



SERMSANG
POWER CORPORATION



Second Party opinion



SERMSANG POWER CORPORATION PLC (“SSP”) GREEN FINANCING FRAMEWORK

Document Title: Second Party Opinion on SSP’s Green Financing Framework

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Location: Bangkok, Thailand

Date: 6 January 2025

DNV Reference (Project Number): DNV-2024-ASR-10541307

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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

Sermuang Power Corporation Public Company Limited ("SSP" or the "Company") is a holding company focused on investing in renewable energy projects. Established in 2015, SSP aims to generate and sell electricity from renewable sources to various consumers, including large factories and electricity providers. The Company operates in Thailand, Vietnam, Japan, Mongolia, and Indonesia. SSP is committed to sustainable development and corporate social responsibility. The Company adheres to international sustainability standards and actively contributes to the UN SDGs. By focusing on economic, environmental, and social aspects of sustainability, SSP aims to build trust with stakeholders and create a positive impact on the communities it operates in.

SSP has developed a Green Financing Framework ("Framework") with the aim to raise Green Finance Instruments ("GFIs") to finance or refinance new and existing projects as part of its sustainable business strategies and commitment to environmental well-being, as described in the Framework. The Framework is in alignment with the stated Principles and Standards (collectively the "Principles & Standards"):

- the Green Bond Principles ("GBP")², issued by the International Capital Market Association (ICMA) in June 2021;
- the ASEAN Green Bond Standards ("GBS")³, issued by the ASEAN Capital Markets Forum (ACMF) in October 2018 and;
- the Green Loan Principles ("GLP")⁴ issued by the Loan Market Association (LMA) / Asia Pacific Loan Market Association (APLMA) in February 2023

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

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 the Customer'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 SSP 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 SSP management and other interested stakeholders in the bond as to whether the bond is aligned with the GBP. In our work we have relied on the information and the facts presented to us by SSP. 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 SSP's management and used as a basis for this assessment were not correct or complete.

² [Green Bond Principles » ICMA](#)

³ [4.1-ASEAN-Green-Bond-Standards.pdf](#)

⁴ [LMA Green Loan Principles Booklet-220318.pdf](#)

Basis of DNV's Opinion

We have adapted our assessment methodology to create the SSP-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/a borrower of GFIs must use the funds raised to finance or refinance or to repay equity of eligible activities. The eligible activities should produce clear environmental benefits.

2. Process for Project Evaluation and Selection

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

3. Management of Proceeds

The Management of Proceeds criteria are guided by the requirements that GFIs 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 SSP 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 bond, as described above and in Schedule 2 and 3 to this Assessment;
- Assessment of documentary evidence provided by SSP on the GFIs and supplemented by a high-level desktop research. These checks refer to current assessment best practices and standards methodology;
- Review of published materials by SSP and SSP's website;
- Discussions with SSP'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

SSP intends to use the net proceeds of the GFIs to finance and/or refinance and/or to repay equity of new and/or existing eligible projects.

The Framework defines the following eligible project categories.

- Renewable Energy
- Climate-related products

DNV undertook an analysis of the associated project type to determine the eligibility as Green and in line with the Principles & Standards. DNV concludes that the eligible categories outlined in the Framework are consistent with the categories outlined in the Principles & Standards.

2. Process for Project Evaluation and Selection

SSP has set up an evaluation and selection process that is comprised of two main steps: valuation of eligible green projects by Green Finance Working Group ("GFWG") consisting of representatives from Finance and Business Development Team and other departments, and approval of eligible green projects by the Board of Directors.

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

3. Management of Proceeds

SSP will deposit the net proceeds from green financing instruments into its general account. These funds will be tracked, monitored, and documented using internal reporting systems. The proceeds will be allocated and used within 36 months. Unallocated funds will be held as cash or cash equivalents, invested in short-term securities aligned with low-carbon and climate-resilient goals, or used to temporarily reduce existing low-carbon debt. If projects become ineligible, SSP will replace them with suitable eligible green projects.

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

4. Reporting

SSP will publish annual reports on its website detailing how green financing is used. The allocation report shows how much is allocated to each project category and remaining unallocated funds. Impact report will detail the expected environmental benefits of the projects, such as reduced carbon emissions (depending on available data).

On the basis of the information provided by SSP 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 GFIs within the Principles & Standards.

For DNV (Thailand) Co., Ltd.

Bangkok, Thailand / 6 January 2025

Thomas Leonard

Thomas Leonard
Quality Reviewer

Kobrat C.

