JCM Validation Report Form

A. Summary of validation

A.1. General Information

Title of the project	Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia
Reference number	ID002
Third-party entity (TPE)	Japan Quality Assurance Organization (JQA)
Project participant contracting the TPE	MAYEKAWA MFG. CO., LTD.
Date of completion of this report	06/03/2015

A.2 Conclusion of validation

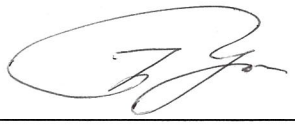
Overall validation opinion	☒ Positive ☐ Negative

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	☒

Item	Validation requirements	No CAR or CL remaining
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 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: Yano	First name: Tadayuki
Title: Senior Executive	
Specimen signature: 	Date: 06/03/2015

B. Validation team and other experts

	Name	Company	Function*	Scheme competence*	Technical competence*	On-site visit
Mr. ☒ Ms. ☐	Tadashi Yoshida	JQA	Team leader	☒	Technical competence authorized	☒
Mr. ☒ Ms. ☐	Hiroshi Motokawa	JQA	Team member	☒	Technical competence authorized	☒
Mr. ☒ Ms. ☐	Irhan Febijanto	BPPT	Technical Expert	☐	Technical competence authorized	☒
Mr. ☒ Ms. ☐	Koichiro Tanabe	JQA	Internal Reviewer	☒	Technical competence authorized	☐

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>

The PDD was checked and confirmed as complete against the JCM Guidelines for Developing Project Design Document and Monitoring Report: JCM_ID_GL_PDD_MR_ver01.0. A valid form of the JCM PDD Form JCM_ID_F_PDD_ver01.0 is used for the PDD Version 01.0 dated 25/12/2014 (the first edition) and for the revised PDD Version 02.0 dated 13/02/2015. The validation was completed on the final version.

<Findings>

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

No issues were identified to the requirement.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

JQA confirms that the PDD is completed using the valid form of the JCM PDD Form and in accordance with the JCM Guidelines for Developing PDD and MR.

C.2. Project description

<Means of validation>

The proposed project is to install a high efficiency refrigerator to a food industry cold storage of PT. Adib Global Food Supplies in West Jawa Province, Indonesia, to reduce GHG emissions from electricity consumption. The annual emission reductions of 140 tCO2 will be achieved through the installation of a refrigerator in a newly built food industry cold storage. The cooling capacity of the refrigerator installed is 189 kW and the electricity consumption is 86 kW, providing the value of 2.20 as COP. The estimated amount of annual electricity consumption by the project refrigerator is 603 MWh.

The project is implemented by PT. Adib Global Food Supplies and PT. Mayekawa Indonesia from the Republic of Indonesia, and MAYEKAWA MFG. CO., Ltd. from Japan. The start date of project operation is changed to 18/12/2014 from 25/11/2014 and the expected operational lifetime of the project is 12 years.

The project is partially supported by the Ministry of the Environment, Japan, through the financing programme for JCM model projects in which financial supports up to 50% of initial investment are available. As for technology transfer, MAYEKAWA MFG. CO., LTD has conducted OJT training and provided a manual on operation, maintenance and safety measures of the facilities installed at the project site. The maintenance service after project start will be provided by PT. Mayekawa Indonesia, which will also contribute to technical transfer through maintenance experiences by the staff of PT. Adib Global Food Supplies.

JQA assessed the PDD and the supporting documents and conducted an on-site assessment to validate the requirements about accuracy and completeness of the project description. The details of the persons interviewed and documents reviewed are provided in the Section E of this report.

<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.

JQA 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. JQA confirms that the proposed JCM project contained in the revised PDD is described accurately and completely.

C.3. Application of approved methodology(ies)

<Means of validation>

The project applied the approved methodology JCM_ID_AM003_ver01.0 "Installation of Energy-efficient Refrigerators using Natural Refrigerant at Food Industry Coold Storage and Frozen Food Processing Plant". The methodology is approved by the Joint Committee on 30/10/2014 and valid as of the time of the validation.

JQA assessed whether the selected methodology was applicable to the proposed project. The project applicability was checked against seven eligibility criteria in the approved methodology. The steps taken to validate each eligibility criterion and the conclusion about its applicability to the proposed project are summarized as below.

Criterion 1: The project installs cooling system at food industry cold storage and frozen food processing plants for the purpose of chilling the food products to below -20 deg. C.

