bond proceeds	$\boxtimes$	Documented process to identify and manage potential ESG risks associated with the project
×	Summary criteria for project evaluation and selection publicly available		Other (please specify):

#### Information on Responsibilities and Accountability

	Evaluation / Selection criteria subject to external advice or verification	$\boxtimes$	In-house assessment
	Other (please specify):		

#### Review

The issuer of a Green Bond should outline a process to determine how the projects fit within the eligible Green Projects categories identified in the ICMA GBP, including a process for determining eligibility and the criteria used. The process should consider the environmental objectives of the proposed bond.

The Bond Issuer is encouraged to position this information in context of overarching governance and/or other processes relating to environmental sustainability, and to disclose pertinent standards or certifications. The Bond Issuer is recommended to supplement its process with an external review.



Table 3 Detailed review of Issuer alignment to the ICMA GBP Core Component Two - Process for Project Evaluation and Selection

**Key** ■ Meets and goes beyond requirements ■ Meets requirements ■ Does not meet requirements ■ Not relevant/applicable to the Issuer and/or External Review ○ Opportunity for enhancement

ICMA GBP specification	Issuer practice	Assessment result
The issuer should clearly communicate to investors the environmental sustainability objectives of the eligible Green Projects	According to the Issuer's Framework and Annual Green Bond Report 2021, eligible projects are defined as geothermal energy generation facilities that support the objectives of the Indonesian government's sustainability strategy, which includes the commitment to decrease greenhouse gas emissions by 29% by 2030. Proceeds of green bonds issued in accordance with the Framework will only be used in connection with assets with emissions of less than 100g CO <sub>2</sub> per kWh estimated carbon intensity. This compares favourably to the local grid (Jamali) average emission factor for electricity of 870g CO <sub>2</sub> per kWh in 2019.	
The issuer should clearly communicate to investors the process by which it determines how projects fit within the eligible Green Project categories	According to the Issuer's Framework, Wayang Windu's Treasury Department is responsible for proposing green projects which could be considered eligible use of proceeds for green bonds issued under its Framework. After initial project evaluation and selection, the ESIC is tasked to validate the selection decision or by the use of its veto power, decline final selection in the event that there is a mismatch between the chosen projects and the eligible project categories under the Framework.	
	The Annual Green Bond Report 2021 states that no project evaluation and selection was conducted in 2021 because the green bond proceeds have been fully and entirely allocated for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.	
The issuer should clearly communicate to investors complementary information on processes by which it identifies and manages associated social and environmental risks	The ESIC has been established to discuss any potential environmental and social impact issues related to the company's outstanding Green Bond.	



The issuer is encouraged to position the information regarding the Green Bond in the context of its overarching objectives, strategy, policy and/or processes relating to environmental sustainability	According to the Annual Green Bond Report 2021, the Wayang Windu geothermal power plant contributes to the reduction of Indonesia's overall carbon emissions. At the same time, the Issuer recognises that geothermal projects can have different negative environmental impacts. As such, Wayang Windu states that it has established a variety of programmes to demonstrate its high commitment to environmental protection. These programmes mainly address the areas of water conservation, energy efficiency, waste reduction, and revegetation and help to eliminate or minimise unwanted side effects.	
The issuer is encouraged to provide information on the alignment with official or market-based taxonomies, related eligibility criteria, and exclusion criteria (if relevant)	Based on the Issuer's Framework and Annual Green Bond Report 2021, the threshold for eligible geothermal assets has to achieve emissions of less than 100g CO <sub>2</sub> per kWh estimated carbon intensity and this aligns with the Climate Bonds Taxonomy (September 2021).  According to the Issuer's Framework, in order to develop its geothermal energy standard, CBI has determined 100g CO <sub>2</sub> perkWh as a first threshold in its decision tree for certification. According to their analysis, the international weighted average of emission from geothermal power plants is 122g CO <sub>2</sub> per kWh. Further, they calculated a combined margin emission factor as the baseline carbon intensity of the national electricity system against which geothermal facilities should be compared. For Indonesia this margin has been 791g CO <sub>2</sub> per kWh given the grid still relies heavily on carbon-intensive fossil fuels.	
The issuer is encouraged to disclose any green standards or certifications referenced in project selection	According to the Annual Green Bond Report 2021, the Issuer did not disclose any green standards or certifications involved in the project selection. No new projects were selected in 2021 because the green bond proceeds have been fully and entirely allocated for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.	
The issuer is encouraged to have a process in place to identify mitigants to known material	According to the Issuer's Framework, the ESIC has been established to discuss any potential environmental and social impact issues related to the company's outstanding Green Bond.	



risks of negative social and/or environmental impacts from the relevant projects

Unless there is an extraordinary reason, the ESIC meets on a semi-annual basis and the most recent meeting was held on 30 September 2021.