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Lead Verifier

Schedule 1. Description of Categories to be financed or refinanced through the SSP's Green Financing Instruments

Eligible Green Project Categories	Eligible Criteria and Description	DNV Findings
Renewable Energy	<p>Renewable energy electricity generation and energy storage including:</p> <ul style="list-style-type: none"> • Wind • Solar (concentrated solar power, photovoltaic power) • Ocean power (e.g., wave, tidal, ocean currents, salt gradient) • Hydropower plants with a run-of-river that does not contain artificial reservoir, or power density above 5 W/m², or lifecycle GHG emissions <100 gCO₂e/kWh 	<p>DNV confirms that SSP's existing wind and solar projects meet the technical screening criteria outlined in ASEAN Taxonomy V3. A detailed assessment of Essential Criteria is provided in Schedule 4.</p> <p>For future projects that will be eligible under this Framework, SSP is committed to ensuring that such projects comply with relevant national and/or regional sustainable finance taxonomies.</p>
Climate-related products	<ul style="list-style-type: none"> • Manufacture and sale of finished products that when used will result in energy efficiency in others' operations <ul style="list-style-type: none"> ○ Energy-efficient lighting systems, HVAC systems, appliances ○ Insulation materials ○ Other energy-saving technologies. • Manufacture and sale of finished products that when used will enable others to decrease, store or eliminate GHGs <ul style="list-style-type: none"> ○ Carbon capture and storage 	<p>For future projects that will be eligible under this Framework, SSP is committed to ensuring that such projects comply with relevant national and/or regional sustainable finance taxonomies.</p> <p>DNV recommends that SSP arrange for post-issuance independent verification to confirm the ongoing eligibility of its green projects.</p>

Exclusion Criteria (if relevant))

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

- Fossil fuel power generation projects;
- Generation of nuclear power;
- Biomass plants and geothermal plants with CO₂ emission level of more than 200g CO₂e/kWh;
- Any project involving child labour/forced labour/human trafficking

Schedule 2. Contributions to UN SDGs

Eligible Project Categories	UN SDGs	DNV Findings
Renewable Energy	<p>7.1 By 2030, ensure universal access to affordable, reliable and modern energy services</p> <p>7.2 By 2030, increase substantially the share of renewable energy in the global energy mix</p>	DNV is of the opinion that the eligible category outlined in the Framework contributes to the achievement of the UN SDGs.
Climate-related products	<p>7.3 By 2030, double the global rate of improvement in energy efficiency</p> <p>13.2 Integrate climate change measures into national policies, strategies and planning</p>	

Schedule 3. Eligibility Assessment Protocol

1. Use of Proceeds

Ref.	Criteria	Requirements	DNV Findings
1a	Type of Bond /Loan	<p>The Bond/Loan must fall in one of the following categories, as defined by the Principles & Standards:</p> <ul style="list-style-type: none"> • Green Use of Proceeds Bond • Green Use of Proceeds Revenue Bond • Green Project Bond • Green Securitized Bond • Loan instrument made available for Green project (Green use of loan proceeds) 	<p>The Framework states that the GFIs are Green Use of Proceeds Bond/Loan.</p> <p>The reviewed evidence confirms that the Green Financing Instruments meet the criteria under the Principles & Standards, and DNV confirms this process to be well aligned with the Principles & Standards.</p>
1b	Green Project Categories	<p>The cornerstones of Green Bonds and Loans are the utilization of the proceeds of the bonds or the loans which should be appropriately described in the legal documentation for the security.</p>	<p>DNV conducted the assessment of existing wind and solar projects against ASEAN Taxonomy V3 as the projects span across a few countries in Asia. DNV concluded that Electricity generation from wind power (Activity 351[030]) and Electricity generation using solar photovoltaic technology (Activity 351[021]) automatically meet the Technical Screening Criteria for EO1 Climate Change Mitigation Green use of proceeds under the ASEAN Taxonomy V3 Plus Standard.</p> <p>Future project categories for financing presented by SSP are as follows:</p> <ol style="list-style-type: none"> 1. Electricity generation from wind power in Asia (to be assessed against the Activity 351[030] ASEAN Taxonomy V3 and/or national taxonomy where the project is located) 2. Electricity generation using solar photovoltaic technology in Asia (can be assessed against the Activity 351[021] ASEAN Taxonomy V3 and/or national taxonomy where the project is located) 3. Electricity generation from ocean energy in Asia (to be assessed against the Activity 351[060] ASEAN Taxonomy V3 and/or national taxonomy where the project is located) 4. Electricity generation from hydropower in Asia (to be assessed against the Activity 351[040])

