

CITY OF YOKOHAMA

Comprehensive Assessment System for the Promotion of Green Buildings Under City of Yokohama's Environmental Ordinance

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YOKOHAMA

1. The Role of Comprehensive Assessment System for the Promotion of Green Buildings Under City of Yokohama's Environmental Ordinance
2. CASBEE Yokohama Comprehensive Assessment System for the Promotion of Green Buildings
3. Case Studies of Promoting Development of Green Buildings

1. The Role of Comprehensive Assessment System for the Promotion of Green Buildings Under City of Yokohama's Environmental Ordinance

Yokohama City Ordinance for the Preservation of the Living Environment (Enacted in 2002)

- With the purpose of preserving the healthy and culturally enriched living environment of present and future citizens,

this ordinance defines the responsibilities of the city, business operators, and citizens in regard to measures addressing a wide range of environmental issues.

Chapter 9, Section2 Reduction of Environmental Load of Building Projects

- It is stipulated to formulate a plan for the promotion of green buildings and to report it. (Amended in 2004)

→ [CASBEE Yokohama Comprehensive Assessment System for the Promotion of Green Buildings](#)

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2. CASBEE Yokohama Comprehensive Assessment System for the Promotion of Green Buildings

CASBEE Yokohama is based on the CASBEE program

What's CASBEE?

Comprehensive **A**ssessment **S**ystem for **B**uilt **E**nvironment **E**fficiency

CASBEE is a program for [assessing and rating the environmental performance of buildings and built environments](#) based on a [comprehensive evaluation](#) of diverse factors.

(Ratings: S, A, B+, B-, C)

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2. CASBEE Yokohama Comprehensive Assessment System for the Promotion of Green Buildings

Purpose of CASBEE Yokohama

- Have owners of new buildings being constructed set environmental performance standards and design targets that are mindful of the building's environmental impact (encouraging consideration for the environment)

➔ Require owners to use CASBEE Yokohama to self-assess their projects, and report the results to the city government

Targeted projects: New constructions/expansions of 2,000 m² or greater

- **Make CASBEE Yokohama results available to the public to inform their building use/purchase decisions**

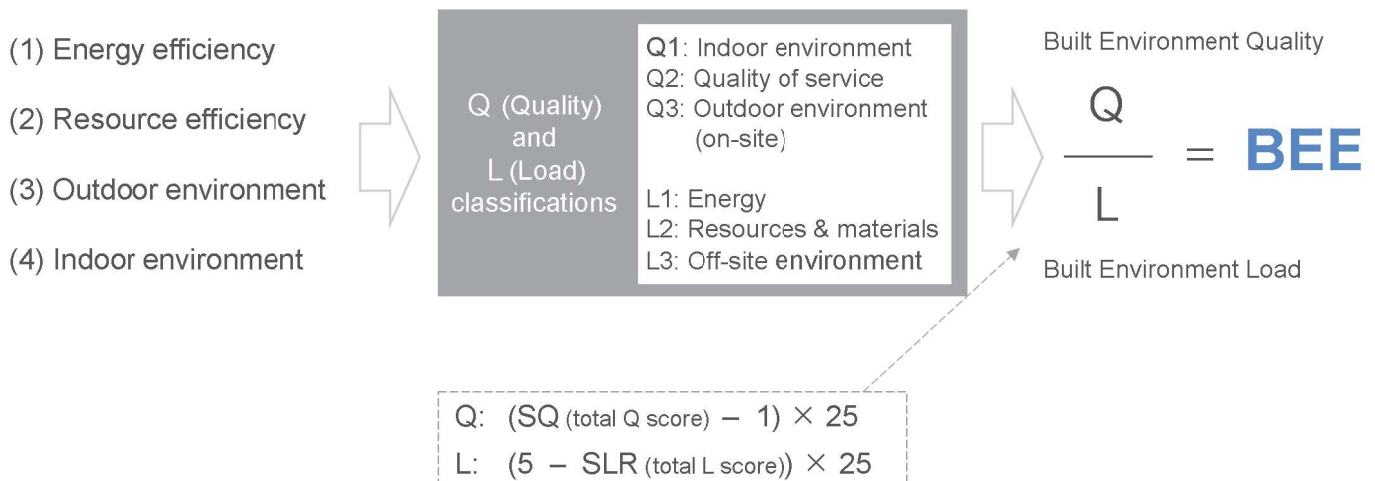
➔ Publish the reports made to the city

➔ Require real estate ads to display the CASBEE Yokohama results

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2. CASBEE Yokohama Comprehensive Assessment System for the Promotion of Green Buildings

CASBEE assessment areas & BEE



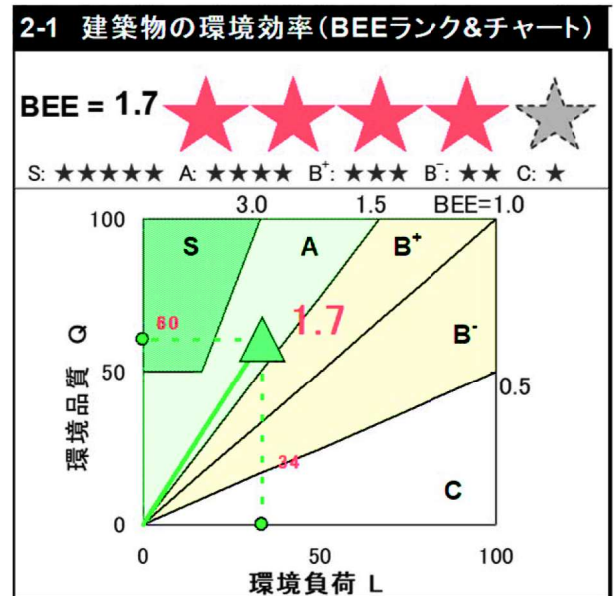
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2. CASBEE Yokohama Comprehensive Assessment System for the Promotion of Green Buildings

