経済産業省　令和５年度二国間クレジット取得等のためのインフラ整備調査事業
（JCM実現可能性調査業務）委託業務

Webinar: Joint Crediting Mechanism (JCM) Exploration in the United Arab Emirates

Key Points for Utilizing METI JCM FS Schemes

March 05, 2024

JCM FS Secretariat

(PACIFIC CONSULTANTS CO., LTD.)

E-mail : JCM_pckk@tk.pacific.co.jp

This English translation is a provisional translation for reference purposes only. Please be sure to refer to the Japanese original for an accurate understanding of the content.

経済産業省 令和５年度
二国間クレジット取得等のためのインフラ整備調査
（JCM実現可能性調査）

企画提案の公募説明会資料

公募期間：令和5年4月24日（月）～5月26日（金）正午

*Presentation is based on JCMFS application guideline in FY2023.

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CONTENTS

1. Purpose

❑ Purpose

Examining the feasibility of a project to commercialize the dissemination of decarbonization technologies and products by Japanese and other entities, and to realize GHG emission reductions and **JCM credits issuance by utilizing the Joint Crediting Mechanism (JCM)**.

As an exit strategy of JCM FS, it is expected to **apply for either the NEDO JCM Demonstration Project or a Private JCM project**.

2. Target technologies/products

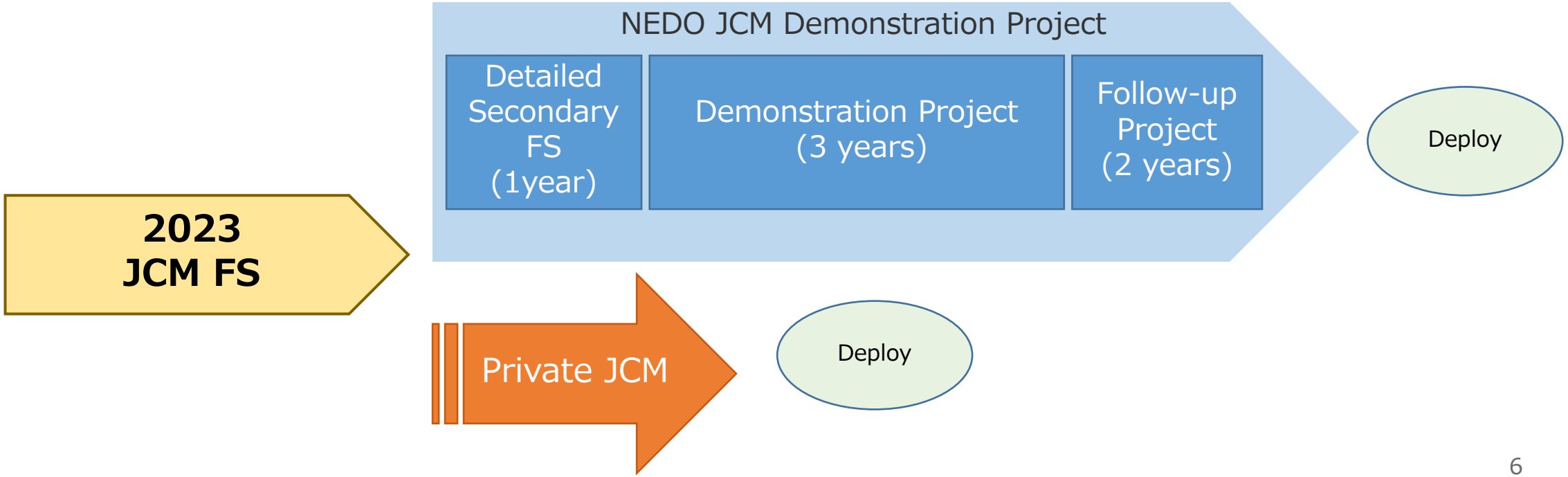
- Target technologies/products

  Reduction of **energy-derived** CO2 emissions through the use of superior decarbonization technologies, etc., and contribution to **issue JCM credits** in partner countries that have signed or are expected to sign the Memorandum of Cooperation on JCM.

  Projects that contribute to **quantifiable GHG emission reductions** and contribute to the largest possible GHG emission reductions. No clear threshold for GHG emission reductions will be set, but priority may be given to proposals that are expected to achieve larger GHG emission reductions.