Ref.	Criteria	Requirements	DNV Findings
			<p>ASEAN Taxonomy V3 and/or national taxonomy where the project is located)</p> <ol style="list-style-type: none"> 5. Electricity generation from bioenergy in Thailand (to be assessed against the Activity 351[014] ASEAN Taxonomy V3 or Thailand Taxonomy V1) 6. Waste to Energy projects in Thailand (to be assessed against ASEAN Taxonomy V4 or Thailand Taxonomy V2 when published) 7. Energy efficient products (can be assessed against the Activity Manufacturing of energy efficiency equipment for buildings Thailand Taxonomy V2 Draft or ASEAN Taxonomy V4 when published and/or national taxonomy where the project is located) 8. CCS/CCUS related activities (to be assessed against the Activity 000[010] Transport of CO2 and Activity 000[020] Underground permanent geological storage of CO2 under ASEAN Taxonomy V3 and/or national taxonomy where the project is located) <p>For future projects that will be eligible under this Framework, SSP will ensure compliance with the relevant ASEAN Taxonomy (where applicable) and/or national sustainable finance taxonomy. DNV recommends that SSP conduct post-issuance verification to confirm the ongoing eligibility of these future projects.</p> <p>Based on an online media search, a review of Code of Practice reports, SSP's environmental and social policies, and SSP's sustainability reports, DNV has found no evidence of violations of Environmental Objectives DNSH or Social Aspects. A detailed Essential Criteria assessment is provided in Schedule 4 of this document.</p> <p>The above-mentioned project category meets the Eligible Green Project Categories in the Principles. DNV confirms this to be well aligned with the Principles.</p>
1c	Environmental Benefits	All designated Green Project categories should provide clear environmentally sustainable benefits, which, where feasible, will be quantified or assessed by the Issuer.	<p>Environmental benefits from Renewable Energy and Climate-related Products Activities include reduced GHG emissions and improved electricity consumption efficiency. Examples of impact indicators include tonnes of CO2 avoided (tCO2e/year), and energy savings (MWh/year).</p> <p>DNV confirms that the proposed use of proceeds will reasonably be expected to deliver meaningful environmental benefits.</p>
1d	Refinancing Share	In the event that a proportion of the proceeds may be used for refinancing, it is recommended that	<p>According to SSP Framework, the proceeds will be used for refinancing the following projects:</p> <ol style="list-style-type: none"> 1. Wind power plant projects <ol style="list-style-type: none"> 1.1 Project Romklao Wind Farm, Mukdahan, Thailand

Ref.	Criteria	Requirements	DNV Findings
		issuers provide an estimate of the share of financing vs. re-financing, and where appropriate, also clarify which investments or project portfolios may be refinanced.	<p>1.2 Project Tra Vinh Wind Power, Tra Vinh, Vietnam</p> <p>2. Solar farm power plant projects in Thailand, Japan, Vietnam, and Mongolia and Solar rooftop power plant projects in Thailand and Indonesia</p> <p>3. Xuejia fishery solar power plant project in Taiwan to COD in 2026</p> <p>4. Leo2 solar power plant project in Japan to COD in 2025</p> <p>5. Bago wind power plant project in Philippines to COD in 2026</p> <p>The proposed management of net proceeds from the Green Finance Instruments is confirmed by DNV to reasonably be expected to meet the criteria under the Principles & Standards.</p>

2. Process for Project Selection and Evaluation

Ref.	Criteria	Requirements	DNV Findings
2a	Investment-Decision Process	<p>The Issuer of a Green Bond and Loan should outline the decision-making process it follows to determine the eligibility of projects using Green Bond and Loan proceeds. This includes, without limitation:</p> <ul style="list-style-type: none"> The environmental objectives of the eligible Green Projects; The process by which the issuer determines how the projects fit within the eligible Green 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). 	<p>According to the Framework, SSP has established a dedicated Green Finance Working Group (GFWG). This interdisciplinary group, comprising members from Finance, Business Development, Operations, Sustainability, and Legal departments, plays a crucial role in:</p> <ul style="list-style-type: none"> Project Evaluation: Rigorously reviewing and selecting eligible green projects, ensuring compliance with defined criteria, applicable laws, and company policies. Project Approval: Proposing eligible projects to management and the Board of Directors for final approval. Project Monitoring: Continuously monitoring the performance of approved projects, removing or replacing those that no longer meet eligibility criteria. ESG Risk Management: Identifying and addressing any ESG controversies related to green projects, such as those impacting local communities or the environment. Framework Management: Regularly reviewing and updating the green financing framework to maintain its effectiveness and alignment with evolving sustainability standards. <p>The project selection and approval process follows a multi-tiered approach, with initial evaluation and approval by the GFWG, followed by further review and final approval by the Management Committee and the Board of Directors.</p> <p>DNV confirms this process for project selection and evaluation to be well aligned with the Principles & Standards.</p>

