JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Introduction of High-efficiency Once-through Boiler in Film Factory

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

The proposed JCM project aims to improve energy saving for steam supply by introducing a high-efficiency once-through boiler at a film factory in Indonesia. The film factory needs considerable energy, and boilers consume significant amount of energy at the film factory. The proposed project covers PET Film production process (especially drawing process) in the factory of PTMC Pet Film Indonesia in Cilegon City, Banten Province of Republic of Indonesia. The film factory introduced high efficiency once-through boiler (fuel: dual fuel of gas or oil) with replacing existing water tube boiler (fuel: oil), and increased the boiler efficiency and stable steam supply. For this, existing 6 ton/h water tube boiler was replaced with 4 ton/h high-efficiency once-through boiler.

A.3. Location of project, including coordinates

Country	Republic of Indonesia
Region/State/Province etc.:	Banten
City/Town/Community etc:	Cilegon
Latitude, longitude	S 5°58'04", E 106°00'09"

A.4. Name of project participants

The Republic of Indonesia	PT MC Pet Film Indonesia
Japan	Mitsubishi Chemical Corporation Nippon Koei Co., Ltd.

A.5. Duration

Starting date of project operation	01/11/2016
Expected operational lifetime of project	9 years

A.6. Contribution from Japan

The proposed project was partially supported by the Ministry of 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, Kawasaki Thermal Engineering (KTE) has provided the following supports to MC Pet Film during commissioning test in Cilegon Factory (31/08/16).

- Direct instruction on proper operation of once-through boiler to boiler operators
- Effective periodical checks to maintain efficiency of the boiler (explanation by the staff of boiler manufacturer using maintenance manual)

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	ID_AM015
Version number	1.0

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 boiler is a once-through boiler with a rated capacity of 7 ton/hour per unit or less (equivalent evaporation)	The project boiler is a once-through boiler with a rated capacity of 4 ton/hour (equivalent evaporation)
Criterion 2	Periodical check and maintenance by the manufacturer of boiler or authorized agent is implemented in accordance with the manufacturer's requirement.	MC Pet Film arranges necessary periodical maintenance by authorized agent (PT Gikoko Kogyo Indonesia) and/or KTE in accordance with the requirement of KTE. It is carried out every 1 to 1.5 year.
Criterion 3	Appropriate water purification/demineralization system such as Reverse Osmosis (RO) membrane treatment is installed.	MC Pet Film purchases demineralized water (Conductivity <10 µS/cm) from PT Mitsubishi Chemical Indonesia

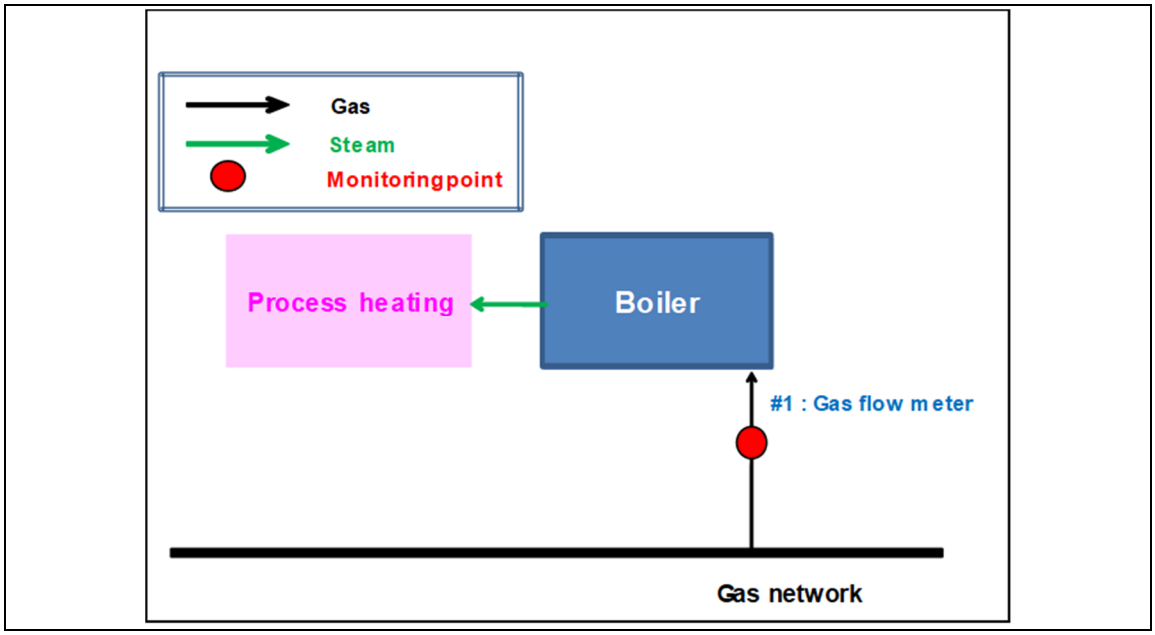
C. Calculation of emission reductions

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

Reference emissions	
Emission sources	GHG type
Fuel consumption by reference boiler	CO_2
Project emissions	

Emission sources	GHG type
Fuel consumption by project boiler	CO_2

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



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	400.2	174.6	225
2017	3,499.0	2,504.4	994
2018	1,843.3	1,319.3	523
2019	1,843.3	1,319.3	523
2020	3,686.5	2,638.7	1,047
2021	3,449.0	2,504.4	994
2022	3,449.0	2,504.4	994
2023	3,686.5	2,638.7	1,047
2024	3,449.0	2,504.4	994
2025	2915.8	2,087.0	828
2026	-	-	-

2027	-	-	-
2028	-	-	-
2029	-	-	-
2030	-	-	-
Total (tCO_2e)			8,169

Note:
The estimated emission reductions in each year are rounded down after the decimal point.

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

E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

The local stakeholder meeting was held at the meeting room of Regional Development Planning Board of Cilegon City on 24 May 2017.

The list of participants:
National and regional government staff

- Coordinating Ministry of Economy Affairs
- Regional Secretary of Cilegon City
- Regional Development Planning Board of Cilegon City
- Department of the Environment of Cilegon City
- Department of Industry and Trade of Cilegon City
- Indonesia JCM Secretariat

A meeting with the staff of PT MC Pet Film Indonesia was also conducted at the meeting room of their factory on 06 March 2017. The outline of JCM and its procedures were presented by Nippon Koei Co., Ltd. The factory staff mentioned that they are satisfied with the stable performance of boiler and easy operations.

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received

PT MC Pet Film Indonesia	Fuel switch could reduce the operation cost and the boiler is running stably.	No action is needed.
PT MC Pet Film Indonesia	The boiler is running without serious troubles.	No action is needed.
PT MC Pet Film Indonesia	It is easy to operate the project boiler. JCM is win-win solution for the factories in Indonesia and Japanese side and is expected to be continued. The vibration of the project boiler seems to be larger compared with the old one.	Boiler manufacturer checked the vibration is in the normal range. To make sure, it was agreed that monitoring of vibration will be continued in the periodical check and maintenance by the authorized agent.
Department of the Environment of Cilegon City	Generally, if water used for a boiler is good, discarded water from the boiler would be less. Thus, water purification and demineralization systems such as Reverse Osmosis (RO) are quite valuable.	No action is needed.
Regional Secretary of Cilegon City	In order to reach the target of CO2 reduction in Indonesia (29%), all administration of Cilegon City work together. Thus, they also support on this JCM project.	No action is needed.

F. References

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

Annex

Revision history of PDD		
Version	Date	Contents revised
1.0	20/10/2018	First Version