Justification in the PDD : The project installs cooling system at a food industry cold storage for the purpose of chilling the food products below -25 deg.C.

Assessment and conclusion : It is confirmed through the review of technical specification issued by MAYEKAWA MFG. CO., LTD. and on-site inspection that the cooling system installed at the food industry cold storage is capable to chill the food products below -25 deg. C lower than -20 deg. C stipulated in the methodology. Therefore, JQA concludes that the Criterion 1 is satisfied.

Criterion 2 : The project system is a secondary loop cooling system using natural refrigerant. CO2 is used as the secondary refrigerant in the system.

Justification in the PDD : The project system is a secondary loop cooling system using natural refrigerant (NH3 and CO2). CO2 is used as the secondary refrigerant in the system.

Assessment and conclusion : It is confirmed through the review of technical specification issued by MAYEKAWA MFG. CO., LTD. and on-site inspection that the project refrigerator has a cooling system consisting of a primary loop (NH3) and secondary loop (CO2). NH3 and CO2 are natural refrigerant and CO2 used in the secondary loop is a non-toxic refrigerant. Hence, this system does not give any harmful damage to the foods and environment even in case where the refrigerant is leaked from the system. Therefore, JQA concludes that the Criterion 2 is satisfied.

Criterion 3 : The refrigerator applied in the project cooling system is a two stage compressor refrigerator with a cooling capacity as shown below: For cold storage: less than 340 kW; For individual quick freezer: less than 260 kW.

Justificationin the PDD : The refrigerator applied in the project cooling system is a two stage

compressor refrigerator for cold storage with 189 kW cooling capacity.
Assessment and conclusion : It is confirmed through the review of technical specification issued by MAYEKAWA MFG. CO., LTD. and on-site inspection that the project refrigerator (NewTon R-6000) used in the cooling system at cold storage employs a two-step compressor system in a primary loop with a cooling capacity of 189 kW which is less than 340 kW stipulated by the methodology. Therefore, JQA concludes that the Criterion 3 is satisfied.

Criterion 4 : The compressor of the project refrigerator is controlled by inverter.
Justification in the PDD : The refrigerator installed in the project is NewTon R-6000 (HCS-90L-PR4I-01), of which the compressor is controlled by an inverter.
Assessment and conclusion : It is confirmed through the interview with the PPs and the review of the documents provided by MAYEKAWA MFG. CO., LTD. that NewTon R-6000 has a two-step compressor equipped with IPM motor and inverter, which saves energy conpared to the conventional refrigerators. Therefore, JQA concludes that the Criterion 4 is satisfied.

Criterion 5 : COP of the project refrigerator i (COP_PJ,i) is shown below: For cold storage: more than 2.0; For individual quick freezer: more than 1.5
Justification in the PDD : The COP of the NewTon R-6000 (HCS-90L-PR4I-01) installed in the project is 2.20.
Assessment and conclusion : Through the review of technical specification and performance data showing a cooling capacity of the refrigerator and electricity consumption by compressor system against temperature of CO2 supplied, it is confirmed that the COP of the project refrigerator (NewTon R-6000) is 2.20 which is higher than 2.0 stipulated by the methodology. Therefore, JQA concludes that the Criterion 5 is satisfied.

Criterion 6 : Periodical check at least once a year is planned.
Justification in the PDD : Periodical check is planned once a year.
Assessment and conclusion : It is confirmed through the review of "Operation Manual for NewTon series" (A01003-F0015S0E-00) issued on 26/11/2013 that the Regular Inspection Items for daily/weekly/monthly/annually inspection are prepared. Therefore, JQA concludes that the Criterion 6 is satisfied.

Criterion 7 : Plan for not releasing the primary refrigerant used for project refrigerator is prepared. In the case of replacing the existing refrigerator with the project refrigerator, refrigerant used for the existing refrigerator is not released to the air.
Justification in the PDD : Plan for not releasing the primary refrigerant used in the project refrigerator is prepared. As this is a Green field project, the existing refrigerator does not exist

in the project site.
Assessment and conclusion : It is confirmed through the review of the relevant documents, on-site inspection and the interview with the PPs that the work procedure manual for the recovery of NH3 from the refrigerator is already prepared and the recovery of NH3 in the future is directly conducted by PT. MAYEKAWA INDONESIA. Ammonia is not recovered at the time of the regular maintenance. Therefore, JQA concludes that the Criterion 7 is satisfied.

