

PROVINCIAL ELECTRICITY AUTHORITY ("PEA") SECOND PARTY OPINION ON SUSTAINABLE FINANCE FRAMEWORK

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Disclaimer

Our assessment relies on the premise that the data and information provided by the client to us as part of our review procedures have been provided in good faith. Because of the selected nature (sampling) and other inherent limitation of both procedures and systems of internal control, there remains the unavoidable risk that errors or irregularities, possibly significant, may not have been detected. Limited depth of evidence gathering including inquiry and analytical procedures and limited sampling at lower levels in the organization were applied as per scope of work. DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Statement.

Statement of Competence and Independence

DNV applies its own management standards and compliance policies for quality control, in accordance with ISO IEC 17029:2019 -Conformity Assessment - General principles and requirements for validation and verification bodies, and accordingly maintains a comprehensive system of quality control, including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements. We have complied with the DNV Code of Conduct¹ during the assessment and maintain independence where required by relevant ethical requirements. This engagement work was carried out by an independent team of sustainability assurance professionals. DNV was not involved in the preparation of statements or data included in the Framework except for this Statement. DNV maintains complete impartiality toward stakeholders interviewed during the assessment process.

¹ DNV Code of Conduct is available from DNV website (www.dnv.com)

DNV'S INDEPENDENT ASSESSMENT

Scope and Objectives

Thailand's Provincial Electricity Authority ("PEA" or the "Customer") is a State Enterprise in the energy sector under the Ministry of Interior and is regulated by the State Enterprise Policy Office. PEA is responsible for providing electricity in 74 provinces of Thailand – reaching all of the country's provinces other than Bangkok, Nonthaburi, and Samut Prakan. PEA places great importance to support transition for users towards low carbon economy and net zero, with an aim to decarbonize the distribution network through various measures including investments in grid modernization and the development of microgrids.

PEA has developed a Sustainable Finance Framework ("Framework") with the aim to raise proceeds of any bonds/loans (collectively, "sustainable finance instruments" or "SFIs") to finance and/or refinance, either wholly or in part, investments in existing projects and new specified initiatives aimed at advancing PEA's sustainability agenda. The Framework is intended to be in alignment with the stated Standards and Principles (collectively the "Principles & Standards"):

- Green Bond Principles ("GBP") issued by the International Capital Markets Association ("ICMA") in June 2021
- 2. ASEAN Green Bond Standards ("ASEAN GBS") issued by the ASEAN Capital Markets Forum ("ACMF") in October 2017
- Green Loan Principles ("GLP") issued by the Loan Market Association ("LMA") / Asia-Pacific Loan Market Association ("APLMA") / Loan Syndications and Trading Association ("LSTA") in February 2023
- 4. Social Bond Principles ("SBP") issued by ICMA in June 2023
- 5. ASEAN Social Bond Standards ("ASEAN SBS") issued by the ACMF in October 2018
- 6. Social Loan Principles ("SLP") issued by LMA / APLMA / LSTA in February 2023
- 7. Sustainability Bond Guidelines ("SBG") issued by ICMA in June 2021
- 8. ASEAN Sustainability Bond Standards ("ASEAN SuBS") issued by ACMF in October 2018

The Framework is also intended to be aligned with the ASEAN Taxonomy for Sustainable Finance Version 3 ("AT V3"), published in April 2024.

DNV (Thailand) Co., Ltd. ("DNV") has been commissioned by PEA to review its Framework and provide a Second Party Opinion on the Framework, based on the Principles & Standards and Taxonomies.

Our methodology to achieve this is described under 'Work Undertaken' below. We were not commissioned to provide independent assurance or other audit activities.

No assurance is provided regarding the financial performance of instruments issued via PEA's Framework, the value of any investments, or the long-term environmental benefits of the transaction. Our objective has been to provide an assessment that the Framework has met the criteria established on the basis set out below.

Responsibilities of the Management of the Customer and DNV

The management of PEA has provided the information and data used by DNV during the delivery of this review. Our statement represents an independent opinion and is intended to inform PEA management and other interested stakeholders in the SFIs as to whether the SFIs are aligned with the stated Principles & Standards and Taxonomies. In our work we have relied on the information and the facts presented to us by PEA. DNV is not responsible for any aspect of the nominated assets referred to in this opinion and cannot be held liable if estimates, findings, opinions, or conclusions are incorrect. Thus, DNV shall not be held liable if any of the information or data provided by PEA's management and used as a basis for this assessment were not correct or complete.

Basis of DNV's Opinion

We have adapted our assessment methodology to create the PEA-specific Eligibility Assessment Protocol (henceforth referred to as "Protocol"). Our Protocol includes a set of suitable criteria that can be used to underpin DNV's opinion.

As per our Protocol, the criteria against which the Framework has been reviewed are grouped under the four core components:

1. Use of Proceeds

The Use of Proceeds criteria are guided by the requirement that an issuer of a bond / a borrower of a loan must use the funds raised to finance or refinance or to repay equity of eligible activities. The eligible activities should produce clear environmental and social benefits.

2. Process for Project Evaluation and Selection

The Project Evaluation and Selection criteria are guided by the requirements that an issuer of a bond / a borrower of a loan should outline the process it follows when determining eligibility of an investment using Sustainability Bond / Loan proceeds and outline any impact objectives it will consider.

3. Management of Proceeds

The Management of Proceeds criteria are guided by the requirements that a bond / loan should be tracked within the organization, that separate portfolios should be created when necessary and that a declaration of how unallocated funds will be handled.

4. Reporting

The Reporting criteria are guided by the recommendation that at least annual reporting should be made of the use of proceeds and that quantitative and / or qualitative performance indicators should be used, where feasible.

No assurance is provided regarding the financial performance of instruments issued via the Framework, the value of any investments, or the long-term environmental benefits of the transaction. Our objective has been to provide an assessment that the Framework has met the criteria established on the basis set out below.

