JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	Reducing GHG emission at textile factories by upgrading to air-saving loom
Reference number	ID 015
Third-party entity (TPE)	PT. Mutuagung Lestari
Project participant contracting the TPE	Toray Industry Incoporation
Date of completion of this report	20 March 2018

A.2 Conclusion of validation

Overall validation opinion	☒ Positive ☐ Negative

A.3. Overview of final validation conclusion

Only when all of the checkboxes are checked, overall validation opinion is positive.

Item	Validation requirements	No CAR or CL remaining
Project design document form	The TPE determines whether the PDD was completed using the latest version of the PDD forms appropriate to the type of project and drafted in line with the Guidelines for Developing the Joint Crediting Mechanism (JCM) Project Design Document, Monitoring Plan and Monitoring Report.	☒
Project description	The description of the proposed JCM project in the PDD is accurate, complete, and provides comprehension of the proposed JCM project.	☒
Application of approved JCM methodology (ies)	The project is eligible for applying applied methodology and that the applied version is valid at the time of submission of the proposed JCM project for validation.	☒
Emission sources and calculation of emission reductions	All relevant GHG emission sources covered in the methodology are addressed for the purpose of calculating project emissions and reference emissions for the proposed JCM project.	☒
	The values for project specific parameters to be fixed *ex ante* listed in the Monitoring Plan Sheet are appropriate, if applicable.	☒
Environmental impact assessment	The project participants conducted an environmental impact assessment, if required by the Republic of Indonesia, in line with Indonesia's procedures.	☒
Local stakeholder consultation	The project participants have completed a local stakeholder consultation process and that due steps were taken to engage stakeholders and solicit comments for the proposed project unless a local stakeholder consultation has been conducted	☒

Item	Validation requirements	No CAR or CL remaining
	under an environmental impact assessment.	
Monitoring	The description of the Monitoring Plan (Monitoring Plan Sheet and Monitoring Structure Sheet) is based on the approved methodology and/or Guidelines for Developing the Joint Crediting Mechanism (JCM) Project Design Document, Monitoring Plan, and Monitoring Report. The monitoring points for measurement are appropriate, as well as whether the types of equipment to be installed are appropriate if necessary.	☒
Public inputs	All inputs on the PDD of the proposed JCM project submitted in line with the Project Cycle Procedure are taken into due account by the project participants.	☒
Modalities of communications	The corporate identity of all project participants and a focal point, as well as the personal identities, including specimen signatures and employment status, of their authorized signatories are included in the MoC.	☒
	The MoC has been correctly completed and duly authorized.	☒
Avoidance of double registration	The proposed JCM project is not registered under other international climate mitigation mechanisms.	☒
Start of operation	The start of the operating date of the proposed JCM project does not predate January 1, 2013.	☒

Authorised signatory:	Mr. ☒ Ms. ☐
Last name: SIDAURUK	First name: FERRY
Title: TEAM LEADER	
Specimen signature: [redacted]	Date: 08/01/2018

B. Validation team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☒ Ms. ☐	Ferry Sidauruk	PT Mutuagung Lestari	Team Leader	☒	Technical competence authorised	☒
Mr. ☒ Ms. ☐	Abdul Rahman	PT Mutuagung Lestari	Team Member	☒	Technical competence authorised	☒
Mr. ☒ Ms. ☐	Tony Arifiarachman	PT Mutuagung Lestari	Internal Reviewer	☒		☐
Mr. ☐ Ms. ☐				☐		☐

Please specify the following for each item.

* *Function: Indicate the role of the personnel in the validation activity such as team leader, team member, technical expert, or internal reviewer.*

* *Scheme competence: Check the boxes if the personnel have sufficient knowledge on the JCM.*

* *Technical competence: Indicate if the personnel have sufficient technical competence related to the project under validation.*

C. Means of validation, findings, and conclusion based on reporting requirements

C.1. Project design document form

<Means of validation>

Validation Team determined that the Project Design Document (PDD) was completed using the latest version of the PDD forms appropirate to the type of project and drafted in line with the Guidelines for Developing the Joint Crediting Mechanism (JCM) Project Design Document, Monitoring Plan and Monitoring Report. The PDD was used for the three sites of the project: PT. Century Textile Industry Tbk (CENTEX) in Jakarta, PT. Indonesia Sysnthetic Textile Milles (ISTEM) in Banten, and PT. Easterntex in East Java.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

Grade/Ref.:

No issue was raised to the requirement.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Mutuagung had assessed the project description contained in the PDD with the supporting documents and conducted a physical site visit to validate the accuracy and completeness of the project description. Mutuagung confirmed that the proposed JCM project contained in the revised PDD was described accurately and completely. .

C.2. Project description

<Means of validation>

The purpose of the project is to install the new technology of weaving looms at the textile factory of Toray Industries Incorporation. The project were implemented at 3 sites of textile factory in Indonesia (ISTEM, Easterntex, and CENTEX). This project scope was upgrading the old weaving looms to total 96 units with the latest air-saving looms (Toyota JAT810), which can reduce energy consumption of air compressors.

This "JAT810" has original air-saving looms technology to reduce air consumption for weft insertion more 15% than the conventional model. The effect was not only reducing CO2 emission by saving the power consumption of air-compressors, but also reducing the running cost.

The proposed project was partially supported by the Ministry of the Environment, Japan through the financing program 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. Apart from support from financing program for JCM model projects, the project was also financially supported by Japanese company.

In terms of technology transfer, Toray Industries has conducted OJT training and provided a manual on operation, maintenance, and safety measures of the three factories during the installation of the project air-saving looms.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

Grade/Ref.: CL-01

Nature of the issue raised: On the section A.3. "Location of project, including coordinates", sub section "Region/State/Province etc." it was stated the location of PT. Indonesia Synthetic Textile Milles is in West Java province. Based on desk review, it was validated that the location of the ISTEM site was in Banten province, instead West Java province. The Project Participants (PPs) was requested to revise the section A.3 on the PDD in order to meet the statement to be proper.

Nature of responses provided by the PPs:

The Project Participants confirmed that the project location of air-saving looms of Toyota JAT

810 at ISTEM site was located in Tangerang City of Banten province, instead West Java province. Then, the PDD has been revised accordingly stated the correct factory location of project air-saving looms on section A.3.

Assessment of the responses:

The validation team reviewed the revised PDD ref. JCM_ID_F_PDD_ver02.0 prepared by the Project Participants. Validation Team confirmed that factory location of the project air-saving looms as described in the revised PDD was accurate. Thus, CL-01 was closed out.