Ref.	Criteria	Requirements	DNV Findings
2b	Issuer/Borrower's Environmental and Governance Framework	<p>Issuers are also encouraged to:</p> <ul style="list-style-type: none"> 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). 	<p>SSP's vision is "to be a leading Asian power producer in providing sustainable energy solution". The Company emphasizes ethical business practices, transparency, and accountability.</p> <p>The establishment of the Corporate Governance & Sustainable Development Committee signifies a proactive approach to integrating ESG considerations into its core operations. This committee oversees policies and guidelines that align with good governance principles, ensuring ethical conduct and fair business practices across all levels of the organization.</p> <p>The executive committee plays a crucial role in formulating guidelines and strategies for sustainable business operations, covering all aspects of ESG. This includes establishing a working group dedicated to corporate sustainability management to oversee the implementation of policies and goals, monitor progress, and ensure compliance with international standards.</p> <p>DNV confirms that SSP's environmental, social, and governance (ESG) strategies and grouping of projects with eligibility criteria, are well aligned with the Principles.</p>

3. Management of Proceeds

Ref.	Criteria	Requirements	DNV Findings
3a	Tracking Procedure	The net proceeds of GFIs should be credited to a sub-account, moved to a sub-portfolio or otherwise tracked by the Issuer/Borrower in an appropriate manner and attested to by a formal internal process that will be linked to the Issuer's/Borrower's lending and investment operations for Green Projects.	<p>The net proceeds from GFIs will be deposited into SSP's general account and managed by its finance team. SSP will track, monitor, and document the use of these proceeds using its internal reporting system.</p> <p>DNV confirms that the Framework outlines processes to track proceeds and allocations to the nominated projects, that are well aligned with the Principles & Standards.</p>
3b	Tracking Procedure	So long as the GFIs are outstanding, the balance of the tracked proceeds should be periodically reduced by amounts matching eligible green	SSP commits to using the proceeds from green financing instruments within 36 months of issuance. These proceeds will be allocated to eligible green projects, such as renewable energy projects. If any of these projects become ineligible, SSP will promptly

		investments or loan disbursements made during that period.	identify and substitute them with other eligible green projects. DNV confirms that the Framework outlines processes to track proceeds and allocations to the nominated projects, that are aligned with the Principles & Standards.
3c	Temporary Holdings	Pending such investments or disbursements to eligible Green Projects, the Issuer should make known to investors the intended types of temporary investment instruments for the balance of unallocated proceeds.	Unallocated proceeds from GFIs will be either held in cash or cash equivalents, or invested in short-term and liquid securities that support a low-carbon and climate-resilient economy, or applied to temporarily reduce existing revolving debt that aligns with a low-carbon and climate-resilient economy, before using the GFIs for eligible green projects. DNV confirms that the Framework outlines instruments to which unallocated proceeds will be invested, that are well aligned with the Principles & Standards.

4. Reporting

Ref.	Criteria	Requirements	DNV Findings
4a	Periodical Reporting	<ul style="list-style-type: none"> • 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 GFIs 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 large number of underlying projects limit the amount of detail that can be made available, the GBP recommend that information is presented in generic terms or on an aggregated portfolio basis (e.g. percentage allocated to certain project categories). 	<p>SSP is committed to transparency regarding its green financing initiatives. They will publish two reports annually on their website:</p> <ul style="list-style-type: none"> • Allocation Report: This report details how the green financing proceeds are used. It will include breakdown of allocated funds by eligible green project category and subcategory, percentage of financing or refinancing provided for projects, remaining unallocated funds, and examples of funded projects (with confidentiality considerations). • Impact Report: This report focuses on the environmental benefits of funded projects. It will include (when possible) installed renewable energy capacity (MWh), and/or annual renewable energy generation (MWh/year), and/or tonnes of CO2 avoided (tCO2eq/year). <p>These reports will be published on SSP's website annually within 1 year after the green financing issuance and then continue until all funds are allocated. Updates will be provided in case of significant changes or project substitutions.</p> <p>DNV confirms that the proposed reporting is consistent with the criteria set out in the Principles & Standards.</p>

Schedule 4. Essential Criteria (EC) Assessment

ASEAN Taxonomy was selected as the benchmarking tool by DNV due to the wide span of SSP projects across many countries in Asia including Thailand, Japan, Mongolia, Indonesia, and Vietnam.

ASEAN Taxonomy requires any activity to fulfil 3 Essential Criteria (EC) which are:

- (1) Do No Significant Harm (DNSH) against other Environmental Objectives (EOs);
- (2) Remedial Measures to Transition (RMT); and
- (3) Social Aspects (SAs)

EC1: DNSH

ASEAN Taxonomy V3 has published 4 Environmental Objectives (EOs) which are:

- EO1: Climate Change Mitigation
- EO2: Climate Change Adaptation
- EO3: Protection of Healthy Ecosystems and Biodiversity
- EO4: Resource Resilience and the Transition to a Circular Economy

DNV has conducted DNSH assessment based on the documents made available to DNV in December 2024 which includes:

- 2017 Environment & Safety Assessment Report for SS's WVO Solar farm project (capacity 5 MW)
- 2013 Initial Environmental Evaluation of SSP's Sermsang Solar Project, Lopburi (capacity 52 MW)
- Code of Practice Monitoring Report for Winchai Wind Power Plant Project, Mukdahan (capacity 45 MW) covering the period of January – December 2023
- SSP's Corporate Sustainability Development Policy⁵ available on SSP's website
- SSP's Environment and Biodiversity Policy⁶ available on SSP's website
- SSP's 2023, 2022, and 2021 Sustainability Reports⁷ available on SSP's website
- Code of Practice Monitoring Report for SSP Solar rooftop project and 2025 Annual Assessment Report on SSP Solar rooftop project issued by ERC

From the result of the assessment, DNV concluded that sufficient measures are in place to prevent significant harm to other environmental objectives.

