

## JCM Project Design Document Form

### A. Project description

#### A.1. Title of the JCM project

10MW Mini Hydro Power Plant Project in North Sumatra

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

The proposed JCM project aims to build mini hydro power generation that connected to the national/regional grids. The project will reduce CO<sub>2</sub> emission by displacement of the grid electricity with the electricity that is produced by the mini hydro. This project is owned by PT. Citra Multi Energi.

The introduced mini hydro power generation will contribute to reducing the power shortage and increasing green energy with renewable energy in North Sumatra.

#### A.3. Location of project, including coordinates

Country	The Republic of Indonesia
Region/State/Province etc.:	Humbang Hasundutan /North Sumatra
City/Town/Community etc:	Sibarung Barung/Sion Selatan
Latitude, longitude	N 2° 20' 54" and E 98° 27' 13"(Weir) N 2° 20' 28" and E 98° 26' 12"(Power Plant)

#### A.4. Name of project participants

The Republic of Indonesia	PT. Citra Multi Energi
Japan	TOYO ENERGY FARM CO., LTD.

#### A.5. Duration

Starting date of project operation	27/8/2020
Expected operational lifetime of project	22years

#### 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. Inspection standards and methods for water turbine liners, the technical core of hydropower generation, were taught to CME and local EPC contractor in the joint meeting in July 2019.

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

### B.1. Selection of methodology(ies)

Selected approved methodology No.	<b>ID_AM019</b>
Version number	ver01.0

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

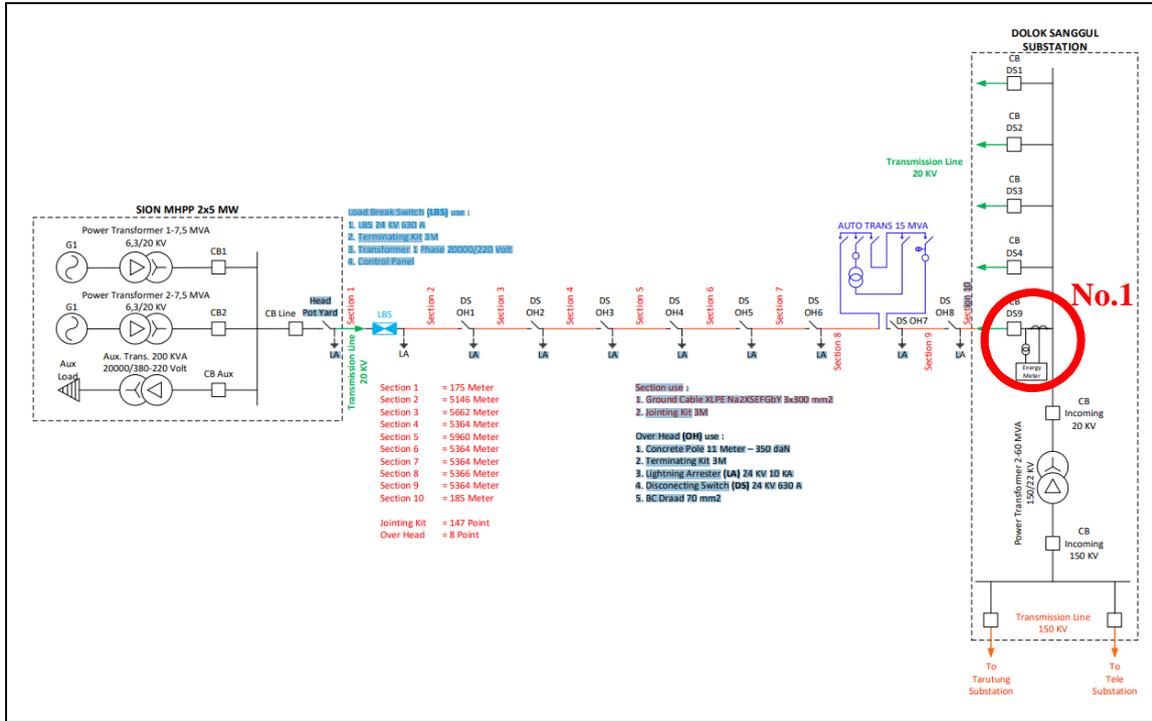
Eligibility criteria	Descriptions specified in the methodology	Project information
Criterion 1	The project newly installs a run-of-river hydro power generation system(s).	This project newly installs a 10MW Mini Hydro Power Plant in North Sumatra.