Grade/Ref.: CAR-01

Nature of the issue raised: On the PDD Section A particularly on sub section A.2 General description of the project and applied technologies and/or measures, it does not mention breakdown of the 96 units of new technology air-saving looms Toyota JAT810 at each factory (CENTEX, ISTEM, and Easterntex). The PP was requested to mention breakdown of 96 units of the new technology air-saving looms (Toyota JAT810) at each factory (CENTEX, ISTEM, and Easterntex).

Nature of responses provided by the PPs:

The Project Participants confirmed that the quantity of 96 units of the air-saving looms of Toyota JAT 810 were not broken down due to presented in the one PDD. Then, the Project Participants revised the PDD accordingly stated the breakdown of the total 96 units of the air-saving looms on sub section A.2. The breakdown of the 96 units of air-saving looms was informed on the PDD: ISTEM 16 units, CENTEX 17 units and Easterntex 63 units.

Assessment of the responses:

The validation team reviewed the revised PDD ref. JCM_ID_F_PDD_ver02.0 prepared by the Project Participants. During the onsite visit, validation team also checked the quantity of the project air-saving looms at the three factory ISTEM, CENTEX, and Easterntex. Based on PDD form review and onsite visit, validation team confirmed that breakdown of the project air-saving looms as described in the revised PDD was accurate. Thus, CAR-01 was closed out.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation team confirmed that the information of province of the project air-saving looms factory location at the site of ISTEM project, as stated on the revised PDD form ref. JCM_ID_F_PDD_ver02.0 as appropriate.

C.3. Application of approved methodology(ies)

<Means of validation>

The project applied the approved methodologies: JCM_ID_AM011_ver01.0 of "Installation of energy saving on air-saving looms at textile factory". The methodology was approved by the

Joint Committe on 10/02/2017 and valid as of the time of the validation.
Validation Team validated if the selected methodology was applicable to the proposed project. The project applicability was checked against each eligibility criteria in the approved methodology selected.
The steps taken to validate each eligibility criterion and the conclusions about its applicability to the proposed project were summarised as below.
Criterion 1: The project replaces existing air-saving looms at a weaving factory with air jet looms equipped with energy saving technologies such as an optimized shape reed's tunnel of nozzles and a pressure sensor to measure air pressure of nozzles for optimization of compressed air consumption of welt insertion.
Justification on the PDD: The project replaces existing air-saving looms at a weaving factory with the latest air-saving looms (Toyota JAT810), which equipped with energy saving technologies such as an optimized shape reed's tunnel of nozzles and a pressure sensor to measure air pressure of nozzles for optimization of compressed air consumption of welt insertion. Validation Team validated if the selected methodology is applicable to the proposed project. The project applicability was checked against each eligibility criteria in the approved methodology selected. The steps taken to validate each eligibility criterion and the conclusions about its applicability to the proposed project were summarised as below.
Steps taken for assessment: Document review was conducted on the technical specification, the records of factory acceptance tests, and a site visit was conducted including assessment of the equipment supply contract, the performance test results and a physical observation.
Conclusion:
Based on the validation processes taken, the Validation Team confirmed that the project air-saving looms were more efficient to the old air jet looms. Therefore the criterion was satisfied.

Criterion 2: The air-saving looms which were installed by the project reduce the specific air consumption more than 15% compared with the reference air jet looms in line with the description in Section 1 of this methodology. Justification on the PDD: Validation Team assessed if the validated methodology is applicable to the proposed project. The project applicability was checked against each eligibility criteria in the approved methodology selected. The steps taken to validate each eligibility criterion and the conclusions about its applicability to the proposed project were summarised as below.
Steps taken for assessment: Document review was conducted on the technical specification, the records of factory acceptance tests, and a site visit was conducted including assessment of the equipment supply contract, the performance test results and a physical observation.
Conclusion:
Based on the validation processes taken, the Validation Team confirmed that the project air-

saving looms were more efficient compared to the old air jet looms. Therefore, the criterion was satisfied.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

Grade/Ref.: CAR 02

Nature of the issue raised: There was a bias information between the one stated on the project overview at the section A.2 on the PDD, with the one stated on the section B.2 on the PDD (criterion 2). On the section A.2 it was stated the efficiency of the JAT 810 is "more than 20%", whereas on the section B.2 (criterion 2) stated "at least 15%". The different information of the JAT 810 efficiency stated on the PDD may lead to bias information.

Nature of responses provided by the PPs:

The Project Participant stated that the information on the PDD at section A.2 and B.2 should be same. The Project Participant confirmed through electronic mail, that the efficiency of the JAT 810 was revised to be "more than 15%". Concequently information on the PDD at section A.2 was revised to be "more than 15%".

Assessment of the responses:

Upon reviewing the confirmation from the Project Participant, the validation team noted that the efficiendy of the JAT 810 was revised to be "more than 15%" accordingly. Thus, CAR 02 was closed out.

Grade/Ref.: CAR 03

Nature of the issue raised: Emission Factor on the Monitoring Plan Sheet (attachment of the Approved Methodology) as of 0.903 was referred improperly. Based on reference as of Decree of the Ministry of Energy Mineral Resources of the Republic of Indonesia issued in 2015, the Emission Factor value for Jawa, Madura, and Bali region is 0.893 for ex-ante (validation stage). The information was accessed during the JCM validation conducted at CENTEX factory on 01 March 2018 referred to official of JCM Indonesia Secretariat website, www.jcm.ekon.go.id. The Project Participant (PP) was requested to revise the emission factor on the Monitoring Plan Sheet in order to meet the calculation of the project emission reduction to be proper.

Nature of responses provided by the PPs:

The Project Participant informed that the emission factor used for estimated annual emission reduction calculation of the project, was refered to the post ante table of 0.903 ton CO2/KWh, instead 0.893 ton CO2/MWh. The Project Participant then revised the emission factor on the Monitoring Plan Sheet (Input Sheet), where the it was the attachment of the Approved Methodology ref. JCM_ID_AM011_ver1.0_Textile_Factories.

Assessment of the responses:

The validation team checked the calculation of the annual emission reduction of project air-saving loom on the revised Monitoring Plan Sheet (Input Sheet) prepared by the Project Participants. Based on desk review on the revised Monitoring Plan Sheet, validation team confirmed that the calculation of estimated annual emission reduction of the project air-saving looms as described in the revised Monitoring Plan Sheet was accurate. Thus, CAR-03 was closed out.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Based on desk review, validation team confirmed that the project air-saving looms applied the valid version of the approved methodology and the applicability was demonstrated to the eligibility criteria of the methodology as appropriate.