Work Undertaken

Our work constituted a high-level review of the available information, based on the understanding that this information was provided to us by PEA in good faith. We have not performed an audit or other tests to check the veracity of the information provided to us. The work undertaken to form our opinion included:

- Creation of a Protocol, adapted to the purpose of the SFIs, as described above and in Schedule 3 to this Assessment;
- Assessment of documentary evidence provided by PEA on the SFIs and supplemented by a highlevel desktop research. These checks refer to current assessment best practices and standards methodology;
- Review of published materials by PEA and PEA's website;
- Discussions with PEA's management, and review of relevant documentation and evidence related to the criteria of the Protocol; and
- Documentation of findings against each element of the criteria.

Our opinion as detailed below is a summary of these findings.

Findings and DNV's Opinion

DNV's findings on the alignment with Principles & Standards are listed below:

1. Use of Proceeds

PEA will use the proceeds of any bonds and / or loans issued under the Framework to finance and / or refinance either wholly or in part, investments in existing projects and new specified initiatives aimed at advancing PEA's sustainability agenda.

The Framework defines the following eligible project categories:

- Renewable energy
- Climate change adaptation
- Affordable basic infrastructure

DNV undertook an analysis of the associated project types to determine the eligibility as Green and Social Projects and in line with the Principles & Standards. Furthermore, DNV confirms that those proposed projects assessed as Green meet the technical screening criteria (TSC) to be classified as Green under AT V3.

DNV concludes that the eligible categories outlined in the Framework are consistent with the categories outlined in the Principles & Standards and Taxonomies.

2. Process for Project Evaluation and Selection

PEA states that the Environmental, Social, and Governance (ESG) Bond Committee is mandated to align the selection of projects with PEA's sustainability objectives. The Framework describes a robust governance structure for selecting projects for investment. PEA also indicates its strategy to manage the process and the approach taken for selection and evaluation, through fulfilling 4 key criteria:

- Alignment with PEA's material topics, categorized within the 3P paradigm—Performance, People, Planet.
- Demonstrable and quantifiable environmental or social impact.
- Compliance with applicable ASEAN Taxonomy Activities.
- Strategic alignment with Thailand's 4D1E (Digitalization, De-centralization, De-regulation, Decarbonization, and Electrification) energy framework and PEA's 2023–2026 strategic objectives.

DNV concludes that PEA's Framework appropriately describes the process for Project Evaluation and Selection.

3. Management of Proceeds

PEA has stated that the net proceeds from the issuance of the SFIs will be earmarked for allocation to finance and/or refinance eligible projects, as defined in the Use of Proceeds section of this framework. PEA will ensure that the amount of proceeds allocated to eligible projects will equal or exceed the balance of net proceeds from the outstanding instruments. PEA will implement internal tracking, providing a link between the SFIs proceeds and their allocation to eligible projects. Until full allocation, any unallocated proceeds may be temporarily placed in cash, cash equivalents, or invested in other short-term financial instruments that align with PEA's liquidity management and investment policies. PEA commits to make best efforts to ensure that no proceeds will be invested in fossil-fuel related projects or any activities that contradict its sustainability objectives.

DNV has reviewed the evidence presented and concludes that the Framework appropriately describes the process for Management of Proceeds.

4. Reporting

PEA has stated that it will disclose and publish updates of the allocation of the proceeds of the SFIs, publicly on its website, annually until full allocation.

Reporting will be made through Allocation Reports and Impact Reports. Allocation Reports will detail the projects financed, the amount allocated, and the balance of the unallocated proceeds.

On the basis of the information provided by PEA and the work undertaken, it is DNV's opinion that the Framework meets the criteria established in the Protocol and that it is aligned with the stated definition of Green and Social Financing Instruments within the Principles & Standards.

DNV (Thailand) Co., Ltd. Bangkok, Thailand / 26 June 2024

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Schedule 1. Description of Categories to be financed or refinanced through PEA's Use of Proceeds

Environmental and Social Objectives

| Green Project Categories | Eligible Criteria and Description | Intended Environmental Benefit | DNV Findings |
|---------------------------------|--|---|---|
| Renewable Energy | Projects encompassing various domains, including production, transmission and distribution, appliances, and product development of renewable energy. Example of project(s): Microgrid Development at Phaluai Island, Suratthani Province Project to establish a small-scale localized and independent energy system on the island of Koh Phaluai It will be powered by solar panels with batteries, and fossil fuel generators will be used only for emergency back- up | Production, transmission, and distribution of renewable energy sources Reduction of CO₂ and other GHG emissions while ensuring that the emission of the grid will be below 100 gCO₂e/kWh | The activities may be classified Green under AT V3 (see following table for details). |
| Climate Change Adaptation | Projects designed to enhance resilience and adaptation to climate change impacts, with a focus on sustainable energy solutions and reducing resource vulnerability. Example of project(s): The 115kV submarine cable extension to Samui Island, Suratthani Province Project for Replacement and Power Reinforcement. This initiative focuses on boosting the electricity transmission capabilities to Koh Samui through advanced undersea cable technology. The submarine cable extension to Tao Island, Suratthani Province Project is building underwater cable infrastructure to provide reliable electricity to Koh Tao Island. | Submarine cable will help: Increase energy capacity and security for island systems, aiding in their adaptation to changing policies and supporting economic growth and the well- being of residents and visitors amid climate change. Enable the operation of energy-intensive infrastructure such as freshwater purification facilities, addressing the islands' water crisis and reducing dependency on fossil fuels for water transportation from the mainland. | The activities may be classified Green under AT V3 (see following table for details). |

| Social Project Categories | Eligible Criteria and Description | Intended Social Benefit | DNV Findings |
|---------------------------------------|---|--|--|
| Affordable Basic Infrastructure | Projects that focus on enhancing energy accessibility, particularly to areas without access to electricity, and elevating the quality of life for beneficiaries. Example of project(s): Agricultural Electrification Project, 3rd Stage to extend the electrical grid to agricultural areas without access to electricity. Power System Development on Islands (Kraten (Tan) island) to enhance the electricity infrastructure on various islands, including Koh Kra-Ten. New Rural Household Electrification, Phase 3, which is expanding electricity access to new households using overhead transmission lines. | Enhancing energy accessibility and reliability, which in turn reduce usage of diesel generators; and elevating the quality of life for beneficiaries. Target groups: people in remote areas | The proposed types of activities may be classified as social projects in accordance with the Principles & Standards in that they represent infrastructure which promotes or supports: • Basic services (water transport, energy). • Employment generation, by ensuring essential services to tourist industries. • Food security, by providing electrical supplies to agricultural areas. |

