URGENT

No. 0804/ 13020

Department of Climate Change
and Environment
49 Soi 30, Rama 6 Road,
Phaya Thai, Bangkok
10400 THAILAND
Tel./Fax. (+66) 2298 5645

28 October B.E. 2568 (2025)

Dear Sir/Madam,

Subject: Authorization Statement for the JCM project entitled "Introduction of 0.8MW Solar Power System and High Efficiency Refrigerator to Food Factory"

We refer to the JCM project entitled "Introduction of 0.8MW Solar Power System and High Efficiency Refrigerator to Food Factory" implemented under the Memorandum of Cooperation on the Joint Crediting Mechanism between the Government of the Kingdom of Thailand and the Government of Japan, signed on 8 July 2024 (hereinafter referred to as the "Memorandum of Cooperation").

The undersigned is the duly authorized representative of the Competent Authority of the Kingdom of Thailand, Mr. Phirun Saiyasitpanich, Director General of Department of Climate Change and Environment, Ministry of Natural Resources and Environment.

With reference to the International Carbon Credit Guideline, endorsed by the Cabinet of the Kingdom of Thailand by its resolution dated 26 August 2025, and in accordance with paragraph 7 of the Memorandum of Cooperation, we hereby communicate the authorization pursuant to Article 6, paragraph 3, of the Paris Agreement for the JCM project entitled "Introduction of 0.8MW Solar Power System and High Efficiency Refrigerator to Food Factory" (hereinafter referred to as the "Mitigation Activity") implemented by Thai Delmar Co., Ltd. and Kanematsu KGK Corp. with the following information:

Encl: (1) Project Design Document (PDD)
(2) Voluntary Standardized Template for Authorization of Use of the Internationally Transferred Mitigation Outcomes from a Cooperative Approach

The Joint Crediting Mechanism
Implementation Agency (JCMA)
7th Floor, Sumitomo Fudosan Hongo Building,
3-22-5 Hongo, Bunkyo-ku,
Tokyo 113-0033, Japan

/I. Description ...

I. Description of the authorized mitigation activity: Thai Delmar Co., Ltd. has constructed a new marine products and food processing factory in the Asia Industrial Estate. The new facility is equipped with a 899 kW solar power system to reduce dependence on grid electricity, and 367.9 kW high-efficiency refrigerators using natural refrigerants (NH_3 and CO_2).

II. Authorized entities: Thai Delmar Co., Ltd. and Kanematsu KGK Corp.

III. Authorized crediting period: 1 January 2021 – 29 June 2030

IV. The NDC period during which ITMOs are authorized for transfer and use: The first NDC implementation period ending 2030

V. Authorized use of ITMOs: Use towards Japan's NDC

VI. Amount and details of ITMOs authorized: A total cumulative maximum amount of 2,440 tCO_2eq of mitigation outcomes generated from the Mitigation Activity. The mitigation outcomes shall be issued and tracked by the designated registry of Thailand administered by Thailand Greenhouse Gas Management Organization (Public Organization).

VII. Applicable terms and provisions: The following terms and provisions applies to this authorization:

(a) Condition precedent: The effectiveness of this authorization is conditional upon successful issuance of mitigation outcome units from the Mitigation Activity in the designated registry of Thailand;

(b) The implementation of the Mitigation Activity shall comply with the International Carbon Credit Guideline, the provisions under the Memorandum of Cooperation, and the applicable mitigation activity standards, procedures, and guidelines;

(c) The Mitigation Activity participant understands that the Government of Thailand is not liable for meeting the specified amount of delivery of the mitigation outcomes referred to above.

VIII. Applicable method of corresponding adjustments: The Kingdom of Thailand will apply corresponding adjustments by using the averaging method specified in Decision 2/CMA.3, annex, paragraph 7 (a)(ii). The Kingdom of Thailand reserves the right to change the applicable method of corresponding adjustments, which will be applied consistently throughout the NDC period, in consideration of further guidance in relation to corresponding adjustments.

IX. Specification of first transfer: The first international transfer of mitigation outcomes from the designated registry of Thailand to the designated registry of Japan by applying a "cancellation-to-recreation" method.

/X. Public ...