Furthermore, the validation team concluded that Project Participant has used the proper emission factor for the project air-saving looms for ex-ante (validation purpose).

C.4. Emission sources and calculation of emission reductions

<Means of validation>

Based on desk review analysis it was validated that GHG emission reduction measures to be concluded as following:

The methodology involved the replacement of old technology of the air jet looms at three textile factories of Toray Incorporation, with the new ones equipped with energy saving technology. This reduced compressed air consumption and led to reducing electricity consumption by the compressor, and consequently GHG emission reductions.

Based on desk review analysis it was validated that, the calculation of reference emissions was as following:

Reference emissions were calculated with amount of fabric produced in the project, the specific air consumption of the project air-saving looms, reduction rate of air consumption, the specific electricity consumption of the air compressors and CO2 emission factor for electricity consumed.

Based on desk review analysis it was validated that, the calculation of the project emissions was as following:

Project emissions were calculated with amount of fabric produced in the project, the specific air consumption of the project air-saving looms, the specific electricity consumption of the air compressors and CO2 emission factor for electricity consumed.

Monitoring parameters was focused on the amount of fabric woven in the project (m/p).

Based on desk review analysis it was validated that, the emmissions sources was as following:

Reference emmissions was referred to the electricity consumption by air compressors to generate compressed air for the reference air jet looms.

Project emmission was referred to the electricity consumption by air compressors to generate compressed air for the project air-saving looms.

Based on desk review analysis, it was validated that the reference emissions were calculated with the following parameters:

- Amount of fabric produced in the project at each project factory [m/p], which is expressed as the amount of fabric produced as per the project air-saving looms type which was determined by, for example, a model of the project air-saving looms by the manufacturer during the monitoring period;
- Specific air consumption as per the project air-saving looms type at each project factory [Nm3/m], which was expressed as amount of compressed air to weave one unit of fabric;
- Reduction rate of specific air consumption at each project factory [%], which was expressed as the average of reduction rates of specific air consumptions by the project air-saving looms to specific air consumptions by the reference air jet loom as per fabric type;
- Specific electricity consumption of the air compressors at each project factory [kWh/Nm3], which was expressed as amount of electricity to generate one unit of compressed air; and
- CO2 emission factor for electricity consumed [tCO2/kWh].

Based on desk review analysis, it was validated that the net emission reductions were achieved by setting specific air consumption as per the project air-saving looms type at each project factory at a minimum value in line with the description in Section I of this methodology.

Based on desk review analysis, it was validated that the specific electricity consumption of the compressor(s) was recalculated if any of the existing compressors was replaced with a new one, or the configuration of compressors connected to supply compressed air to the project air-saving looms was changed at the time of or after registration of the project.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

Grade/Ref.: CL-02

Nature of the issue raised: No calculation method in detail on how to obtain the project emission reduction target stated on the PDD that coming from factory experimental data at the time of validation.

Nature of responses provided by the PPs:

The Project Participant stated at the validation time, that the factory experimental data and calculation method in details were available in Toray Head Office. The file of the factory experintal data of the three sites (CENTEX, ISTEM, and Easterntex), will be sent to Mutuagung through electronic mail accordingly.

Assessment of the responses:

Project Participant then sent the complete factory experimental data of the three sites (CENTEX, ISTEM, and Easterntex), through electronic mail to the validation team. Then

validation team reviewed them comprehensively. Upon reviewing the factory experimental data, the validation team considered that factory experimental data was sufficient in calculating the emission reduction, through calculation of comparison of the air consumption rate from the technology JAT 810 and JAT 710. Thus, CL-02 was closed out.

Grade/Reff.: CAR-04

Nature of the issue raised: On the Monitoring Plan Sheet (Input Sheet) at worksheet "MPS(input)", Table 2 (project specific-parameters to be ex ante) which presented some parameters of "SECj", "SAC_PJi,j", and "RRi,j". As described on the Table 2 section d. (source of data), "SECj" estimated value was obtained from performance curve of the air compressors from their manufacturers. While for "SAC_PJi,j" estimated value was obtained from experimental data from the manufacture of the project air-saving looms. Lastly, "RRij" estimated value was obtained based on project and reference specific air consumption collected as per the project. Based on interview during the onsite validation, the Project Participant could not showed the source data of those parameters ("SECj", "SAC_PJi,j", and "RRi,j") which referred on the MPS(input) Table 2 as mentioned above. The PP could not showed the raw data of parameter "AP_PJi,j,p" (amount of the fabric woven by the project air-saving looms), stated in the MPS(input) of Table 1 (parameters to be monitored ex post) of attachment to Project Design Document. Those parameters of "SECj", "SAC_PJi,j", "RRij" and "AP_PJi,j,p" were needed in calculating the parameters on Table 3 (ex-ante estimation of each CO2 emission reduction) such as estimated values of "REp" (Reference Emission during the period p), "PEp" (Project Emission during the period p), and finally will influence the calculation result of parameter "ERp" (Emission Reductions during the period p). The Project Participant was requested to provide all above mentioned parameters as row data in MS Excel spreadsheet, and/or performance curve which referred for estimated value of "SECj". The row data will be considered in order to confirm all the estimated values as presented on the Monitoring Plan Sheet (Input Sheet) report were appropriate and accurate.

Nature of responses provided by the PPs:

Project Participant then provided all the raw data and sent them to validation team through electronic mail. Project Participant provided the raw data of "SECj", "SAC_PJi,j", and "RRij" parameters for the three factory sites. The raw data of "AP_PJi,j,p" parameter was provided as production quantity of the project air jet loom of woven fabric in meter per year of unit dimension for the three factory sites, also presented on MS Excel spreadsheet. In addition, the sum of operation day in a year also provided by Project Participant as the raw data of the "AP_PJi,j,p parameter for the three factory sites.

The calculation of those parameters was comprehensively presented, complete with the unit

dimension of each parameter.

Assessment of the responses:

Based on the data provided by the Project Participant, validation team then validated the data particularly on how to calculate the parameters of the emission reduction was presented, including but not limited to "SAC_PJi,j", "RRij", "AP_PJi,j,p", "REp", "PEp", and "ERp". Desk review validation was performed on the MS Excell file provided by the Project Participant, in order to make sure all the parameters were calculated in a proper manner. Deep analysis was also performed by validation team on the row data, such as how the raw data (log book and daily report) was input to the computer, what kind of formulas were used in the calculation, and was there any linkage of data related to work sheets or other files of the project emission reduction calculation.

