JCM Verification Report Form

A. Summary of verification

A.1. General Information

Title of the project	Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia
Reference number	ID006
Monitoring period	01/03/2014 – 31/05/2016
Date of completion of the monitoring report	01/09/2016
Third-party entity (TPE)	Japan Quality Assurance Organization (JQA)
Project participant contracting the TPE	Lawson, Inc.
Date of completion of this report	09/09/2016

A.2 Conclusion of verification and level of assurance

Overall verification opinion	☒ Positive ☐ Negative
☒ Unqualified opinion	Based on the process and procedure conducted, JQA (TPE's name) provides reasonable assurance that the emission reductions for "Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia" (project name) ✓ Are free of material errors and are a fair representation of the GHG data and information, and ✓ Are prepared in line with the related JCM rules, procedure, guidelines, forms and other relevant documents
(If overall verification opinion is negative, please check below and state its reasons.) ☐ Qualified Opinion ☐ Adverse opinion ☐ Disclaimer	<State the reasons> N/A

A.3. Overview of the verification results

Item	Verification requirements	No CAR or CL remaining
The project implementation with the eligibility criteria of the applied methodology	The TPE determines the conformity of the actual project and its operation with the eligibility criteria of the applied methodology.	☒
The project implementation against the registered PDD or any approved revised PDD	The TPE assesses the status of the actual project and its operation with the registered/validated PDD or any approved revised PDD.	☒
Calibration frequency and correction of measured values with related requirements	If monitoring Option C is selected, the TPE determines whether the measuring equipments have been properly calibrated in line with the monitoring plan and whether measured values are properly corrected, where necessary, to calculate emission reductions in line with the PDD and Monitoring Guidelines.	☒
Data and calculation of GHG emission reductions	The TPE assesses the data and calculations of GHG emission reductions achieved by/resulting from the project by the application of the selected approved methodology.	☒
Avoidance of double registration	The TPE determines whether the project is not registered under other international climate mitigation mechanisms.	☒
Post registration changes	The TPE determines whether there are post registration changes from the registered PDD and/or methodology which prevent the use of the applied methodology.	☒

Authorised signatory: Mr. ☒ Ms. ☐

Last name: Yano First name: Tadayuki

Title: Senior Executive

Specimen signature: [redacted] Date: 09/09/2016

B. Verification team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☐ Ms. ☒	Sachiko Hashizume	JQA	Team leader	☒	Authorized	☒
Mr. ☒ Ms. ☐	Koichiro Tanabe	JQA	Team member	☒	Authorized	☐
Mr. ☒ Ms. ☐	Hiroshi Motokawa	JQA	Internal reviewer	☒	Authorized	☐
Mr. ☐ Ms. ☐	N/A	N/A	N/A	☐	N/A	☐

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 verification.*

C. Means of verification, findings and conclusions based on reporting requirements

C.1. Compliance of the project implementation and operation with the eligibility criteria of the applied methodology

<Means of verification>

The project has been registered as a JCM project on 03 June 2016, with applying JCM Approved Methodology ID_AM004 "Installation of Inverter-Type Air Conditioning System for Cooling for Grocery Store Version 2.0", JCM Approved Methodology ID_AM005 "Installation of LED Lighting for Grocery Store Version 2.0" and JCM Approved Methodology ID_AM008 "Installation of a separate type fridge-freezer showcase by using natural refrigerant for grocery store to reduce air conditioning load inside the store, version 2.0" under the scheme of Joint Crediting Mechanism between Indonesia and Japan.

The project aims to improve energy saving in grocery stores in Republic of Indonesia by introducing high-efficiency technologies. The project covers a total of 12 grocery stores owned by PT MIDI UTAMA INDONESIA Tbk. located in Special Capital Region of Jakarta and its surrounding districts. Three types of key technologies listed below are implemented in all 12 stores:

(1) Inverter-type air conditioning system (newly installed or installed to replace existing air conditioning system) (methodology used: ID_AM004)

(2) LED lighting (newly installed or installed to replace existing fluorescent lighting) (methodology used: ID_AM005)
(3) Separate type fridge freezer showcase (newly installed or installed to replace existing built-in type fridge freezer showcase) (methodology used: ID_AM008)

The JCM website indicates the starting date of the project operation is 21 February 2014. This is the date on which the store Raden Saleh (Store 1) opened as the first store in the project. On the other hand, this monitoring period starts from 1 March 2014, the date on which Store 1 commenced the formal monitoring after the commissioning.

