JCM Sustainable Development and Safeguards Assessment Report

Project description	
Title	Introduction of Solar PV Systems on Rooftops of Factory and Office Building
Project participant (Thai)	Siam Steel International Public Company Limited
Project participant (Japanese)	Pacific Consultants Co., Ltd.
Project location	51 Moo 2, Poochao Rd., Bangyaprak, Phrapradaeng, Samutprakarn, Kingdom of Thailand
Latitude, longitude	Site A: N 13° 38' 47" and E 100° 32' 55" Site B: N 13° 39' 01" and E 100° 33' 01"
Project status	Operated since 20/06/2016

Report description		
Date of report completion	12 May 2025	
Version	1.0	
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	Organization	Pacific Consultants Co., Ltd.
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	E-mail	

Note:

- Related figures, documents, evidence related to the description may be attached as attachment.
- In the case where there is any other relevant issue that needs to be considered, it is be specified in the last row of each area of assessment.

Certification letter

12/05/2025

I, the undersigned, hereby certify that Pacific Consultants Co., Ltd. is the author of the "Sustainable Development and Safeguards Assessment Report" of the project titled "Introduction of Solar PV Systems on Rooftops of Factory and Office Building" developed by Pacific Consultants Co., Ltd. and Siam Steel International Public Company Limited located at 51 Moo 2, Poochao Rd., Bangyaprak, Phrapradaeng, Samutprakarn, Kingdom of Thailand.

The report was prepared by the team members as follows:

No.	Name	Position	Signature
1	Yoshihiro Mizuno	General Manager of Sustainability Promotion Department	[redacted]
2	Daiki Nose	General Manager of Sustainable Development Section	
3	Shigezane Kidoura	Chief Researcher	

Signature [redacted]

(Yoshihiro Mizuno)

Position: General Manager of Sustainability Promotion Department

Seal (if any)

Part 1: General information of the project area before project implementation

Provide baseline information describing the conditions before project implementation. This data is essential for assessing the project's environmental, social, and economic impacts. Ensure the details are accurate and comprehensive to support a thorough evaluation.

Area of Assessment	Description
1. Environment and natural resources	
1.1 Air pollution	The project is located inside the Siam Steel International site in Phrapradaeng, Samutprakarn. There is no significant air pollution in this area.
1.2 Water pollution	No surface water and ground water pollution problem were found in the area.
1.3 Soil pollution	No soil pollution was found in the area.
1.4 Noise pollution	No point sources of noise pollution were found in the area.
1.5 Odor pollution	No odor was found in the area.
1.6 Water consumption	Industrial water was consumed within the capacity of water supply in the area.
1.7 Solid waste/municipal solid waste	Waste from the project site is properly collected. So, there is no leftover problem in the area.
1.8 Hazardous waste/infectious waste/electronic waste	No pollution from hazardous waste/infectious waste /electronic waste was found in the area.
1.9 Energy (i.e. Wasted Energy, Renewable Energy)	The factory used electricity from power grid.
1.10 Land Use	The project is located inside the Siam Steel International site.
1.11 Biodiversity	Biodiversity was not relevant in the Siam Steel International site.
1.12 Wild animal/ Aquatic ecosystem	No wild animal or aquatic ecosystem was found in the area.
1.13 Other (Please specify…)	-
2. Society	
2.1 Socio-cultural characteristics	Socio cultural characteristics were those of a typical Bangkok suburb. The society comprises largely of the working class who engage in manufacturing and office work.

Area of Assessment	Description
2.2 Health and safety	There was no major concern in terms of health and safety in the area.
2.3 Traditions, cultures and/or valuable places worthy of conservation	The tradition and cultural values of the people in the area are commonly found in the central region of Thailand. There were no distinctive places of high conservation values.
2.4 Race, religion, and ethnic group	Most of the population in the area were of Thai origin who practice Buddhism.
2.5 Transportation	The primary mode of transportation in the area was private and corporate vehicles.
2.6 Other (Please specify…)	-
3. Economic	
3.1 Overall local economy (i.e. income, expenditure, etc.)	The local economy in the area is largely driven by the manufacturing sector.
3.2 Employment/Career	Factory workers, clerical workers.
3.3 Major agricultural activity in the area	No agricultural activity in the area is found.
3.4 Major industry in the area	Metal product manufacturing, auto parts manufacturing.
3.5 Major service sector in the area	Metal processing services, office furniture sales and services.
3.6 Basic infrastructure (i.e. road, school, etc.)	The basic infrastructure in the area included transportation (road network), utilities (electricity, water supply, waste management), as well as telecommunications.
3.7 Other (Please specify…)	-

**Project Participant explains in detail of provenance and importance of issue consider about before project implement and specify if the project is rightful/environmental law, social, and economy. To have Negative impact assessment (Do-no-net-harm) with supporting documents.*

Part 2 Sustainable Development Goals

2.1 Sustainable Development Contributions Assessment

*Please mark ✓ in ☐ to identify the contributions of the proposed project to specific SDG. The project is required to contribute to **at least two SDGs, in addition to** SDG13: Climate Action.*

Project Contributions to SDGs	Indicator (Please specify)	Description of Indicator
☐ SDG 1: No Poverty		
☐ SDG 2: Zero Hunger		
☐ SDG 3: Good Health and Well-being		
☐ SDG 4: Quality Education		
☐ SDG 5: Gender Equality		
☐ SDG 6: Clean Water and Sanitation		
☑ SDG 7: Affordable and Clean Energy	Amount of generated clean energy (Unit: MWh)	Increase share of renewable energy in national energy mix
☐ SDG 8: Decent Work and Economic Growth		
☐ SDG 9: Industry, Innovation and Infrastructure		
☐ SDG 10: Reduced Inequality		
☐ SDG 11: Sustainable Cities and Communities		
☐ SDG 12: Responsible Consumption and Production		
■ SDG 13: Climate Action		
☐ SDG 14: Life Below Water		
☐ SDG 15: Life on Land		