<Findings>

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

CAR 01

It is confirmed through the on-site inspection that there was no printed name of project refrigerator, NewTon R-6000, on the nameplate. The PPs were requested to provide relevant documents in order to identify the type of project refrigerator installed on-site.

Resolution of CAR 01 by the PPs :
The NewTon series refrigerator is classified by the specific code which shows various information such as refrigerator model, with/without CO2 pump and CO2 receiver, power voltage, installation place, etc. Through the interview with the PPs and the review of the documents provided by MAYEKAWA MFG Co., LTD., it is confirmed that NewTon R-6000 is named by the specific code, HCS-90L-PR4I-01, which is printed on the nameplate of the refrigerator. Thus, CAR 01 is closed.

CL 06
The following issues are to be clarified:
1) It is to be clearly described that CO2 emission factor of 0.8 tCO2/MWh for captive electricity in Monitoring Plan Sheet (Table 2) is "Default value" which is stipulated by the para. 9 of AMS-I.A ver. 16.
2) The description of COP_RE,i in "Source of data" of Monitoring Plan Sheet (Table 2) is to be checked.

Resolution of CL 06 by the PPs :
1) It is confirmed through the review of the revised Monitoring Plan Sheet (Table 2) that the original sentence is appropriately revised to "Default value stipulated in the para.9 of AMS-I.A ver.16".
2) It is confirmed through the review of the revised Monitoring Plan Sheet (Table 2) that the original sentence is appropriately revised to "The default values for COP_RE,i are set as follows: For cold storage: 1.71; For individual quick freezer: 1.32.

The revision complies with the methodology ID_AM003 applied. Thus, CL 06 is closed.

CL 03
The project information for Criteria 4 and 5 is to be checked. NewTon R-6000 shows a type of the refrigerator, not a type of the compressor.

Resolution of CL 03 by the PPs :
It is confirmed through the review of the revised PDD that the project information in Criterion 4 and Criterion 5 is appropriately revised. Thus, CL 03 is closed.

<Conclusion based on reporting requirements>
Please state conclusion based on reporting requirements.
JQA confirms that the project applies the valid version of the approved methodology and the applicability is demonstrated to the eligibility criteria of the methodology as appropriate.

C.4. Emission sources and calculation of emission reductions

<Means of validation>

The project provides the cooling services by application of high efficiency refrigerator. The sources of GHG emissions are electricity consumption by the reference refrigerator and the project refrigerator. The annual electricity consumption by the project refrigerator is estimated to be 603 MWh. There is a captive diesel engine generator with a capacity of 200 kW on-site to supply electricity to the refrigerator in case of power failure from the grid. All electricity is supplied by the public power grid system in the region. The CO2 emission factor of the grid electricity is determined as 0.814 tCO2/MWh based on the most recent data, sourced from "Emission Factors of Electricity Interconnection Systems" published by National Committee on CDM Indonesian Designated National Authority (DNA). The COP of the reference refrigerator is set to be 1.71 as the default value stipulated in the methodology. The COP of the project refrigerator is 2.20 based on the result of the factory acceptance test.

The GHG emission reductions during the period p are calculated by the following equations:

$ERp = REp - PEp$

$= \Sigma i\{EC\_PJ,i,p \times (COP\_PJ,i / COP\_RE,i) \times EFelec\} - \Sigma i\{EC\_PJ,i,p \times EFelec\}$

The annual GHG emission reductions are calculated from the estimated annual electricity consumption of the project refrigerator as follows:

$ERp = (603\ MWh \times (2.20 / 1.71) \times 0.814) - (603MWh \times 0.814)$

$= 631 - 491 = 140\ tCO2$

The project started operation on 18/12/2014 and the GHG emission reductions of the year 2014

are estimated to be 5 tCO2.

JQA assessed the documented evidence and confirmed through the on-site inspection that all the relevant GHG emission sources covered in the applied methodology are identified, and the equations to calculate project emissions and reference emissions in the proposed project comply with the requirements of the approved methodology.

<Findings>

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

CL 04

The starting date of project operation was changed from 25/11/2014 to 18/12/2014 due to insufficient monitoring training. Therefore, the amount of emission reductions is to be recalculated due to the change of starting date of project operation.