X. Public repository of the authorization of ITMOs: This authorization statement will be made publicly available on www.dcce.go.th/article6, http://registry.tgo.or.th, and the centralized accounting and reporting platform (CARP) as referred to in paragraph 10 of Decision 4/CMA.6.

Reference to additional information shall be made to the enclosed Project Design Document (PDD) and the "Voluntary Standardized Template for Authorization of Use of the Internationally Transferred Mitigation Outcomes from a Cooperative Approach", which form an integral part of this authorization statement.

With this authorization statement, we confirm that our national process for ascertaining authorization to this Mitigation Activity has been duly followed.

Yours sincerely,

P. Saiyasitpanich

(Mr.Phirun Saiyasitpanich)
Director General

JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

Introduction of 0.8MW Solar Power System and High Efficiency Refrigerator to Food Factory

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

Thai Delmar Co., Ltd, the Thai corporation of Delmar Co., Ltd. which is a company of marine products and food, also being one of the group company of Nippon Suisan Kaisha, Ltd. built a new factory in the Asia Industrial Estate. In this new factory, solar power system and high efficiency refrigerators were installed to avoid reducing grid power consumption. For solar power system, it was constructed by Tosplant Engineering (Thailand) Co., Ltd. (an affiliate of Toshiba Plant System Co., Ltd., hereinafter referred to as Toshiba Thailand), which power generation scale is 899kW. The solar power generation is contributed by internal grid. For high efficiency refrigerator, it is manufactured by Mayekawa (Thailand) Co., Ltd. (an affiliated company of Maekawa Manufacturing Co., Ltd., hereinafter referred to as Maekawa Thailand), which has a refrigerating capacity of 367.9kW. The refrigerator introduced in this project is a high-efficiency non-CFC refrigerator that uses a natural refrigerant (NH3 and CO2) which was developed as a measure against global warming (global warming coefficient is 1 or less). Therefore its impact on the environment is small.

The refrigerator uses CO_2 as the refrigerant for the secondary refrigeration cycle which is controlled by an inverter.

A.3. Location of project, including coordinates

Country	The Kingdom of Thailand
Region/State/Province etc.:	Samut Prakarn Province
City/Town/Community etc.:	Bang Bo District
Latitude, longitude	N 13° 40' 2.32" and E 100° 54' 24.27"

A.4. Name of project participants

The Kingdom of Thailand	Thai Delmar Co., Ltd.
Japan	Kanematsu KGK Corp

A.5. Duration

Starting date of project operation	30/6/2020 (Solar Power System: 20/2/2021) (High Efficiency Refrigerator: 30/6/2020)
Expected operational lifetime of project	10 years

A.6. Contribution from Japan

The proposed project was partially supported by the Ministry of the Environment, Japan (MOEJ) through the Financing Programme for JCM Model projects, which provided financial support of less than half of the initial investment for the projects in order to acquire JCM credits. Throughout various stages of project implementation including project design, construction, scheduling, installation, Toshiba Thailand and Mayekawa Thailand have provided local operators with required training and know-how transfer and is also expected to do so continuously for operation and maintenance phases.

B. Application of an approved methodology(ies)

B.1. Selection of methodologies

Selected approved methodology No.	TH_AM001
Version number	Ver2.0
Selected approved methodology No.	TH_AM011
Version number	Ver1.0

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

Regarding solar power system (Based on the methodology of "JCM_TH_AM001_ver02.0")

Eligibility criteria	Descriptions specified in the methodology	Project information
Criterion 1	The project installs solar PV system(s).	Solar power system is installed in the new factory in Asia Industrial Estate with power generation scale of 899kW.
Criterion 2	The solar PV system is connected to the internal power grid of the project site and/or to the grid for displacing grid electricity and/or captive electricity at the project site.	Solar power system is connected to the internal power grid of the factory to replace the grid power.

Criterion 3	The PV modules have obtained a certification of design qualifications (IEC 61215, IEC 61646 or IEC 62108) and safety qualification (IEC 61730-1 and IEC 61730-2).	The PV modules of this project are qualified for design (crystal type: IEC61215) and safety (IEC61730-1, IEC61730-2).
Criterion 4	The equipment to monitor output power of the solar PV system and irradiance is installed at the project site.	Monitoring equipment is introduced to measure the amount of power generation and solar radiation intensity of the solar power system.