EO2: Climate Change Adaptation

An activity must demonstrate future resilience of the activity itself to comply with EO2 DNSH ASEAN Taxonomy V3. Based on SSP's 2023, 2022, and 2021 sustainability reports, the summary of potential climate risks, impacts and mitigation measures of SSP projects are shown in the table below.

Table 1: SSP's Potential Climate Risks and Mitigation Measures (EO2 DNSH)

⁵ [SSP - Corporate Governance](#)

⁶ [SSP - Corporate Governance](#)

⁷ [SSP - Sustainable Development](#)

Potential Climate Risk	Data Sources	Assumption and Impact	Mitigation Measure
Floods	Historical natural disaster statistics and IPCC 6 th Assessment Report of projected climate change in Asia	More frequent extreme precipitation and flooding in Southeast Asia will disrupt or cause physical damage to the power plants.	<ul style="list-style-type: none"> - Selection of project areas with low probability of disaster - To implement a weekly maintenance schedule for the water pump - Before the rainy season, measure water levels and clean drainage lines to improve drainage capacity
Droughts	Historical natural disaster statistics and IPCC 6 th Assessment Report of projected climate change in Asia	Rising temperature increases the likelihood of droughts in arid and semiarid areas, may increase the operational costs for purchasing water from third party	To harvest rainwater inside the project site
Changing wind patterns	Approximate 20 years of historical wind data from MERRA -2 climate model from NASA, ERA-5 climate model from the ECMWF, etc. and IPCC 6 th Assessment Report of projected climate change in Asia	Weaker monsoonal winds in the future will decrease the performance of wind farms	The location of wind farms is selected based on climate projection, ensuring that wind conditions at the location selected can generate satisfactory returns.

E03: Protection of Healthy Ecosystems and Biodiversity

Based on the review of Code of Practice Monitoring Reports, interviews with SSP, and online media research, DNV has not found any evidence indicating that Environmental Object 3 (E03) has been compromised or that SSP's Environmental Management and Biodiversity Management Policies have been violated.

Table 2: SSP's potential significant harm to healthy ecosystems and biodiversity (E03 DNSH)

Aspect of Potential Significant Harm	Solar Farm Code of Practice Monitoring Report	Wind Farm Code of Practice Monitoring Report
Protection of Healthy Ecosystems and Biodiversity	The project is required to adhere to all relevant laws, including those pertaining to land use, environmental protection, and cultural preservation.	The project is required to adhere to all relevant laws, including those pertaining to land use, environmental protection, and cultural preservation.

	It is mandatory to attach a site plan depicting the project location and specifying the land use characteristics of the surrounding area. The plan should detail, among other things, structures within a 300-meter radius, environmentally sensitive areas, and the radius encompassing the public consultation and participation area.	It is mandatory to attach a site plan depicting the project location and specifying the land use characteristics of the surrounding area. The plan should detail, among other things, structures within a 300-meter radius, environmentally sensitive areas, and the radius encompassing the public consultation and participation area.
Impact on Water Resources	Records of the water volume used in the project is presented for comparison with the water volume permitted by the authorizing agency. Any problems or obstacles encountered in water usage (if any) must also be reported every six months. For wastewater discharge, a water balance and information on the wastewater treatment system is presented. Water quality of the wastewater must be monitored at least at one station, with a monitoring frequency of once per month. In cases where water is pumped or discharged into surface water bodies, the quality of the surface water must also be monitored.	Records of the water volume used in the project is presented for comparison with the water volume permitted by the authorizing agency. Any problems or obstacles encountered in water usage (if any) must also be reported every six months. For wastewater discharge, a water balance and information on the wastewater treatment system must be presented. Water quality of the wastewater must be monitored at least at one station, with a monitoring frequency of once per month. In cases where water is pumped or discharged into surface water bodies, the quality of the surface water must also be monitored.
Impact related to Noise	Not relevant	Noise level measurements is conducted in the atmosphere at least at four stations in the vicinity of the project site that may be affected by the project. These measurements are conducted twice a year and continuously for at least seven days, covering both weekdays and weekends. A site plan showing the locations of the noise monitoring stations is attached, with the stations placed at appropriate locations that represent areas likely to be affected by the project.
Impact on Air	Not relevant	Not relevant
Impact on Soil	Prior to project implementation, a study on soil conditions and soil erosion must be conducted	Prior to project implementation, a study on soil conditions and soil erosion must be conducted

	to establish a baseline. The data obtained from this study should be used to consider and determine additional measures.	to establish a baseline. The data obtained from this study should be used to consider and determine additional measures.
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EO4: Resource Resilience and the Transition to a Circular Economy

An activity is considered harmful to EO4 if it uses materials and natural resources inefficiently at any stage of a product’s lifecycle, or significantly increases the production, burning, or disposal of waste, except for non-recyclable hazardous waste incineration.