CASBEE assessment items

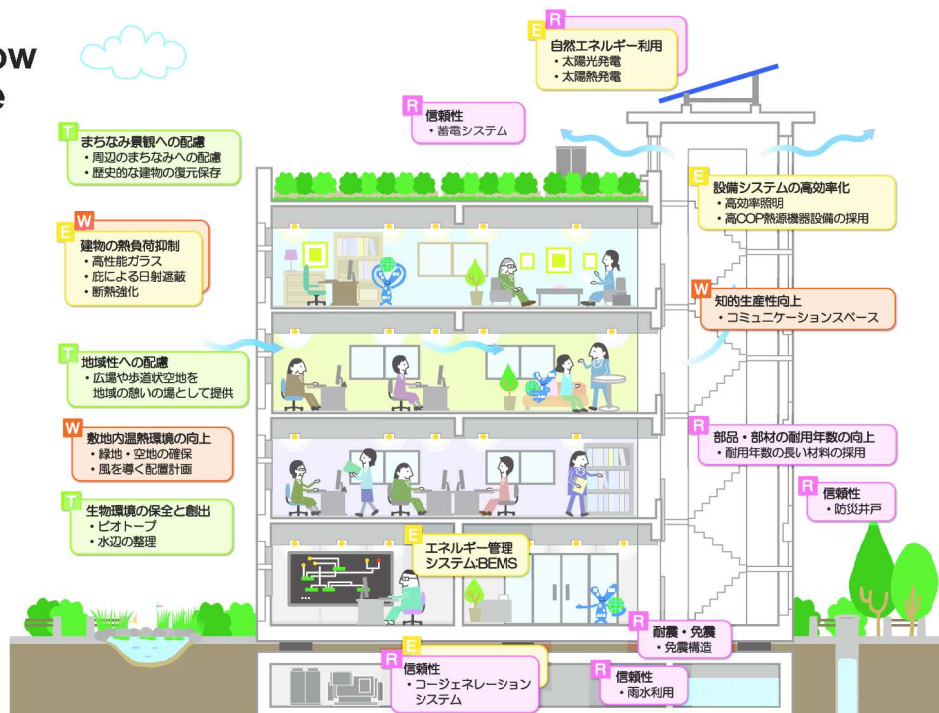
- BEE is expressed as the slope of lines on a graph
- The slope indicates the building's degree of sustainability

Rank	Assessment	BEE value	Expression
S	Excellent	$BEE \geq 3.0$ and $Q \geq 50$	★★★★★
A	Very Good	$3.0 > BEE \geq 1.5$	★★★★
B+	Good	$1.5 > BEE \geq 1.0$	★★★
B-	Fairly Poor	$1.0 > BEE \geq 0.5$	★★
C	Poor	$0.5 > BEE$	★



2. CASBEE Yokohama Comprehensive Assessment System for the Promotion of Green Buildings

Examples of how focus items are addressed



2. CASBEE Yokohama Comprehensive Assessment System for the Promotion of Green Buildings

Features of CASBEE Yokohama

- Real estate ads are required to display the property's CASBEE Yokohama ratings



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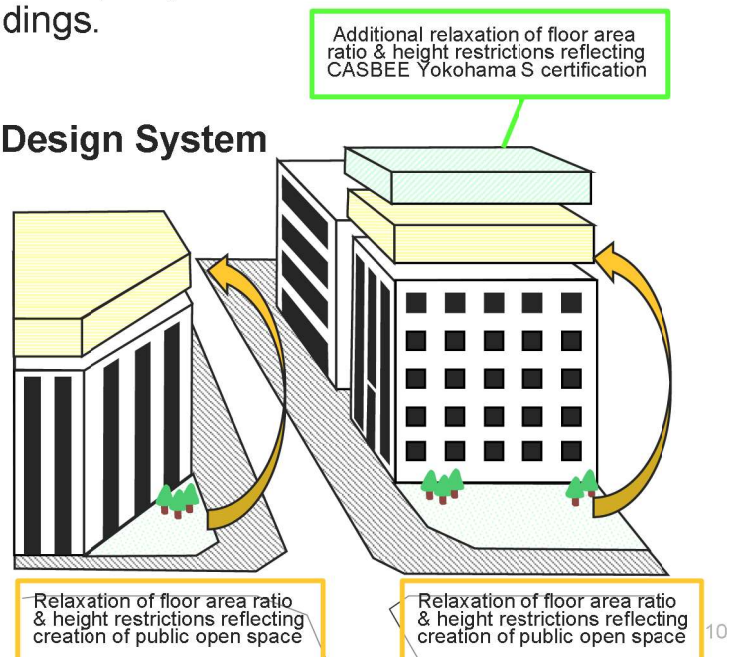
3. Case Studies of Promoting Development of Green Buildings

Linking CASBEE Yokohama with other systems, City of Yokohama guides building development of green buildings.

Representative example:

Yokohama Urban Area Environmental Design System

- [A CASBEE Yokohama rating of at least A](#) is a requirement for receiving relaxation of architectural form restrictions
- Projects with [S certification](#) are entitled to [additional relaxation of architectural form restrictions](#)



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3. Case Studies of Promoting Development of Green Buildings

- Other linked programs/systems:

- Program for submission of urban plans based on the City Planning Act
- District planning floor area ratio approval
- Public offering of city-owned land

and more

To guide building development of green buildings, which reduces the environmental load of building projects, a CASBEE Yokohama rating of at least A has been added as a condition for submission of urban plans to the city government, including with regard to the sale of city-owned land or programs related to urban planning intended to promote sophisticated use of land

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Thailand's Voluntary Carbon Market Outlook 2025

The 5th workshop on "Net Zero Emissions Business Opportunity under Bangkok-Yokohama City to City Collaboration Program"

Miss Anothai Sangthong
Director of Communications and Carbon Credit Registry Office,
Thailand Greenhouse Gas Management Organization (Public Organization),
Ministry of Natural Resources and Environment, Thailand
1 October 2025

Thailand Greenhouse Gas Management Organization (Public Organization) <https://www.tgo.or.th/>

Today's outline

- Regulatory Framework
- Current situation
- Thailand's VCM Outlook



Regulatory Framework



(Draft) Thailand's Climate Change Act



Plan and Measurement

Mitigation

Chapter 1
General
Principle

Chapter 2
National Climate
Targets

Chapter 6
Greenhouse Gas
(GHG) Data

Chapter 7
GHG Reduction

Chapter 8
Emission Trading
System (ETS)

Chapter 3
National Climate Policy
Committee

Chapter 5
National Master Plan

Chapter 9
Carbon Border Adjustment
Mechanism (CBAM)

