JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Energy Saving by Introducing High Efficiency Autoclave to Infusion Manufacturing Factory

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

The proposed JCM project aims to reduce emissions of greenhouse gas (GHG) by introducing a new type of high efficiency autoclave and a waste hot water recovery system in the Infusion Manufacturing Factory of PT. Otsuka Indonesia. The hot water drained from the autoclave is recovered by the waste hot water recovery system and stored in the hot water tank. By reusing hot water in the next sterilization process, the temperature of the water to be raised is reduced. Therefore, installation of waste hot water recovery system to an IMP line reduces the amount of steam supplied by a boiler for heating water. It leads to reduction of fuel consumed by the boiler for generating steam, which consequently leads to GHG emission reductions. The high efficiency autoclave and a waste hot water recovery system are manufactured by Shandong Xinhua Medical Instrument Co., Ltd.

A.3. Location of project, including coordinates

Country	Republic of Indonesia
Region/State/Province etc.:	East Java Province
City/Town/Community etc:	Malang
Latitude, longitude	7°84'48.3"S 112°70'29.8"E

A.4. Name of project participants

The Republic of Indonesia	PT. Otsuka Indonesia
Japan	Otsuka Pharmaceutical Factory, Inc.

A.5. Duration

Starting date of project operation	13/03/2019
Expected operational lifetime of project	8 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. Furthermore, implementation of the proposed project promotes transfer of low carbon technologies in Indonesia. The proposed JCM project also provides local staff with a technical training for maintenance skill.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	ID_AM028
Version number	Ver1.0

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

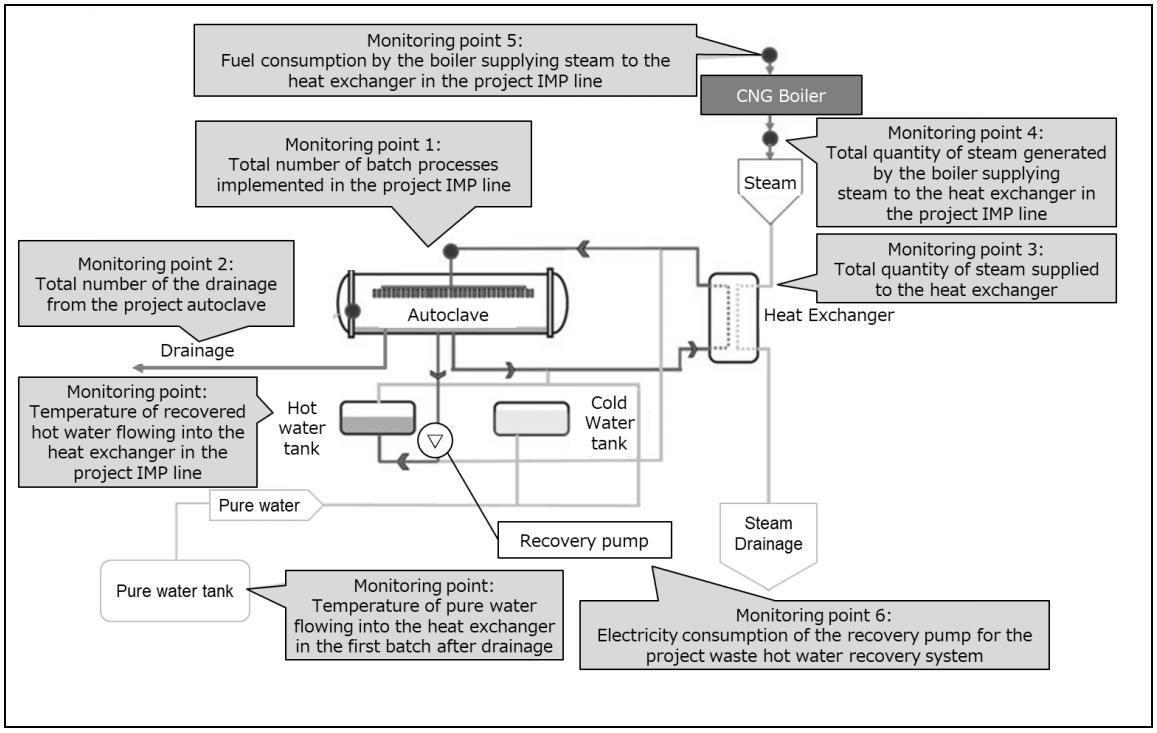
Eligibility criteria	Descriptions specified in the methodology	Project information
Criterion 1	Waste hot water recovery system is newly installed to an autoclave(s) in an infusion manufacturing process line (IMP line).	A waste hot water recovery system is newly installed to an IMP line. The high efficiency autoclave and a waste hot water recovery system are manufactured by Shandong Xinhua Medical Instrument Co., Ltd.