The table below shows the result of LCA Checklist based on the review of SSP 2023 Sustainability report and information related to the performance of SS WVO Solar Farm project (capacity 5 MW) and SPN’s Sermsang Solar Project (capacity 52 MW). It represents the best information and assessments available. Any areas of potential additional study are highlighted.

Table 3: SSP’s Life Cycle Assessment (LCA) Checklist (EO4 DNSH)

Step	Item	Description	Explanation	SSP Response
1A	Activity Definition	Activity	What is the proposed activity?	Solar Farms in Thailand
1B		Period of Activity (Start / End)	When will the Activity start and what it is expected life?	SS’s Sermsang Solar Project – COD 2015 SPN’s WVO Project - COD 2018. Expected lifespan 30 years
2A	Inputs and outputs throughout Activity lifecycle	Initial infrastructure / equipment	High level view of main equipment items	Main machinery and equipment, such as solar panels, inverters, batteries, system controller and data acquisition, and backup power devices. Transmission and distribution systems include transformer and switch gear.
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?	Inverters need replacement every 10-15 years.
2D		Energy use	What forms of energy does the Activity consume?	Not applicable
2E		Emissions	What emissions	No direct emission generated from SPN or SS. Scope 2 emissions in 2023 was

			does the Activity make?	384.4 tCO2e for SPN, and 13 tCO2e for SS. Scope 3 emission from purchased and disposal of PV cells needs to be considered.
2F		Waste Streams	What forms of waste will the Activity generate in its lifetime?	COP Monitoring report and IEE report refer to waste generated during construction phase, operation and end-of-life phase. There are 2 types of waste generated from solar farms: hazardous and non-hazardous waste.
3A	Potential impacts from the Activity on EO4 (circular economy and resource resilience)	Initial infrastructure / equipment	For each of these categories, what are or could be the impact on EO4?	Hazardous waste such as broken PV modules and inverters contain toxic metals may leach into the soil and groundwater, contaminating the environment.
3B		Raw materials used		Not applicable
3C		Replacements and Spares		Hazardous waste such as broken PV modules and inverters contain toxic metals may leach into the soil and groundwater, contaminating the environment.
3D		Energy use		Not applicable
3E		Emissions		Incomplete scope 3 emissions data may lead to inaccurate assessments of progress toward climate goals, hindering efforts to reduce GHG emissions.
3F		Waste Streams		SSP is aware that end-of-life PV needs to be managed in accordance with law. In 2023 SS generated 195 kgs of non-hazardous waste, and 222 kgs of hazardous waste. The accumulated solar panels awaiting disposal in 2023 was 1,776 kg. Non-hazardous waste generated from daily activities of workers in the project will be sorted, ensuring recyclables materials are collected while rejects are properly disposed of. Valuable non-hazardous waste from production line such as plastic scraps, old motors, old conveyer belts and electrical wires are separately collected and sold to material recovery facilities.
4A	Proposed actions and improvements to mitigate impact	Initial infrastructure / equipment	What actions are or will be implemented to avoid harm to EO4?	SSP has partnered with Better World Green Public Company Limited to ensure the safe and environmentally responsible disposal of damaged solar panels. The disposal process aligns with academic standards and minimizes any potential harm to the environment.

4B		Raw materials used		Not applicable
4C		Replacements and Spares		<p>According to SSP Supplier Code of Conduct, SSP is committed to materials that have less negative impact to the environment.</p> <p>End-of-life appliances are sent to material recycling facilities while rejects are disposed by 101 type factories with valid license for hazardous waste processing.</p> <p>Possible future consideration to ensure that the Green Procurement Policy covers all the replacements and spares.</p>
4D		Energy use		Not applicable
4E		Emissions		Possible future consideration to ensure that Scope 3 emissions from production and disposal of PV modules are reported.
4F		Waste Streams		<p>SSP is committed to reducing overall waste by 10% by 2027 and eliminating hazardous waste landfill by the same year. Broken or expired solar panels and equipment are stored in designated hazardous waste areas before being disposed of in accordance with national regulations.</p> <p>Possible future consideration to work with local authorities to promote waste segregation at source, ensuring recyclables are not incinerated by WtE facilities.</p>

EC2: RMT

Risk Mitigation Treatments (RMTs) are measures to eliminate or significantly reduce harm to the environment. If an activity poses a significant environmental risk, RMTs must be implemented within a 5-year timeframe. If significant harm is occurring or is imminent and cannot be addressed within 5 years, the activity is classified as high risk ('Red'). If an activity causes or may cause significant harm, its classification is downgraded to a lower risk level ('Amber') until effective remediation is in place.

