JCM Sustainable Development and Safeguards Assessment Report

Project description	
Title	Introduction of 3.4 MW Rooftop Solar Power System in Technical Center and Office Buildings
Project participant (Thai)	Toyota Motor Asia (Thailand) Co., Ltd
Project participant (Japanese)	TOYOTA MOTOR CORPORATION
Project location	(1) 99 Moo 5, Ban-Ragad, Bang Bo,Samutprakarn, 10560 Thailand (2) 99/9 Moo 2, Ladkwang, Ban pho, Chachoengsao,24140 Thailand
Latitude, longitude	(1) Latitude: 13°35'45.2"N / Longitude: 100°52'37.2"E (2) Latitude: 13°37'27.8"N / Longitude: 101°00'51.7"E
Project status	Status on 16 March 2025 ■operated since 1 August 2019

Report description		
Date of report completion	17 March 2025	
Version	1.0	
Corresponding author	Name	Mr. Yasuto Kawamoto
	Title	Group Manager
	Organization	TOYOTA MOTOR CORPORATION
	Telephone	[redacted]
	E-mail	[redacted]

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

03/09/2025

I, the undersigned, hereby certify that TOYOTA MOTOR CORPORATION is the author of the "Sustainable Development and Safeguards Assessment Report Form" of the project titled Introduction of 3.4 MW Rooftop Solar Power System in Technical Center and Office Buildings developed by Toyota Motor Asia (Thailand) Co., Ltd located at(1)99 Moo 5, Ban-Ragad, Bang Bo,Samutprakarn, 10560 Thailand, and (2) 99/9 Moo 2, Ladkwang, Ban pho, Chachoengsao,24140 Thailand

The report was prepared by the team members as follows:

No.	Name	Position	Signature
1	Yuichi Yamada	General Manager	[redacted]
2	Yayoi Nagahama	Deputy General Manager	
3	Yasuto Kawamoto	Group Manager	

Signature [redacted]

Position General Manager

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

Area of Assessment	Description
1. Environment and natural resources	
1.1 Air pollution	The project installed solar panels on the roof of each building. Therefore, it does not cause air pollution. The ambient air quality consistently met the standards, except for occasional PM2.5 levels exceeding the standards during the dry season.
1.2 Water pollution	No surface water and ground water pollution problem were reported in the area.
1.3 Soil pollution	No soil pollution was reported in the area. TMA is registered as office, no Thailand regulation for this issue
1.4 Noise pollution	No noise is generated from the solar panels and no noise problems have been observed.
1.5 Odor pollution	No odor is generated from the solar panels and no odor problems have been observed
1.6 Water consumption	The major use of water in the TMA is toilet water. No water is used in this PJT.
1.7 Solid waste/municipal solid waste	We dispose of waste in accordance with the law, we manage it with EMS and have not had any problems.
1.8 Hazardous waste/infectious waste/electronic waste	No pollution from hazardous waste/infections waste/electronic waste was reported in this area.
1.9 Energy (i.e. Wasted Energy, Renewable Energy)	TMA uses electricity from power grid and solar power
1.10 Land Use	TMA is surrounded by residences
1.11 Biodiversity	TMA was built around 20years ago. Thus, issues concerning biodiversity is not relevant to the commercial building.
1.12 Wild animal/ Aquatic ecosystem	Maintains the original ecosystem (birds, snakes, lizards, fish, etc.)
1.13 Other (Please specify…)	-
2. Society	
2.1 Socio-cultural characteristics	Socio-cultural characteristics are those of atypical Bangkok residential area. The society comprises largely of working-class who engage in trade and

Area of Assessment	Description
	official work. With employment opportunities arising from urban development, residents represent a mixture of locals and trans-local and foreign immigrants.Many Southeast Asian people besides Thais work at TMA.
2.2 Health and safety	There is no major concern in terms of health and safety in the area. Annual health checkups and safety training as needed
2.3 Traditions, cultures and/or valuable places worthy of conservation	The tradition and cultural values of the people in the area are those commonly found in the central region of Thailand. There are no distinctive places of high conservation values.
2.4 Race, religion, and ethnic group	The majority of population in the area are of Thai origin who practice Buddhism. There is a small group informal foreign workers from neighboring countries.
2.5 Transportation	Primary mode of transportation in the area is private vehicles(cars, trucks and motorbikes). There is also a use local public transport such as train, buses, vans.
2.6 Other (Please specify…)	-
3. Economic	
3.1 Overall local economy (i.e. income, expenditure, etc.)	The average monthly income in Thailand is 470$. Expenditure data is not available.
3.2 Employment/Career	Office workers , Officials, merchants, factory workers, farmers / Many university graduates work at TMA
3.3 Major agricultural activity in the area	There are some fish farming
3.4 Major industry in the area	There are some factories include automotive/parts, warehouse.
3.5 Major service sector in the area	Transportation
3.6 Basic infrastructure (i.e. road, school, etc.)	The basic infrastructure in the area include transportation (road network, public transportation), utilities (electricity, water supply, waste management), education, healthcare 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	Amount of generated clean energy (Unit: MWh)	Increase share of renewable energy in national energy mix
☐ 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 clean energy
Variable or Indicator	Amount of generated electricity (Unit:MWh)
Duration/Frequency	Monthly
Method/Tool	Power meter
Responsible person	Staff of Toyota Motor Asia (Thailand) Co., Ltd

SDG Number	13
SDG Target	Climate Action
Variable or Indicator	Amount of generated electricity (Unit:MWh)
Duration/Frequency	Monthly
Method/Tool	Power meter
Responsible person	Staff of Toyota Motor Asia (Thailand) Co., Ltd

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 Toyota Motor Asia (Thailand) Co., Ltd

Part 3 Do no net harm

3.1 'Do no net harm' Risk Assessment and Safeguards

Potential Impact of Project Activity	Level of Impact Severity				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	Level of Impact Severity				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		✔			When solar panels fail, waste is generated to switch to new ones.	Compliance with waste disposal according to the law and selection of appropriate waste disposal contractors
Other	✔					
1.3 Biological resources						
Impacts on forest areas and land-use change	✔					
Loss of land and wildlife ecosystem	✔					
Loss of water resources and aquatic ecosystem	✔					
Foraging	✔					
Food	✔					
Other	✔					

Potential Impact of Project Activity	Level of Impact Severity				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
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	✔					
Impact on public utilities such as electricity, telephone service etc.	✔					
Impact on traffic	✔					
Community conflict	✔					
Employment and labor	✔					

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

Potential Impact of Project Activity	Level of Impact Severity				Description of Impact	Action Plan to mitigate harmful impacts
	None	Low	Moderate	High		
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 electric waste
Vulnerable group	Neighbors and residents of the disposal site
Possible negative impact	Environmental pollution due to improper disposal
Parameter/indicator	・Waste categories : Hazardous waste ・Manifest management
Reference	Hazardous Substances Act, B.E. 2535 (1992)
Duration/frequency	Depending on solar panel waste generation volume
Method/Tools	**Apply the method outlined in the law**
Responsible person	**Staff of Toyota Motor Asia (Thailand) Co,. Ltd.**
Expected outcome	Disposed of in accordance with legal requirements to protect the environment and residents near the disposal site