The raw data of "SECj" parameter was presented in the MS Excel sheet, complete with its calculation method. The result of "SECj" parameter was obtained from calculation formula of "Axis power (in kW)" devided by "Quantity of pressure air (in Nm3/h)". Based on given formula and calculation it was resulted "SECj" parameter for each factory site, were as follows: ISTEM (0.0935 kW/Nm3/h), CENTEX (0.0871 kW/Nm3/h), and Easterntex (0.0920 kW/Nm3/h).

The raw data of "SAC_PJi,j" parameter was presented in the MS Excel sheet based on experimental performed at three factory sites of ISTEM, CENTEX, and Easterntex. The experimental was conducted in order to compare the parameters of project air jet loom type JAT 810 (new air-saving loom) with JAT 710 (old air jet loom). The result of "SAC_PJi,j" parameter for air jet loom type JAT 810 was obtained from experimental data among several fabric types at the three factory sites. The objective of the experiments was in order to obtain the lowest "air consumption (m3/h)" and SAC_Ji,j (m3/m) at each factory site. Based on experimental data at ISTEM factory, the lowest air consumption was 33.6 m3/h, and the lowest "SAC_PJi,j" parameter was 1.84 m3/m. Those result was based on type of the fabric "PSM 556", and "density times fabric widht" (density x fabric width) of 4,872. Based on experimental data at CENTEX factory, the lowest of air consumption was 51.0 m3/h, and the lowest of "SAC_PJi,j" parameter was 1.74 m3/m. Those result was based on type of the fabric "PC899W", and "density times fabric widht" of 3,302. Based on experimental data at Easterntex factory, the lowest air consumption was 40.0 m3/h, and the lowest SAC_PJi,j was 2.10 m3/m. Those result was based on the type of fabric "E-208 CV", and "density times fabric widht" of 4,536.

The raw data of "RRij" parameter was obtained from using formula: ("SAC_RE" - "SCA_PJ") / "SAC_RE", where the result was presented in percentage (%). Based on calcultion method, the result of "RRij" parameter for the three factory sites was presented as follows: ISTEM

(23.63%), CENTEX (24.42%), and Easterntex (24.35%).
The calculation result of "AP_PJi,j,p" parameter was obtained from the formula: Production quantity/day of project air jet loom) * Number of looms of project at the factory * Operating day per year. Based on calculation on the Monitoring Plan Sheet (Input sheet), the result of "AP_PJi,j,p" parameter of the three sites were as follows: ISTEM (1,815,744 m/year), CENTEX (1,420,530 m/year), and Easterntex (10,694,201 m/year).
The row data was considered to confirm all the estimated values as presented on the Monitoring Plan Sheet (Input Sheet) report were appropriate and accurate.
Calculation result of "REp" parameter was obtained from the formula: "SECj" * "SAC_PJi,j" / (1 - RRi,j/100) * "AP_PJi,j,p" * "EFelec,j"). Based on calculation on the Monitoring Plan Sheet (Input sheet), the result of the "REp" parameter for each factory of the three sites were as follows: ISTEM (365.3 tCO2/p), CENTEX (254.4 tCO2/p), and Easterntex (2,438.9 tCO2/p).
Calculation result of "PEp" parameter was obtained from the formula: "SECj" * "SAC_PJi,j" * "AP_PJi,j,p" * "EFelec,j". Based on calculation on the Monitoring Plan Sheet (Input sheet), the result of the "PEp" parameter for each factory of the three sites were as follows: ISTEM (279.0 tCO2/p), CENTEX (192.3 tCO2/p), and Easterntex (1,845.0 tCO2/p).
Calculation result of "ERp" parameter was obtained from the formula: "REp" - "PEp". Based on calculation on the Monitoring Plan Sheet (Input sheet), the result of the "ERp" parameter for each factory of the three sites were as follows: ISTEM (86.3 tCO2/p), CENTEX (62.1 tCO2/p), and Easterntex (593.9 tCO2/p).
The calculation result of "AP_PJi,j,p" parameter was obtained from the formula: Production quantity/day of project air jet loom) * Number of looms of project at the factory * Operating day per year. Based on calculation on the Monitoring Plan Sheet (Input sheet), the result of "AP_PJi,j,p" parameter of the three sites were as follows: ISTEM (1,815,744 m/year), CENTEX (1,420,530 m/year), and Easterntex (10,694,201 m/year).
The row data was considered to confirm all the estimated values as presented on the Monitoring Plan Sheet (Input Sheet) report were appropriate and accurate.
Through desk review analysis and on site visit, validation team confirmed that all row data provided by the Project Participant were presented properly. Thus, CAR-04 was closed out.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Based on desk review and interview to the Project Participant during the validation activity, it was concluded as following:
- Validation team concluded that Project Participant has sufficeint factory experimental data of the three sites (CENTEX, ISTEM, and Easterntex), in order to calculate the emission reduction through calculation of the air consumption rate reduction of the technology JAT 810 and JAT

710.
- Validation team concluded through desk review analysis, that all row data including the calculation, formula, and the result of the presented data provided by the Project Participant on the Monitoring Plan Sheet (Input Sheet) were presented appropriately.

C.5. Environmental impact assessment

<Means of validation>

The project was intended to reduce GHG emission at textile factories by upgrading to air-saving looms in order to reduce the specific air consumption by at least 15% compared with the reference air-saving looms. The environmental impact assessment of the project was covered in UKL/UPL document owned by the PPs. The project activity did not significantly change the factory operational it merely replaced air jet looms with the upgraded technology.

According to the laws of the host country, three levels of environmental management and reporting are applicable depending on the significance of the environmental impacts of project activity, i.e. AMDAL (detailed EIA), UKL/UPL (Environmental Management Plan and the Environmental Monitoring Plan) and Surat Pernyataan Pemantauan Lingkungan (Environment Monitoring Statement Letter) from the Local Enviroment Government Agency. Validation Team assessed the applicable legal requirements in the host country using its local expertise through desk review analysis. As a result, the followings points were confirmed:

1) AMDAL (Environmental Impact Analysis) of CENTEX was submitted by the PP and accepted by the local authority of East Jakarta;

2) There was no regulation related to the activities of saving-air loom technology in existing factory and it was not included in the types and businesses of EIA requirement.

For more referrence, Validation Team reviewed the D-23_No.05_2012 about types and businesses for EIA. Validation Team confirmed that the PP was not requested to conduct an EIA, and there was no regulation related to project equipment in the host country. Thus, it deemed that the impacts of the project activity on the environment was negligibly small.

Validation Team validated the company on environmental obligation for ISTEM factory, through its environmental semestar report. Environmental reports of semester 1 and semester 2 of 2017 were available and they have been reported to the Environment Agency of Kota Tangerang District, Banten province.