Regarding high efficiency refrigerator (Based on the methodology of "JCM_TH_AM011_ver01.0")

<table>
<tr><th>Eligibility criteria</th><th>Descriptions specified in the methodology</th><th>Project information</th></tr>
<tr><td>Criterion 1</td><td>Refrigerator(s) with a secondary loop cooling system using CO_2 as a refrigerant and equipped with inverter is installed at cold storage.</td><td>The refrigerator uses CO_2 as the refrigerant for the secondary refrigeration cycle which is controlled by an inverter.</td></tr>
<tr><td>Criterion 2</td><td>COP of project refrigerator(s) installed in the project cooling system is more than the threshold COP values set in the tables below. ("x" in the table represents cooling capacity per unit.)
<table>
<tr><th>Room Temperature condition</th><th>Cooling capacity (kW)</th><th>Threshold COP value</th></tr>
<tr><td>-25 deg. C</td><td>$42.4 \leq x \leq 340.0$</td><td>1.71</td></tr>
<tr><td>0 deg. C</td><td>$73.6 \leq x \leq 516.4$</td><td>2.79</td></tr>
<tr><td>5 deg. C</td><td>$86.2 \leq x \leq 612.6$</td><td>3.20</td></tr>
</table>
COP for the project refrigerator(s) are calculated with the following conditions:
● Room temperature condition: - 25 deg. C or 0 deg. C or 5 deg. C
● Cooling water fed to condenser: inlet 32 deg. C</td><td>Room temperature condition is -25 deg. C. Cooling capacity is between 42.4 kW and 340.0kW. And threshold COP value is 1.71.

The refrigerator installed in this project has a refrigeration capacity of 340kW or less. It has been clarified that the COP of the reference refrigerator in Thailand is 1.71, which can cool down to -25°C. While by adopting the NH_3/CO_2 cooling system, the COP of this project refrigerator increased to 2.1 and the energy efficiency being improved by 20% approximately.</td></tr>
<tr><td>Criterion 3</td><td>Periodical check is planned at least one (1) time</td><td>Periodical check is conducted at</td></tr>
</table>

	annually.	least once a year.
Criterion 4	In the case of replacing the existing refrigerator with the project refrigerator, a plan for prevention of releasing refrigerant used in the existing refrigerator to the air (e.g. re-use of the equipment) is prepared. Execution of this plan is checked at the time of verification, in order to confirm that refrigerant used for the existing one replaced by the project is prevented from being released to the air.	Since this project is a new installation, it does not release the refrigerant from the existing refrigerator.

C. Calculation of emission reductions

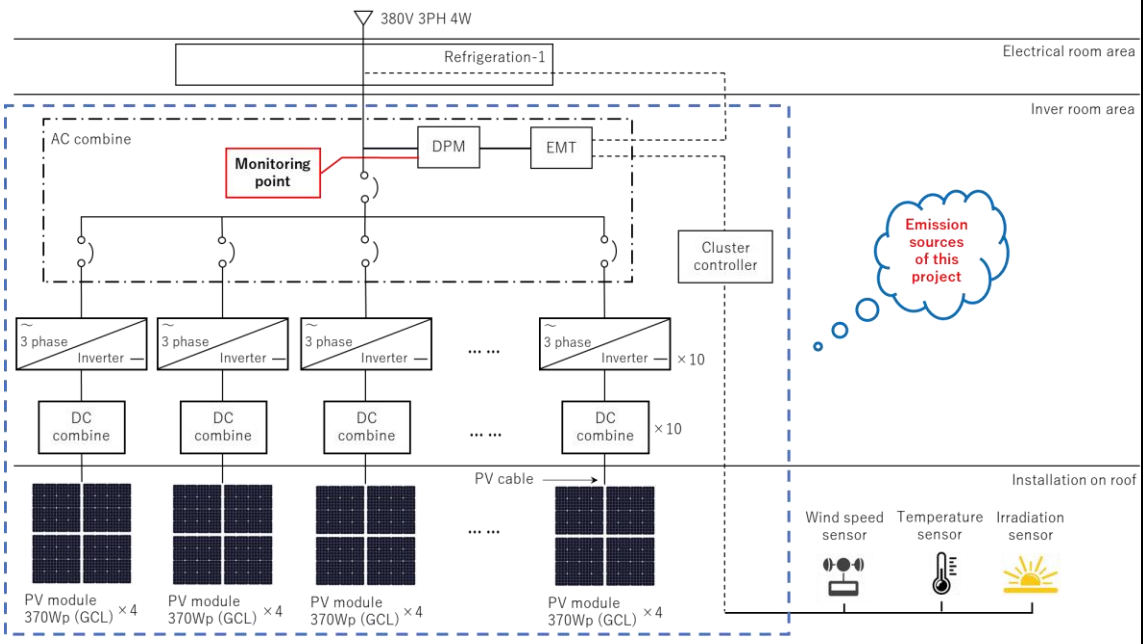
C.1. All emission sources and their associated greenhouse gases relevant to the JCM project