Chapter 10
Carbon Tax

Chapter 11
Carbon Credit

Chapter 12
Climate Adaptation

Chapter 4
Climate Fund

Chapter 13
Thailand Taxonomy

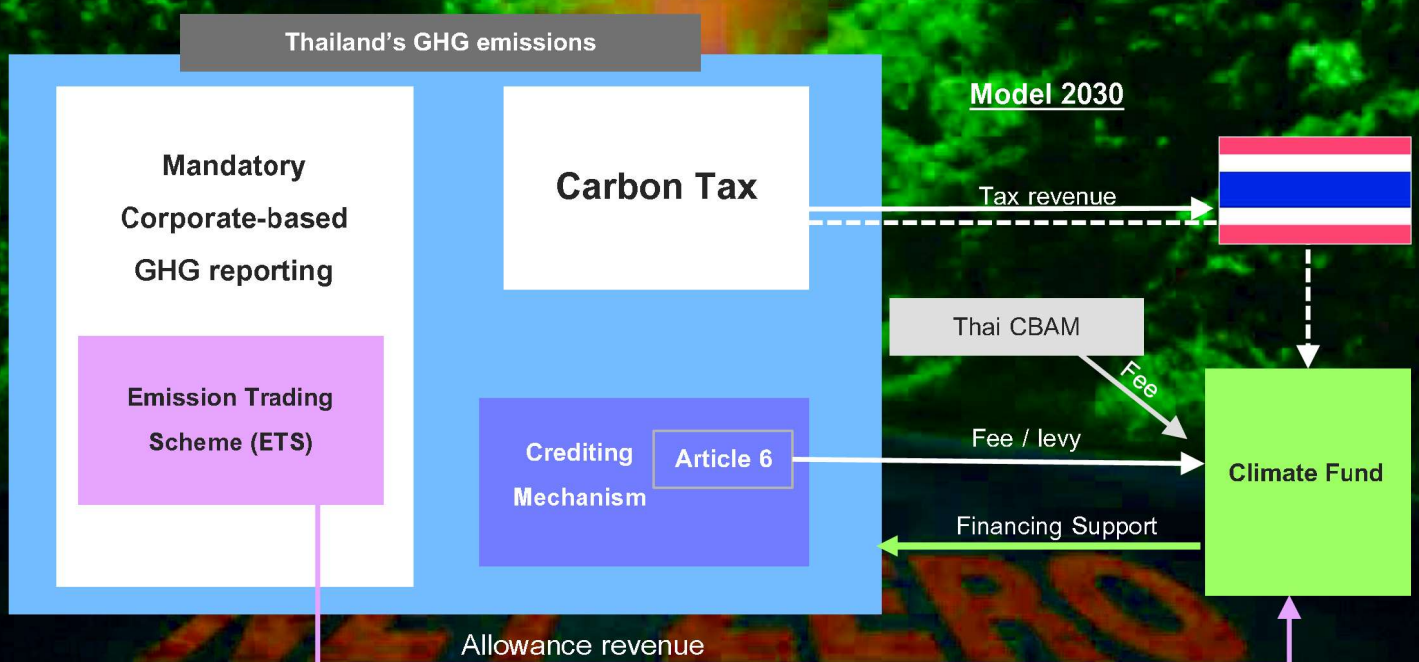
Chapter 14
Penalties

Adaptation

Funding Measure

Source: Department of Climate Change and Environment, Thailand

Economic measures and instruments under Climate Change Act.



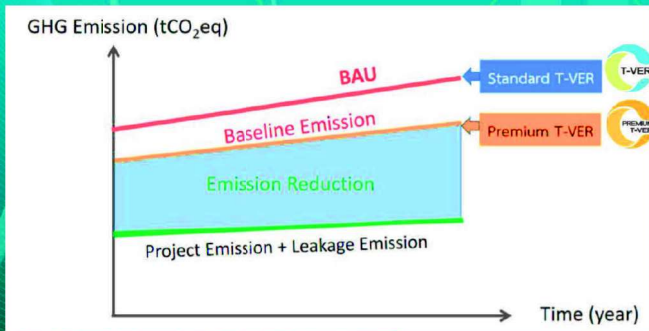
Source: Department of Climate Change and Environment, Thailand

Thailand Voluntary Emission Reduction Program (T-VER)

Alignment with ISO Standard

1. The T-VER framework aligns with ISO 14064
2. The Monitoring and Verification framework for GHG emissions aligns with ISO 14064
3. The Validation and Verification Body (VVB) is accredited under ISO 14065.