The PPs did not state that the new technology JAT810 has an environmental impact. Therefore, the environmental impact assessment was not supported in the Project Development Document (PDD). The project activity did not significantly change the factory operational it merely replace air-saving looms with the upgraded technology JAT810. Validation Team validated the company on environmental obligation through its environmental monitoring report. The

Easterntex, they use the local expertise and the local official of Environemntal Agency of Pasuruan District to assess the environmental impact.

The Easterntex conducted monitoring for noise level with local laboratories HIPERKES every 6 month (twice a year). The result for noise level at the weaving area from HIPERKES in April 14, 2016 was 100.2 dB.A, May 12, 2017 was 103.7 dB.A and February 28, 2018 was 101.4 dB.A with maximum allowed value was 85 dB.A by Permenakertrans No. 13 year 2011. In this case, the company has a regulation for all employee in the weaving area should used ear plug during working.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No issue was identified to the requirement.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Validation Team confirmed by assessing the relevant documents and looking at the operation of new installation upgraded air-saving looms on sites that the project did not significantly change the current operation therefore referring to national regulation PP. No. 27 year 2012 on Environment Permit.

Validation Team confirmed by assessing the relevant documents, interviewing with the internal employees and looking at the operation of new installation upgraded air-saving looms JAT 810 on site that the project did not significantly change the current operation. In addition, the project did need a special environmental impact assessment for this project to meet the legal requirement of the host country. The PDD satisfied the requirements of the JCM.

C.6. Local stakeholder consultation

<Means of validation>

The PPs identified local stakeholders of employee of PPs, Indonesia Textile Association and Indonesia JCM Secretariat. The stakeholder consultation was conducted on 29th September 2016 at Conference room of ISTEM. The comment from stakeholder are positive among of them concerning on monitoring item for JCM, electricity consumption monitoring and the advantage of energy saving promote. During the validation visit, observed that the implementation of the project was located in the restricted area within the PPs operational area and it was indoor area.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No issue was identified to the requirement.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The PP has conducted stakeholder consultation in line with the project design. The consultation result was provided in PDD. Considering stakeholder result, document review and site project overview, Validation Team confirmed that stakeholder consultation was conducted in good manner and the response was positive.

C.7. Monitoring

<Means of validation>

The Monitoring Plan consisting of the Monitoring Plan Sheet and Monitoring Structure Sheet was based on the approved methodology.

The specific electricity consumption of the air compressors of the project air-saving loom was measured by performance curve of the air compressors from their manufacturers. The specific air consumption of the project air-saving looms type i at the project factory j was measured by experimental data from the manufacture of the project air-saving looms. The reduction rate of specific air consumption of the project air ject loom type was measured based on project and reference specific air consumption collected as per the project. CO2 emission factor for consumed electricity at the project factory was sourced from "Emission Factors of Electricity Interconnection Systems", National Committee on Clean Development Mechanism (Indonesian DNA for CDM), based on data obtained by Directorate General of Electricity, Ministry of Energy and Mineral Resources, Indonesia, unless otherwise instructed by the Joint Committee. The project plan was to apply an auto data collection system. The recorded data will be checked on a monthly basis by the responsible staff. The roles and responsibilities of the persons were described in the Monitoring Structure Sheet in accordance with the requirements of the applied methodology. The monitored data collected was to be checked by the Machine Operator and the Supervisor and reported after approval by the Factory Manager. The validation team confirmed that the Monitoring Plan complied with the requirements in the approved methodology and that the PPs will be able to apply the Monitoring Plan following the monitoring arrangements described in it.

Information Management System of Managing Data Quality, and Monitoring GHG Project

Project Participant should meet the requirement of the ISO 14064-2 for project level, as following:

a. Managing Data Quality

Establishment and application of the quality management procedures to manage data and information, including: assessment of uncertainty, relevant to the project and baseline scenario, reduce, as far as is practical, uncertainties related to the quantification of GHG emission reductions or removal enhancements.

b. Monitoring GHG Project

Establishment and maintainenance of the criteria and procedures for obtaining, recording, compiling and analysing data and information important for quantifying and reporting GHG emissions reduction relevant for the project and baseline scenario (i.e. GHG information system).
Validation team checked that the monitoring procedures of the project have included the following: purpose of monitoring, types of data and information to be reported, origin of data, monitoring methodologies, monitoring time and period, monitoring roles and responsibility, and the GHG information management system.

Data Quality of the Project
a. Data Source
Project Participant provide a system that satisfying requirements as following:
1. Primary data: measured, metering systems, delivery frequency, amount of woven fabric produced.
2. Default data: from external source, electricity emission factors, global warming potential, and electricity grid factors specific to Indonesia country per area, and grid emission factor
3. Calculated data: emission factors (tCO2eq), amount of woven fabric, wind consumption of the air-saving looms (m3/m), and rotation per minute (rpm) of the air-saving looms.

Data Management:
Project Participant is required to provide the organization chart of the GHG project was clear on who does what. This also including to provide that the chart to be accurate. In addition the Project Participant is required to provide training records of some sort to be present. The training programs including for machine installation, commisioning test, operation running, HSE, management system, and refreshing training for production and utility crews.

Documentation of GHG project:
Project participant is requested to satisfy requirement of ISO 14064-2 for documentation of GHG project as following:
- Demonstration the conformance of the GHG project with the requirements of ISO 14064-2 (project level)
- Consistent with validation needs in accordance with the JCM Guidelines for Validation, and with the requirements of ISO 14064-2 (project level)

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

Grade/Ref.: CAR-05
Nature of issue raised: Based on site visit in term of the Information Security System, there

was no procedure on how to entry the daily report, entry data to the system, authorization for checking, and backup system at the IT Department (CENTEX, ISTEM, and Easterntex factories).

Nature of responses provided by the PPs:

The Project Participant has provided some standard operating procedures and work instructions related to Information Security System which covering procedure of entry the daily report, data entry to the system, authorization for checking, and backup system at the IT Department for the three factories of CENTEX, ISTEM, and Easterntex. Those documents provided by the Project Participant have been recorded accordingly and implemented properly on the three sites. The reports template have been completed with relevant information of date, person in-charge, aurthorization for checking and back up system. All procedures and work instructions were also provided in the work flow of process so that may be easily understood by relevant staff how to implement the procedures and work instructions.

Assessment of the responses:

The validation team checked all the procedures and works instructions, including implementation of them particularly related to Database Management and Information System at the Information Technology (IT) section. This action was taken in order to make sure security system of the information was implemented properly from inputting the daily performance, data entry to the system, and database distribution of the factory to the relevant parties. This system was also implemented at the three factories at CENTEX, ISTEM, and Easterntex. Based on desk review on the provided documents by Project Participant, validation team confirmed that the information of the Database System as described in the provided procedures and work instructions were proper. Thus, CAR-05 was closed out.