PEA's financing proceeds shall not be utilized towards the following activities:

• Fossil-fuel power generation projects² and projects involving activities that pose social impacts related to alcohol, gambling, tobacco and weaponry.

Alignment with technical screening criteria (TSC) of the ASEAN Taxonomy Version 3

The table below highlights the alignment of Green Project Categories with the Green technical screening criteria of the AT V3.

| Green Project Categories | Alignment with ASEAN Taxonomy V3 Green TSC |
|--------------------------------|--|
| Renewable | EO1 (Climate Change Mitigation) |
| Energy | 351[013] Hybrid fossil, renewable power generation, T&D, and/or energy storage for Island Systems: PEA has stated that the systems will supply electricity at an emissions factor <100 gCO₂/kWh. Fossil fuel generators will be used as emergency back-up only; this is acceptable under AT V3 assuming these do not cause the emissions factor to exceed the allowable limit. |

 2 Note that some microgrid projects may include fossil fuel generators, but only to be used as emergency back-up.

| | The microgrid ³ as a complete unit, including all generation equipment, is aligned with the Green TSC for this activity. |
|---------------------------------|---|
| | 351[071] Transmission and distribution (T&D) of electricity: T&D systems which supply electricity at an emissions factor <100 gCO₂/kWh may be classified as Green. |
| | AT V3 also classifies forms of low-carbon power generation (<100 gCO₂/kWh) and energy storage as Green, e.g.: 351[021] Electricity generation using solar photovoltaic technology 351[072] Storage of electricity, including pumped storage |
| Climate Change Adaptation | EO2 (Climate Change Adaptation) 351[071] Transmission and distribution (T&D) of electricity It can be shown that the proposed investment will have a positive effect on climate change adaptation⁴. The area is projected to suffer higher temperatures and other severe weather conditions during the life of the proposed investments.⁵ Increased population and tourist activity have caused the demand for fresh water to spike, resulting in shortages with the additional uncertainty of precipitation.^{6 7} Climate change will exacerbate already existing strains on the provision of essential services such as water supplies on the islands. This will necessitate a more secure supply of electricity in a period when greater demands will be placed on the grid to meet other environmental objectives, such as electrification of transport. The proposed interconnector represents an effective adaptation solution and is |
| | therefore aligned with Green TSC for this activity in accordance with the ASEAN Taxonomy. |

Do No Significant Harm (DNSH)

Activities to be assessed as aligned with environmental objectives as defined by the AT V3 must also demonstrate that they will do no significant harm (DNSH) to other environmental objectives. The activities may also not directly or indirectly detract from the intended environmental objective(s).

Evidence has been submitted by PEA to demonstrate DNSH as summarised in the tables below.

Based on the statements below, DNV is of the opinion that the proposed activities will do no significant harm to any environmental objectives, nor will they directly or indirectly detract from the intended environmental objectives.

³ Which must fulfil AT V3 requirements of a system comprising grid-connected power generation, electrical distribution, storage, control assets and loads, which have the ability to operate together independently of a wider electrical network and with a total nameplate power generation capacity of <100 MW.</p>

⁴ As opposed to the CRVA in the DNSH section, which shows that the proposed investments will not cause significant harm or directly or indirectly detract for the environmental objective.

⁵ World Bank Group, Asian Development Bank. (2021) Thailand: Climate Risk Country Profile. Washington, DC: World Bank Group.

⁶ Board, J. (2023). N FOCUS: 'We are in a crisis right now' - Koh Samui enduring severe water shortages as tourism demand booms. Channel News Asia.

⁷ Tangwanichgopong, S. (2019). Thailand gears up to protect its tourism sector from climate change. German Cooperation. Accessed from: https://www.thai-german-cooperation.info/en_US/thailand-gears-up-to-protect-its-tourism-sector-from-climate-change/.

EO2: Climate Change Adaptation

Climate Risk and Vulnerability Assessment (CRVA) Checklist

| Step | Item | Description | Explanation | Status |
|------|--|---|--|---|
| 1A | Lifespan of the Activity equipment and materials | Activity description | What is the proposed Activity? | Electrification to customers on islands, (1) Submarine cable (2) Micro Grid (Solar Farm + BESS) (3) Distribution system |
| 18 | | Equipment and materials description | What equipment and materials will be used to perform this Activity? | Submarine cable; protection equipment; ceramic insulators; monitoring and control equipment Solar Panels, Inverters, Battery Distribution system; protection equipment; monitoring and control equipment |
| 1C | | Activity start | When will the Activity start operations? | (1) Submarine cable – commence operation between 2024-2025 |
| 1D | | Activity end | When will the Activity cease operations (either through deterioration of components or reduced demand for Activity)? | and operation lifetime for project is 30 years (2) Micro Grid (Solar Farm + BESS) - commence operation in 2024 and operation lifetime of Solar is 30 years and BESS, 15 years (3) Distribution system - commence operation between 2024-2025 and operation lifetime for project is 30 years |
| 1E | | Operational life >10 years? | Will the operational life of the Activity be more than 10 years? If no, conduct assessment using current IPCC climate scenarios and trends based on extrapolated current climate data. If yes, conduct current and future assessment using both IPCC climate scenarios and trends. | Yes. |
| 2A | Climate related hazards | Potential climate risks to the Activity | Identify and list potential risks to the Activity from Table 2, considering location of the Activity and applicable scenarios and trends as described in 1E. | Heavy rain and stormsCoastal erosion |
| 2B | | Evaluate most common potential risks | Consider the likelihood of the risk based on the location of the Activity. | Heavy rain and storms may increase which could cause the poles to collapse, resulting in blackout. Coastal erosion may occur. |