#### Core component opinion

Aligns with the ICMA GBP

Core Component Two – Process for

Project Evaluation and Selection, and the

Issuer's Framework

In the External Reviewer's opinion, Wayang Windu has implemented relevant internal procedures for project evaluation and selection in line with the ICMA GBP and its Framework. According to the Annual Green Bond Report 2021, no new projects were selected in 2021. In addition, Wayang Windu has provided supporting evidence to document the ESIC's meeting outcomes including discussion on the economic benefit, social benefit, environmental aspect and health aspect related to evaluating and selecting projects.

In the External Reviewer's opinion, the Issuer's Annual Green Bond Report 2021 regarding project evaluation and selection meets the requirements of the ICMA GBP Core Component Two – Process for Project Evaluation and Selection and the Issuer's Framework.



## Core Component Three – Management of Proceeds

#### Overview

#### Tracking of proceeds:

$\boxtimes$	Green Bond proceeds segregated or tracked by the issuer in an
	appropriate manner
	Disclosure of intended types of temporary investment instruments
	for unallocated proceeds
	Other (please specify):

#### Additional disclosure:

Allocations to future investments only		Allocations to both existing and future investments
Allocation to individual disbursements		Allocation to a portfolio of disbursements
Disclosure of portfolio balance of unallocated proceeds	×	Other (please specify): The proceeds of 2018 Green Bond have been fully and entirely used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.

#### Review

The net proceeds of Green Bonds 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 a formal internal process linked to the issuer's lending and investment operations for Green Projects. So long as the Green Bond is outstanding, the balance of the tracked net proceeds should be periodically adjusted to match allocations to eligible Green Projects made during that period. A declaration should be made as to how any unallocated funds are managed.

The Bond Issuer is recommended to supplement its processes with an external review by an auditor, or other third party, to verify the internal tracking method and the allocation of funds from the Green Bond proceeds.



#### Table 4 Detailed review of Issuer alignment to the ICMA GBP Core Component Three – Management of Proceeds

**Key** Meets and goes beyond requirements Meets requirements Does not meet requirements

Not relevant / applicable to the Issuer and/or External Review

Opportunity for enhancement

GBP 2021 specification	Issuer practice	Assessment result
The net proceeds of the Green 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	According to the Annual Green Bond Report 2021, the use of proceeds is being tracked via the Green Bond register. The outstanding amount of green bond is tracked and reflected in the Green Bond Register.	
The aforementioned process should be attested to by the issuer in a formal internal process linked to the issuer's lending and investment operations for eligible Green Projects	The proceeds of 2018 Green Bond have been fully and entirely used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset. The outstanding amount of green bond is tracked and reflected in the Green Bond Register.	
Whilst the Green Bond is outstanding, the balance of the tracked net proceeds should be periodically adjusted to match allocations to eligible Green Projects made during that period	According to the Green Bond Register reviewed by the Carbon Trust, the Issuer tracks the year-on-year changes to the outstanding bond amount arising from payment to bondholders. The Annual Green Bond Report 2021 indicates the outstanding amount of green bond as of 31 October 2021.	
The issuer should make known to investors the intended types of temporary placement for the balance of unallocated net proceeds	The proceeds of 2018 Green Bond have been fully and entirely used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.	
The proceeds of Green Bonds can be managed per bond (bond-by-bond approach)	The proceeds of 2018 Green Bond have been fully and entirely used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.	



or on an aggregated basis for multiple green bonds (portfolio approach)		
is recommended that an issuer's	, , , , , , , , , , , , , , , , , , , ,	

Aligns with the ICMA GBP

Core Component Three – Management of

Proceeds, and the Issuer's Framework

In the External Reviewer's opinion, the Annual Green Bond Report 2021 provides up-to-date information regarding the outstanding amount of green bond and this is supported by consistent figures captured by the Green Bond Register.

In the External Reviewer's opinion, the Issuer's Annual Green Bond Report 2021 stipulates the management of proceeds in accordance with the requirements of the ICMA GBP Core Component Three – Management of Proceeds and the Issuer's Framework.