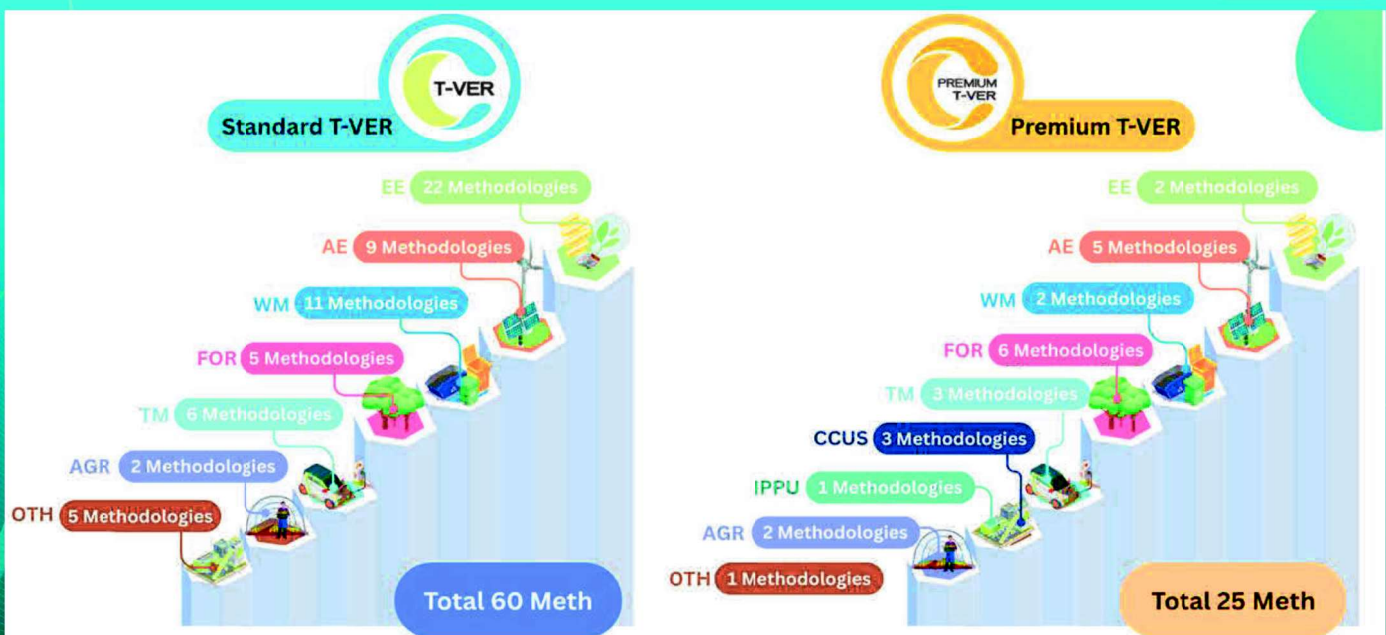
Baseline Scenario



Premium T-VER Creditability



T-VER Methodologies



Standard T-VER projects and credits

Registered Projects

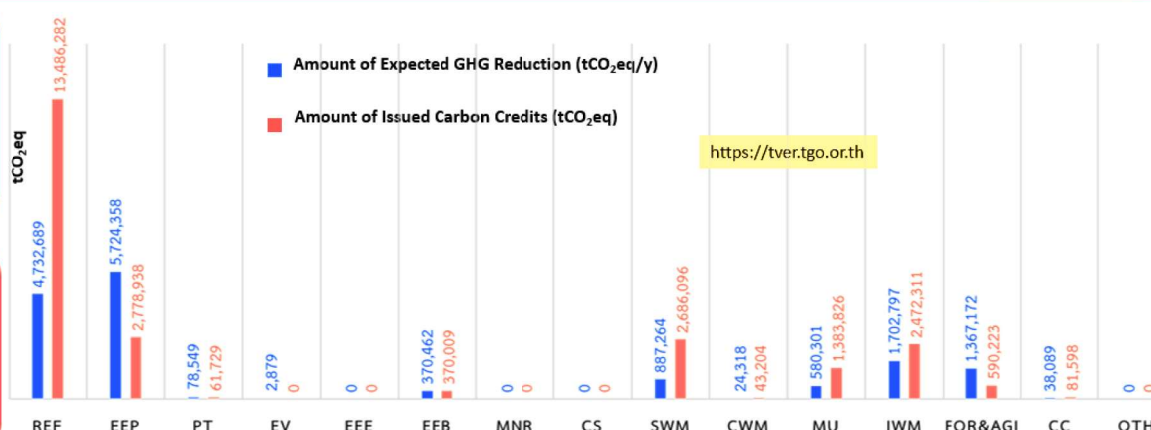
574 Projects

Amount of Expected
GHG Reduction
15,508,878 tCO₂eq/year

Issued Projects

198 Projects (405 Times)

Amount of Issued
Carbon Credits
23,954,216 tCO₂eq



REF	Renewable energy or fossil fuel replacement	CS	Use of clinker substitute	As of 23 Sep 25
EEP	Improvement of the efficiency of electricity and heat generation	SWM	Solid waste management	
PT	Use of public transportation system	CWM	Domestic wastewater management	
EV	Use of electric vehicle	MU	Methane recovery and utilization	
EEE	Improvement of the efficiency of engine	IWM	Industrial wastewater management	
EEB	Improvement of the efficiency of energy consumption in building and factory and in household	FOR&AGI	Reduction, absorption and removal of greenhouse gases from the forestry and agriculture sectors	
MNR	Use of natural refrigerant	CC	Capture, storage, and/or utilization of greenhouse gas	

Premium T-VER projects and credits

Amount of Expected
GHG Reduction

20,073

tCO₂eq/year



tver.tgo.or.th

Registered project **8** projects

- 1 EGAT's Participatory Reforestation Project 2023 (Tambon Mae Teep, Ngao District, Lampang)
- 2 Mangrove reforestation for sustainable environment in Thailand (group 1)
- 3 Greenhouse Gas Reduction with Mangrove Reforestation in Thailand (Group 1)
- 4 Increasing Thailand's Carbon Sequestration through Sustainable Mangrove Forest Management by SCG Chemicals (SCGC)
- 5 Forest and Ecosystem Restoration Project for Carbon Credits by Collaborating between Toyota Boshoku Asia (TBAS) and Royal Forest Department (RFD)
- 6 Enhanced Good Practices to reduction GHG emissions in rice cultivation at Saraburi Province
- 7 Enhanced Good Practices to reduction GHG emissions in rice cultivation at Saraburi Province
- 8 Alternative Wetting and drying driving low carbon rice city in Suphanburi project by Wave BCG

Statistics of TVERs Credit Trading by fiscal year



Fiscal Year	Volume (tCO ₂ eq)	Value (baht)
2016	5,641	846,000
2017	33,468	1,006,000
2018	144,697	3,090,520
2019	131,028	3,246,984
2020	169,806	4,375,686
2021	286,580	9,714,290
2022	1,187,327	128,489,976
2023	857,102	68,321,090
2024	686,079	85,794,604
2025	474,208	36,476,221
Total	3,975,936	341,361,371

Noted: FY2023 has included the OTC and Exchange Platform

As of 31 Aug 2025

Thailand's VCM Outlook





Scan to read



Scan to read

Key Finding on Climate Action

- Over 70% of survey respondents indicated that their **organizations may face either risks or opportunities from the climate transition**, reflecting heightened **awareness of carbon pricing mechanisms for compliance**. Still, there remains a gap in awareness, particularly to physical risks.
- More than 95% of respondents have **begun taking actions to address the impacts of climate change**, driven primarily by three motivations:
 - (1) demonstrating environmental responsibility
 - (2) enhancing corporate image
 - (3) gaining a competitive business advantage
- Over 70% of organizations stated that **they need additional time to prepare for compliance with the Climate Change Act**, indicating an opportunity to support the private sector's transition, particularly among those still in the preparation phase.

Source: The 2025 Thailand's Voluntary Carbon Market Outlook

Key Finding on Demand: Market Players' Perspectives

- The **importance of carbon credits** varies across industries, with most viewing them **as an important tool for offsetting organizational greenhouse gas emissions**. Survey results indicate that the key attributes of carbon credits are
 - (1) permanence of greenhouse gas reductions
 - (2) additionality beyond business-as-usual activities
 - (3) avoidance of double counting.
- **Organizations adopt diverse strategies for acquiring carbon credits**, with more than 50% emphasizing planned purchases in advance. **The current primary procurement channel is over-the-counter (OTC) market**, with a **preference for credits certified under the T-VER standard**.
- Over 60% of respondents **expressed interest in purchasing carbon credits from forestry/agriculture and renewable energy projects**. The main reasons for these preferences are **alignment with corporate sustainability goals**. However, most offsetting behavior remains at a low to moderate level, with 78% offsetting **less than 5,000 tCO₂e per year**.
- More than 50% are **willing to buy carbon credits in the price range of 50–200 THB per tCO₂e**, considering this a cost-effective investment aligned with prevailing market prices in both domestic and international markets.