## 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 including national/regional and isolated grids and/or captive electricity	CO <sub>2</sub>
Project emissions	
Emission sources	GHG type
Generation of electricity from the hydro power generation system(s)	N/A

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 emissions (tCO <sub>2</sub> e)	Reference	Estimated Emissions (tCO <sub>2</sub> e)	Project	Estimated Reductions (tCO <sub>2</sub> e)	Emission
2013		-		-		-
2014		-		-		-
2015		-		-		-
2016		-		-		-
2017		-		-		-
2018		-		-		-
2019		-		-		-
2020		11,415.2		0		11,415
2021		32,807.5		0		32,807
2022		32,807.5		0		32,807
2023		32,807.5		0		32,807
2024		32,807.5		0		32,807
2025		32,807.5		0		32,807
2026		32,807.5		0		32,807
2027		32,807.5		0		32,807

2028	32,807.5	0	32,807
2029	32,807.5	0	32,807
2030	32,807.5	0	32,807
Total (tCO <sub>2</sub> e)			339,485

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	Yes
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#### 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
25 September 2018 14:00-15:30	Aula Pertemuan Kec. Parlilitan Kab. Humbang Hasundutan Sumatera Utara	JCM Indonesia, Ministry of Energy and Mineral Resources, PT. PLN. Rayon Dolok Sanggul, Environmental Institution of Humbang Hasundutan, Local residents

##### E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
Representative from Environmental Institution of Tapanuli Tengah Regency	Is there any other projects from PT. Citra Multi Energi and JCM other than hydroelectric power plants, for example Power Plants from the waste to energy?	PT. Citra Multi Energi: until now PT Citra Multi Energi has not developed a power plant other than hydropower. JCM Indonesia: JCM Indonesia has done a lot of cooperation with companies engaged in the field of electric power generation, especially renewable power plants. Not only with hydroelectric power companies,

		but with other sources, such as solar power. JCM does not only cooperate with power generation companies, but also with companies engaged in other fields or produce other things as long as the company seeks to reduce energy use and emissions.
Representative from Environmental Institution of Humbang Hasundutan	Is there any irrigation developments along this project?	There is no planning for irrigation development, because the type of DAM is made by run of river, it means when the volume of water passes through the capacity of the DAM, the flow of water will pass through the weir (over flow)
	Is there a company commitment in this case PT. CME to carry out reforestation?	For now, we have not planning about reforestation, because we are still in the construction phase.
Representative from Environmental Institution of Pak Pak Bharat Regency	Does PT. CME have a project in Pak Pak Bharat?	No it doesn't.
Representative from BAPPEDA of Humbang Hasundutan Regency	How is the sustainability mechanism of this project for the Humbang Hasundutan district government, especially the Parlilitan sub-district? (related to environmental responsibilities)	PT. CME has fulfilled the environmental responsibility aspects as a condition of the district government and there are periodic reports that we routinely submit. JCM Indonesia: JCM Indonesia will directly monitor project activities where PT. CME will report to JCM Indonesia including environmental management and community relations. If PT. CME does not carry out, the funds given may be revoked.
	Regarding waste management in	JCM Indonesia : The proposed

	Humbang Hasundutan Regency (TPS), is it possible to collaborate with PT Citra Multi Energi and JCM Indonesia in making waste-based power plants?	polling station must be suitable to meet the scale of project utilization, so it is necessary to conduct a study in advance, then pass the permit management process along with the stages, if it meets then it can be submitted to get funding from the JCM, if it meets the specified requirements.
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#### F. References

10MW Mini Hydro Power Plant Project in North Sumatra Environmental Assessment Report  
ENVIRONMENTAL MANAGEMENT PLAN & ENVIRONMENTAL MONITORING PLAN

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

#### Annex

N/A

#### Revision history of PDD

Version	Date	Contents revised
01.0	5/2/2021	First edition
02.0	8/2/2021	For submission