## Core Component Four – Reporting

Overv	iew		
Use of	proceeds reporting:		
	Project-by-project		On a project portfolio basis
	Linkage to individual bond(s)		Other (please specify): The proceeds of 2018 Green Bond have been fully and entirely used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.
	Information reported:		
	Allocated amounts		Green Bond financed share of total investment
×	Other (please specify): The outstanding amount of Green Bond is updated and reported.		
	Frequency:		
×	Annual		Semi-annual
	Other (please specify):		
Impact	reporting:		
	Project-by-project		On a project portfolio basis
	Linkage to individual bond(s)	$\boxtimes$	Other (please specify): Wayang Windu Geothermal Asset
	Frequency:		
$\boxtimes$	Annual		Semi-annual



	□ Other (please specify):			
	Information reported (expected or ex-post):			
$\boxtimes$	GHG Emissions / Savings		Energy Savings	
	Decrease in water use		Other ESG indicators (please specify):	
Means	of Disclosure			
	Information published in financial report		Information published in sustainability report	
	Information published in ad hoc documents		Other (please specify):	
×	Reporting reviewed (if yes, please specify which parts of the reporting are subject to external review):  Annual Green Bond Report 2021			
Useful l	Links			
https:	//www.starenergygeothermal.co.id/green-document/			
Specify	other external reviews available, if appropriate:			
	Type(s) of Review provided			
$\boxtimes$	Second Party Opinion		Certification	
	Verification		Scoring/Rating	
	Other (please specify):			

Review provider(s): Carbon Trust Singapore Pte Ltd

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#### Review

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. The annual report should include a list of the projects to which Green Bond proceeds have been allocated, as well as a brief description of the projects and the amounts allocated, and their expected impact. Where confidentiality agreements, competitive considerations, or a large number of underlying projects limit the amount of detail that can be made available, the ICMA GBP recommend that information is presented in generic terms or on an aggregated portfolio basis. The ICMA GBP recommend the use of qualitative performance indicators and, where feasible, quantitative performance measures, and the disclosure of the key underlying methodology and/or assumptions used in the quantitative determination. Bond Issuers with the ability to monitor achieved impacts are encouraged to include those in their regular reporting.

Table 5 Detailed review of Issuer alignment to GBP Core Component Four - Reporting



ICMA GBP specification	Issuer practice	Assessment result
The issuer 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	The proceeds of 2018 Green Bond have been fully and entirely used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset.  The outstanding amount of Green Bond is updated in the Annual Green Bond Report 2021, after payment to bondholders.	
The annual report should include a list of the projects to which Green Bond proceeds have been allocated, as well as a brief description of the projects, the amounts allocated, and their expected impact. Where additional considerations limit the amount of detail that	According to the Annual Green Bond Report 2021, the proceeds of 2018 Green Bond have been fully and entirely used for the repayment of outstanding indebtedness under the Existing Senior Debt Facilities of Wayang Windu Geothermal Asset. The same report also provides a brief description of the asset such as its facility capacity, total gross and net production of clean energy as well as the environmental impact.	



can be made available, information should be presented in generic terms or on an aggregated portfolio basis		
Recommended: Transparency is of particular value in communicating the expected and/or achieved impact of projects; the use of qualitative performance indicators and, where feasible, quantitative performance measures and disclosure of the key underlying methodology and/or assumptions used in the quantitative determination is recommended	Wayang Windu's latest indicator of environment impact was updated in the Annual Green Bond Report 2021, reflecting quantitative performance measure i.e. the Facility $CO_2$ emission (g/KWh) and Total $CO_2$ emission avoided ( $TCO_2$ e) in reference to the local grid (Jamali) emission factor. The Annual Green Bond Report 2021 also provides the underlying methodology used in deriving the total $CO_2$ emission avoided.	
Recommended: The issuer should refer to and adopt, where possible, the guidance and impact reporting templates provided in the ICMA Harmonised Framework for Impact Reporting	The impact metrics captured in the Annual Green Bond Report 2021 includes annual greenhouse gas emissions avoided in tonnes of CO <sub>2</sub> equivalent as well as the annual renewable energy generation in MWh which are among the core indicators listed in the ICMA Harmonised Framework for Impact Reporting.	

#### Core component opinion

Aligns with the ICMA GBP

Core Component Four – Reporting, and the

Issuer's Framework

In the External Reviewer's opinion, the Annual Green Bond Report 2021 provides appropriate disclosure regarding the Wayang Windu Geothermal Asset to which the proceeds of 2018 Green Bond have been fully allocated. The same report also captured quantifiable environmental benefits and the underlying methodology used in deriving the total CO<sub>2</sub> emission avoided.

In the External Reviewer's opinion, the Issuer's Annual Green Bond Report 2021 pertaining to reporting satisfies the requirements of the ICMA GBP Core Component Four – Reporting and the Issuer's Framework.

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- > measures and certifies the environmental footprint of organisations, products and services;
- helps develop and deploy low-carbon technologies and solutions, from energy efficiency to renewable power.

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