Through a review of relevant documents, the verification team verified whether the project implementation and operation after the starting date of project operation complied with the eligibility criteria of the applied methodology during the monitoring period. After the desk review, the on-site assessment was conducted on 29 August 2016. The verification team conducted a physical inspection and interviews with project participants and other entities involved in the project as below:

- PT MIDI UTAMA INDONESIA Tbk, the project participant from the Republic of Indonesia (hereinafter called the “Project Partner”, or the “PP”)
- Lawson, Inc. the project participant from Japan (hereinafter called the “Project Developer”, or the “PD”)
- Panasonic Corporation (hereinafter called the “Manufacturer”)
- The partner companies of the Manufacturer (hereinafter called the “Distributers”)

The assessment results regarding the eligibility criteria are summarized as below:

[ID_AM004]

Criterion 1: Single split inverter-type air conditioning system is newly installed or installed to replace existing air conditioning system for grocery store whose selling area is less than 400 (four hundred) m^2.

Criterion 2: The installed air conditioning system is wall mounted type and/or ceiling cassette type, and has a COP value higher than that of the value indicated in the table below.

Cooling Capacity [kW]	Reference COP
$2.5 < x \leqq 4.1$	4.00
$4.1 < x \leqq 5.3$	3.59
$5.3 < x \leqq 7.1$	2.96
$7.1 < x \leqq 14.2$	2.85

Criterion 3: Ozone Depletion Potential (ODP) of the refrigerant used for the installed air conditioning system is 0 (zero).

Though reviewing supporting documents, including the specifications, and the physical inspection during on-site assessment, the verification team confirmed that the project implementation and operation complied with above eligibility criteria.

Criterion 4: A Plan for not releasing refrigerant used for project air conditioning system is prepared. In the case of replacing the existing air conditioning system with the project air conditioning system, a plan is prepared in which refrigerant used for the existing air conditioning system is not released to the air e.g. re-use of the refrigerant. Execution of the prevention plan is checked at the time of verification, in order to confirm that refrigerant used for the existing one replaced by the project is not released to the air.

Through reviewing the validation report and “Removal Measures for Existing Equipment and Management Plan for Newly-installed Equipment to Prevent Refrigerant or Mercury Leakage“(Document No.27), it is confirmed that a plan for not releasing refrigerant from the project air conditioning system and the existing air conditioning system has been prepared by Technical Support & Maintenance Manager of PP. With respect to the execution of the prevention plan, a FAR was raised during the validation.

According to the FAR, the verification team requested the supporting documents for the confirmation of the execution of the prevention plan for the replacement of the existing air conditioning systems. In response to the request, "Record of removed existing equipment"(Document No.41) was provided by PP. The record includes the model, quantity and the status of the removed air conditioning system per store.

Through reviewing the document, it was confirmed that the existing air conditioning systems replaced by the project were managed by the PP. According to the record, there were seven removed air conditioning system for Store 3 (Surya Darma). However, the project inverter-type air conditioning systems are newly installed and there is no replacement of air conditioning systems based on the PDD. Therefore, CL01 was raised and resolved as described under <Findings> below.

Through the interview with the PP during the site-visit, it was confirmed that there are three statuses into which each replaced air conditioning system falls, namely, 1) reused in other non-project stores, 2) stored in warehouse and 3) sold to second hand vendors. In addition, it was confirmed that the status of each equipment can be evidenced by the documents such as transaction notes, sales-receipt or inventory.

Through interviews with PP, Manufacturer and Distributer, and a review of the relevant documents, the verification team confirmed that the project implementation and

operation complied with the above-mentioned eligibility criterion.

[ID_AM005]

Criterion 1: LED lighting is newly installed or installed to replace existing fluorescent lighting for grocery store whose selling area is less than 400 (four hundred) m^2.

Criterion 2: The installed LED lighting is a straight type LED with color temperature between 5,000 and 6,500 K, length between 602.5 and 1,513.0 mm, and luminous efficiency of more than 120 lm/W.

Criterion 3: A measurement result of the illuminance (lux (lm/m2)) of the installed LED lighting which is equal or above the minimum value (300 lux) for illuminance of grocery store is obtained. See explanatory note for the measurement method.

Though reviewing supporting documents, including the specification of the LED lighting, and the physical inspection during the on-site assessment, the verification team confirmed that the project implementation and operation complied with the eligibility criteria above.

Criterion 4: In the case of replacing existing fluorescent lighting with the project LED lighting, mercury contained in existing fluorescent lighting is not released to the environment.

Through reviewing "Removal Measures for Existing Equipment and Management Plan of Newly-installed Equipment to Prevent Refrigerant or Mercury Leakage" (Document No.27) provided by Technical Support & Maintenance Manager of PT.MIDI UTAMA INDONESIA Tbk, the following information is confirmed;

- The prevention plan for releasing mercury contained in the replaced fluorescent lighting into the environment is prepared.
- The removal is conducted by PT.MIDI UTAMA INDONESIA Tbk.
- After the removal process, the fluorescent lighting is either reused in other grocery stores or stored in warehouse without being dismantled.

