JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Reduction of Energy Consumption by Introducing an Energy-Efficient Waste Paper Processing System into a Packaging Paper Factory in Bekasi, West Java

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

The demand of paper has grown rapidly in Indonesia driven by its high economic growth. As one of the leading companies of corrugated carton production in Indonesia, PT FAJAR SURYA WISESA (Fajar Paper) decided to equip higher energy efficient technologies of Aikawa Iron Works than those for existing Line 5 in its newly built production Line 8 as a JCM project.

A corrugated carton production process consists of the following two main processes: old corrugated cartons (OCC) process and sheet forming process. This project aims to reduce electric power use in the former process.

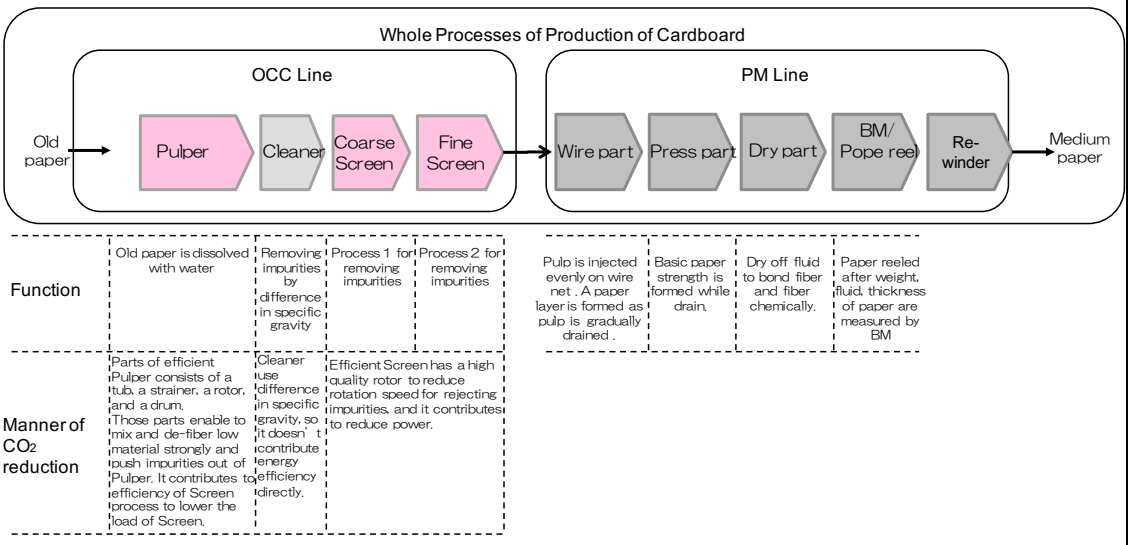

Figure 1: OCC process in the entire cardboard production processes

In the OCC process, the material of sheet paper is made by removing foreign substances, using multiple machines from ground and then liquefied old paper with water. This process is composed of 4 components based 30 equipment. It is expected the specific energy consumption of the project OCC Line 8 is around 0.12 MWh/ton (for 1,400 ton/day), in comparison to the historical performance of the existing OCC Line 5 (0.188 MWh/ton) whose output product is the same of the Line 8.

A.3. Location of project, including coordinates

Country	Indonesia
Region/State/Province etc.:	Jawa Barat/ Bekasi
City/Town/Community etc:	Cikarang Bar/ Kalijaya/ Jl. Kampung Gardu Sawah No. 1
Latitude, longitude	16°16'20"S 107°07'22"E

A.4. Name of project participants

The Republic of Indonesia	PT FAJAR SURYA WISESA Tbk.
Japan	KANEMATSU CORPORATION

A.5. Duration

Starting date of project operation	1 April 2017
Expected operational lifetime of project	12 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 Japanese project participant transfers the technology through conducting the training on operation and maintenance of newly installed equipment through this project.

B. Application of an approved methodology(ies)

B.1. Selection of methodology(ies)

Selected approved methodology No.	ID_AM012
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 specific energy consumption of the project OCC line guaranteed by the manufacture is, at the	Project specific energy consumption (0.120 MWh/ton for 1,400 ton/day) for Line 8 expected by Aikawa Iron Works is less than historical performance of Line 5 (0.188 MWh/ton) which produces

	minimum, less than the reference specific energy consumption set for the project factory.	equivalent product. [Note: ton implies BDt (Bone Dry ton)]
Criterion 2	The paper yield of the project OCC line(s) guaranteed by the manufacture is equal to or more than 90% at the range of designed production capacity.	The guaranteed paper yield is 92% in the project OCC line 8 as shown in "6.4.4.2. Fiber Loss Amount" of ~~the~~ "Technical guarantees" provided by Aikawa Iron Works,
Criterion 3	Production capacity of the project OCC line is no more than the twice as large as the capacity of the existing OCC line	Project capacity of the OCC Line (1,400 ton/day) is less than the twice as large as 1,150 ton/day, which is the maximum capacity of existing OCC line 5 which produces equivalent product.
Criterion 4	Plan for regular adjustment, replacement, and improvements of project OCC line(s) are prepared (at least once every six months).	Aikawa Iron Works agreed with Fajar to give the appropriate advices for the stable operation of the Line 8 every 3 months with the visit at least every 6 months (Agreement signed on August 28, 2015).