According to the result of DNSH assessment, DNV could not detect any activity that cause significant harm to any EO. Therefore, RMT is deem not relevant for SSP.

EC3: SAs

An activity, while contributing to environmental objectives, should not negatively impact people. It must align with ASEAN Taxonomy's social aspects, including human rights, labour rights, and community impacts. Companies must avoid and mitigate exploitative practices and comply with local social laws.

DNV has conducted SAs assessment based on the online media research, and documents made available to DNV in December 2024 which includes:

- 2017 Environment & Safety Assessment Report for SS's WVO Solar farm project (capacity 5 MW)
- 2013 Initial Environmental Evaluation of SSP's Sermsang Solar Project, Lopburi (capacity 52 MW)
- Code of Practice Monitoring Report for Winchai Wind Power Plant Project, Mukdahan (capacity 45 MW) covering the period of January – December 2023
- SSP's Human Rights Policy, and Human Resource Management Policy available on SSP's Policy website
- SSP's HRDD Policy, Risk Management of HRDD and HRDD Procedure available on SSP's Policy website
- SSP's 2023, 2022, and 2021 Sustainability Report available on SSP's website
- Code of Practice Monitoring Report for SSP Solar rooftop project and 2025 Annual Assessment Report on SSP Solar rooftop project issued by ERC

SA1: Promotion and Protection of Human Rights

Promotion and Protection of Human Rights is clearly stated in SSP Human Rights Policy and HRDD Policy. SSP adheres to international human rights standards, including the Universal Declaration of Human Rights, UN Global Compact, UN Guiding Principles on Business and Human Rights, and ILO Declaration on Fundamental Principles and Rights at Work.

To ensure compliance, the Company has established a Human Rights Policy that covers its operations and investments. Key guidelines include:

- **Respect for Human Rights:** Treating all individuals with dignity and equality, regardless of their background.
- **Prevention of Human Rights Violations:** Taking measures to avoid human rights abuses in business operations.
- **Promotion of Human Rights:** Supporting and promoting human rights initiatives. SSP respects fundamental human rights such as freedom of association, collective bargaining, equal pay, and non-discrimination.
- **Due Diligence:** Identifying, assessing, and mitigating human rights risks.
- **Transparency and Accountability:** Providing channels for reporting human rights concerns and taking appropriate action.

The Company encourages its employees, partners, and suppliers to adhere to these principles and to report any human rights violations. By implementing this Human Rights Policy, SSP aims to contribute to a more just and equitable society.

SA2: Prevention of Forced Labour and Protection of Children's Rights

Prevention of Forced Labour and Protection of Children's Rights is covered under SSP Human Resource Management Policy and SSP's HRDD Policy. SSP Group is committed to upholding human rights and ethical business practices. The Company strictly prohibits child labor, forced labor, and human trafficking. The Company also ensures fair and equitable treatment of all employees, regardless of gender, age, race, religion, or disability. SSP also actively works to prevent harassment and protect worker rights, including access to resources, fair treatment, and freedom from slavery and forced labour.

SA3: Impact on people living close to investments

SSP has published Human Rights Due Diligence (HRDD) Procedure on their website. This procedure clarifies how SSP works with indigenous people and local communities where SSP operate. The process involves several key steps:

1. **Scoping:** Clearly defining the scope of the due diligence process to cover all relevant stakeholders and human rights issues.
2. **Risk Identification:** Identifying potential human rights risks, considering both direct and indirect impacts, and reviewing industry trends.
3. **Risk Prioritization:** Categorizing risks based on their likelihood and potential impact, focusing on high-risk areas.
4. **Mitigation and Prevention:** Developing and implementing measures to mitigate and prevent identified risks, particularly high-risk areas.
5. **Monitoring and Review:** Regularly reviewing human rights risks and the effectiveness of mitigation measures, using key performance indicators to track progress.

Engagement with local communities is a crucial requirement for establishing and operating power plants, often mandated by national regulations. Even in countries like Thailand, where Environmental Impact Assessments (EIAs) are not legally required for power plants below 10 MW, evidence of community engagement must still be submitted to the Energy Regulatory Commission periodically. Failure to proactively engage with local communities to address concerns and resolve conflicts can lead to reputational damage and, potentially, the revocation of operating licenses.

Based on DNV's online media research, there is no evidence suggesting that existing eligible projects under this Framework have caused social harm.