| 3A 3B | Risk assessment | Projection of climate hazards | If activity has operational life >10 years, what potential hazards may occur based on using both IPCC climate scenarios and trends? | Rainfall is expected to slightly increase, given the projection of rainfall in RCP 2.6 and RCP 8.5 can vary. Typhoons entering Thailand are expected to increase over the next 20 years (up to 2043) ⁸ . |
|----------|---|---|---|---|
| 3C | | Potential impact of climate related hazards | How could climate- related hazards could affect elements of the Activity? Direct impacts may not always occur; some may also be indirect (or impacts in succession). | Heavy rain and storms may increase which could cause the poles to collapse, resulting in blackout. Coastal erosion may require movement/relocation of riser poles. |
| 4A | Identify adequate and effective adaptation solutions | Adaptive solutions | List adequate and effective adaptation solutions under identified climate- related hazards. | PEA continues to plan for climate change, both in terms of mitigation, and also adaptation ⁹ . PEA is committed to maintaining a secure and stable grid into the future with consideration to climate change as well as other challenges ¹⁰ . |

EO3: Protection of Healthy Ecosystems and Biodiversity

Commitment to protecting Biodiversity and Ecology

PEA is committed to conduct environmental assessments (i.e. Initial Environmental Examination: IEE), where applicable, to ensure that project development complies with relevant laws and regulations and minimizes negative impacts to the extent possible. The IEE process includes economic and social benefits analysis, and environmental assessment, including biological resources as well as mitigation and monitoring measures.¹¹

EO4: Resource Resilience and the Transition to a Circular Economy

Lifecycle Assessment (LCA) Checklist

| Step | Item | Description | Explanation | Status |
|------|------------------------|--|--|--|
| 1A | Activity Definition | Activity | What is the proposed activity? | Electrification to customers on islands, (1) Submarine cable (2) Micro Grid (Solar Farm + BESS) (3) Distribution system |
| 18 | | Period of Activity (Start / End) | When will the Activity start and what it is expected life? | Submarine cable - commence operation between 2024-2025 and operation lifetime for project is 30 years Micro Grid (Solar Farm + BESS) - commence operation in 2024 and operation lifetime of Solar is 30 years and BESS, 15 years Distribution system - commence operation between 2024-2025 and operation lifetime for project is 30 years |

⁸ <u>https://climateknowledgeportal.worldbank.org/sites/default/files/2021-08/15853-WB_Thailand%20Country%20Profile-WEB_0.pdf</u>

⁹ https://sustainability.pea.co.th/environmental-dimension/

¹⁰ https://sustainability.pea.co.th/wp-content/uploads/2023/08/SD-Report-2564-TH-1.pdf

¹¹ <u>https://www.pea.co.th/en/About-PEA/Operating-Results/Sustainable-Finance</u>

| 2A | Inputs and outputs throughout Activity lifecycle | Initial infrastructure / equipment | High level view of main equipment items | Submarine cable; protection equipment; ceramic insulators; monitoring and control equipment Solar Panels, Inverters, Battery Distribution system; protection equipment; monitoring and control equipment |
|----|--|--|---|---|
| 2B | | Raw materials used | What type of raw materials will be used for the activity? (Mainly applies to manufacturing Activities) | Not applicable – Activity does not consume raw materials |
| 2C | | Replacements and Spares | What spares are likely to be consumed during Activity life? | Preventive and corrective maintenance (1) There are two annual examinations for distribution system: visual inspection of all equipment; and corona test at the power cable. The defective equipment will be replaced as soon as possible. (2) There are two annual examinations for submarine cable: visual inspection of riser poles and all equipment; and partial discharge test at the termination (connection of overhead cable and submarine cable) and the submarine cable. Defective equipment will be replaced as soon as possible. |
| 2D | | Energy use | What forms of energy does the Activity consume? | (1) Submarine cable Equipment is intended for the distribution of electricity to customers but draws relatively small amounts of power from the grid for its own operation. There is a change of energy source in the case of island electrification, from diesel fuel to power grid Microgrid - renewable energy |
| 2E | - | Emissions | What emissions does the Activity make? | Activity will have emissions in the case of using a diesel generator for back up, but small amounts. |
| 2F | | Waste Streams | What forms of waste will the Activity generate in its lifetime? | Activity will result in small volumes of waste resulting from maintenance, repairs and replacements during equipment life. (1) Trees and bushes close to the distribution system are trimmed twice a year to prevent blackouts. However, little wood will be cut as the distribution system is constructed mostly on the edge of the roads. (2) Defective equipment |

| ЗА | PotentialInitialimpacts frominfrastructurethe Activity/ equipment | For each of these categories, what are or could be the impact on | Activity will result in significant use of up-front equipment (e.g. cabling). | |
|----|---|--|---|---|
| 3B | on EO4 (circular economy and | Raw materials used | E04? | Not applicable |
| 3C | resource resilience) | Replacements and Spares | | Replacements and spares are likely to be minimal during operation and will be defined in operations and maintenance plans. |
| 3D | | Energy use | | Low impact |
| 3E | | Emissions | | No impact |
| 3F | | Waste Streams | | Waste during operation is likely to be minimal. |
| 4A | Proposed actions and improvements | Initial infrastructure / equipment | What actions are or will be implemented to avoid harm to EO4? | Where possible, replaced equipment will be sent for recycling. |
| 4B | to mitigate impact | Raw materials used | | Not applicable |
| 4C | | Replacements and Spares | | See `Initial infrastructure / equipment' |
| 4D | | Energy use | | Not applicable |
| 4E | | Emissions | | Not applicable |
| 4F | | Waste Streams | | See `Initial infrastructure / equipment' |

DNV confirms that the proposed activities meet the DNSH requirements as defined by the AT V3.

