# JCM Project Design Document Form

## A. Project description

A.1. Title of the JCM project

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| Introduction of 0.97 MW Rooftop Solar Power System for Fishery Net Factory |

A.2. General description of project and applied technologies and/or measures

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| The proposed JCM project aims to reduce $CO_2$ emissions by introducing a grid-connected solar photovoltaic (PV) system on top of the Factory Building of Siam Brothers Corp., Ltd.. The total solar module output is 972.4 kW and overall system output is 756.6 kW. The solar PV system replaces the grid electricity mostly derived from natural gas. All of the power generated by the solar PV system is self-consumed and not fed into the grid. Installed modules are Toshiba 72 cell polycrystalline PV module. This module achieves high performance even in the high-temperature and high-humidity climate in this project site. PV generated energy is monitored at a remote location. |

A.3. Location of project, including coordinates

| | |
|---|---|
| Country | Kingdom of Thailand |
| Region/State/Province etc.: | Samut Prakan Province |
| City/Town/Community etc: | 65 Moo 5, Bangrak, Phra Pradaeng |
| Latitude, longitude | 13°38'37.86"N, 100°31'27.63"E |

A.4. Name of project participants

| | |
|---|---|
| The Kingdom of Thailand | Siam Brothers Corp., Ltd. |
| Japan | Finetech Co., Ltd. |

A.5. Duration

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|---|---|
| Starting date of project operation | 01/03/2019 |
| Expected operational lifetime of project | 17 years |

A.6. Contribution from Japan

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| The proposed project was partially supported by the Ministry of the Environment, Japan (MOEJ) through the Financing Programme for JCM Model projects, which provided financial support of less than half of the initial investment for the projects in order to acquire JCM credits. As for technology transfer, capacity building on operation and monitoring has been provided by Finetech Co., Ltd. through its office in Thailand. |

## B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

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|---|---|
| Selected approved methodology No. | TH_AM001 |
| Version number | Ver02.0 |

B.2. Explanation of how the project meets eligibility criteria of the approved methodology

| Eligibility criteria | Descriptions specified in the methodology | Project information |
|---|---|---|
| Criterion 1 | The project installs solar PV system(s). | A solar PV system is installed at the site. The solar PV module employed is Toshiba polycrystalline photovoltaic module TA72P320WB/K. |
| Criterion 2 | The solar PV system is connected to the internal power grid of the project site and/or to the grid for displacing grid electricity and/or captive electricity at the project site. | The solar PV system is connected to the internal power grid of the site and to the grid. |
| Criterion 3 | The PV modules have obtained a certification of design qualifications (IEC 61215, IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC 61730-2). | The installed PV module (Toshiba polycrystalline photovoltaic module TA72P320WB/K) has obtained a certification of design qualifications (IEC 61215) and safety qualification (IEC 61730-1 and IEC 61730-2). |
| Criterion 4 | The equipment to monitor output power of the solar PV system and irradiance is installed at the project site. | Data loggers of inverters are installed to measure and record the output power of the solar PV system. A pyranometer is installed at the site to measure irradiance. |

## C. Calculation of emission reductions

C.1. All emission sources and their associated greenhouse gases relevant to the JCM project

| Reference emissions | |
|---|---|
| Emission sources | GHG type |

| | |
|---|---|
| Consumption of grid electricity | $CO_2$ |
| Project emissions | |
| Emission sources | GHG type |
| Generation of electricity from solar PV system(s) | N/A |

C.2. Figure of all emission sources and monitoring points relevant to the JCM project