Schedule 4. Green Bond/Loan External Review Form

Section 1. Basic Information

Issuer name: Sermsang Power Corporation Public Company Limited ("SSP")
Bond ISIN⁸: *Bond ISIN*
Independent External Review provider's name for pre-issuance review: DNV (Thailand) Co., Ltd.
Completion date of this form: 6 January 2025

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/SBP/SBG (*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:
- | | |
|---|---|
| <input type="checkbox"/> Use of Proceeds | <input type="checkbox"/> Process for Project Evaluation and Selection |
| <input type="checkbox"/> Management of Proceeds | <input type="checkbox"/> Reporting |
- assessed the alignment with other regulations or standards (CBI, EU GBS, ASEAN Green Bond Standard, ISO 14030, etc.); please indicate which ones: ASEAN Taxonomy V3

ROLE(S) OF INDEPENDENT REVIEW PROVIDER

- | | |
|---|---|
| <input checked="" type="checkbox"/> Second Party Opinion | <input type="checkbox"/> Certification |
| <input type="checkbox"/> Verification | <input type="checkbox"/> Scoring/Rating |
| <input type="checkbox"/> Other (<i>please specify</i>): | |

Does the review include a sustainability quality score⁹?

- | | |
|--|--|
| <input type="checkbox"/> Of the issuer | <input type="checkbox"/> Of the project |
| <input type="checkbox"/> Of the framework | <input type="checkbox"/> Other (please specify): |
| <input checked="" type="checkbox"/> No scoring | |

ASSESSMENT OF THE PROJECT(S)

Does the review include:

- 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

⁸ The ISIN code is mandatory for publishing the form in the Sustainable Bond Issuers Database.

⁹ 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.

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 STRATEGY¹⁰

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 ¹¹ that are deemed necessary to limit climate change to targeted levels?
- The comprehensiveness of the issuer’s disclosure to help investors assess its performance holistically¹²?

Overall comment on this section:

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.

1. USE OF PROCEEDS

Does the review assess:

- 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:

¹⁰ 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 [Climate Transition Finance Handbook](#).

¹¹ 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 [Methodologies Registry](#) which includes a list of tools to specifically help issuers, investors, or financial intermediaries validate their emission reduction trajectories.

¹² 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.

SSP intends to use the net proceeds of the GFIs to finance and/or refinance and/or to repay equity of new and/or existing eligible projects.

The Framework defines the following eligible project categories.

- Renewable Energy
- Climate-related products

DNV undertook an analysis of the associated project type to determine the eligibility as Green and in line with the Principles & Standards. DNV concludes that the eligible categories outlined in the Framework are consistent with the categories outlined in the Principles & Standards

2. PROCESS FOR PROJECT EVALUATION AND SELECTION

Does the review assess:

- whether the eligibility of the project(s) is aligned with official or market-based taxonomies or recognised international standards? Please specify which ones.¹³
- 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:

SSP has set up an evaluation and selection process that is comprised of two main steps: valuation of eligible green projects by Green Finance Working Group ("GFWG") consisting of representatives from Finance and Business Development Team and other departments, and approval of eligible green projects by the Board of Directors.

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

3. MANAGEMENT OF PROCEEDS

Does the review assess:

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

SSP describes the process for management of net proceeds under this Framework:

SSP will deposit the net proceeds from green financing instruments into its general account. These funds will be tracked, monitored, and documented using internal reporting systems. The proceeds will be allocated and used within 36 months. Unallocated funds will be held as cash or cash equivalents, invested in short-term securities aligned with low-carbon and climate-resilient goals, or used to temporarily reduce existing low-carbon debt. If projects become ineligible, SSP will replace them with suitable eligible green projects.

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

¹³ The EU Taxonomy, CBI Taxonomy, UK Taxonomy, China catalogue, etc.

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:

SSP will publish annual reports on its website detailing how green financing is used. The allocation report shows how much is allocated to each project category and remaining unallocated funds. Impact report will detail the expected environmental benefits of the projects, such as reduced carbon emissions (depending on available data).

On the basis of the information provided by SSP 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 GFIs 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.)

About DNV: [Sustainable finance](#)

ASEAN Taxonomy V3: [ASEAN-Taxonomy-Version-3-2.pdf](#)

SSP: [Sermsang Power Corporation PLC.](#)

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

SSP's eligible projects contribute to UN SDG 7 and SDG 13.

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



About DNV

Driven by our purpose of safeguarding life, property and the environment, DNV enables organisations to advance the safety and sustainability of their business. Combining leading technical and operational expertise, risk methodology and in-depth industry knowledge, we empower our customers' decisions and actions with trust and confidence. We continuously invest in research and collaborative innovation to provide customers and society with operational and technological foresight. With our origins stretching back to 1864, our reach today is global. Operating in more than 100 countries, our 16,000 professionals are dedicated to helping customers make the world safer, smarter and greener.

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