3. Expected exit strategy after JCM FS

- NEDO JCM Demonstration Project
- Private JCM project



3. Developments after the end of the FS (assumed exit strategy)

Differences in target technologies and assumed GHG emission reductions by exit strategy assumed in the JCM FS

Exit strategy	NEDO JCM Demonstration Project	Private JCM
Target Technology	① The technology to be demonstrated must be a Japanese low-carbon technology or system owned by the proposer, and there must be technical issues to be overcome in order to promote the technology or system in the partner country (hereinafter referred to as "technical issues"). The demonstration project is necessary to overcome such technical issues. ② The demonstration project is expected to have quantifiable GHG emission reduction effects as a countermeasure against global warming, and is expected to have large-scale GHG emission reduction effects during and after the demonstration project period. ③ The dissemination strategy for the technology/system must be concrete and highly feasible. ④ The demonstration plan must be appropriately prepared as an effective means of overcoming the technical issues identified in ①.	There are no restrictions on the target technologies if the introduction of superior decarbonization technologies that contribute to GHG emission reductions and absorption by private enterprises in Japan is financed by the private enterprises themselves. *Note that the target of JCM FS is the introduction of technologies that contribute to the reduction of energy-based CO2 emissions.
Assumed GHG emission reductions	・JCM credits of 1,000 t-CO2 or more are expected during the monitoring period of the JCM Demonstration Project, and ・Emission reductions of 10,000 t-CO2 or more per year during the period of diffusion and deployment after the JCM Demonstration Project is completed.	No specific criteria are set, but the comprehensive evaluation will be conducted based on the feasibility of the project as a private-sector JCM and its GHG emission reduction potential from a medium- to long-term perspective, as well as other factors.

※ Both are only available for JCM Partner countries.

4. The research items in FS

Items	Survey Details
1. Analysis of related policy and institutional trends	● Identify trends (current and future) in policies and systems related to FS in the partner country, as well as issues and local needs. ● Policies and systems to be covered include NDC, climate change policy and related energy policy, and policies, systems, laws, and regulations related to commercialization of the proposed project.
2. Consideration of commercialization and JCM project	● Based on the results of the analysis in the Item 1, identify business/technology needs and study specific commercialization plans and dissemination strategies for commercialization and JCM project development (including studies necessary for financing, investment, and mitigation of business risks for commercialization). ● Examine the possibility of and measures to expand in other regions of the target country and other/neighboring countries. ● Examine plans for the NEDO JCM demonstration project, diffusion and expansion using private-sector JCM.
3. Study of issues and countermeasures	● In considering future commercialization and JCM project development, issues related to commercialization and dissemination strategies (business risks, identification of bottlenecks in dissemination, etc.) as well as success factors and issues to be resolved and measures to be taken for future business development (including contributions to regulations and standards in partner countries, approaches other than policies and systems, and proposals for business models linked to policy and system building).
4. Calculation of GHG emission reductions and consideration of emission reduction contributions	● To estimate the GHG emission reductions when the proposed project becomes and is implemented as the JCM project , and to study and prepare a draft JCM methodology for calculating the GHG reductions. ● To examine the contribution to GHG emission reductions in the country concerned and within other countries and regions when the proposed decarbonization technology/product, etc. is expanded (e.g., contribution to GHG reductions through the introduction of the system in the country concerned and quantification of the contribution to reductions when the system is expanded within other countries and regions). **Estimate GHG emission reductions for the proposed project level and the GHG emission reductions based on the assumption of widespread deployment of the proposed project.**
5. Coordination for commercialization through sharing proposed technologies/products, commercialization plans, issues, and countermeasures, etc. with counterparts in other countries.	● Through dialogues with partner country's government officials, etc., share the contents and progress/results of the studies in the Item 1-4, promote commercialization, and identify government officials and counterpart companies that will serve as counterparts in future JCM project development. This includes efforts to collaborate with relevant institutions and companies in the partner country, Japanese Embassy, JETRO, NEDO, JICA, and other overseas parties, etc. Effective implementation of surveys of relevant facilities in Japan and holding of briefing sessions, etc. for government officials, etc. of the counterpart country, as necessary.