Though reviewing supporting documents, the verification team confirmed that the project implementation and operation complied with above eligibility criterion.

[ID_AM008]

Criterion 1: The project is to install a separate type fridge-freezer showcase by using natural refrigerant or replacing the existing at a grocery store which is equipped with wall mounted type and/or ceiling cassette type air conditioning system and whose selling area is less than 400 (four hundred) m^2.
Criterion 2: In the case of replacing the existing fridge-freezer showcase with the project fridge-freezer showcase, the existing one is a built-in type showcase.

Though reviewing supporting documents, including the specification of the fridge-freezer showcase and the brochure of existing fridge-freezer showcase replaced by the project, and the physical inspection during the on-site assessment, the verification team confirmed that the project implementation and operation complied with above eligibility criterion.

Criterion 3: A plan for not releasing refrigerant used for project fridge-freezer showcase is prepared. In the case of replacing the existing fridge-freezer showcase with the project fridge-freezer showcase, a plan is prepared in which refrigerant used in the existing fridge-freezer showcase is not released to the air e.g. re-use of the refrigerant. Execution of the prevention plan is checked at the time of verification, in order to confirm that refrigerant used for the existing one replaced by the project is not released to the air.

Through reviewing the validation report and “Removal Measures for Existing Equipment and Management Plan for Newly-installed Equipment to Prevent Refrigerant or Mercury Leakage“ (Document No.27), it is confirmed that a plan for not releasing refrigerant from the project fridge-freezer showcase and the replaced existing fridge-freezer showcase has been prepared by Technical Support & Maintenance Manager of PP. With respect to the execution of the prevention plan, a FAR was raised during the validation.

According to the FAR, the verification team requested the supporting documents for the confirmation of the execution of the prevention plan for the replacement of the existing fridge-freezer showcase. In response to our request, "Record of removed existing equipment" was provided by PP. The record includes the model, quantity and the status of the removed fridge-freezer showcase per store. Through reviewing the document, it was confirmed that the existing fridge-freezer showcase replaced by the project were managed by the PP. According to the record, there were some removed fridge-freezer showcases for Store 3 (Surya Darma). However, the fridge-freezer

showcases are newly installed and there is no replacement of fridge-freezer showcase based on the PDD. Therefore, CL01 was raised and resolved as described under <Findings> below.

Through the interview with the PP during the site-visit, it was confirmed that there are three statuses into which each replaced fridge-freezer showcase falls, namely, 1) reused in other non-project stores, 2) stored in warehouse and 3) sold to second hand vendors. In addition, it was confirmed that each status can be evidenced by the documents such as transaction notes, sales-receipt or inventory. However, during the cross check of the record (Document No.41) and the transaction notes, an inconsistency was observed. Therefore, CL02 was raised and resolved as described under <Findings> below.

<**Findings**>

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

(Issue raised as CL01)

With respect to Eligibility criterion 4 of AM004 and Eligibility criterion 3 of AM008, the following issue is raised.

According to the record (Document No.41), there were seven removed air conditioning system and five removed fridge-freezer showcase for Store 3 (Surya Darma). However, the project equipments are newly installed and there is no replacement of existing equipments for Store 3 based on the PDD.

Therefore, it is requested to clarify the inconsistency.

(Summary of the response on CL01)

Store 3 (Surya Darma) is a newly-opened project store. However, records on Document No.41 show that there has been equipment replacement in the store. Please find the clarification below.

For Store 3, delivery of project air conditioning system and project fridge-freezer showcase (hereinafter "project equipment") did not make it in time for the store opening. As temporary measures, locally available equipment were used as substitute for the first two months after store opening. Upon arrival of project equipment after two months, the temporarily used equipment were replaced by project equipment. Therefore, the temporarily used equipment can be found in Document No.41 as "removed equipment".

Meanwhile, since the removed existing equipment are merely used in Store 3 as temporary measures, Store 3 is regarded as "new store" and not "existing store". With that, project equipment for this store are regarded as "equipment which are newly installed", and not "equipment installed to replace existing equipment". This shows that

the information in the PDD - that project equipment are newly installed and there is no replacement of existing equipment for Store 3 - is correct.

(Assessment result of the responses on CL01)

Through reviewing the response provided by the project participants, it was confirmed that Store 3 is a newly opened project store and the inconsistency is caused by the delayed delivery of project equipments. Through interview with the PD, it was also confirmed that there was no such delay in Store 1, 2, 11 and 12, in which the project equipments are newly installed according to the PDD.