Reference emissions	
Emission sources	GHG type
Consumption of grid and/or captive electricity	CO_2
Project emissions	
Emission sources	GHG type
Generation of electricity from solar PV system(s)	N/A

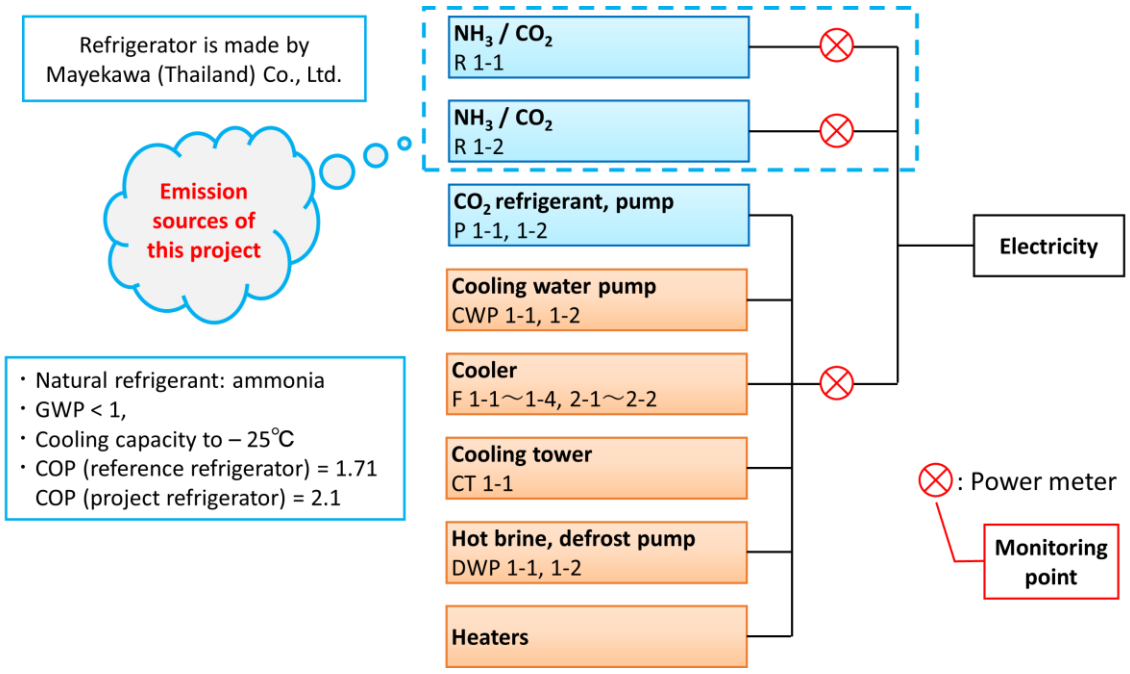
Reference emissions	
Emission sources	GHG type
Power consumption by the reference refrigerator	CO_2
Project emissions	
Emission sources	GHG type
Power consumption by the project refrigerator	CO_2