Grade/Ref.: CAR-06

Nature of issue raised: No written procedure/work instruction/manual the Utility Department (recording the daily report, inputting the daily data, authorization, and report distribution) at all factories (CENTEX, ISTEM, and Easterntex).

Nature of responses provided by the PPs:

The Project Participants have provided some documents in the Weaving Section such as, procedure and work instruction for the utility daily report completed with date, name of operator, authorization from the Supervisor and Utility Department manager. The documents provided by the Project Participants, have been well implemented accordingly, where all daily reports on the Utility Departement have been with authorized by relevant operators, staff, and its management.

Assessment of the responses:

The validation team checked several daily performance reports provided by the Project

Participants on the Utiliy Department at the three sites of CENTEX, ISTEM, and Easterntex. This checking was conducted to see the implementation of those documents on the Utility Department for recording operation performance. Based on desk review on the provided documents by Project Participant, validation team confirmed that the standard operating procedures and work instructions were inline with the operation at the Utility Deparment. Based on desk review, it was also validated that the standard operating procedures and work instructions were already informed to the relevant operators and staff through inhouse training program. Thus, CAR-06 was closed out.

Grade/Ref.: CAR-07
Nature of issue raised: On the compressor operation daily report, no signature of operator who prepared the report, nor authorization by Utilization Department management at all factories (CENTEX, ISTEM, and Easterntex).
Nature of responses provided by the PPs:
The Project Participant has revised the template of the form at the Compressor Operation Daily Report with no information of the operator incharged. The report template has been revised accordingly by the Project Participants. It has been added with signature of the Compressor Operator and authorized by the Supervisor of the Utility Departmen.
Assessment of the responses:
The validation team checked template report of the Daily Compressor Operation to make sure the implementation of authorization of those documents was in place. Based on desk review on the provided documents by Project Participants, validation team confirmed that the authorization of the Daily Compressor Operation report as described in the revised reports has been implemented properly. Thus, CAR-07 was closed out.

Grade/Ref.: CAR-08
Nature of issue raised: No written procedure/work instruction/manual the Weaving Section (recording the daily report, inputting the daily data, authorization, and report distribution).
No written procedure/work instruction/manual the Weaving Section (recording the daily report, inputting the daily data, authorization, and report distribution) at all factories (CENTEX, ISTEM, Easterntex).
Nature of responses provided by the PPs:
The Project Participants have provided some documents in the Weaving Section such as, procedure and work instruction for the daily report completed with date, name of operator, authorization from the foreman and production manager. The documents provided by the Project Participants, has been well implemented accordingly, where all daily reports on the Weaving Section have been with authorized by Weaving Section Foreman and Production

Manager.

Assessment of the responses:

The validation team checked several daily production reports provided by the Project Participants on the Weaving Section at the three sites of CENTEX, ISTEM, and Easterntex. This checking was conducted to see the implementation of those documents on the production lines of the Weaving Section. Based on desk review on the provided documents by Project Participant, validation team confirmed that the standard operating procedures and work instructions were inline with the process at the weaving section. Based on desk review, it was also validated that the standard operating procedures and work instructions were already informed to the relevant operators and staff through inhouse training program. Thus, CAR-08 was closed out.

Grade/Reff.: CAR-09

Nature of issue raised: On the Inspecting Sheet report ref. No. 10/B/IV/Q-WV/01 dated on 28.02.2018 and Shoken Report ref. FM-WVQ- dated on 09.02.2018, there were no authorization by production management. (ISTEM factory).

Nature of responses provided by the PPs:

The Project Participant has revised the template of the form of Inspection Sheet Report and Shoken Report referring to as above mentioned documents. The documents provided by the Project Participants, has been revised accordingly, where the reports template have been added with authorization signature by Weaving Section Foreman and Production Manager.

Assessment of the responses:

The validation team checked several reports of Inspection Sheet Report and Shoken Report to make sure the implementation of authorization of those documents. Based on desk review on the provided documents by Project Participant, validation team confirmed that the authorization of the Inspection Sheet Report and Shoken Report as described in the revised reports were proper. Thus, CAR-09 was closed out.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The Validation team confirmed:

- Monitoring Plan was described in compliance with the requirements of the approved methodology and the Guidelines for developing PDD and MR, and the Project Participants have demonstrated feasibility of the monitoring structure and their ability to implement the Monitoring Plan.
- Database management and information system security has been implemented by the Project Participants trhough establishing and implementing procedures and work instructions in the

entire company divisions at the three sites (CENTEX, ISTEM, and Easterntex), under department of Information Technology at each site.
- Reporting of daily performance at utility operation at the three sites (CENTEX, ISTEM, and Easterntex), have been updated and implemented performed by Department of Utility at each site of Toray Incorporation.
- Production report of daily, weekly, and monthly at Weaving production sections have been updated accordingly by revising and establishing standard operating procedures and work instruction at the production lines at the three sites (CENTEX, ISTEM, and Easterntex), have been implemented performed by Weaving Sections and Production Management at each site.
- Project Participants have provided some standard operating procedures and work instructions at the Weaving Section. Those documents have been informed to relevant staff and operators and implemented well at the three sites accordingly.
- It was concluded that, the authorization of the Inspection Sheet Report and Shoken Report as described in the revised reports have been properly implemented on the weaving section operation.

C.8. Modalities of Communication

<Means of validation>

The MoC was submitted to MUTUAGUNG prior to on site validation for review in the form JCM_ID_F_MoC_ver01.0 in which Toray Industries Corporation (Japan) was nominated as the focal point. The MoC was signed by the authorized representatives of all the PPs with the contact details. The form used is the latest one as of the time of validation.

MUTUAGUNG has assessed the personal identities including specimen signatures and employment status of the authorized signatories through the review of the written confirmation from the PPs. It was confirmed that all corporate and personal details including specimen signatures are valid and accurate as requested in the JCM Guidelines for Validation and Verification ref. JCM_ID_GL_VV_ver01.0. MUTUAGUNG confirmed through the review of the corporate information of the PPs and the interview with these representatives of the PPs that the information provided in the MoC was correct.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No issue was raised to the requirement.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

MUTUAGUNG confirmed that the MoC was completed using the latest form and the information in the MoC was correct and sufficient, in compliance with the requirements of the JCM Guidelines.

C.9. Avoidance of double registration

<Means of validation>

The validation team assessed and confirmed relevance of the written confirmation in the MoC from the PPs that the proposed JCM project was not registered under the other international climate mitigation mechanisms.