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
Electricity consumption by recovery pump to recover waste hot water	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	-	-	-
2017	-	-	-
2018	-	-	-
2019	168.4	1.0	167
2020	209.1	1.2	207
2021	209.1	1.2	207
2022	209.1	1.2	207
2023	209.1	1.2	207
2024	209.1	1.2	207
2025	209.1	1.2	207
2026	209.1	1.2	207
2027	209.1	1.2	207
2028	-	-	-

2029	-	-	-
2030	-	-	-
Total (tCO_2e)			1,823

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

Local stakeholder consultation has been conducted online, on 17th September 2021.
The list of attendees to the meeting has been determined through the consultation with the JC secretariat of Indonesian side.
The overview and participants of the meeting are as follows.

Date: 17th September 2021
Place: web conference

Agenda
1. Opening remarks
2. Introduction about PT. Otsuka Indonesia
3. Project Overview and introduced Technology and Facility
4. Q&A and comments to receive from the participants

Participants:
[Local stakeholders]

No.	Organization	Position
1	Indonesia JCM Secretariat	Senior Advisor
2	CMEA / Indonesia JCM Secretariat	Head of Indonesia JCM Secretariat
3	CMEA / Indonesia JCM Secretariat	Analyst
4	Indonesia JCM Secretariat	Advisor
5	Ministry of Industry of the Republic	Head of the Center for Industrial

	of Indonesia	Pollution Prevention Technology
6	Ministry of Energy and Mineral Resources of the Republic of Indonesia	Director of Energy Conservation
7	Ministry of Energy and Mineral Resources of the Republic of Indonesia	Section Head, Technology Application of Energy Efficiency
8	Ministry of Energy and Mineral Resources of the Republic of Indonesia	Analyst of Clean Energy Application Technologies
9	Center of Farming Research-Batu	Head of Research
10	PT Jaya Obayashi	Engineering Manager
11	PT Taikisha Indonesia Engineering	President Director
12	PT Taikisha Indonesia Engineering	Director
13	PT. Taikisha Indonesia Engineering	Project Engineer
14	PT WIDATRA BHAKTI	Factory Director
15	PT WIDATRA BHAKTI	Technical Operation Division Head
16	PT WIDATRA BHAKTI	MPD manager

[Project participants]
PT. Otsuka Indonesia
Otsuka Pharmaceutical Factory, Inc.

A summary of the comments received, and consideration of those comments are listed in Section E.2. below.

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
Indonesia JCM Secretariat	Was it impossible to introduce an autoclave without the JCM?	In the plastic bottle plant three autoclaves have been installed, two of which were installed under JCM. Therefore, without JCM, only one autoclave could be installed.
	How many staff members operate the autoclave? Is there a difference in the number of operational staff before and after	There is one operator per one autoclave. There is no change in the number of people before and after the implementation of the JCM project.

	the project is implemented?	
Otsuka Pharmaceutical Factory, Inc.	JCM is a cooperation scheme between Japan and Indonesia, and PTOI will contribute to Japan and Indonesia by reducing CO2 through the JCM project. What kind of contribution do you plan to make in the future?	PTOI will implement the JCM project and reduce GHG through the JCM project. We also plan to contribute to solving environmental issues in the future.
PT WIDATRA BHAKTI	How to maintain temperature in a hot water tank?	The hot water tank does not have a system to maintain the temperature, so it only maintains the hot water in its natural state.
	How many cycles can hot water be used?	Basically, there is no need to change the water. If the water gets dirty, it is replaced periodically (a few times a month).
	Can this JCM project also reduce natural gas consumption?	Yes.

F. References
N/A

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

Annex
N/A

Revision history of PDD		
Version	Date	Contents revised
1.0	##/##/2021	First Edition