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

Solar Power System



High Efficiency Refrigerator



C.3. Estimated emissions reductions in each year

Year	Estimated Reference emissions (tCO_2e)	Estimated Project Emissions (tCO_2e)	Estimated Emission Reductions (tCO_2e)
2020	N/A	N/A	66
2021	N/A	N/A	448
2022	N/A	N/A	500
2023	N/A	N/A	500
2024	N/A	N/A	500
2025	N/A	N/A	500
2026	N/A	N/A	500
2027	N/A	N/A	500
2028	N/A	N/A	500
2029	N/A	N/A	500
2030	N/A	N/A	433
Total (tCO_2e)			4,947

D. Environmental impact assessment	
Legal requirement of environmental impact assessment for the proposed project	No

E. Local stakeholder consultation

E.1. Solicitation of comments from local stakeholders

To solicit comments from local stakeholders, a consultation meeting was planned by the project participants, and the project participants sent out invitation letters to the consultation meeting to various stakeholders. Details of the local stakeholders' consultation meeting is summarized as follows:

<Meeting outline>

- Date and Time: Oct. 27, 2020 13:30 – 14:30, Thai time
- Venue: Meeting room of Thai Delmar Co., Ltd
- Thailand Greenhouse Gas Management Organization (TGO) was participated by document review after the LSC.

<Meeting agenda>

#	*Time*	*Program*	*Remarks*
1	13:30 - 13:40	Introduction of participants	All participants
2	13:40 – 13:50	Overview of the project	Kanematsu KGK
3	13:50 – 14:00	Explanation of technology introduced	Kanematsu KGK and Mayekawa
4	14:00 – 14:20	Questions and answers	All participants
5	14:20 – 14:30	Company outline and Closing remarks	Thai Delmar

<Meeting summary>

In order to share the information of Joint Crediting Mechanism (JCM) model project in Thai Delmar factory and collect the comments/opinions from the persons concerned, the local stakeholder consultation (LSC) was conducted in accordance with above agenda.

E.2. Summary of comments received and their consideration

Stakeholders	Comments received	Consideration of comments received
GEC	GEC asked that what is a benefit of the JCM application.	It is expected that JCM application contributes to saving initial cost of energy efficiency/renewable energy facilities installation. Also, through the JCM application, it is satisfied that Thai Delmar can reduce GHG emissions which their client take attention to.
TGO*	TGO asked about the project activities such as the power in refrigeration tons (RT).	No action is needed.

*Comment from TGO was received by e-mail.

F. References

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

Annex

Estimated emissions reductions in each year (TH_AM001)			
Year	Estimated Reference emissions (tCO_2e)	Estimated Project Emissions (tCO_2e)	Estimated Emission Reductions (tCO_2e)
2020	0.0	0.0	0
2021	316.6	0.0	316
2022	368.0	0.0	368
2023	368.0	0.0	368
2024	368.0	0.0	368
2025	368.0	0.0	368
2026	368.0	0.0	368
2027	368.0	0.0	368
2028	368.0	0.0	368
2029	368.0	0.0	368
2030	368.0	0.0	368
Total (tCO_2e)			3,628

Estimated emissions reductions in each year (TH_AM011)			
Year	Estimated Reference emissions (tCO_2e)	Estimated Project Emissions (tCO_2e)	Estimated Emission Reductions (tCO_2e)
2020	357.8	291.3	66
2021	711.7	579.5	132
2022	711.7	579.5	132
2023	711.7	579.5	132
2024	711.7	579.5	132
2025	711.7	579.5	132
2026	711.7	579.5	132
2027	711.7	579.5	132
2028	711.7	579.5	132
2029	711.7	579.5	132
2030	352.9	287.4	65
Total (tCO_2e)			1,319

Revision history of PDD		
Version	Date	Contents revised
01.0	XX/XX/2021	First edition

VOLUNTARY STANDARDIZED TEMPLATE[1] [2] [3] AUTHORIZATION OF USE OF THE INTERNATIONALLY TRANSFERRED MITIGATION OUTCOMES FROM A COOPERATIVE APPROACH (Version 01.0)

PURPOSE

1. This document provides the information outlined in paragraph 5 of decision x/CMA.6 in relation to the authorization of the use of internationally transferred mitigation outcomes from a cooperative approach as referred to in decision 2/CMA.3, annex, paragraph 18. [4] [5]

2. This document is:

☐ The authorization referred to in decision 2/CMA.3, annex, paragraph 18; or

☑ An attachment to the authorization referred to in decision 2/CMA.3, annex, paragraph 18.