Social Aspects

Activities to be assessed as aligned with environmental objectives as defined by the AT V3 must also demonstrate that they will not harm social aspects (SA). SA relates to social conditions which could potentially be harmed by an activity.

PEA has committed to protect social aspects in the conduct of its activities¹², including:

- Human Rights
- Development And Maintenance of Human Resources

DNV confirms that the proposed activities meet the SA requirements as defined by the AT V3.

¹² https://sustainability.pea.co.th/en/social-dimension/

Schedule 2. Contributions to UN SDGs

| Eligible Project Categories | UN SDGs | DNV Findings |
|------------------------------------|--|---|
| Renewable Energy | SDG 7: Affordable and Clean Energy | DNV is of the opinion that the eligible categories outlined in the Framework |
| Climate Change Adaptation | SDG 3: Good Health and Well-being | are reasonably expected to contribute to the achievement of the listed UN |
| | SDG 7: Affordable and Clean Energy | SDGs. |
| | SDG 11: Sustainable Cities and Communities | |
| Affordable Basic Infrastructure | SDG 9: Industry, Innovation, and Infrastructure | |

Schedule 3. Eligibility Assessment Protocol

1. Use of Proceeds

| Ref. | Criteria | Requirements | DNV Findings |
|------|--|--|--|
| 1a | Type of Bond / Loan | The Bond / Loan must fall in one of the following categories, as defined by the Principles & Standards: | The Framework states that PEA will use the proceeds of any bonds and / or loans issued under the Framework to finance and / or refinance either wholly or in part, investments in existing projects and new specified initiatives aimed at advancing PEA's sustainability agenda. |
| | | Green / Social Use of Proceeds Bond Green / Social Use of Proceeds Revenue Bond | DNV can confirm that the process is well aligned with the Principles & Standards. The reviewed evidence confirms that the SFIs issued under the Framework will meet the criteria under the Principles & Standards. |
| | | Green / Social Project Bond | |
| | | Green / Social Securitized Bond | |
| | | Loan instrument made available for Green / Social project (Green / Social use of loan proceeds) | |
| 1b | Green / Social Project Categories | The cornerstones of Green / Social Bonds and Loans | Eligible project categories presented by PEA are as follows: • Renewable energy |
| | | of the proceeds of | Climate change adaptation |
| | | the bonds or the loans which should | Affordable basic infrastructure |
| | be appropriately described in the legal documentation for the security. | | The above-mentioned project categories meet the requirements for Eligible Green and Social Project Categories, as defined in the Principles & Standards. DNV can confirm this to be well aligned with the Principles & Standards, as well as applicable TSC of the AT V3. |
| 1c | 1c Environmental All designated and Social Green / Social Benefits Project categorie | | The Framework provides a detailed description of the intended environmental and social benefits from each project category. This is shown as follows: |
| | | should provide clear | Renewable energy: |
| | | environmentally and socially sustainable | Reduction of CO₂ and other GHG emissions while ensuring that the emission of the grid will be below 100gCO₂e/kWh. |
| | | where feasible, will | Climate change adaptation: |
| | | be quantified or | Increase energy capacity and security for island systems, aiding in their adaptation to changing |

| | | assessed by the Issuer. | policies and supporting economic growth and the well-being of residents and visitors amid climate change. Enable the operation of energy-intensive infrastructure such as freshwater purification facilities, addressing the island's water crisis and reducing dependency on fossil fuels for water transportation from the mainland. Affordable basic infrastructure: Enhancing energy accessibility and reliability, which in turn reduce usage of diesel generators; and elevating the quality of life for beneficiaries (Target groups: people in remote areas) DNV can confirm that the proposed use of proceeds will reasonably be expected to deliver meaningful |
|----|------------------------|---|--|
| | | | environmental and social benefits. |
| 10 | l Refinancing Share | In the event that a proportion of the proceeds may be used for refinancing, it is | The Framework states that the net proceeds from the issuance of the SFIs will be earmarked for allocation to finance and/or refinance the eligible projects, ensuring that the amount will equal or exceed the balance of net proceeds from the outstanding instruments. |
| | | recommended that issuers provide an estimate of the share of financing vs. re-financing, and where appropriate, also clarify which investments or project portfolios | Based on the scope and definition of the eligible project categories listed under the Framework, the financing vs. refinancing share may be defined on a per-case basis. |
| | | | The proposed management of net proceeds from the SFIs is confirmed by DNV to reasonably be expected to meet the criteria under the Principles & Standards. |
| | | may be remanced. | |