The team in addition to the interviews with the PPs checked publicly accessible information of Clean Development Mechanism (CDM), Joint Implementation, Verified Carbon Standard (VCS) and Gold Standard and found no identical project as the proposed JCM project in terms of the name of entities, applied technology, scale and the location. The result of researches confirmed that the proposed project was not registered under the other international climate mitigation mechanisms than JCM and it will not result in a double counting of GHG emission reductions.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No issue was raised to the requirement of the section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

MUTUAGUNG confirmed that the proposed JCM project was not registered under the other international climate mitigation mechanisms.

C.10. Start of operation

<Means of validation>

The start date for the operation of the proposed JCM project was indicated as 01/01/2017 in the PDD form for the three sites of CENTEX, ISTEM, and Easterntex.

The validation team confirmed correctness/relevance of the information by reviewing the supporting evidence and on site visit, including but not limited to assessing of the contracts and commissioning report, and that the date is not before 01/01/2013 as required to be eligible as a JCM project.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No issue was raised to the requirement of the section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

MUTUAGUNG confirmed through the on site assessment that the start date of operation of the proposed JCM project was starting on 01/01/2017 and not before 01/01/2013 as required to be eligible as a JCM project.

C.11. Other issues

<Means of validation>

Project Participants provided the GHG organization structure of the organisation at the three factory sites described the role of the persons in charge. Project Participants also provided job description for the persons who were involved in the GHG program. In addition, training of comissioning and operation at the three factory sites (CENTEX, ISTEM, and Easterntex) of the new technology were conducted to the relevant staff and operators. Based on desk review and on site visit, it was validated by validation team that, GHG organization structures of the three factory sites as abovementioned were in place. Also it was validated that, job descriptions for the person who were involved in the GHG program was defined clearly. In addition, it was validated that, training of comissioning and operation at the three factory sites were conducted to the relevant staff and operator. It was confirmed that, the employee were also trained with refreshing training and HSE (Health, Safety, and Environment) particularly for production and utility operators at the Weaving section production lines.

<Findings>

Please state if CARs, CLs, or FARs are raised, and how they are resolved.

No issue was raised to the requirement of the section.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

Based on desk review on factory of the three sites (CENTEX, ISTEM, and Eastertex) it was concluded that GHG organization structure of the three sites were in place. Job description for the persons who were involved in the project air-saving looms was defined clearly. Training of comissioning and operation for the project air-saving looms were conducted to the relevant staff and operators.

D. Information on public inputs

D.1. Summary of public inputs

In line with the JCM Project Cycle Procedure, the PDD was to be made publicly available for 30 days to invite public comments. The PDD was made publicly available in line with the requirements of the procedure for the period of 06/02/2017 to 07/03/2018 as per https://www.jcm.go.jp/id-jp/information/254.

D.2. Summary of how inputs received have been taken into account by the project participants

Based on information through accessing the JCM website on 07/03/2018, no comment was received during the above period to receive public inputs. Thus no action was required to be taken by the PPs to satisfy the JCM requirement.

E. List of interviewees and documents received

E.1. List of interviewees

A. CENTEX:

- Mr. Katsuya Okajima (Factory Manager)
- Mr. Fatkhurrohman (Deputy Factory Manager)
- Mr. Amry SC (Weaving Manager)
- Mr. Ngadino (Utility Manager)
- Mr. Setyo Pranowo (Deputy Manager)
- Mr. Heri (Leader)
- Ms. Lis (Operator Admin)

B. ISTEM:

Toray Industries Incorporation (Japan)

- Mr. Junya Taniguchi (Senior Staff)

PT. Indonesia Synthetic Textile Milles (ISTEM)

- Mr. Masaru Kimura (Production Director)
- Mr. Agung Rubedo (Weaving General Manager)
- Mr. Dwi Prayitno (Section Manager)
- Mr. Wilan (QC Assistant Manager)
- Mr. Taufik I. (Waving Maintenance)
- Mr. Budi Suryono (Engineering)
- Ms. Rahma Febrina (HSE)

C. EASTERNTEX:

- Mr. Junya Taniguchi - Toray Incorporation (Japan)
- Mr. Shinici Ohira - Weaving Production Advisor
- Mr. Purwo Sunu - Production Manager
- Mr. Slamet N. - Utility Manager
- Ms. Theresia MP - Weaving Foreman

- Mr. Yasir Arafat, Ass. Chief
- Mrs. Muzaimah, Weaving Foreman
- Mr. Jainal, Lead IT Dept.
- Mr. Suryo, Ass. Manager Safety Committee
- Mr. Devi Kurniawan, Foreman
- Mr. Adip AM, Assistant Chief
- Mr. M. Choirul Anam, Assistant Foreman
- Ms. Anggun Adijaya, Group Leader
- Ms. Luthfiah Fajrin, Translator

E.2. List of documents received

Documents of Category A (Prepared by the Project Participant)

- PDD Version 01.0 ref. JCM_ID_F_PDD_ver01.0 dated 01/30/2018
- PDD Version 02.0 ref. JCM_ID_f_PDD_ver02.0 dated 03/12/2018
- Company brochure of Toray Incorporation - Japan
- Company profile of PT. Century Textile Industry Tbk. (CENTEX) - Jakarta
- Company profile of Indonesia Synthetic Textile Mills (ISTEM) - Banten
- Company profile of PT. Eastertex (Easterntex) - East Java
- Modalities of Communication dated 09/25/2017
- Sustainable Development Implementation Plan for CENTEX
- Sustainable Development Implementation Plan for ISTEM
- Sustainable Development Implementation Plan for Easterntex
- Local Stakeholder for the JCM Project of Toray Industries Incorporation
- Local Stakholder for the JCM Project of Toray Indonesia Tbk.
- Depreciation of life year of the project air-saving looms Toyota JAT 810
- Confirmation Letter of Installation for CENTEX factory
- Confirmation Letter of Installation for ISTEM factory
- Confirmation Letter of Installation for Easterntex factory
- Calculation reduction of Specific Electricity Consumption for CENTEX
- Calculation reduction of Specific Electricity Consumption for ISTEM
- Calculation reduction of Specific Electricity Consumption for Easterntex
- Calculation reduction of Specific Air Consumption for CENTEX
- Calculation reduction of Specific Air Consumption for ISTEM
- Calculation reduction of Specific Air Consumption for Easterntex
- Specification data sheet