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4. Research items on JCM FS

Project Idea Note

PIN refer number

All the infromation described in this document is at the pre-implement project developes.

1. Basic project information	
1.1. Date of Submission	dd/mm/yyyy
1.2. Partner country (*A host county where the planned project is located*)	
1.3. Title of the planned project (*Should be self-explanatory and clearly indicate the activity leading to GHG emissions reductions / removals*)	

The Joint Committee makes the result publicly available, including the planned project, the date of submission in the above, and the reason f objects to the planned project described in the PIN through the JCM w

2. Project participants and contact information	
2.1. Representative Japanese participant for the project and its r (*For identification of the person in charge for the project in terms of*	
Name of the entity (*Company, etc.*):	
Roles of the entity in the project:	
Address of the contact entity:	
Website of the contact entity:	
Name and position of the main contact person in the entity:	**Last name: First Position:**
E-mail of the main contact person:	
Phone number of the main contact person:	
2.2. Japanese participant(s) for the project and their roles in the (*If possible, please indicate the contact person of each entity involved*	
Name of the entity (*Company, etc.*):	
Roles of the entity in the project:	
Address of the entity:	
Website of the entity:	
Name and position of the contact person in the entity:	**Last name: First Position:**
E-mail of the contact person:	

1

戦式は JCM パートナー国と調整中のものであり最新様式は JCM ホ

Phone number of the contact person:	
2.3. Participant(s) of partner country for the project (*If possible, please indicate the contact person of each e*	
Name of the entity (*Company, etc.*):	
Roles of the entity in the project:	
Address of the entity:	
Website of the entity:	
Name and position of the contact person in the entity:	**Last name: Position:**
E-mail of the contact person:	
Phone number of the contact person:	
2.4 Relevant ministry or governmental agency of par (*If possible, please indicate the contact person*)	
Name of the entity:	
Address of the entity:	
Website of the entity:	
Name and position of the main contact person in the entity:	**Last name: Position:**
E-mail of the main contact person:	
Phone number of the main contact person:	
Is the project information already shared with the entity?	☐ Yes (*Briefly* ☐ No

3. Project information	
3.1. Summary of the planned project	
Description of the project: (*Project implementation scheme, role of each participant, etc. Insert an image of the implementation structure in section 5*)	
Location of the project	
Technologies, products, systems, services, infrastructure, or implementation of mitigation actions to be adopted for the project, and a brief description of them:	
Status and progress of the project (*Feasibility study, license application status, etc.*):	

2

(本様式は JCM パートナー国と調整中のものであり最新様式は JCM ホームページの各パートナー国ページを

3.2. Expected scale of investment	Total project costs: In project currency: In Japanese Yen: Breakdown (in project currency):
3.3. Applicable JCM methodology(ies)	☐ Existing methodology(ies) (*Please specify be* ☐ New methodology(ies) needed (*Briefly explai*
3.4. Expected GHG emission reductions / removals (unit: tCO_2/year)	tCO2/year
3.5. Expected schedule up to the commercial operations date and the project registration under the JCM	
3.6. Contribution to Partner Country's NDC (Nationally Determined Contributions)	
3.7. Contribution other than GHG emissions reductions or removals (*Financial contribution should be explained in section 4*)	

3.8. Credit allocation

Select one of the following:
☐ Credit allocation is still under discussion among project participants.
☐ Project participants propose a preliminary percentage of credit allocation as below, *condition that numbers will be decided by the Joint Committee at the time of project regi*
*In case the project expects to receive financial support from the Government of Japan, Japan determines a preliminary percentage of credit allocation.