Resolution of CL 04 by the PPs :

It is confirmed through the review of the revised PDD that the amounts of emission reductions in 2014 are appropriately recalculated . Thus, CL 04 is closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

JQA confirmed that:

- The emission sources and GHG types are confirmed through the on-site inspection and the review of the relevant documents,
- The methodology is correctly applied to calculate project emissions and reference emissions and other significant emission sources which are not addressed by the applied methodology are not identified in the project activity,
- The Monitoring Plan Sheet is not altered and the cells are filled in as required so that estimates of the emission reductions could be calculated using the parameters and data provided in the PDD,
- The values of the project specific parameters to be fixed ex-ante listed in the Monitoring Plan Sheet are appropriately determined based on data sources,
- All assumptions and data used are listed in the PDD with their references and sources, and
- All values used in the PDD are considered reasonable in the context of the proposed JCM project.

C.5. Environmental impact assessment

<Means of validation>

The proposed project is to use a high efficient refrigerator at a Green field cold storage and the PDD states that an environmental impact assessment is required by laws of the host country.
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 SPPL. JQA assessed the applicable legal requirements in the host country using its local expertise through the interview with the local official of Environmental Impact Assessment Section of Bekasi City on 19/01/2015. As a result, the followings are confirmed:
1) UKL/UPL (Environmental Management Plan / Environmental Monitoring Plan) was submitted by the PP and accepted by the local authority;
2) There is no regulation related with the use/leaks of ammonia by the project equipment.
JQA confirms that the PP is not requested to conduct an EIA, and that there are no regulations on the use/leaks of ammonia by the project refrigerator in the host country. Indeed, the amount of ammonia used in the project refrigerator is very small. And it deems that the impacts of the project activity on the environment is negligibly small.

<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.
JQA confirms by assessing the relevant documents and interviewing with the local official of BPLHD Kota Bekasi using the local expertise that the project does not need an environmental impacts assessment to meet the legal requirement of the host country. The PDD satisfies the requirements of the JCM.

C.6. Local stakeholder consultation

<Means of validation>
The PPs identified the local governments as local stakeholders, such as Bekasi Regency Government and West Java Provincial Government, as there is no residence within the area where any environmental impact may be caused by the proposed project. The PPs conducted a local stakeholder consultation meeting at the Conference room of the West Java Provincial Government on 08/12/2014. The local governments participated in the consultation are as follows:

- International Cooperation Division, Regional Autonomy and Cooperation Bureau,

Government of West Java Province

- Department of Communications and Information, Government of West Java Province
- Social Service Bureau, Government of West Java Province
- Regional Environmental Management Board of West Java Province (BPLHD Jawa Barat)
- Economic Bureau, Government of West Java Province
- Fishery and Marine Department, Government of West Java Province
- Agriculture and Food Crops Department, Government of West Java Province
- Industry and Trade Department, Government of West Java Province

Following two agencies were not able to attend the meeting and therefore the relevant documents were distributed and their comments were requested by mail.

- Regional Development Planning Board of West Java Province (BAPPEDA Jawa Barat)
- Regional Environmental Agency of Bekasi Regency (BPLHD Kota Bekasi)

The local stakeholders provided positive comments. No negative issues that require actions to be taken by the PPs were raised through the consultation. JQA confirms that the stakeholder consultation process and targeted stakeholders were appropriate for identifying stakeholders' opinions about the project and collecting their views.

<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.

JQA confirms that the PPs have invited comments to the proposed project from the relevant local stakeholders, the summary of the comments received is provided in the PDD in a complete manner and the PPs have taken due account of all the comments received from the local stakeholders.

C.7. Monitoring

<Means of validation>

The Monitoring Plan consists of the Monitoring Plan Sheet and Monitoring Structure Sheet, which complies with the approved methodology. Three monitoring points, namely 1) Amount of electricity consumption of the project refrigerator i during the period p (EC_PJ,i,p), 2) Electricity imported from the grid to the project site during the period p (EI_grid,p), 3) Operating time of captive electricity generator during the period p (h_gen,p) are listed as monitoring parameters.

The electricity consumption of the project refrigerator is directly and continuously measured

by an electricity meter. Measured data is automatically collected and sent to a server and then recorded in a spreadsheet electronically. The recorded data is to be checked on a monthly basis by the responsible staff. The electricity consumption data is manually recored in a logbook on a daily basis as a back-up data. The electricity meter is to be calibrated by a qualified entity every year in compliance with national/international standards.