I. ELEMENTS OF THE AUTHORIZATION OF USE OF THE INTERNATIONALLY TRANSFERRED MITIGATION OUTCOME FROM A COOPERATIVE APPROACH

A: ELEMENTS RELATED TO THE AUTHORIZATION PROCESS

Party:	Thailand
Authorization ID:	0804/13020
Authorization date:[6]	**28/10/2025**
Version:	01.0
Date of last change to the authorization, if applicable:	N/A Click or tap to enter a date.
Effective date of the change to the authorization:[7]	N/A Click or tap to enter a date.
Duration of the authorization: [8]	**Start date:** **01/01/2021**

[1] When filling in this template the values for specific information attributes shall be provided as per the list of common nomenclatures under Article 6, as applicable and available. The list of common nomenclatures under Article 6.2 of the Paris Agreement is available at https://unfccc.int/documents/641433.

[2] Guidance on the completion of the template provided in grey is to be overwritten or deleted, as appropriate.

[3] If the template is used to prepare a document attached to an authorization, information already included in the authorization should be referenced accordingly.

[4] The list of acronyms and abbreviations used is available in decision 6/CMA.4: https://unfccc.int/documents/624474.

[5] References to paragraphs are to paragraphs in the annex to decision -/CMA.6, unless stated otherwise. "Article" refers to an Article of the Paris Agreement.

[6] Date and time refer to UTC, universal coordinated time.

[7] The effective date of the change to the authorization shall not be before the date of submission of the revised voluntary standardized template of authorization.

[8] The date and duration of the authorization, including the final date for mitigation outcomes to be issued or cancelled, in connection with the first transfer specified by the Party as per decision 2/CMA.3, annex, paragraph 2(b), as applicable.

	End date: 29/06/2030
NDC period of the authorizing Party:	**Start date:** 01/01/2021
	End date: 31/12/2030
Components covered by the authorization:	☐ Authorization of the cooperative approach ☑ Authorization of ITMOs ☑ Authorization of entities
Where changes to the authorization <u>may occur</u>, information on the applicable terms and conditions of the authorization that specify the circumstances for such changes and a description of the process for managing them in a way that avoids double counting:	
Any changes to authorization of the use of ITMOs shall not apply to, or affect, mitigation outcomes that have already been first transferred unless: • It is found that the project participants deliberately provided false information that significantly differs from the fact, undermining sustainable development, environmental integrity and transparency as required under Article 6.2 of the Paris Agreement, and the authorization were issued based on such false information; or • It is found that the project participants implemented the mitigation activities in violation of applicable domestic laws and regulations. In such cases, the authorization shall be revisited, and if necessary, revised to ensure that any possibility of double counting is avoided and all relevant records and information will be updated accordingly.	
Where changes to the authorization <u>have occurred</u> consistent with the provided terms and conditions of the authorization, a description of the circumstances in which the changes occurred and how changes follow the process for managing them in a way that avoids double counting:	
N/A	
Where changes to the authorization <u>have occurred</u>, a description of the specific changes in respect to the earlier version of the authorization:	
N/A	
B. ELEMENTS RELATED TO THE AUTHORIZATION OF THE COOPERATIVE APPROACH	
Name of the cooperative approach included in this authorization:	Joint Crediting Mechanism between the government of the Kingdom of Thailand and the government of Japan
Unique identifier for the cooperative approach, if available:[9]	CA0007

[9] The cooperative approach identifier will be available if the initial report has been submitted.