Partner country (Government and project participants)	
Japan (Government and project participants)	
The reason for the above credit allocation:	

4. Financial contribution (*Please indicate which government support is expected; otherwise, explain in the "C*	
☐ **Financial support from the Government of Japan: Select one of the following**	**Fiscal**
☐ Financing Programme for JCM Model Project by Ministry of the Environment, Japan (MOEJ)	
☐ JCM Support Programme administered by the United Nations Industrial Development Organization (MOEJ)	
☐ F-gas Recovery and Destruction Model Project by MOEJ	
☐ Japan Fund for the JCM administered by the Asian Development Bank (MOEJ)	
☐ JCM Demonstration Project by New Energy and Industrial Technology Development Organization (Ministry of Economy Trade ad Industry, Japan)	
☐ **Other** (*Please explain how the project will be financed and what financial*	

3

(本様式は JCM パートナー国と調整中のものであり最新様式は JCM ホームページの各パートナー国ページを参照する必要がある。)

contribution or economic incentive will make the project viable.):	

5. Implementation structure
Please insert an image of the implementation structure including financial flows below:

Revision history of PIN

Version	Date	Contents revised
	dd/mm/yyyy	
	dd/mm/yyyy	
	dd/mm/yyyy	

*Project participants fill in this section when they submit a revised PIN to the Joint Committee.
*Rows may be added, as needed

4

Source: https://www.meti.go.jp/press/2022/03/20230328004/20230328004-2.pdf

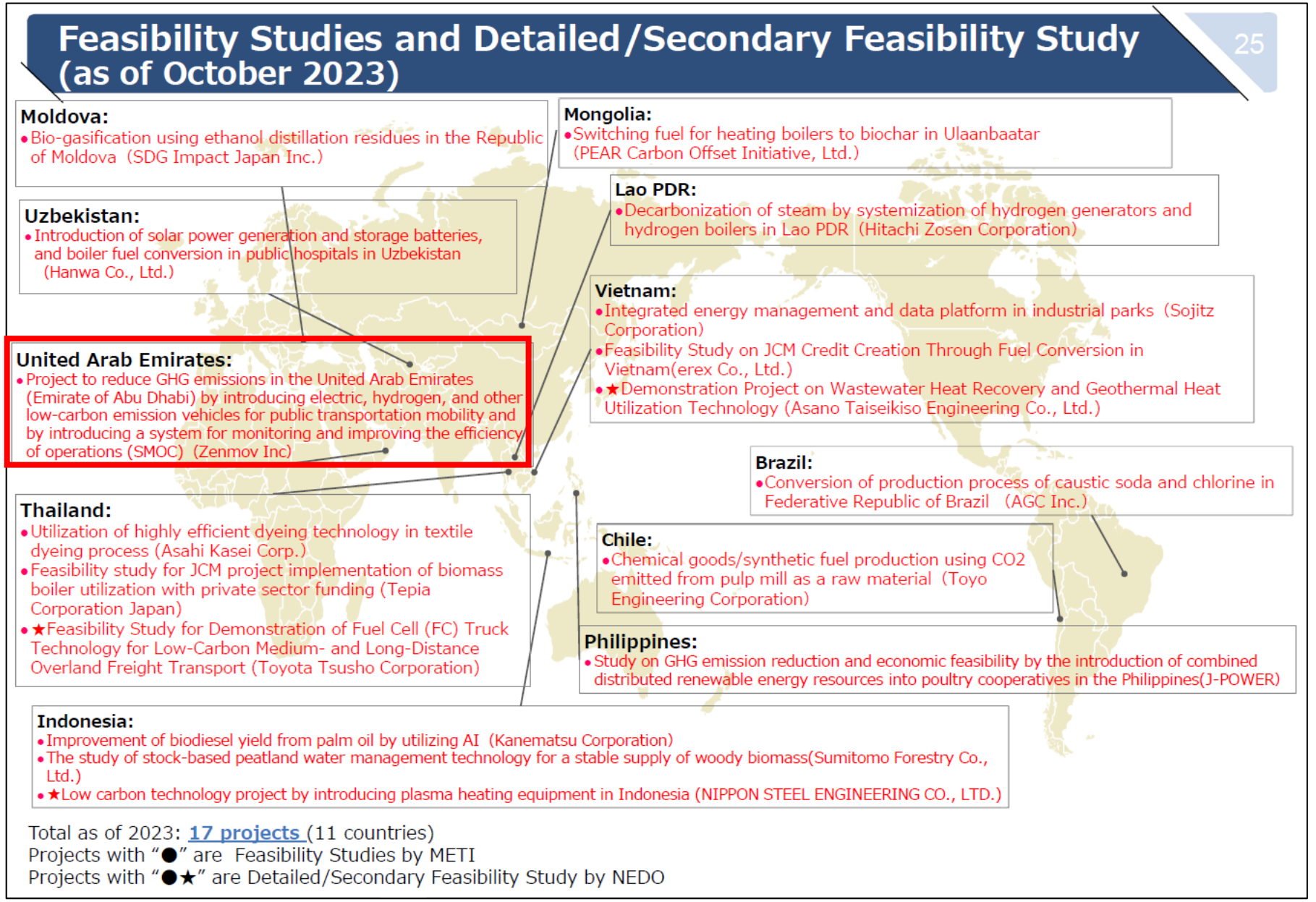
5. JCM FS budget and eligibility for apply