The electricity imported from the grid to the project site is monitored by invoices from the power company on a monthly basis and then inputted to the spreadsheet. Regarding the selection of monitoring option, CL 01 was raised. Refer to CL 01 below.

The operating time of captive electricity generator is directly and continuously measured by meter equipped to a generator. Measured operation time is manually recorded in a logbook on a daily basis.

The roles and responsibilities of the persons are described in the Monitoring Structure Sheet in accordance with the requirements of the applied methodology. The monitored data collected is checked by the QA/QC team and then sent to the Duputy Project Manager for confirming the recorded data and archived data. These data are approved by the Project Manager. The monitored data are manually inputted to a spreadsheet by Record keeper for back-up. All monitored data are sent to MAYEKAWA MFG. CO., LTD. office in Tokyo for archiving and calculating the emission reductions.

JQA confirms that the Monitoring Plan complies with the requirements in the approved methodology and that the PPs will be able to implement the monitoring activity appropriately according to the Monitoring Plant.

<Findings>

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

CL 01

Monitoring Plan Sheet states that Electricity imported from the grid to the project site during the period p (EI_grid,p) is to be measured by applying Option B (Invoice from the power company) or Option C (monitored data). However, it is confirmed through the on-site inspection and the interview with the PPs that the electricity meter which is measuring electricity imported from the grid is sealed under the control of the grid company and therefore the PPs are not able to measure electricity directly. The PPs were requested to clarify how to collect electricity data in case of the Option C.

Resolution of CL 01 by the PPs :

The PPs selected only Option B, i.e., Data is collected from relevant invoices from the power company who owns the grid and input to a spreadsheet electronically, in Table 1 of the Monitoring Plan Sheet. It is confirmed through the review of the invoice and the interview

with the PPs that the data of electricity imported from the grid to the project site during the period p (EI_grid,p) is monthly provided with the invoice issued by the grid company. Thus, CL 01 is closed.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

JQA confirms that the Monitoring Plan is described in compliance with the requirements of the approved methodology and the Guidelines for developing PDD and MR, and the PPs have demonstrated feasibility of the monitoring structure and their ability to implement the monitoring activity appropriately.

C.8. Modalities of Communication

<Means of validation>

The MoC was submitted to JQA for review in the form JCM_ID_F_MoC_ver01.0 in which MAYEKAWA MFG. CO., LTD. is 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.

JQA 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. The written confirmation letters were provided by Mr. Tadashi Maekawa, President of MAYEKAWA MFG. CO., LTD., Mr. Budi Mulyono, President of PT. Adib Global Food Supplies and Mr. Yuuki Okishio, General Manager of PT. MAYEKAWA INDONESIA, respectively. It is confirmed that all corporate and personal details including specimen signatures are valid and accurate as requested in the JCM Guidelines for Validation and Verification. JQA confirms 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 is 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.

JQA confirms that the MoC is completed using the latest form and the information in the MoC is correct and sufficient, in compliance with the requirements of the JCM Guidelines.

C.9. Avoidance of double registration

<Means of validation>

The representative of focal point entity, Mr. Tadashi Maekawa of MAYEKAWA MFG. CO., LTD., declares in the MoC that the proposed JCM project is not registered under any other international climate mitigation mechanism other than the JCM. It is confirmed through the check of publicly available information of Clean Development Mechanism (CDM), Verified Carbon Standard (VCS), etc. that the proposed JCM project is not registered under other international climate mitigation mechanisms in terms of the name of entities, applied technology, scale and the location. Thus, it can be concluded that the proposed JCM project will not result in 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.

<Conclusion based on reporting requirements>

Please state conclusion based on reporting requirements.

JQA confirms that the proposed JCM project is not registered under the other international climate mitigation mechanisms.

C.10. Start of operation

<Means of validation>

The starting date of the proposed JCM project is set as 18/12/2014 in the PDD. It is confirmed through the review of relevant documents, on-site inspection and the interview with the PPs that the refrigerator has been smoothly operated since the operation test in last November 2014. After the completion of operation training conducted by MAYEKAWA MFG. CO., LTD., the refrigerator was handed over to PT. Adib Global Food Supplies on 18/12/2014. JQA confirmed through the review of relevant documents and interview with the PPs that the starting date of project operation was 18/12/2014.