In addition, through reviewing the completion report of project equipments installation, the verification team confirmed that the completion date of the installation of the project equipments in Store 3 is 20 March 2015, which is the starting date of project operation for Store 3 in the PDD. On the other hand, it was confirmed that the monitored data from 23 April 2015 to 31 May 2016 is used for the calculation of emissions reductions of Store 3, by reviewing "No.1-4 Raw monitoring data for each store_160810".

Based on above, it can be concluded that the temporal substitution of equipment in Store 3 does not result in any overestimation of emissions reductions.

Therefore, this CL was closed.

(Issue raised as CL02)

With respect to AM008, Eligibility criterion 3, the following issues are raised.

Regarding the quantity of the removed fridge-freezer showcase per store, during the cross check of the record (Document No.41) and the transaction notes, an inconsistency was observed. Therefore, it is requested to clarify the inconsistency.

(Summary of the response on CL02)

Through comparison between Document No.41 and respective transaction notes, it has been found that part of the information on Document No.41 is not up-to-date, causing an inconsistency with the transaction notes.

Since the transaction notes include up-to-date information, Document No.41 has been revised to the newest information based on the transaction notes.

(Assessment result of the responses on CL02)

Through reviewing the provided documents, it was confirmed that "Record of removed existing equipment" (Document No.41) was updated appropriately and the information on the record is consistent with the transaction notes.

Therefore, this CL was closed.

<**Conclusion based on reporting requirements**>

Please state conclusion based on reporting requirements.

The verification team reached the conclusion that the actual project and its operation were in compliance with the eligibility criteria of the applied methodologies during this monitoring period.

C.2. Assessment of the project implementation against the registered PDD or any approved revised PDD

<**Means of verification**>

The verification team assessed the status of the actual project and its operation with the registered PDD. The assessment results are summarized as below;

[Physical features of the project]

Through the desk review, on-site visit and interview with project participants and relevant entities, it was confirmed that inverter-type air conditioning system, LED lightings and separate type fridge freezer showcases had been installed and operated as per the registered PDD during the monitoring period.

[Monitoring equipments]

Through the desk review, on-site visit and interview with project participants and relevant entities, it was confirmed that monitoring equipments had been installed for project equipments to monitor electricity consumption as follows;

- an electric meter is installed for each air conditioning system,
- an electric meter is installed for each LED lighting sub-circuit,
- an electric meter is installed for each outdoor condensing unit and showcase

It was also confirmed that those electricity meters were under a continuous remote monitoring system during the monitoring period.

[Monitoring structure]

Through the interview with project participants and relevant entities, it was confirmed that the monitoring structure was formed and operated in line with the registered PDD during the monitoring period. The monitoring personnel under the structure were identified as follows;

1) Authorized Personnel (Mr. Shinichiro Uto, Lawson, Inc.)

Personnel responsible for final check of monitoring reports and authorization of application procedures related to issuance of JCM credits.

2) Person-in-charge of the Project (Mr.Hiroyuki Matsutani , Lawson, Inc.)
Personnel responsible for creating monitoring report and double-checking monitored data to prevent missing data.
3) Engineer 1 (stationed in Japan) (Mr. Satoshi Mitani, Panasonic Commercial Equipment Systems Co.,Ltd)
Personnel responsible for compiling monitored data from remote server to be reported to person-in-charge of the project.
4) Engineer 2 (stationed in Jakarta, Indonesia) (Mr.Hiroshi Matsuda, PT. Panasonic Gobel Eco Solutions Sales Indonesia)
Personnel responsible for installation and settings of electric meter.
5) Engineer 3 (stationed in Jakarta, Indonesia)
for air conditioning system (Mr.Jestro, PT. Gobel Dharma Nusantara)
for LED lighting (Mr.Tsuyoshi Maeki, PT. Panasonic Gobel Eco Solutions)
for fridge-freezer showcase (Mr. Ir. Jeffri A. Suminto, PT. Sigma Bimed)
Personnel responsible for maintenance of project equipments should any technical difficulties occur.

Training for technology transfer

It was explained that, for the purpose of knowledge transfer of the advanced technologies, Manufacturer conducted a training session at each store, when the commercial operation of the project equipment started. Through review of training record and interview with relevant personnel including store staffs, it was confirmed that the training was implemented in accordance with the registered PDD.

<**Findings**>

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

No outstanding issue was raised.

<**Conclusion based on reporting requirements**>

Please state conclusion based on reporting requirements.

The verification team concluded that the project implementation was in accordance with the registered PDD during the monitoring period, and no change was found from the registered PDD.

C.3. Compliance of calibration frequency and correction of measured values with related requirements

<**Means of verification**>

Through reviewing the monitoring report, the verification team identified parameters which have been monitored by measuring equipment as below.

[ID-AM004]

It was confirmed that the monitoring of $EC_{PJ,3,p}$ (Power consumption of project air conditioning system 3 during the period p) has been conducted by electric meters and the measured values were used for the calculation of the GHG emissions reductions.