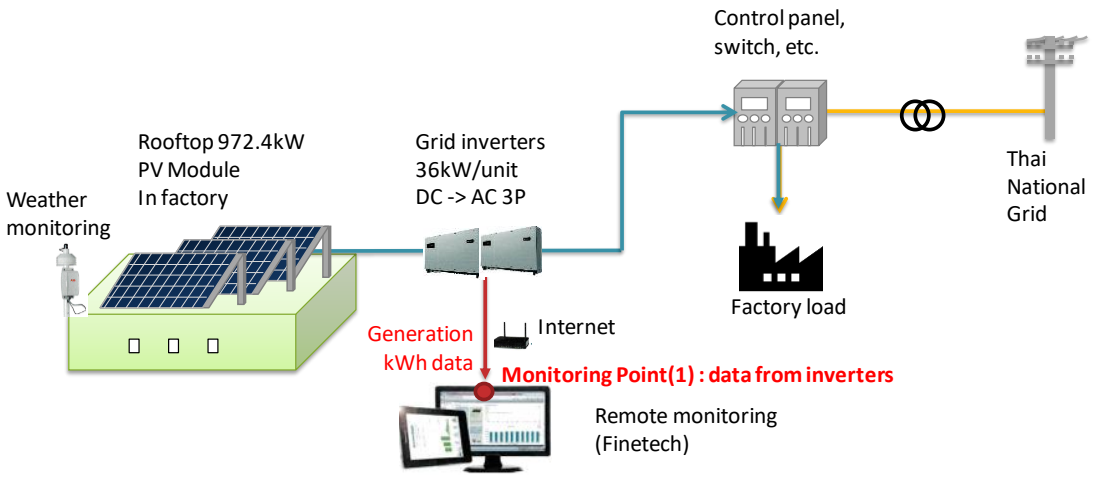


Figure PV Generation System and Monitoring Point

C.3. Estimated emissions reductions in each year

| Year | Estimated Reference emissions ($tCO_2e$) | Estimated Project Emissions ($tCO_2e$) | Estimated Emission Reductions ($tCO_2e$) |
|---|---|---|---|
| 2013 | - | - | - |
| 2014 | - | - | - |
| 2015 | - | - | - |
| 2016 | - | - | - |
| 2017 | - | - | - |
| 2018 | - | - | - |
| 2019 | 338.2 | 0 | 338 |
| 2020 | 425.1 | 0 | 425 |
| 2021 | 425.1 | 0 | 425 |
| 2022 | 425.1 | 0 | 425 |
| 2023 | 425.1 | 0 | 425 |
| 2024 | 425.1 | 0 | 425 |

| | | | |
|---|---|---|---|
| 2025 | 425.1 | 0 | 425 |
| 2026 | 425.1 | 0 | 425 |
| 2027 | 425.1 | 0 | 425 |
| 2028 | 425.1 | 0 | 425 |
| 2029 | 425.1 | 0 | 425 |
| 2030 | 425.1 | 0 | 425 |
| Total ($tCO_2e$) | | | 5,013 |

| **D. Environmental impact assessment** | |
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| Legal requirement of environmental impact assessment for the proposed project | No |

## E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

Local stakeholder consultation meeting was held at 10:00-12:00, 30 November 2018 at the meeting room of Siam Brothers Corp., Ltd.(SB). Participants from the Thai government (Thailand Greenhouse Gas Management Organization: TGO), Embassy of Japan (EoJ), Assistant Manager and operator of SB, EPC contractor, and Focal Point (Finetech Co., Ltd.) were invited and comments were collected in LSC. The minutes of meeting was distributed and reviewed among the participants.

E.2. Summary of comments received and their consideration

| Stakeholders | Comments received | Consideration of comments received |
|---|---|---|
| TGO | TGO advised that the meter reading for double check is recommended considering inverter degradation. | Energy meter will be installed and SB will record meter reading for double check. |
| EoJ | The disposal of PV panel should be according to the existing regulations. A regulation on the disposal may be introduced in the future.<br>There are several experiences of JCM about Solar PV system including | In future when PV panel disposal is necessary, SB will dispose PV panels according to existing regulation at that time.<br>Past projects example will be referred at the time of registration and |

| | | |
|---|---|---|
| | methodology and PDD, and it is possible to refer to such past examples for this project. | monitoring. |
| Assistant Manager of SB | Generation plan may need to be reviewed according to operation plan of modification of factory. | Generation plan has been reviewed according to updated operation plan. |
| Operator of SB | No comment was given. | No action is needed. |
| EPC contractor | The applied Toshiba PV module is superior in keeping good efficiency especially in high-temperature and humid condition, and it would be the best selection in the environment in Thailand. | No action is needed. |

| **F. References** |
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| N/A |

Reference lists to support descriptions in the PDD, if any.

| **Annex** |
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| **Revision history of PDD** | | |
|---|---|---|
| Version | Date | Contents revised |
| 02.0 | 25/10/2021 | Second edition<br>Revision to change the description of "Measurement methods and procedures" to clarify the requirement for calibration in the Monitoring Spreadsheet: JCM_TH_AM001_ver02.0 |
| 01.0 | 20/02/2019 | First edition |
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