JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Power Generation by Waste Heat Recovery in Cement Industry

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

This project aims to improve the energy efficiency of a Cement Plant by introducing 12MW Waste Heat Recovery Power Generation System.

In this project, a waste heat recovery boiler is installed at two places, a preheater section (PH) that heats raw material at the cement plant and a cooling section (AQC) that rapidly cools high-temperature clinker, and steam obtained from both boilers is used to generate electricity through a turbine and a power generator.

The Waste Heat Recovery Power Generation System has been introduced by Shanghai Conchi Kawasaki Engineering Co., Ltd., whose technology was provided by Kawasaki Engineering Co., Ltd., one of the largest engineering companies in Japan.

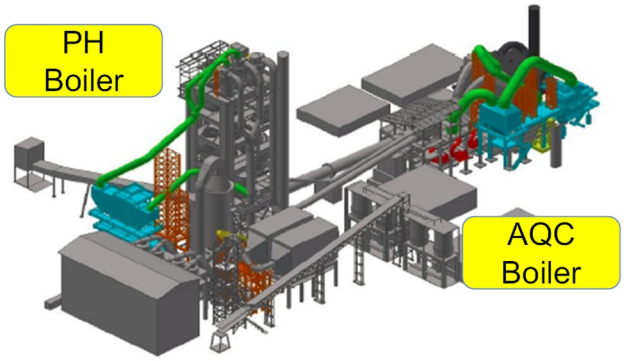


Figure : Location and outline of the Project

A.3. Location of project, including coordinates

Country	The Kingdom of Thailand
Region/State/Province etc.:	Saraburi Province 18260
City/Town/Community etc:	99 Moo 9 and 219 Moo 5, Mittraparb Road Km. 129-131 Tambon Thap Kwang, Amphor Kangkoy, Saraburi Province
Latitude, longitude	N 14°37'24.8" and E 101°05'43.7"

A.4. Name of project participants

The Kingdom of Thailand	Siam City Power Company Limited
Japan	NTT Data Institute of Management Consulting Inc.

A.5. Duration

Starting date of project operation	28/03/2018
Expected operational lifetime of project	15 years

A.6. Contribution from Japan

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. The technology of waste heat recovery & power generation system is introduced by the project participant. Further, implementation of the proposed project promotes technology transfer of low carbon technologies into Thailand.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	TH_AM007
Version number	ver01.0

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 waste heat recovery (WHR) system in the cement production facility.	The project installed WHR & 12MW of electricity generation system in the site.
Criterion 2	WHR system utilizes only waste heat and does not utilize fossil fuels as a heat source to generate steam for power generation.	Installed WHR system utilizes only waste heat and does not utilize fossil fuels as a heat source to generate steam for power generation.

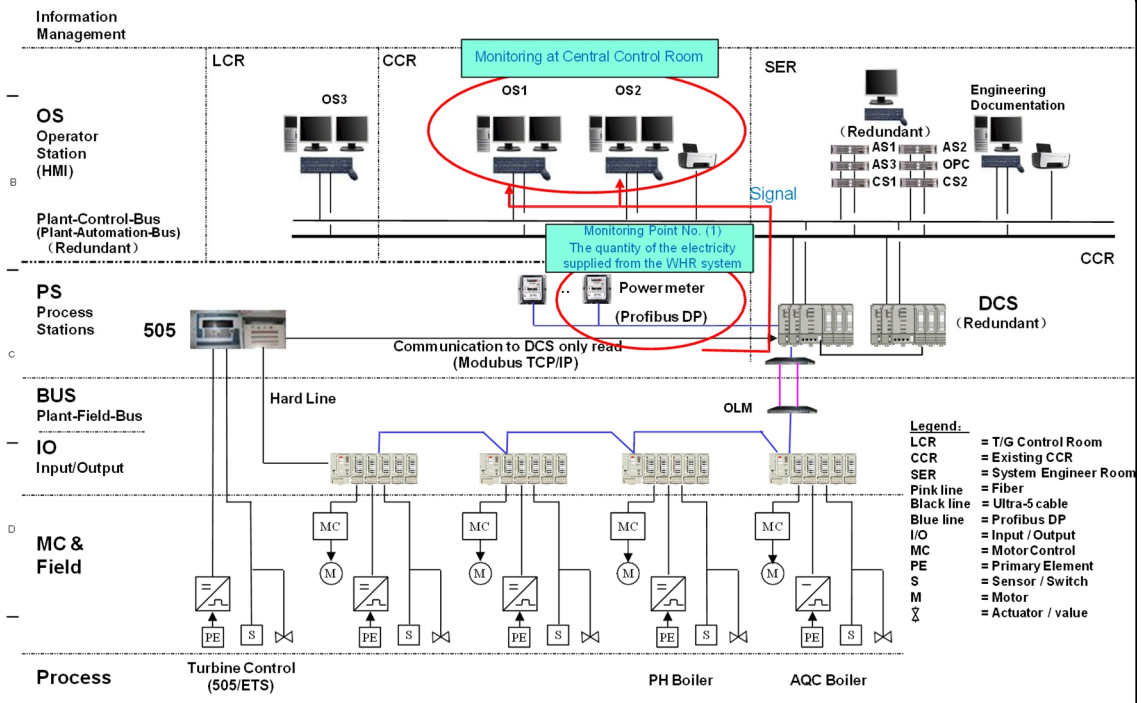
Criterion 3	WHR system has not been introduced to a corresponding cement kiln of the project prior to its implementation.	This is the first WHR system introduced to Cement kiln of the project.