[ID-AM005]

It was confirmed that the monitoring of $EC_{PJ,P}$ (Total power consumption of project lighting during the period p) has been conducted by electric meters and the measured values were used for the calculation of the GHG emissions reductions.

[ID-AM008]

It was confirmed that the monitoring of $EC_{PJ,frige,i,p}$ (Electricity consumption of project fridge showcase i during the period p) and $EC_{PJ,freezer,i,p}$ (Electricity consumption of project freezer showcase i during the period p) have been conducted by electric meters and the measured values were used for the calculation of the GHG emissions reductions.

With respect to the calibration requirement for the electric meters used for the monitoring of the project, it was confirmed that no calibration is required in the monitoring plan based on the following reason.

- The Mean Time Between Failures (MTBF, predicted timing of an equipment to malfunction) of electric meters used in the project are 9 -10 years, indicating that these electric meters are not likely to malfunction (including accuracy deterioration) during the above period. Since this exceeds project operation period of 8 years, there is no need to calibrate or exchange the electric meters.

Through the desk review, on-site visit and interviews with project participants and relevant entities, it was confirmed that the project comply with the calibration requirements in the registered PDD and monitoring plan, even though the electric meters installed for the monitoring of the project were not calibrated during the monitoring period.

<Findings>

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

No outstanding issue was raised.

<**Conclusion based on reporting requirements**>

Please state conclusion based on reporting requirements.

The verification team concluded that the calibration frequency and correction of measured values were in compliance with related requirements.

C.4. Assessment of data and calculation of GHG emission reductions

<**Means of verification**>

The verification team assessed the data and calculation of GHG emission reductions achieved by the project as below;

(a) Through reviewing the monitoring report for the project, titled as "No.1-1 JCM_ID_AM004_AM005_AM008_ver02.0_160810", it was confirmed that the appropriate Monitoring Report Sheet of each applied methodology has been used. Meanwhile, though the monitoring was conducted for a multi-year period, one monitoring report was created for the entire monitoring period, therefore, the verification team could not assess the data and calculation of GHG emission reductions per year. Therefore, CL03 was raised and resolved as described under <Findings> below.

(b) A complete set of data for the monitoring period was provided to the verification team in the form of three kind of excel files. Through the desk review and interview with the project participants, it was confirmed that these three kinds of files contain the evidence and records for the electricity consumption of project equipments. The character and function of each file is summarized as below;

1) “No.1-4 Raw monitoring data for each store_160810”

These files contain the daily data of each electric meter under the remote monitoring system in each store. Therefore, there are twelve (12) files, one file for one store. Engineer 1 (stationed in Japan) defined in the Monitoring Structure Sheet (herein after MSS) is responsible for the creation of this file. He obtains the daily monitoring data in CSV file per store per month from the remote server of monitoring system through the dedicated web interface. Under the remote monitoring system, there are other measurement equipments which are installed for the monitoring of non-project equipments and the operational environment, e.g. lighting used in the backyard of store and temperature of store. Therefore, these files also contain daily monitoring data of such non-project data.

2) “No.1-3 A set of raw monitoring data selected from No.1-4 which are related to ID006_160810”

This file contains the monthly electricity consumption data of each electric meter used for the monitoring of project equipments in each twelve stores. Engineer 1 is responsible for the creation of this file. He selects the relevant daily monitoring data from No.1-4 above and aggregates into monthly data by electric meter by store.

3) "No.1-2 A set of parameters used in monitoring report_160901"

This file contains the aggregated monthly monitoring data for each monitoring parameter by stores. "Person-in-charge of the Project" defined in the MSS is responsible for the creation of this file. He aggregates the data based on No.1-3 above. The input value in each input sheet of the monitoring reports is aggregated data of this file.

(c) The verification team checked all the reported data in the monitoring report listed below with sources described in (b) above:

$EC_{PJ,3,p}$: Power consumption of project air conditioning system 3 during the period p
$EC_{PJ,p}$:Total power consumption of project lighting during the period p
$EC_{PJ,frige,1,p}$: Electricity consumption of project fridge showcase 1 during the period p
$EC_{PJ,frige,2,p}$: Electricity consumption of project fridge showcase 2 during the period p
$EC_{PJ,freezer,1,p}$: Electricity consumption of project freezer showcase 1 during the period p

Method to check values in the monitoring report with sources are summarized as below;

Firstly, the verification team checked all the input values of above parameters reported in the monitoring reports with “No.1-2 A set of parameters used in monitoring report_160901”. It was confirmed that the aggregation was done correctly.