Source: The 2025 Thailand's Voluntary Carbon Market Outlook

Key Finding on Demand: Prospective Market Participants' Perspectives

- **Prospective entrants to the carbon market face high uncertainty** regarding their timeline for participation, preferred certification standards, and types of projects of interest. This aligns with survey findings on **key barriers** to entry, where over 70% cited **a lack of knowledge in selecting carbon credit and limited budget allocation for such purchases**.
- **The key motivation** for 46% of respondents **is to prepare for compliance and respond to emerging policy trends and corporate sustainability targets**. Expected roles in the carbon market span across the supply side, demand side, and supporting functions within the carbon market ecosystem.
- **Regarding the most acceptable price for buying and selling**, 38% of the participants indicated **a preference for prices below 50 THB per tCO₂e (lower than current market participants' range)**, while 28% preferred prices in the range of 50–200 THB per tCO₂e (in line with existing market players). The reasoning provided is that such pricing can incentivize investment and deliver satisfactory returns and profitability for project developers.

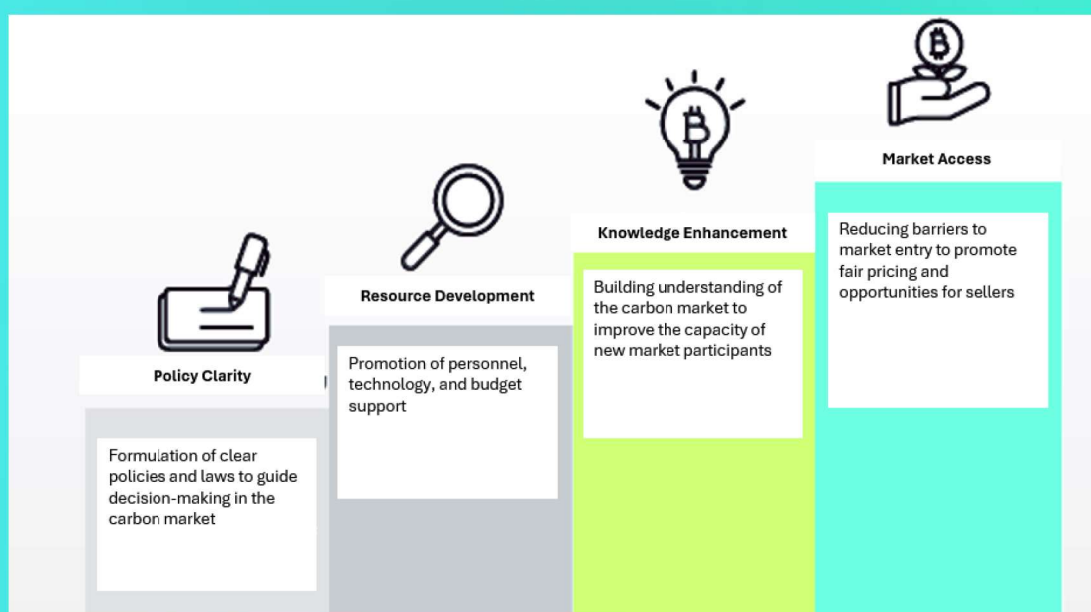
Source: The 2025 Thailand's Voluntary Carbon Market Outlook

Key Finding on Supply

- 76% of projects are **developed under the T-VER standard**, with 63% of the **participants focusing on renewable energy initiatives, mainly due to alignment with corporate policies**. In financing project development, 87% of respondents reported using internal organizational budgets to finance implementation.
- **Key challenges** in project development include **limited cost-effectiveness, limited market access, and constraints in knowledge and resources for new projects**. Project developers proposed market development measures such as aligning the T-VER standard with international standards, establishing a transparent trading platform, and developing financial mechanisms to reduce project development costs.
- 42% are **willing to sell at a price range of 50–200 THB per tCO₂e**, citing alignment with domestic market prices, cost-effective investment, and the potential to generate adequate returns and profits.

Source: The 2025 Thailand's Voluntary Carbon Market Outlook

Pathway for Strengthening the Competitiveness of Thailand's VCM



Source: The 2025 Thailand's Voluntary Carbon Market Outlook

Yokohama-Bangkok City-to-City Collaboration Workshop

Overview and recent progress of the JCM

Overseas Environmental Cooperation Center (OECC)
Jun WATANABE

About OECC



- Comprehensive Consultation from Upstream Policy to Downstream On-Site Projects
- Wide Experience in Planning and Operating International Conferences, Training, and Information Dissemination
- Project Support in Environmental Business from a Neutral Standpoint



Climate Change

- UN Negotiations
- Mitigation
- Adaptation
- Innovative Technologies
- International Training



Environmental Management

- DSS and Atmosphere
- Chemicals Management
- Mercury Control



Biodiversity

- Genetic Resources
- Mangrove Conservation
- International Negotiations



Integrated Approach

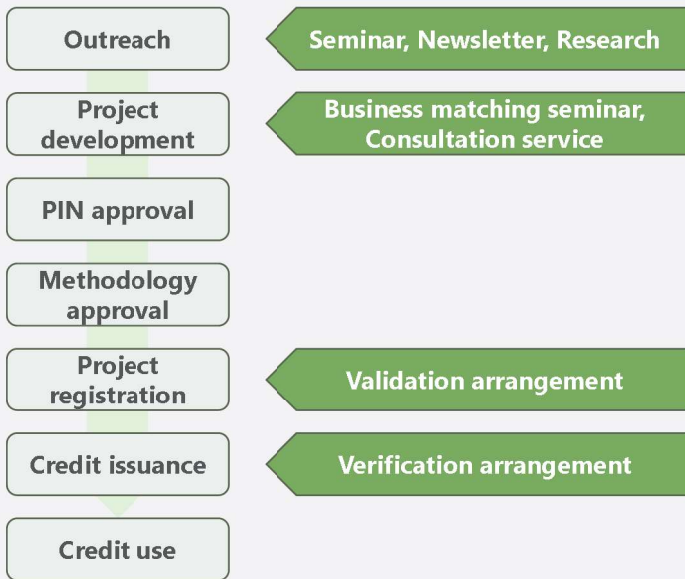
- JPRSI
- Environment Week
- Intergovernmental Meetings
- Support for JICA
- Co-Benefit Approach