<Findings>

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

CL 02

The PDD states that starting date of project operation was 25/11/2014. The new refrigerator manufactured by MAYEKAWA MFG. CO., LTD. was delivered to the project site on

18/05/2014 and its test operation was conducted during the period of 21/10/2014 - 11/11/2014. After that, the operation training of the refrigerator for the appointed staffs of PT. Adib Global Food Supplies was conducted under the supervision of MAYEKAWA MFG. CO., LTD. The PPs were requested to provide relevant supporting documents on the starting date of project operation.

Resolution of CL 02 by the PPs:
The relevant documents to specify the starting date of the project operation were provided by the PPs. JQA confirmed through the on-site inspection, the review of relevant documents and the interview with the PPs that the cooling system including the refrigerator had been smoothly operated since the operation test in November 2014 and was successfully handed over to PT. Adib Global Food Supplies after the implementation of operational training.
JQA reviewed the training record and text materials used in the training and thus concluded that the start of project operation on 18/12/2014 was reasonable, complying with the definition for the start of project operation. Thus, CL 02 is closed.

<Conclusion based on reporting requirements>
Please state conclusion based on reporting requirements.
JQA confirms through the on-site assessment that the starting date of project operation is 18/12/2014 and not before 01/01/2013 as required to be eligible as a JCM project.

C.11. Other issues

<Means of validation>
There is no requirement on this issue.

<Findings>
Please state if CARs, CLs, or FARs are raised, and how they are resolved.
CL 05
The revision history of the PDD is not appropriately described.

Resolution of CL 05 by the PPs :
It is confirmed through the review of the revised PDD that the revision history of the revised PDD is appropriately added. Thus, CL 05 is closed.

<Conclusion based on reporting requirements>
Please state conclusion based on reporting requirements.

JQA confirms that the revised PDD is completed in accordance with the JCM Guideline for Developing Project Design Document and Monitoring Report, JCM_ID_GL_PDD_MR_ver01.0.

D. Information on public inputs

D.1. Summary of public inputs

In line with the JCM Project Cycle Procedure, the PDD was made publicly available for 30 days from 07/01/2015 to05/02/2015 to invite public comments on the JCM website.
https://www.jcm.go.jp/id-jp/information/70
The proposed project received public comments from Mr. Thomas Grammig on 13/01/2015 regarding how the old refrigerant is treated in relation to Criterion 7.

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

First of all, JQA confirmed through the e-mail correspondence whether the public comment was definitely written by Mr. Thomas Grammig and received his confirmation mail on 17/01/2015.
In response to the public comment, the PPs revised the project information in Criterion 7 as follows: The plan for not releasing the primary refrigerant used in the project refrigerator has been prepared. As this is a Greenfield project, the existing refrigerator does not exist in the project site.
JQA confirms that the PPs has appropriately taken into due account the public comment received.

E. List of interviewees and documents received

E.1. List of interviewees

Mr. Budi Mulyono	President Director, PT ADIB Global Food Supplies
Mr. Ardi Wijaya	Fish & Seafood Manager, PT ADIB Global Food Supplies
Mr. Norm Okta	Engineer, PT ADIB Global Food Supplies
Mr. Yuuki Okishio	General Manager, PT. MAYEKAWA INDONESIA
Mr. Suhaimi Sirad	Director PT. MAYEKAWA INDONESIA
Mr. Ferry Sidauruk	Head of Business Development, PT Mutuagung Lestari

Mr. Osamu Bannai	Assistant Manager, Global Environment Centre Foundation (GEC)
Ms. Ai Kawamura	Manager, EX Research Institute Ltd.
Mr. Ibu Heni Rushendar	Local official of BPLHD Kota Bekasi