As the next step, the verification team assessed the data in “No.1-2 A set of parameters used in monitoring report_160901”. To assess the monthly data per parameter per store in the No.1-2 file, the verification team applied the simple random sampling. As all the parameters are electricity consumption data monitored in the same remote monitoring system, each data can be deemed homogeneous.

The sampling is conducted in line with “Standard for sampling and surveys for CDM project activities and programme of activities” for large scale CDM projects.

According to the sampling plan, 20 data was randomly sampled from “No.1-2 A set of parameters used in monitoring report_160901”, and then such data was cross-checked with the data of “No.1-4 Raw monitoring data for each store_160810”. As a result, no discrepancy was found.

(d) Through the desk review and interview with the project participants, it was confirmed that emission factors, default values, and other reference values were applied in the calculations appropriately. It was also confirmed that no assumption was applied in the calculations.

(d) No assumption had been used in emission calculations and hence no justification was required.

(e) Appropriate emission factors, default values, and other reference values had been correctly applied.

<**Findings**>

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

(Issue raised as CL03)

The monitoring period is from 01 March 2014 to 31 May 2016. The project participants created the monitoring report by using total monitored values throughout the monitoring period. However, it is requested for TPE to verify and report the emission reductions achieved by the project annually in the verification report. Therefore, it is requested to provide a particular monitoring report for each year of the monitoring period.

(Summary of the response on CL03)

Based on the request to provide a particular monitoring report for each year, the monitoring report has been divided from one single document (comprising total monitoring period from 01 March 2014 to 31 May 2016) into three documents as shown below;

- Monitoring report for year 2014, comprising monitoring period from 01 March 2014 to 31 December 2014 (refer to Document No.1-1-1)
- Monitoring report for year 2015, comprising monitoring period from 01 January 2015 to 31 December 2015 (refer to Document No.1-1-2)
- Monitoring report for year 2016, comprising monitoring period from 01 January 2016 to 31 May 2016 (refer to Document No.1-1-3)

Following this modification, a separate document which summarizes each year's

reference emissions, project emissions and emission reductions has been presented. (refer to Document No.1-1-4)

(Assessment result of the responses on CL03)

It was confirmed that the monitoring report has been divided into three files by year. The verification team checked all the monitored values of three monitoring reports with “No.1-2 A set of parameters which are used in Monitoring Report (No.1-1)_160810”. The project participants also provided a summary of each year's reference emissions, project emissions and emissions reductions as "No.1-1-4 Summary or RE, PE and ER_160901" . The verification team checked the aggregated data in the file with the monitoring report of each year.

As a result, no discrepancy was found. Therefore, this CL was closed.

<**Conclusion based on reporting requirements**>

Please state conclusion based on reporting requirements.

The verification team concluded through assessment of data and calculation of GHG emission reductions that the reported values in the monitoring report were verified in an accepted manner.

C.5. Assessment of avoidance of double registration

<**Means of verification**>

According to a form of declaration for avoidance of double registration in the JCM Modalities of Communication Statement, the declaration letter signed by the project developer’s representative was submitted to the Joint Committee at the validation stage, and it was also cross-checked at the verification stage. In addition, through search on the website of the CDM and JI, it was confirmed that no project with similar technology and location had been registered in the Republic of Indonesia.

<**Findings**>

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

No outstanding issue was raised.

<**Conclusion based on reporting requirements**>

Please state conclusion based on reporting requirements.

The verification team concluded that the project had not been registered under other international climate mitigation mechanisms.

C.6. Post registration changes

<Means of verification>

It was confirmed through the review of documents and the on-site assessment that the project had not been changed from the registered PDD and/or methodology.

<Findings>

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

No outstanding issue was raised.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

The verification team concluded that the project had not been changed from the registered PDD and/or methodology.

D. Assessment of response to remaining issues

An assessment of response to the remaining issues including FARs from the validation and/or previous verification period, if appropriate

Through the validation, two FARs had been raised with respect to the execution of prevention plan of refrigerant leakage from the removed air conditioning systems and fridge-freezer showcase of the existing stores.

The assessment for those FARs was done during this verification as mentioned in Section C.1. “Compliance of the project implementation and operation with the eligibility criteria of the applied methodology”.

As a result, the verification team concluded that the prevention plan had executed appropriately during the monitoring period. Therefore, two FARs were closed.

E. Verified amount of emission reductions achieved

Year	Verified Reference Emissions (tCO_2e)	Verified Project Emissions (tCO_2e)	Verified Emission Reductions (tCO_2e)
2013	0	0	0
2014	157.3	137.1	18
2015	891.3	776.0	112
2016	522.5	455.1	65
2017	N/A	N/A	N/A
2018	N/A	N/A	N/A
2019	N/A	N/A	N/A
2020	N/A	N/A	N/A
Total (tCO_2e)	1,571.1	1,368.2	195

*The each year's value of Verified Reference Emissions and Verified Project Emissions is aggregate amount of the value in the each Calculation Process Sheet of three applied methodologies in the MRS. These values have not been processed rounding as there is no rounding function set in the MRS. On the other hand, the each year's value of Verified Emission Reductions is aggregate amount of the value of "Table 3 Ex-post calculation of CO2 emission reductions" in the each Input Sheet of three applied methodologies in the MRS. These values have been processed round-down based on the pre-set round-down function in the MRS.