2. Process for Project Selection and Evaluation

| Ref. | Criteria | Requirements | DNV Findings |
|------|---------------------------------|---|--|
| 2a | Investment- Decision Process | The Issuer of a Green / Social Bond and Loan should outline the decision-making process it follows to determine the eligibility of projects using Green / Social Bond and Loan proceeds. This includes, without limitation: • The environmental and social objectives of the | PEA states that the Environmental, Social, and Governance (ESG) Bond Committee is mandated to align the selection of projects with PEA's sustainability objectives. There is a 3-step evaluation process under which PEA will follow in selecting and evaluating eligible projects to be financed/refinanced with the use of proceeds. The procedure will be repeated to ensure that eligible projects, assets, and expenditures are in accordance with PEA's Framework. DNV can confirm this process for project selection and evaluation to be well aligned with the Principles & Standards. |

| | | eligible Green / Social Projects; The process by which the issuer determines how the projects fit within the eligible Green / Social Projects categories; and Complementary information on processes by which the issuer identifies and manages perceived environmental and social risks associated with the relevant project(s). | |
|----|--|---|--|
| 2b | Issuer / Borrower's Environmental and Governance Framework | Issuers are also encouraged to: Position the relevant information within the context of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability. Provide information, if relevant, on the alignment of projects with official or market-based taxonomies, related eligibility criteria Have a process in place to identify mitigants to known material risks of negative environmental and/or social impacts from the relevant project(s). | The Framework describes a robust governance structure for selecting projects for investment. PEA also indicates its strategy to manage the process and the approach taken for selection and evaluation. Projects seeking funding through the SFIs must fulfil four core criteria: Alignment with PEA's material topics, categorized within the 3P paradigm — Performance, People, Planet. Demonstrable and quantifiable environmental or social impact. Compliance with applicable ASEAN Taxonomy Activities. Strategic alignment with Thailand's 4D1E energy framework and PEA's 2023-2026 strategic objectives. DNV can confirm that PEA's environmental, social, and governance (ESG) strategies and grouping of projects with eligibility criteria, are aligned with the Principles & Standards. |

3. Management of Proceeds

| Ref. | Criteria | Requirements | DNV Findings |
|------|-----------|---|--|
| 3a | Procedure | (bond) The het proceeds of Green / Social 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 that will be linked to the Issuer's lending and investment operations for Green / Social Projects. (Loan) The proceeds of Green / Social Loans should be credited to a dedicated account or otherwise tracked by the borrower in an appropriate manner, so as to maintain transparency and promote the integrity of the product. Where a green loan takes the form of one or more tranches of a loan facility, each green tranche(s) must be clearly designated, with proceeds of the green tranche(s) credited to a separate account or tracked by the borrower in an appropriate manner. | The net proceeds from the issuance of SFIS will be allocated to finance or refinance eligible projects as defined in the Framework's Use of Proceeds section. PEA will ensure that the amount allocated to these projects always equals or exceeds the net proceeds from the outstanding instruments. PEA will use internal tracking to clearly link the SFIs proceeds to the eligible projects, detailing the allocation amount, project name, expected sustainability impact, and completion status. Any unallocated proceeds will be temporarily placed in cash, cash equivalents, or other short-term financial instruments, ensuring they align with PEA's liquidity management and investment policies, as well as the criteria laid down in the Framework. DNV Can confirm that PEA's management procedures are aligned with the Principles & Standards. |

| 3b | Tracking Procedure | So long as the Green / Social Bonds or Loans are outstanding, the balance of the tracked proceeds should be periodically reduced by amounts matching eligible green investments or loan disbursements made during that period. | The Framework states that the net proceeds from the issuance of the SFIs will be earmarked for allocation to finance and/or refinance the listed eligible projects under Schedule 1. PEA ensures that, at all times, the amount of proceeds allocated to eligible projects will equal or exceed the balance of net proceeds from the outstanding instruments. DNV confirms that the Framework outlines processes to track proceeds and allocations to the nominated projects, that are aligned with the Principles & Standards. |
|----|-----------------------|--|---|
| 3с | Temporary Holdings | Pending such investments or disbursements to eligible Green / Social Projects, the Issuer should make known to investors the intended types of temporary investment instruments for the balance of unallocated proceeds. | The Framework describes the process under which proceeds will be allocated to eligible projects. Until full allocation, any unallocated proceeds may be temporarily placed in cash, cash equivalents, or invested in other short-term financial instruments that align with PEA's liquidity management and investment policies. PEA commits to make best efforts to ensure that no proceeds will be invested in fossil-fuel related projects or any activities that contradicts its sustainability objectives. DNV confirms that the Framework outlines instruments to which unallocated proceeds will be invested, that are aligned with the Principles & Standards. |

4. Reporting

| Periodical Reporting 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/Social Bond or Loan proceeds have been allocated, as well as a brief description of the projects, the amounts allocated, and their expected impact. Where confidentiality Where confidentiality Where confidentiality The annual report should include a list of the projects, the amounts allocated, and their expected impact. Where confidentiality State of new financing and refinancing; and | Ref. | Criteria | Requirements | DNV Findings |
|---|------|-------------------------|--|---|
| agreements, competitive considerations, or a | 4a | Periodical Reporting | 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/Social Bond or Loan proceeds have been allocated, as well as a brief description of the projects, the amounts allocated, and their expected impact. Where confidentiality agreements, competitive considerations, or a | PEA will annually publish updates on the allocation of SFI proceeds on its official website until full allocation, including any material changes to PEA's operations or SFI features, ensuring transparency and rigorous management. This includes: 1. Allocation Reporting. PEA will publish an annual allocation report, detailing the projects financed, the amount allocated, and the balance of unallocated proceeds. The allocation report will include the following information: confirmation that funds are allocated eligible assets, projects, and expenditures within this framework; total amount of eligible assets; list of sustainable finance instruments issued and their outstanding amounts; breakdown of eligible assets by eligible category; share of new financing and refinancing; and balance of unallocated proceeds at the reporting end-period. |

| large number of underlying projects limit the amount of detail that can be made available, the GBP recommend that information is presented in generic | Impact Reporting. PEA will also annually publish an impact report. This report will outline the estimated environmental and social impacts of the financed projects, where possible, supported by quantitative and qualitative performance metrics. Impact Metrics | | |
|--|---|---|--|
| terms or on an aggregated portfolio basis (e.g. percentage | ICMA-Eligible Category and UN SDGs | Sample Impact Metrics | |
| allocated to certain project categories). | Renewable Energy | MWh of renewable energy generated | |
| | | Reduction in CO2 emissions (tonnes/year) | |
| | | Capacity of renewable energy installed (MW) | |
| | Climate Change | Number of on-site diesel generators replaced | |
| | Auaptation | Number of households newly connected to the grid provided by the submarine cables | |
| | Affordable Basic | Number of households newly connected to the grid | |
| | Infrastructure | Improvement in energy reliability (% uptime) | |
| | DNV can confirm th aligned with the Pri | nat PEA's reporting procedures are inciples & Standards. | |

Schedule 4. External Review Form

Section 1. Basic Information

Issuer name: Provincial Electricity Authority

Bond ISIN¹³:

Independent External Review provider's name for pre-issuance review: DNV (Thailand) Co., Ltd.