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
Grid electricity or captive power generation	CO2
Project emissions	
Emission sources	GHG type
N/A	N/A

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



Note: All the electricity generated by WHR system is consumed by factories (self-consumption).

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	22,737.9	0	22,737
2019	29,746.7	0	29,746
2020	29,746.7	0	29,746
2021	29,746.7	0	29,746
2022	29,746.7	0	29,746
2023	29,746.7	0	29,746
2024	29,746.7	0	29,746
2025	29,746.7	0	29,746
2026	29,746.7	0	29,746
2027	29,746.7	0	29,746
2028	29,746.7	0	29,746
2029	29,746.7	0	29,746
2030	29,746.7	0	29,746
Total (tCO_2e)			379,689

D. Environmental impact assessment	
Legal requirement of environmental impact assessment for the proposed project	Yes

E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

To solicit comments from local stakeholders, a consultation meeting was planned by the project participants, and the project participants invited various stakeholders. Details of the local stakeholders consultation meeting is summarized as follows:

Date and Time: November 8, 2017, 09:00 - 11:00

Venue: Project Room, Siam City Power Co. Ltd., Saraburi province

Following organization from Thailand side were participated to the consultation meeting:

- Siam City Power Company Limited (SCP)
- Shanghai Conchi Kawasaki Engineering Co., Ltd. (SCKE)
- NTT Data Institute of Management Consulting, Inc. (NTTDIOMC)

At the meeting, the details of the proposed JCM project and the technology to be introduced were explained by representative of NTTDIOMC (Representative company) of the project. Questions were raised by mainly SCP. There were no negative comments toward the proposed project expressed during the stakeholders meeting by the attendees. The comments received during the local stakeholders meeting were summarized in the following section.

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
Siam City Power Company Limited (SCP)	How many tCO2 will be reduced by our project?	About 31,000 tCO2 will be reduced per year. As the project has 15 years to go, about 467,000 tCO2 in total will be reduced [No action is needed]
	Have the PDD and MRV methodology been approved? What is the status and when the registration of the project completed? When will be the date for the monitoring start? Our project will be finished by the end of December this year. Is it from the day right after the project completion in December or January 1st?	MRV methodology is yet to be approved by the Joint Committee. The draft is under consideration while the PDD is being developed at the same time in line with the draft methodology. Once the methodology is approved and PDD will be finalized and we will proceed to the registration of the project. Please start monitoring from the day right after the project completion in February of 2018. [No action is needed]

	What if the registration cannot be completed before the date of the monitoring start? Can the monitoring be started before the registration is completed?	You can start monitoring before the registration is completed. Start monitoring after completion of project in February of 2018 is the most important point. [No action is needed]

F. References
N/A

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

Annex
-The Environmental Impact Assessment (EIA) report is approved on 1st August 2016. The approval letter's number is No. 1009.3/8804 and the project ID code is 10376.

Revision history of PDD		
Version	Date	Contents revised
1.0	19/09/2018	First edition
1.1	05/02/2019 02/08/2019	Revised based on Validation Comments Initial registration by the Joint Committee through electronic decision