This resulted in the difference between "the balance of Verified Reference Emissions and Verified Project Emissions" and Verified Emission Reduction in the table above.

F. List of interviewees and documents received

F.1. List of interviewees

- Frankie Poedjiharto, Technical Support & Maintenance Manager, PT MIDI UTAMA INDONESIA Tbk
- Gendis.S.Samodra, Building Coordinator, PT MIDI UTAMA INDONESIA Tbk
- Atsushi Ota, Head of Cold Chain, Indonesia PT Panasonic Gobel Indonesia
- Hiroshi Matsuda, Advisor, PT. Panasonic Gobel Eco Solutions (Sales Indonesia Energy System Group)
- Satoshi Mitani, Manager, Panasonic Commercial Equipment Systems Co.,Ltd.
- Rudy Hartono, Technician, PT. Sigma Bimed
- Hiroyuki Matsutani, Manager, Lawson, Inc. (Store Construction Dept., Franchisee

Operation Support Division) ・ Ruo Lin Yaw, myclimate Japan Co.,Ltd (Carbon Project Group)

F.2. List of documents received

1	Monitoring Report Sheet(draft) "No.1-1 JCM_ID_AM004_AM005_AM008_ver02.0_160810", "No.1-2 A set of parameters which are used in Monitoring Report (No.1-1)_160810", "No.1-3 A set of raw monitoring data selected from No.1-4 which are related to ID006_160810", and "No.1-4 Raw monitoring data for each store_160810"
2	Monitoring Report Sheet(final) "No.1-1-1 JCM_ID_AM004_AM005_AM008_ver02.0_2014_160901", "No.1-1-2 JCM_ID_AM004_AM005_AM008_ver02.0_2015_160901", "No.1-1-3 JCM_ID_AM004_AM005_AM008_ver02.0_2016_160901", "No.1-1-4 Summary of RE, PE and ER_160901", "No.1-2 A set of parameters used in monitoring report_160901", "No.1-3 A set of raw monitoring data selected from No.1-4 which are related to ID006_160810", and "No.1-4 Raw monitoring data for each store_160810"
3	JCM Approved Methodology ID_AM004 "Installation of Inverter-Type Air Conditioning System for Cooling for Grocery Store Version 2.0" (JCM_ID_AM004_ver02.0.pdf)
4	Form of Monitoring Plan Sheet and Monitoring Structure Sheet (ID_AM004) (JCM_ID_AM004_ver02.0.xlsx)
5	JCM Approved Methodology ID_AM005 "Installation of LED Lighting for Grocery Store Version 2.0" (JCM_ID_AM005_ver02.0.pdf)
6	Form of Monitoring Plan Sheet and Monitoring Structure Sheet (ID_AM005) (JCM_ID_AM005_ver02.0.xlsx)
7	JCM Approved Methodology ID_AM008 "Installation of a separate type fridge-freezer showcase by using natural refrigerant for grocery store to reduce air conditioning load inside the store, version 2.0" (JCM_ID_AM008_ver02.0.pdf)
8	Form of Monitoring Plan Sheet and Monitoring Structure Sheet (ID_AM008) (JCM_ID_AM008_ver02.0.xlsx)

9	JCM Glossary of Terms (JCM_ID_Glossary_ver02.0)
10	JCM Guidelines for Developing Project Design Document and Monitoring Report (JCM_ID_GL_PDD_MR_ver02.0)
11	JCM Project Cycle Procedure (JCM_ID_PCP_ver04.0)
12	JCM Guidelines for Validation and Verification (JCM_ID_GL_VV_ver01.0)
13	Standard for Sampling and surveys for CDM project activities and programmes of activities Version 05.0
14	Project Design Document, dated on 16/01/2016, ver.1.0 (2.JCM_ID_F_PDD_Lawson_final.pdf)
15	Monitoring Plan Sheet (3.JCM_ID_AM004_AM005_AM008_ver02.0_final.xlsx)
16	JCM Modalities and Communication Statement Form, dated on 15/09/2015 (4.JCM_ID_F_MoC_ver01.0__ID006_.pdf)
17	JCM Validation Report, dated on 20/01/3016 (5.Final_JCM_ID_F_Val_Rep_ver01.0.pdf)
18	The latest CO2 emission factor for grid electricity (http://jcm.ekon.go.id/en/index.php/content/Mzg%253D/emission_factor)
19	CO2 emission factor for captive electricity (AMS-I.A.: Electricity generation by the user Version 16.0)
20	Company profile of PT MIDI UTAMA INDONESIA Tbk
21	A list of 12 stores, involved in the proposed project, including the location of project, starting date of project operation, and other information for eligibility criteria
22	A list of the store profile, including the type and the amount of equipment (newly-installed or replacement) per store
23	Product brochure of the project air conditioning system, including the specifications (model No: CS-S24PKP)
24	A floor plan view of selling area of each store
25	A label sample which shows the type of refrigerant used in the project air conditioning system
26	Company profile of PT Gobel Dharma Nusantara
27	Removal Measures for Existing Equipment and Management Plan for Newly-installed Equipment to Prevent Refrigerant or Mercury Leakage, issued on 07/08/2015 by PT MIDI UTAMA INDONESIA Tbk
28	Panasonic Corp regulation on air conditioning system refrigerant management (confidential)