Project Contributions to SDGs	Indicator (Please specify)	Description of Indicator
☐ SDG 16: Peace and Justice Strong Institutions		
☑ SDG 17: Partnerships to achieve the Goal	Last progress report submission date	Operational continuity of the JCM project, which mobilizes additional financial resources, disseminates low-carbon technologies, and reduces GHG emissions in Thailand

**Project Participant provides the description for each indicator of the selected SDGs and presents currently available datasets along with supporting documents.*

2.2 Details on Monitoring Parameters for Demonstrating SDG Contributions

Provide details on how to monitor the indicators identified in Section 2.1.
(Tables can be added based on the number of selected SDGs.)

SDG Number	7
SDG Target	Affordable and clean energy
Variable or Indicator	Amount of generated electricity (Unit: MWh)
Duration/Frequency	Monthly
Method/Tool	Power meter
Responsible person	Staff of Siam Steel International Public Company Limited

SDG Number	17
SDG Target	Partnerships to achieve the goal
Variable or Indicator	Last annual progress report submission date
Duration/Frequency	Yearly
Method/Tool	-
Responsible person	Staff of Pacific Consultants Co., Ltd.

Part 3 Do no net harm

3.1 'Do no net harm' Risk Assessment and Safeguards

Specify impacts and mitigation plans to mitigate negative impacts.

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
1. Impacts on Environment and Natural Resources						
1.1 Physical resources						
Water pollution	✓					
Soil pollution	✓					
Air pollution	✓					
Noise pollution	✓					
Odor pollution	✓					
Soil erosion, coastal/river erosion	✓					
Vulnerability to natural disaster	✓					
Other	✓					
1.2 Waste management						
Increase in solid waste/municipal solid waste	✓					

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
Increase in hazardous waste such as waste contaminated with oil, chemicals and used oil etc.	✓					
Increase in infectious waste	✓					
Increase in electronic waste		✓			After the installed solar PV modules reach the end of their useful life, which is expected to be several years after the project period ends, it will become necessary to dispose of them.	Since solar PV modules may contain hazardous substances, we plan to dispose of them appropriately in accordance with Thai regulations at the time of disposal. If recycling facilities for solar PV modules are available at that time, we will prioritize recycling them as part of our business efforts.
Other	✓					
1.3 Biological resources						
Impacts on forest areas and land-use change	✓					
Loss of land and wildlife ecosystem	✓					

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
Loss of water resources and aquatic ecosystem	✓					
Foraging	✓					
Food	✓					
Other	✓					
1.4 Human livelihood						
Water drainage or waterway diversion	✓					
Change in water consumption	✓					
Change in land ownership	✓					
Other	✓					
2. Social impacts						
Public security such as increase in crime risks	✓					
Health impacts	✓					
Relocation or temporary/permanent loss of land	✓					
Loss of housing	✓					

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
Impact on public utilities such as electricity, telephone service etc.	✓					
Impact on traffic	✓					
Community conflict	✓					
Employment and labor	✓					
Impact on people of certain race, religion and ethnic groups	✓					
Damage to areas of high conservation value, such as religious sites, historic sites, monuments, important places of the community etc.	✓					
Impact on human rights such as education, freedom of thought, religion etc.	✓					
Gender inequality such as in employment opportunities, salary, promotion, benefits, termination of contract etc.	✓					

Potential Impact of Project Activity	Severity Level of Impact				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
Other	✓					
3. Economic impacts						
Increase unemployment /loss of income of people in local communities	✓					
Other	✓					

**Criteria for assessing the level of impact severity*

1. None: The proposed activity has no direct/indirect impacts on the environment, society and economy.

2. Low: The proposed activity causes some changes to the existing conditions but has no implication on the quality of the environment, society and economy. The impact is short-lived and temporary, and the extent of the affected area is not large (1km perimeter).

3. Moderate: The proposed activity causes some changes to the existing conditions and has implications on values or qualities of the environment, society and economy. The impact is short-lived and temporary. The extent of the affected area is large but confined to the related area (2km perimeter).

4. High: The proposed activity causes some changes to the existing conditions and has implications on value or quality of the environment, society, economy, and potentially the ecosystem. The impact is permanent and the extent of the affected area id extensive (3km perimeter).

3.2 Details on Monitoring Parameters for Ensuring No Negative Impacts

Provide details on how to monitor the impacts identified in Section 3.1.

(Tables can be added based on the number of negative impacts identified)

Category of negative impact	Waste management
Subcategory of negative impact	Increase in electronic waste
Vulnerable group	People and the environment around solar PV module disposal sites
Possible negative impact	Harmful substances leaking from improperly disposed solar PV modules can pollute the surrounding environment and pose health risks to nearby residents.
Parameter/indicator	Number of PV modules properly disposed of
Reference	- Hazardous Substance Act (No.4) B.E. 2562 (2019) - Notification of Ministry of Industry Subject: List of Hazardous Substances (No.7) B.E. 2565 (2022)
Duration/frequency	Yearly
Method/Tools	Apply the method in accordance with Thai regulations at the time of disposal.
Responsible person	Staff of Siam Steel International Public Company Limited
Expected outcome	Solar PV modules containing hazardous materials are disposed of properly, thereby protecting the environment and people around the disposal site.

Category of negative impact	
Subcategory of negative impact	
Vulnerable group	
Possible negative impact	
Parameter/indicator	
Reference	
Duration/frequency	
Method/Tools	
Responsible person	
Expected outcome	