Role of OECC promoting the JCM



JCM steps

OECC's activities



Business matching seminar



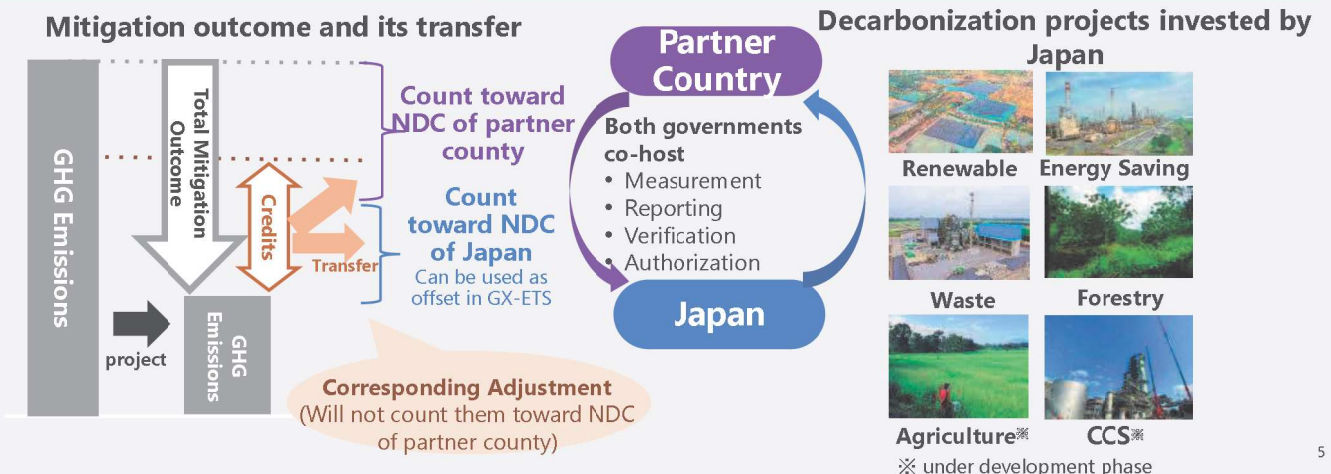
JCM / Carbon Markets Newsletter



Overview of Joint Crediting Mechanism (JCM)



- **JCM is a carbon market tool** where Japanese companies and government cooperate with mitigation activities in partner countries (30 as of Today).
- Among total mitigation outcomes, both governments conservatively calculate, authorize and share JCM credits between the companies/countries in proportion to their contributions, in line with Article 6 of Paris Agreement.
- **JCM incentivizes Japan's investment** in decarbonization projects bringing various benefits including achievement of NDC and sustainable development.



JCM is consistent with Article 6 of the Paris Agreement



1. Conservatively calculate the amount of JCM credits using the reference emissions below Business as Usual (BaU) emissions
2. Both countries authorize international transfer and use purpose of JCM credits
3. Avoid double counting by corresponding adjustments
4. Evaluate contribution to sustainable development
5. Report to UNFCCC

JCM partner countries (31 countries)



 【Mongolia】 Jan. 8, 2013 (Ulan Bator)	 【Bangladesh】 Mar. 19, 2013 (Dacca)	 【Ethiopia】 May 27, 2013 (Addis Ababa)	 【Kenya】 Jun. 12, 2013 (Nairobi)	 【Maldives】 Jun. 29, 2013 (Okinawa)	 【Viet Nam】 Jul. 2, 2013 (Hanoi)
 【Laos】 Aug. 7, 2013 (Vientiane)	 【Indonesia】 Aug. 26, 2013 (Jakarta)	 【Costa Rica】 Dec. 9, 2013	 【Palau】 Jan. 13, 2014 (Ngerulmud)	 【Cambodia】 Apr. 11, 2014 (Phnom Penh)	 【Mexico】 Jul. 25, 2014 (Mexico City)
 【Saudi Arabia】 May 13, 2015	 【Chile】 May 26, 2015 (Santiago)	 【Myanmar】 Sep. 16, 2015	 【Thailand】 Nov. 19, 2015 (Tokyo)	 【Philippines】 Jan. 12, 2017 (Manila)	 【Senegal】 Aug. 25, 2022 (Dakar)
 【Tunisia】 Aug. 26, 2022 (Tunis)	 【Azerbaijan】 Sep. 5, 2022 (Baku)	 【Moldova】 Sep. 6, 2022 (Kishinev)	 【Georgia】 Sep. 13, 2022 (Tbilisi)	 【Sri Lanka】 Oct. 10, 2022 (Colombo)	 【Uzbekistan】 Oct. 25, 2022 (Tashkent)
 【Papua New Guinea】 Nov. 18, 2022 (Sharm El Sheikh)	 【UAE】 Apr. 16, 2023 (Sapporo)	 【Kyrgyz】 Jul. 6, 2023 (Bishkek)	 【Kazakhstan】 Oct. 30, 2023 (Astana)	 【Ukraine】 Feb. 19, 2024 (Tokyo)	 【Tanzania】 May 28, 2025 (Tokyo)
					 【India】 Aug. 7, 2025

Existing JCM projects

Renewable Energy



Energy efficiency [Consumer sector]



Energy efficiency [Industrial sector]



Effective Use of Energy



Energy efficiency [Urban sector]



Waste



Transport



Forestry



JCM consultation cases

- Until February 2025, there were approximately 100 consultations about JCM project development for wide range of project types.

Others(24) 25%

Rice Paddy fields (22) 23%

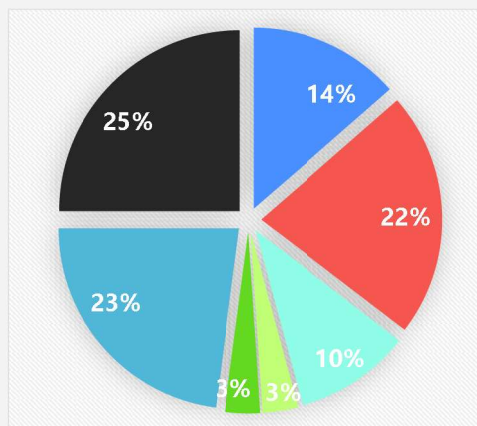
- AWD etc.