The name(s) of other participating Party(ies) covered by the authorization, if known: *Other participating Party(ies) indicated are those authorized to acquire ITMOs under this authorization.*	JP	Japan
Duration of the cooperative approach:	**Start date:** **01/01/2021** **End date:** **31/12/2030**	
	Remark:	The cooperation covers the period for the issuance of credits that covers GHG emission reductions or removals from JCM projects until 31 December 2030. Both governments may consider a possible extension of the above-mentioned period and reach a decision by 2030.
Where authorizing for OIMP, the specification of the first transfer of the mitigation outcome by the participating Party in accordance with decision 2/CMA.3, annex, paragraph 2(b):	☐ The authorization of the mitigation outcomes ☐ The issuance of the mitigation outcomes ☐ The use or cancellation of the mitigation outcomes	
Metrics covered:	☑ GHG (t CO_2 eq.) ☐ Non-GHG (consistent with the NDC metrics)	

Units of measurement (applicable to non-GHG metric) and units of conversion to CO2 eq:	
NA *Units of measurement*	N/A *Units of conversion*
NA *Units of measurement*	N/A *Units of conversion*
(add rows as necessary)	

Sector(s):	Energy generation
Mitigation types:	☑ Emission reductions ☐ Removals ☐ Emission reductions and removals
Activity types	Solar
Activity(ies), if applicable:	
TH022	Introduction of 0.8MW Solar Power System and High Efficiency Refrigerator to Food Factory

The identification of or cross-reference to underlying regulations, frameworks, standards or procedures, including any specific methodologies underpinning the cooperative approach:		
All underlying regulations, frameworks, standards and procedures are set out in the relevant rules, guidelines, and decisions made by the Joint Committee. Those rules, guidelines and decisions are made publicly available on the JCM website (https://www.jcm.go.jp/th-jp).		
C. ELEMENTS RELATED TO THE AUTHORIZATION OF ITMOS		
Scope of authorization of use of ITMOs:	☑ NDC ☐ IMP ☐ OP ☐ OIMP ☐ NDC and OIMP ☐ NDC and IMP ☐ NDC and OP	
OIMP authorized, if applicable:	N/A	
The quantity of ITMOs being authorized, if applicable:	2,440	
Vintage(s):	2021 - 224 2022 - 250 2023 - 250 2024 - 250 2025 - 250 2026 - 250 2027 - 250 2028 - 250 2029 - 250 2030 - 216	
The registry the participating Party has, or has access to, for the purpose of tracking and recording internationally transferred mitigation outcomes:	*Registry identifier: The applicable common nomenclature is not available at the time of this authorization.* *Registry identifier as per common nomenclatures, where available.*	Thailand Carbon Credit Registry (https://registry.tgo.or.th/en/) *Registry name as per common nomenclature, where available.*
Relevant registry(ies) in any underlying regulations, frameworks, standards or procedures that contain mitigation outcomes and track the status of mitigation activities and outcomes and participation and transactions by entities, as applicable:	*Registry identifier: The applicable common nomenclature is not available at the time of this authorization.* *Name of the relevant registry(ies) in an underlying regulation, framework, standard or procedure as per common nomenclatures.*	The registry explained above contains mitigation outcomes and transparently tracks the status of underlying mitigation activities. *Name of the underlying regulation, framework, standard or procedure under which the relevant registry operates.*
	(add rows as necessary)	
D. ELEMENTS RELATED TO THE AUTHORIZATION OF ENTITIES		
Entities covered by the authorization, if known;[10]	Kanematsu KGK Corp.	*Entity ID: The applicable common nomenclature is not available at the time of this authorization.*

[10] Entities covered by the authorization are those authorized by the participating Party providing the authorization.

		Entity ID: as per common nomenclatures.
	Thai Delmar Co., Ltd.	*Entity ID: The applicable common nomenclature is not available at the time of this authorization.* *Entity ID: as per common nomenclatures.*
	(add rows as necessary)	
II. FURTHER ELEMENTS FOR THE AUTHORIZATION		
N/A		
III. INFORMATION ON THE INSTITUTIONAL ARRANGEMENTS FOR AUTHORIZATION		
Name	Department of Climate Change and Environment	
Address	49, Soi 30, Rama VI Road, Phaya Thai Subdistrict, Phaya Thai District, Bangkok 10400	
E-mail	saraban@dcce.mail.go.th cc: unfccc.thailand.focalpoint@gmail.com climate.measure@dcce.mail.go.th	
Representative of the authority	Mr. Phirun Saiyasitpanich, Director General of Department of Climate Change and Environment, Ministry of Natural Resources and Environment	
Signature, stamp or equivalent means of authentication	*As relevant.*	

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