- Drawing - Outline dimension
- Drawing - Foundation
- Drawing - Flow sheet
- Drawing - Notes
- Starting characteristics
- Electrical drawing (main motor starter panel)
- Electrical drawing (local control panel)
- Transformer box electrical drawing
- Operation and maintenance manual
- Project schedule
- Weekly report commissioning air-saving looms
- Record of visit to Japan by members of Indonesian committee
- Daily report of weaving section (CENTEX, ISTEM, and Easterntex)
- Performance testing report of air saving-looms the Toyota JAT 810 (CENTEX, ISTEM, and Easterntex)
- National Standardization Agency of Indonesia SNI ISO/IEC 17021:2008
- Instruction for use of multi power meter model 53U, MSYSTEM
- ISO9001:2015/JIS Q9001:2008 Certificate for MSYSTEM
- Sample invoice from PT. PLN (Persero) for 2017 and 2018 (January-March) for CENTEX, ISTEM, and Easterntex
- Grid Electricity Emission Factors (calculated in year 2015), Ministry of Energy and Mineral Resources
- List of business plan and/or activities required have environmental impact assessment No. 5 in 2012, Environment Minister of State of the Republic of Indonesia
- Meeting Memo on Stakeholder (Local Government) Consultation for the JCM Model Project on Energy Saving by High-efficiency Centrifugal Chiller dated 29/09/2016
- Organizational structure of three sites CENTEX, ISTEM, and Easterntex
- UKL & UPL report (CENTEX, ISTEM, Easterntex)
- Procedures for checking and maintenance of air-saving looms
- Specification of air-saving looms equipment
- Operation manual of air-saving looms
- Clarification on the monitoring plan
- UKL/UPL Document of PT Indonesia Synthetic Textile Milles Industri Indonesia
- Semester I and Semester II Report of UKL/UPL
- UKL/UPL Document of PT Easternetx No. 660/1243/424.078/2016 from Environmental Agency, Pasuruan District. signed by Ir. Muchaimin, MT on behalf of Pasuruan District Head.
- Reports of Air Quality from HIPERKES Laboratory in April 14, 2016; May 12, 2017; and

February 28, 2018
- Agreement Letter of Transportation and Management Toxic and Hazardous Waste (No. 001/NIK/V/2017) between PT Easterntex with PT Nusantara Indah Kemilau (Transporter) and PT Pengelolaan Limbah Industri Bekasi (Toxic and Hazardous Waste Manager)
- Agreement Letter of Transportation and Management Toxic and Hazardous Waste (No. 001/ETX/ANT/X/2017 between PT Easterntex with PT Arguningsih Nusantara Transpor Branch East Java.
- Air-saving looms lay out for CENTEX, ISTEM, and Easterntex
- Monthly production report of the project air-saving looms
- Montly packing manual report
- Flow process of entry inspection system
- Layout of the weaving department
- Warehouse Trace List
- Schedule of Backup Server to Qnap01
- Schedule of Backup Server to Qnap02
- Weaving Daily Quality Report for CENTEX factory
- Weaving Daily Quality Report of ISTEM factory
- Weaving Daily Quality Report of Easterntex factory
- Weaving Weekly Quality Report
- Weaving montlhly production Report for CENTEX factory
- Weaving monthly production Report for ISTEM factory
- Weaving monthly production Report of Easterntex factory

Category B documents (other documents referenced)
- Toyota Catalogue for Saving-Air Loom JAT 810
- JCM_ID_AM011_ver01.0 Reducing GHG emission at textile factories by upgrading to air-saving looms
- Additional Information for Reference Emission
- Finance Minister Regulation 96/PMK.03/2009 on Types of Assets including Intangible Assets for Depreciation Purposes
- JCM Project Cycle Procedure JCM_ID_PCP_ver01.0
- JCM Guidelines for Validation and Verification JCM_ID_GL_VV_ver01.0
- JCM_ID_GL_TPE_ver03.0
- JCM Guidelines for Developing PDD and MR JCM_ID_GL_PDD_MR_ver02.0
- JCM Glossary of Terms JCM_ID_Glossary_ver02.0
- JCM PDD Form JCM_ID_F_PDD_ver01.0
- JCM MoC Statement Form JCM_ID_F_MoC_ver01.0

- JCM Validation Report Form JCM_ID_F_Val_Rep_ver01.0
- Approved Small Scale Methodology AMS II.C. Demand-side energy efficiency activities for specific technologies
- SSC_510 Clarification on the applicability of AMS-II.C to a project activity replacing multiple low efficiency equipment with a single high efficient equipment
- Indonesia Energy Efficiency Reports
- Government Regulation No. 27/2012 about Environmental Permit (Governmental Regulation No. 27/1999 concerning Environmental Impact Assessment)
- Environmental Impact Assessment Regulations and Strategic Environmental Assessment Requirements, Practices and Lessons Learned in East and Southeast Asia
- The AMDAL Process and the Equator Principles
- Act No. 32 Year 2009 of The Environmental Protection and Management
- Act No. 3 Year 2014 of The Industry
- Act No. 7 Year 2014 of The Trade
- Act No. 70 Year 2009 of The Energy Conservation
- Act No. 13 Year 2013 of The Labor
- Ministry of Environment of Republic Indonesia Decree No. 13 Year 1995 of Quality Standards of the Unmovable Emission Sources
- Government Regulation No. 27/2012 of Environmental Permit (Government Regulation No. 27/1999 concerning Environmental Impact Assessment)
- Ministry of Environment No. 13 of 2010 Environmental Management Plan, Environmental Monitoring Plan, and Environmental Management and Monitoring Statement
- Government Regulation No. 50 Year 2012 of Implementation of the Safety and Health Management System

Annex Certificates or curricula vitae of TPE's validation team members, technical experts and internal technical reviewers

Please attach certificates or curricula vitae of TPE's validation team members, technical experts and internal technical reviewers.

Certificate of Appointment is attached to this report.

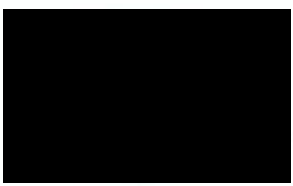
mutu certification international

CERTIFICATE OF APPOINTMENT

Title of project: Reducing GHG emission at textile factories by upgrading to air-saving looms of Toray Industries Inc.

We hereby certify that the following personnel have engaged in the validation process that has successfully satisfied the competence requirements of validation of the JCM project.

Name of Person	Assigned Roles
Ferry Sidauruk	Lead Auditor
Abdul Rahman	Team Member
Tony Arifiarachman	Internal Reviewer



Ferry Sidauruk
Lead Auditor/Validator/Verifier of GHG and Sustainable Standard
20 March 2018

PT. MUTUAGUNG LESTARI

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