Fluorocarbon (3) 3%

- Fluorocarbon recovery and destruction

Green Carbon (3) 3%

- REDD+ etc.



Renewable Energy (13) 14%

- Solar Power Generation etc.

Energy Efficiency (21) 22%

- Boiler
- LED etc.

Transport (10) 10%

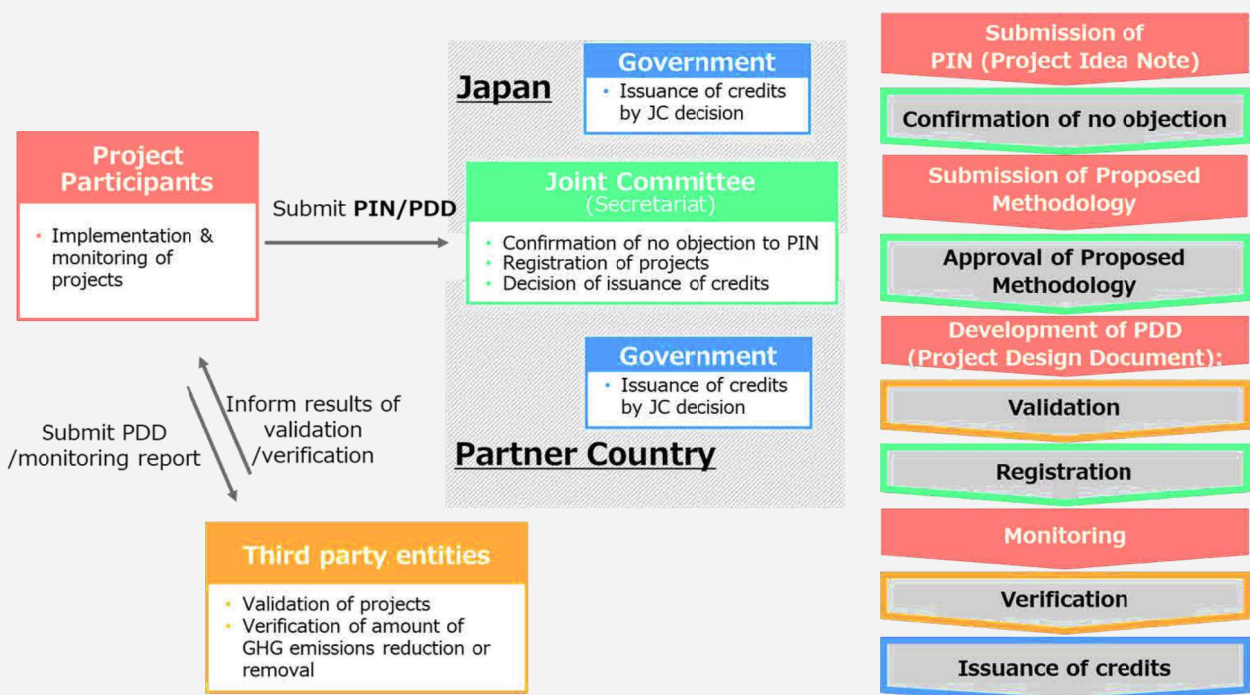
- Optimization of shuttle bus
- EV etc.

Eligible project types in Thailand [International Carbon Credit Guideline]



- (1) **capture, storage or utilization of greenhouse gases** such as Carbon Capture and Storage (CCS), Carbon Capture and Utilization (CCU), and Direct Air Capture (DAC);
- (2) **renewable energy or fossil fuel replacement** such as green hydrogen energy, tidal energy, offshore wind energy, geothermal energy, sustainable aviation fuel (SAF), production or use of green ammonia in energy and industrial sector;
- (3) **improvement of energy efficiency in buildings, factories or households** such as high-efficiency electric furnaces and electric boilers as fossil fuel furnace replacements, high-efficiency electric motors for industrial processes;
- (4) **improvement of efficiency of electricity or heat generation** such as energy storage, green pallet production from agricultural waste for combined heat and power;
- (5) **greenhouse gas reduction in transport sector** such as electrification of transportation systems, hydrogen vehicles, plug-in hybrid electric vehicles (PHEVs) with a fuel cell, electric vehicles or improvement of engine efficiency;
- (6) **improvement of production process or management of industrial waste** such as improvement of the process or technology of chemical or petrochemical production, production of low carbon cement, production of methanol using carbon dioxide or green hydrogen, reduction of the use of fluorinated gases by avoiding use, substitution, recovery, reuse, reclamation, and environmentally friendly disposal;
- (7) **improvement of production process or management of agricultural and livestock waste** such as soil management, methane reduction of rice cultivation, improvement of animal feeds, improvement of animal breeds, production of advanced bio methanol from agricultural waste and scraps;
- (8) **wastewater or waste management using advanced technology** such as technology for decomposing of food waste, community's wastewater treatment system;
- (9) **emission reduction from forest areas** such as restoration of degraded forests, sustainable forest management and forestation for carbon sequestration; and
- (10) **other project types as approved by the National Committee on Climate Change Policy and consistent with national mitigation plan, policy or measures.**

JCM project cycle

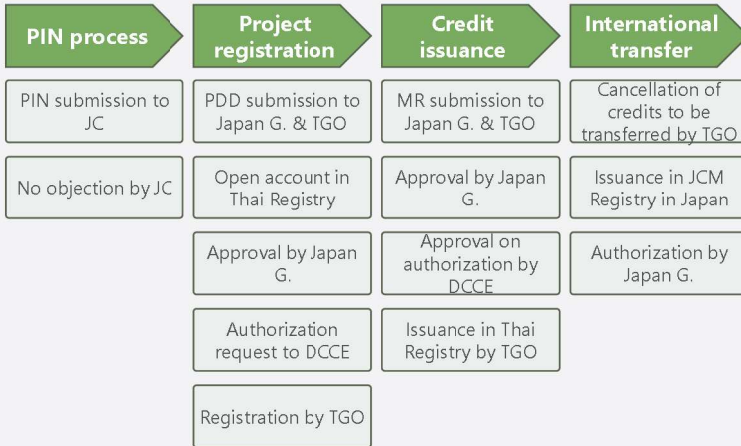


JCM track under Premium T-VER



- Memorandum of Cooperation on the Joint Crediting Mechanism between the Government of the Kingdom of Thailand and the Government of Japan (MoC) was signed in July 2024 to introduce the Rules of Implementation for the "JCM track under Premium T-VER".
- New Rules and Guidelines for "JCM track under Premium T-VER" was adopted in the 6th JC in September 2024.
- 7 PINs have been approved (no objection) until now.