29	Specifications of installed LED lighting (frame No. NNFK90509 and light bar No. NNU502005KLA9,frame No. NNLK41515 and light bar No. NNL4300EN LA9)
30	A list of model number, manufacturers and specifications of the removed existing fluorescent lighting
31	Calibration certificate of illuminance measurment meter (Chroma Meter), issued on 25/05/2015 by KONICA MINOLTA, INC
32	Lux Measurement Report, including illuminance measurement results of each store, issued on 24/08/2015 by PT Panasonic Gobel Eco Solutions Sales Indonesia
33	Specifications of the project fridge showcase (model No. RAS-CZ673LAGE and model No.CC-CP4000TLN) and CO2 outdoor condensing unit (model No. OCU-CR1000VF)
34	Specifications of the project freezer showcase (model No.RIF-CZ2LLD) and CO2 outdoor condensing unit (model No. OCU-CR200VLF)
35	A list of the removed existing fridge-freezer showcase
36	Product brochure of the removed existing fridge-freezer showcase
37	Conceptual diagram of the project monitoring system
38	Panasonic Corp catalogue for electricity meter (model No.AKW2010G, AKW1111, AKW4801C, AKW4802C) http://www3.panasonic.biz/ac/e_download/fasys/eco/common/catalog/energy_consumption_e_cata.pdf?f_cd=401154
39	Factory test specifications for electricity meter, issued on 26/08/2015 by Panasonic Industrial Devices SUNX Tatsuno Co., Ltd. and the table of the Mean Time Between Failures (MTBF) published by Panasonic Corporation http://ac-faq.industrial.panasonic.com/jp/faq_detail.html?id=10054
40	Participants records of training sessions conducted by Panasonic Corporation
41	Record of removed existing equipment
42	Transaction notes of removed existing equipment
43	Proof of completion of project equipment installation in each store

Annex Certificates or curricula vitae of TPE's verification 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.

Statement of competence

Name: Ms. Sachiko Hashizume

Qualified and authorized by Japan Quality Assurance Organization.

Function

	Date of qualification
Validator	2015/11/20
Verifier	2015/11/20
Team leader	-

Technical area within sectoral scopes

	Date of qualification
TA 1.1. Thermal energy generation	2015/11/20
TA 1.2. Renewables	2015/11/20
TA 3.1. Energy demand	2015/11/20
TA 13.1. Solid waste and wastewater	2015/11/20

Statement of competence

Name: Mr. Koichiro Tanabe

Qualified and authorized by Japan Quality Assurance Organization.

Function

	Date of qualification
Validator	-
Verifier	2014/12/22
Team leader	2015/3/24

Technical area within sectoral scopes

	Date of qualification
TA 1.1. Thermal energy generation	2014/12/22
TA 1.2. Renewables	2014/12/22
TA 3.1. Energy demand	2014/12/22
TA 4.6. Other manufacturing industries	2014/12/22
TA 5.1. Chemical industry	2014/12/22
TA 10.1. Fugitive emissions from oil and gas	2014/12/22
TA 13.1. Solid waste and wastewater	2014/12/22

Statement of competence

Name: Mr. Hiroshi Motokawa

Qualified and authorized by Japan Quality Assurance Organization.

Function

	Date of qualification
Validator	2014/12/22
Verifier	2014/12/22
Team leader	2014/12/22

Technical area within sectoral scopes

	Date of qualification
TA 1.1. Thermal energy generation	2014/12/22
TA 1.2. Renewables	2014/12/22
TA 3.1. Energy demand	2014/12/22
TA 4.1. Cement and lime production	2014/12/22
TA 4.6. Other manufacturing industries	2014/12/22
TA 13.1. Solid waste and wastewater	2014/12/22