Completion date of this form: 26 June 2024

Section 2. Overview

SCOPE OF REVIEW

The review:

- assessed the 4 core components of the Principles (**complete review**) and confirmed the alignment with the GBP/GLP/SBP/SLP (*delete where appropriate*).
- assessed only some of them (**partial review**) and confirmed the alignment with the GBP/SBP/SBG (*delete where appropriate*); please indicate which ones:
 - □ Use of Proceeds □ Process for Project Evaluation and Selection
 - □ Management of Proceeds □ Reporting
- assessed the alignment with other regulations or standards (CBI, EU GBS, ASEAN Green Bond Standard, ISO 14030, etc.); please indicate which ones:

ROLE(S) OF INDEPENDENT REVIEW PROVIDER

- ☑
 Second Party Opinion
 □
 Certification

 □
 Verification
 □
 Scoring/Rating
- □ Other (please specify):

Does the review include a sustainability quality score¹⁴?

- □ Of the issuer
- □ Of the framework
- ⊠ No scoring

□ Of the selected KPIs/SPTs

Other (please specify):

ASSESSMENT OF THE PROJECT(S)

Does the review include:

 $^{^{13}\,}$ The ISIN code is mandatory for publishing the form in the Sustainable Bond Issuers Database.

¹⁴ The external review may indicate the provider's opinion of the overall sustainability quality of a bond or bond framework and assess whether it has a meaningful impact on advancing contribution to long-term sustainable development.

☑ The environmental and/or social features of the type of project(s) intended for the Use of Proceeds?

☑ The environmental and/or social benefits and impact targeted by the eligible Green and/or Social Project(s) financed by the Green, Social or Sustainability Bond?

☑ The potentially material environmental and/or social risks associated with the project(s) (where relevant)?

ISSUER'S OVERARCHING OBJECTIVES

Does the review include:

An assessment of the issuer's overarching sustainability objectives and strategy, and the policies and/or processes towards their delivery?

An identification and assessment of environmental, social and governance related risks of adverse impact through the Issuer's [actions] and explanations on how they are managed and mitigated by the issuer?

A reference to the issuer's relevant regulations, standards, or frameworks for sustainability-related disclosure and reporting?

CLIMATE TRANSITION STRATEGY¹⁵

Does the review assess:

□ The issuer's climate transition strategy & governance?

□ The alignment of both the long-term and short/medium-term targets with the relevant regional, sector, or international climate scenario?

□ The credibility of the issuer's climate transition strategy to reach its targets?

□ The level/type of independent governance and oversight of the issuer's climate transition strategy (e.g. by independent members of the board, dedicated board sub-committees with relevant expertise, or via the submission of an issuer's climate transition strategy to shareholders' approval).

□ If appropriate, the materiality of the planned transition trajectory in the context of the issuers overall business (including the relevant historical datapoints)?

□ The alignment of the issuer's proposed strategy and targets with appropriate science-based targets and transition pathways ¹⁶ that are deemed necessary to limit climate change to targeted levels?

 \Box The comprehensiveness of the issuer's disclosure to help investors assess its performance holistically¹⁷?

Overall comment on this section:

A global review of the customer climate transition strategy was not part of the assessment. However, the proposed activities are not inconsistent with a net zero strategy.

Section 3. Detailed Review

Reviewers are encouraged to provide the information below to the extent possible and use the comment section to explain the scope of their review.

¹⁵ Where issuers wish to finance projects towards implementing a net zero emissions strategy aligned with the goals of the Paris Agreement, guidance on issuer level disclosures and climate transition strategies may be sought from the <u>Climate Transition Finance Handbook</u>.

¹⁶ GHG emissions reduction targets that are in line with the scale of reductions required to keep the average global temperature increase to ideally 1.5°C, or at the very least to well below 2°C above pre-industrial temperatures. Science Based Targets Initiative (SBTi) is a branded verification body for science-based targets and SBTi verification is one way for issuers to validate the alignment of their emission reduction trajectories with science-based reference trajectories. In addition, ICMA has published a <u>Methodoloaies Reaistry</u> which includes a list of tools to specifically help issuers, investors, or financial intermediaries validate their emission reduction trajectories.

¹⁷ Including information such as the respective contribution (e.g. %) of the different measures to the overall reduction, the total expenses associated with the plan, or the issuer's climate policy engagement.

1. USE OF PROCEEDS

Does the review assess:

 \boxtimes the environmental/social benefits of the project(s)?

☑ whether those benefits are quantifiable and meaningful?

☑ for social projects, whether the target population is properly identified?

Does the review assess if the issuer provides clear information on:

☑ the estimated proceeds allocation per project category (in case of multiple projects)?

☑ the estimated share of financing vs. re-financing (and the related lookback period)?

Overall comment on this section:

PEA intends to utilize proceeds from bonds and loans issued under the Framework to finance or refinance projects aimed at advancing its sustainability agenda, categorized into renewable energy, climate change adaptation, and affordable basic infrastructure. DNV's analysis confirms that the proposed projects align with Green and Social Project criteria and meet technical screening criteria to be classified as Green under AT V3, concluding that the eligible project categories outlined in the Framework are consistent with Principles & Standards and Taxonomies.