JCM track under Premium T-VER



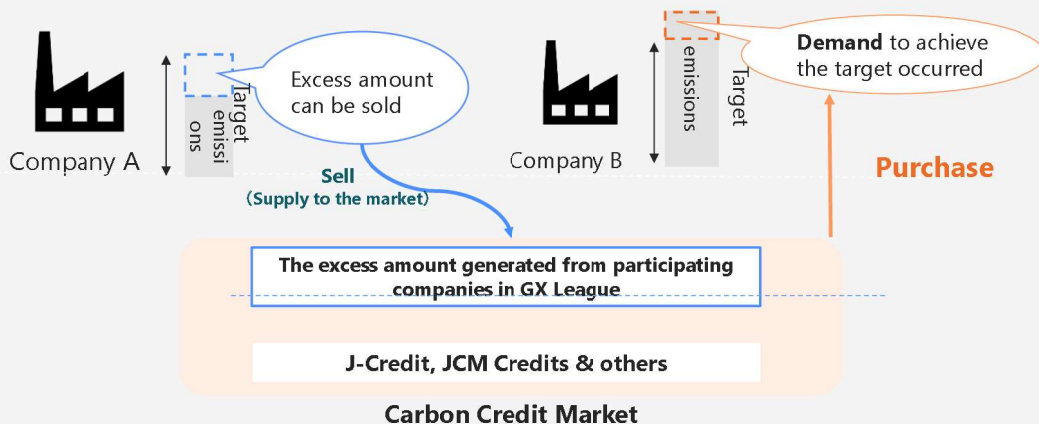
Title of Project Idea Note (PIN)	Date of no objection decision
TH_PIN001 "Productivity Improvement of Aluminium Ingots Using High Efficiency Furnace System"	23 Sep 24
TH_PIN002 "Introduction of Biomass Co-generation System to Chemical Factory"	23 Sep 24
TH_PIN003 "Demonstration Project of Perovskite Solar Cell System in Subtropical Region"	23 Sep 24
TH_PIN005 "48MW Solar Power Generation and 60MWh BESS Project at Lopburi Province"	01 Apr 25
TH_PIN006 "Solar and heat battery installation project for a packaging factory"	01 Apr 25
TH_PIN007 "Reduction of CO2 emissions from textile dyeing processes through the use of highly efficient dyeing technology (Nakornchaisri-Dontoom)"	01 Apr 25

Use of JCM Credits



- JCM credits acquired by Japan can be
 1. used for corporate voluntary carbon offsetting
 2. used for companies' compliance targets under GX-ETS phase 1 (2023-2025) and phase 2 (2026-)

GX-ETS phase 1 and Carbon Credit Market



ETS Phase 2

- The amended GX Promotion Act was approved by the Cabinet in February 2025.
- ETS phase 2 is currently being designed by the ETS Subcommittee under Ministry of Economy, Trade and Industry (METI).
- JCM credit can be used

Eligible carbon credits

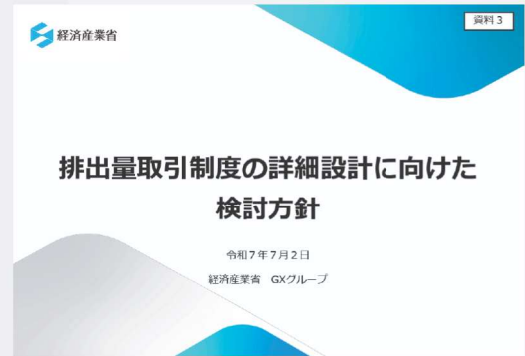
1. J-Credit
2. JCM credit

Credit utilization limit

10% (TBC)

Allowance allocation, upper and lower price limits

(TBC)



Financial programs by the Government of Japan

	Programme	Type of support
Ministry of the Environment	Subsidy Programme for the JCM Facility Introduction	Subsidy
	Japan Fund for the JCM (JF JCM) managed by ADB	Grant
	UNIDO JCM Managed by UNIDO	Grant
	Synergy type JCM project creation program	Subsidy
	Project development/capacity building/MRV support	Technical cooperation
Ministry of Economy, Trade and Industry	JCM Feasibility Study	Technical cooperation
	JCM Demonstration Programme	Government-commissioned project
	Methodology development study	Technical cooperation
	JCM credit & MRV application study	Technical cooperation
Ministry of Agriculture, Forestry and Fisheries	Development of MRV for JCM projects in Agriculture –implemented by ADB	Technical cooperation
	Field studies for JCM REDD+	Government-commissioned project

URL: <https://www.jcm.go.jp/>

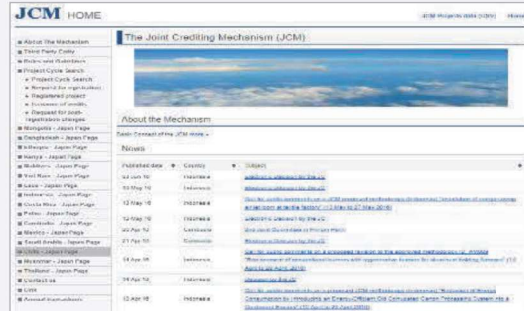
Contents

- General information page
- Individual JCM Partner countries-Japan page

Function

- Information sharing to the public, e.g.,
 - the JC decisions
 - rules and guidelines
 - methodologies and projects
 - issuance of JCM credits
 - call for public inputs/comments
 - status of TPEs, etc.
- Internal information sharing for the JC members, e.g.
 - File sharing for electric decisions by the JC

▼ Image of the general information page



▼ Image of the individual JCM Partner countries-Japan page



Introducing JCM Global Match

- ◆ JCM Global Match is an entirely free of charge business matching platform which supports **development of JCM Model Project.**
- ◆ Around 1,000 active users have been registered from over 60 countries.



Home | What Is JCM | How to Use | Good Practice | FAQ

JCM Global Match

A FREE matching platform for decarbonizing businesses!

This business matching platform is dedicated to help set up an international consortium for a **JCM model project**, a scheme to provide financial supports from the government of Japan to accelerate diffusion of advanced decarbonizing technologies. You can **SEARCH** for, **COMMUNICATE** with other users and **ADVERTISE** your business freely in this site.

***Major features of the "JCM Global Match"**

What you can do at "JCM Global Match" website.

Global Environment Centre Foundation (GEC)

Consortium for JCM