E.2. List of documents received

- PDD version 01.0 , 25/12/2014
- PDD version 02.0, 29/01/2015
- MoC, 25/12/2014
- MoC confirmation letter from the PPs
- Company's brochure of PT Adib Global Food Supplies, http://www.adibfood.com
- Quotation for supply and installation of refrigeration equipment and installation work for cold storage and IQF freezer, Ref. No. MT-000368, 17/09/2013
- Certificate of final acceptance, issued by PT. MAYEKAWA MFG. CO., LTD. and PT. Adib Global Food Supplies, 18/12/2014
- Layout of cooling system at food industry cold storage of PT. Adib Global Food Supplies
- Design drawing of the refrigerator (NewTon R-6000) installed at food industry cold storage
- Pamphlet on NewTon refrigerator series including R-6000
- Specification of NewTon R-6000 refrigerator including cooling capacity of 189 kW and power consumption of 86 kW, issued by MAYEKAWA MFG. Co., Ltd.
- Operation Manual of NewTon series (R-6000, F-600), issued by MAYEKAWA MFG. CO., LTD.
- Figure showing the correlation of CO2 refrigerant temperature with the cooling capacity and electricity consumption of the refrigerator NewTon R-6000
- Survey on the identification of COP and cooling capacity of existing refrigerators distributed in the market of Indonesia
- Legal durable years of cold storage in Japan (12 years)
- Monitoring manual of JCM project of "Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia" for PT. Adib Global Food Supplies
- Monitoring Implementation framework including responsibility and role of each entity
- Monitoring strucute of MAYEKAWA MFG. CO., LTD
- Record of MRV monitoring training conducted on 5 February 2015 including attendee list
- Commissioning test report on Project of introducing high efficiency refrigerator to a cold chain in Indonesia", issued by MAYEKAWA MFG. CO., LTD., Dec. 2014
- Work procedure manual for the recovery of NH3 from refrigerator
- List of components for regular inspections of refrigerator

- Letter of Consent on periodical checks by PT. MAYEKAWA Indonesia, 26/12/2014
- Letter of Consent on recovery of refrigerant by PT. MAYEKAWA Indonesia, 26/12/2014
- Minute of interview with the local official of BPLHD Kota Bekasi
- UKL/UPL (Environmental Management Plan /Environmental Monitoring Plan)
- Regulation of the State Ministry of Environment No. 18 Year 2009 regarding Licensing Procedure on Waste Management of Hazardous and Toxic Material
- Regulation of the State Ministry of Environment No. 13 Year 2011 regarding Compensation of Pollution and/or Environmental Damage
- Regulation of the State Ministry of Environment No. 03 Year 2010 regarding Quality Standard of Wastewater in Industrial Site
- Regulation of the Ministry of Manpower and Transmigration No. Per. 13/Men/X/2011 Year 2011 regarding Limit Value of Physical and Chemical Factor at Work Place
- Logbook sheet for refrigerator operation and electricity consumption
- Minutes of Meeting of the local stakeholder consultation on "Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia" and "Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia", West Java Provincial Government, 08/12/2014
- Specification of electricity meter ((Manufacturer: Omron, Model: KM50-E1FLK, Accuracy: ± 2%)
- Specificationof diesel engine generator (Taneko, CUMMINS6LTA8.9G2, 250 kVA)
- Copy of electricity consumption invoice from the grid
- Public comment from Mr. Thomas Grammig

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.

Certificate

Name	**Dr. Tadashi Yoshida**
Assessor No.	**CDM-AS-104**
Date of registration	**8th October 2010**

This is to certify that Dr. Tadashi Yoshida

is registered as CDM Assessor

by Japan Quality Assurance Organization.

Date 16th April 2012

Japan Quality Assurance Organization

Senior Executive

Team Leader Qualification

The above mentioned assessor is qualified as Team Leader.

Date of qualification 4th December, 2012

Date 4th December, 2012

Japan Quality Assurance Organization

Senior Executive

Certificate

Name	**Mr. Hiroshi Motokawa**
Assessor No.	**CDM-AS-102**
Date of registration	**22nd May 2009**

This is to certify that Mr. Hiroshi Motokawa
is registered as CDM Assessor
by Japan Quality Assurance Organization.

Date 16th April 2012

Japan Quality Assurance Organization

Senior Executive

Team Leader Qualification

The above mentioned assessor is qualified as Team Leader.

Date of qualification **12th August 2011**

Date 16th April 2012

Japan Quality Assurance Organization

Senior Executive

Certificate

Name	**Dr. Irhan FEBIJANTO**
Technical Expert No.	**CDM-TE108**
Date of registration	**20th June, 2013**

This is to certify that Dr. Irhan FEBIJANTO is registered as CDM Technical Expert by Japan Quality Assurance Organization.

Date **20th June, 2013**

Japan Quality Assurance Organization

Senior Executive

Certificate

Name Koichiro Tanabe

Reviewer No. CDM-TR-016

Date of registration 17 November, 2014

This is to certify that Mr. Koichiro Tanabe is registered as CDM Technical Reviewer by Japan Quality Assurance Organization.

Date 17 November, 2014

Japan Quality Assurance Organization

Senior Executive