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Does the review assess:

 \boxtimes whether the eligibility of the project(s) is aligned with official or market-based taxonomies or recognised international standards? Please specify which ones.¹⁸

⊠ whether the eligible projects are aligned with the overall sustainability strategy of the issuer and/or if the eligible projects are aligned with material ESG-related objectives in the issuer's industry?

☑ the process and governance to set the eligibility criteria including, if applicable, exclusion criteria?

⊠ the processes by which the issuer identifies and manages perceived social and environmental risks associated with the relevant project(s)?

⊠ any process in place to identify mitigants to known material risks of negative social and/or environmental impacts from the relevant project(s)?

Overall comment on this section:

PEA's Environmental, Social, and Governance (ESG) Bond Committee is tasked with aligning project selection with sustainability goals, employing a governance structure detailed in their Framework. PEA's strategy for project evaluation and selection encompasses alignment with material topics, measurable impact, regulatory compliance, and strategic alignment with energy frameworks and organizational objectives, as affirmed by DNV's assessment of their process.

3. MANAGEMENT OF PROCEEDS

Does the review assess:

☑ the issuer's policy for segregating or tracking the proceeds in an appropriate manner?

 $^{^{18}}$ The EU Taxonomy, CBI Taxonomy, UK Taxonomy, China catalogue, etc.

☑ the intended types of temporary investment instruments for unallocated proceeds?

☑ Whether an external auditor will verify the internal tracking of the proceeds and the allocation of the funds?

Overall comment on this section:

The Framework specifies that the net proceeds from the issuance of SFIs will be allocated to finance or refinance eligible projects as defined in the framework's Use of Proceeds section. PEA affirms its commitment to avoiding investments in fossil-fuel related projects, aligning with sustainability objectives, a conclusion supported by DNV's assessment of the Management of Proceeds process.

4. REPORTING

Does the review assess:

☑ the expected type of allocation and impact reporting (bond-by-bond or on a portfolio basis)?

☑ the frequency and the means of disclosure?

☑ the disclosure of the methodology of the expected or achieved impact of the financed project(s)?

Overall comment on this section

PEA plans to regularly disclose updates on how the proceeds of SFIs are allocated, sharing the information publicly on its website. This will be done annually until full allocation is achieved. The updates will be in the form of Allocation Reports and Impact Reports. Allocation Reports will provide details on the projects financed, the amount allocated, and the remaining unallocated proceeds. According to DNV's assessment based on the information provided by PEA, the framework meets the criteria set in the Protocol and aligns with the defined standards for Green and Social Financing Instruments within the Principles & Standards.

Section 4. Additional Information

Useful links (e.g. to the external review provider's methodology or credentials, to the full review, to issuer's documentation, etc.)

https://www.pea.co.th/en/About-PEA/Operating-Results/Sustainable-Finance

https://sustainability.pea.co.th/environmental-dimension/

https://sustainability.pea.co.th/wp-content/uploads/2023/08/SD-Report-2564-TH-1.pdf

https://sustainability.pea.co.th/wp-content/uploads/2024/02/2565-PEA_SD_Report22_EN.pdf

https://sustainability.pea.co.th/en/social-dimension/

Analysis of the contribution of the project(s) to the UN Sustainable Development Goals:

The eligible project categories outlined in the Framework are expected to contribute to the achievement of specific UN Sustainable Development Goals (SDGs). Renewable Energy aligns with SDG 7 (Affordable and Clean Energy), Climate Change Adaptation with SDGs 3 (Good Health and Well-being), 7 (Affordable and Clean Energy), and 11 (Sustainable Cities and Communities), and Affordable Basic Infrastructure with SDG 9 (Industry, Innovation, and Infrastructure), as confirmed by DNV's findings.

Additional assessment in relation to the issuer/bond framework/eligible project(s):

ABOUT ROLE(S) OF REVIEW PROVIDERS AS DEFINED BY THE Principles & Standards

- 1. Second Party Opinion: An institution with environmental expertise, that is independent from the issuer may issue a Second Party Opinion. The institution should be independent from the issuer's adviser for its Green Loan Framework, or appropriate procedures, such as information barriers, will have been implemented within the institution to ensure the independence of the Second Party Opinion. It normally entails an assessment of the alignment with the Principles & Standards In particular, it can include an assessment of the issuer's overarching objectives, strategy, policy and/or processes relating to environmental sustainability, and an evaluation of the environmental features of the type of projects intended for the Use of Proceeds.
- 2. Verification: A borrower or issuer can obtain independent verification against a designated set of criteria, typically pertaining to business processes and/or environmental criteria. Verification may focus on alignment with internal or external standards or claims made by the issuer. Also, evaluation of the environmentally sustainable features of underlying assets may be termed verification and may reference external criteria. Assurance or attestation regarding an issuer's internal tracking method for use of proceeds, allocation of funds from Sustainable Financial Instrument proceeds, statement of environmental impact or alignment of reporting with the Principles & Standards, may also be termed verification.
- **3. Certification:** A borrower or issuer can have its Sustainable Financial Instrument or associated Framework or Use of Proceeds certified against a recognised external green standard or label. A standard or label defines specific criteria, and alignment with such criteria is normally tested by qualified, accredited third parties, which may verify consistency with the certification criteria.
- 4. Green Loan Scoring/Rating: A borrower or issuer can have its Sustainable Financial Instrument or associated Framework or a key feature such as Use of Proceeds evaluated or assessed by qualified third parties, such as specialised research providers or rating agencies, according to an established scoring/rating methodology. The output may include a focus on environmental performance data, the process relative to the Principles & Standards or another benchmark, such as a 2-degree climate change scenario. Such scoring/rating is distinct from credit ratings, which may nonetheless reflect material environmental risks.



WHEN TRUST MATTERS

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