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 the reference OCC line(s)	CO_2
Project emissions	
Emission sources	GHG type
Electricity consumption by the project OCC line(s)	CO_2

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

Monitoring Points in Whole Process

For monitoring, Fajar uses energy management system "DCS" and reporting system "SAP".

At this factory, Line 8 has its energy monitoring/control room. It collects and records monitored electricity consumption of each facility of the OCC line every hour.

Fajar monitors electricity consumption and paper production weight. For electricity, data of Pulper, Coarse Screen and Fine Screen are only measured. Paper production weight is measured by weight bridge at the last process. Both electricity and paper production (Gross) are

automatically monitored.

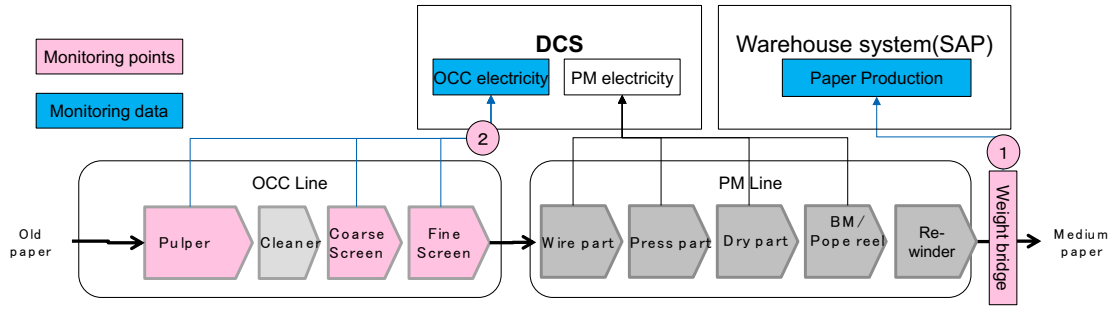

Figure 2: Schematic chart of monitoring system

C.3. Estimated emissions reductions in each year

Year	Estimated Reference emissions (tCO_{2e})	Estimated Project Emissions (tCO_{2e})	Estimated Emission Reductions (tCO_{2e})
2017	39,433.5	25,174.8	14,258
2018	52,578.0	33,566.4	19,011
2019	52,578.0	33,566.4	19,011
2020	52,578.0	33,566.4	19,011
Total (tCO_{2e})	197,167.5	125,874.0	71,291

[Note] The emission reductions are counted from April 1, 2017.

D. Environmental impact assessment	
Legal requirement of environmental impact assessment for the proposed project	YES. In addition to the EIA (UKL-UPL) obtained in 2015 (660.2.1/084/TL&ADL/BPLH), Fajar owns the Environmental Permit (Nomor: 503.9.a/Kep 127/ BPMPPT/V/2015). EIA (UKL-UPL) is governed by the Indonesian Law Number 32 (2009). While the Environmental Permit is governed by Government Regulation Number 27 (2012). Both the Permit and EIA complement each other.

E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

Local Stakeholder Consultation (LSC) had been held in 20th December, 2016, which had invited several stakeholder; Staff of Fajar Paper, Indonesian Government and Indonesian Pulp and Paper

Association.

Date/Location

Date: 20 December, 2016 Venue: Mill site of PT FAJAR SURYA WISESA Tbk.

LSC Agenda

10:00~10:15: Time adjustment 10:15~10:20: Opening remarks by Mr. Roy of Fajar 10:20~10:30: Introduction of relative entities 10:30~10:50: JCM introduction by Yoshimoto of NRI 10:50~11:00: JCM in Indonesia by Ms. Keni of JCM secretariat 11:00~11:20: Introduction of Fajar and Line 8 by Mr. Hardy of Fajar 11:20~11:40: JCM boundary and Equipment of JCM project by Mr. Aoshima of Aikawa Iron Works 11:40~11:45: Q&A 11:45~11:50: Closing by Mr. Asami of Kanematsu 12:00~13:00: Lunch organized by Fajar 13:00~14:00: Mill site tour organized by Fajar

List of Participants,

Organization
FajarPaper
Kanematsu
Aikawa Iron Works
Nomura Research Institute
SUNCOSMO
JCM secretariat
Coordinating Ministry of Economic Affairs
Ministry of Industry
APKI(Indonesian Pulp and Paper Association)

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
Director of Fajar	Japanese stakeholders involved into this project	No Action

Paper	is appreciated and the enthusiasm for utilizing and further promoting JCM is mentioned.	
Indonesia JCM secretariat	This project is positioned as a first project of paper industry in Indonesia and an important project. Moreover, in order to develop the project horizontally to other paper factories in Indonesia, it is pointed to set up committees involving public and private sectors in the paper industry and to appeal the results of this JCM project.	No Action
the Ministry of Industry	An introduction about the efforts of the paper industry in the Ministry of Industry is given. The energy reduction amount by the project OCC was asked.	No Action
Indonesian pulp and paper Association	The total production capacity and yield of LINE 8 was asked.	No Action

F. References

- UKL-UPL report (660.2.1/084/TL&ADL/BPLH)
- Environmental permit (Nomor: 503.9.a/Kep 127/ BPMPPT/V/2015)

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

Annex

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Revision history of PDD

Version	Date	Contents revised
0.1	13/02/2017	Initial draft.
1.0	18/09/2017	Revised for validation.
1.1	22/09/2017	Revised for validation
1.2	27/11/2017	Revision with revised emission factors