JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Energy Saving by Inverters for Distribution Pumps in Water Treatment Plant

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

The proposed JCM project aims to reduce CO_2 emissions by introducing inverters to two existing pumps (520kW and 272kW) which are owned by Phnom Penh Water Supply Authority. The pumps with inverters are automatically controlled by the central monitoring system under the best operational conditions. It can reduce the electricity consumption mostly derived from the Cambodia grid and leads to reduce CO_2 emissions reduction at the water treatment plant.

A.3. Location of project, including coordinates

Country	The Kingdom of Cambodia
Region/State/Province etc.:	Phnom Penh
City/Town/Community etc:	Office 45 st.106, Sangkat Srah Chork, Khan Daun Penh
Latitude, longitude	N 11° 34’ 28” and E 104° 54’ 55”

A.4. Name of project participants

The Kingdom of Cambodia	Phnom Penh Water Supply Authority (PPWSA)
Japan	METAWATER Co., Ltd.

A.5. Duration

Starting date of project operation	30/06/2018
Expected operational lifetime of project	18 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.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	KH_AM005
Version number	Ver01.0

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

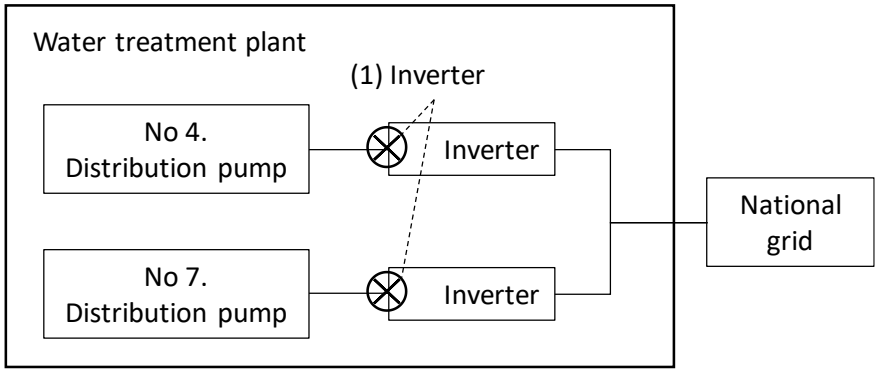
Eligibility criteria	Descriptions specified in the methodology	Project information
Criterion 1	Inverter(s) is installed to the existing constant-speed pump(s) for water distribution in water treatment plant.	Two inverters are installed to the existing constant-speed pumps for water distribution in water treatment plant.
Criterion 2	The value of ECR of project pump is always smaller than that of reference pump at the same operational load except when the operational load is equal to one (1), which is demonstrated by equations fixed ex ante or may be demonstrated by equations ex post at the time of the first verification.	The value of ECR of project pump is always smaller than that of reference pump at the same operational load except when the operational load is equal to one.

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
Electricity consumption by reference pumps	CO_2
Project emissions	
Emission sources	GHG type
Electricity consumption by project pumps	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})
2018	1,369.9	1,151.9	218
2019	2,702.8	2,272.6	430
2020	2,702.8	2,272.6	430
2021	2,702.8	2,272.6	430
2022	2,702.8	2,272.6	430
2023	2,702.8	2,272.6	430
2024	2,702.8	2,272.6	430
2025	2,702.8	2,272.6	430
2026	2,702.8	2,272.6	430
2027	2,702.8	2,272.6	430
2028	2,702.8	2,272.6	430
2029	2,702.8	2,272.6	430
2030	2,702.8	2,272.6	430
Total (tCO_{2e})			5,378

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 main stakeholders of the project are people working at the project sites. In order to collect comments from these stakeholders, the project participants held a stakeholder meeting.

Date and time	Venue	Participants
18 December 2018 13:50-15:40	Conference room of PPWSA	Ministry of Industry and Handicraft, Ministry of Environment, METAWATER Co., Ltd., PPWSA

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
PPWSA	PPWSA has installed some inverter pumps without using JCM subsidy. Can these be registered as a JCM project?	In order to apply for JCM, the project should be implemented with Japanese entity.
PPWSA	Can PPWSA request for JCM registration for the project?	No, you cannot. The process of requesting for JCM registration should be conducted by the focal point entity of the project. It will be Metawater Co., Ltd.
PPWSA	Can the cost of part replacement and/or maintenance be covered by JCM subsidy?	No, it cannot. The cost of part replacement and/or maintenance is out of coverage of the JCM Model Project. It mainly covers the initial investment cost of the project.
PPWSA	Please explain the detail of calculation method of GHG emission reductions.	Metawater Co., Ltd. will explain it later.

F. References

N/A

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

Annex
Annex 1: Estimated emissions reductions in each year for each equipment

Revision history of PDD		
Version	Date	Contents revised
01.0	01/12/2020	First edition
02.0	01/03/2021 09/06/2023	Second edition Initial registration by the Joint Committee through electronic decision