- Type：Entrustment from JCMFS secretariat
- FS schedule：Contract date ～ 9 February 2024
- Budget: Maximum 15 million JPY (tax excluded)/proposal = 100,000 USD/proposal　(1USD=150JPY)

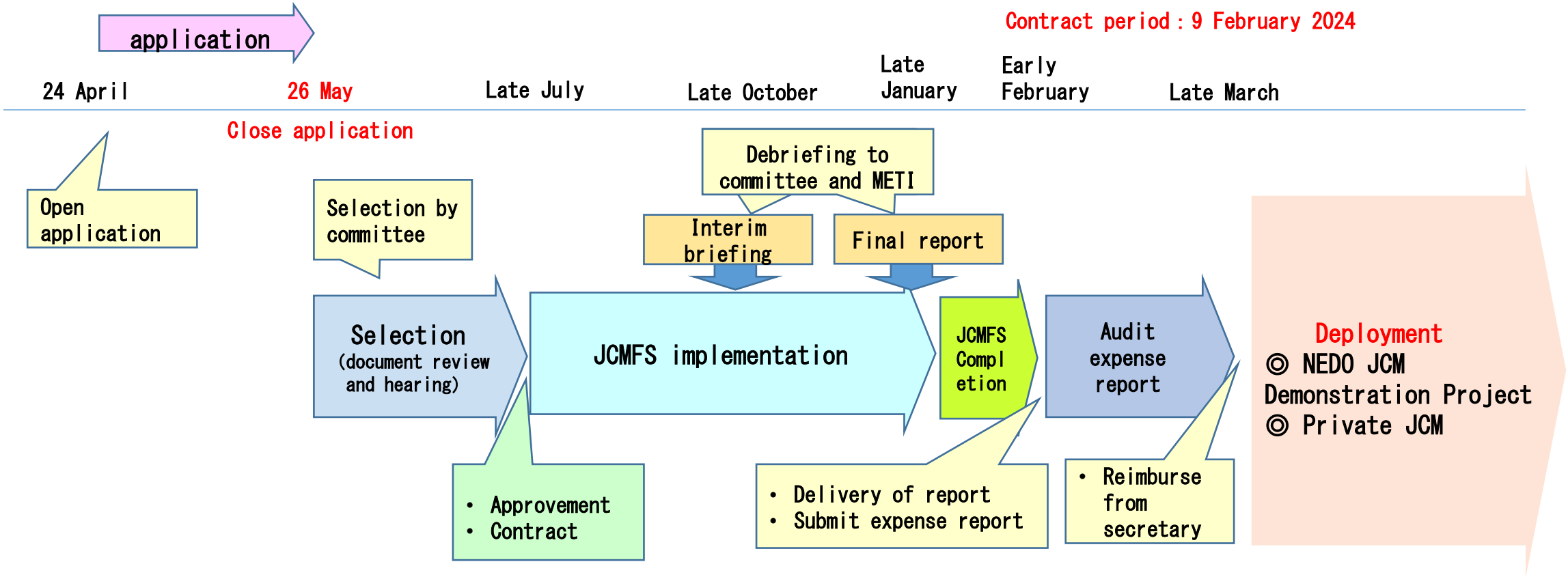
  <u>FY2023 result: 14 JCMFS project approved</u>

  ・Open call for proposal of JCMFS is expected to be continued for the next Japanese fiscal year (Apr 2024 -).
- One of eligibilities for applicants：Having a base of operation in Japan. An overseas subsidiary/branch of a Japanese company whose parent company's head office locates in Japan is also eligible.

5. JCM FS budget and eligibility for apply



6. Overall schedule in case of FY2023

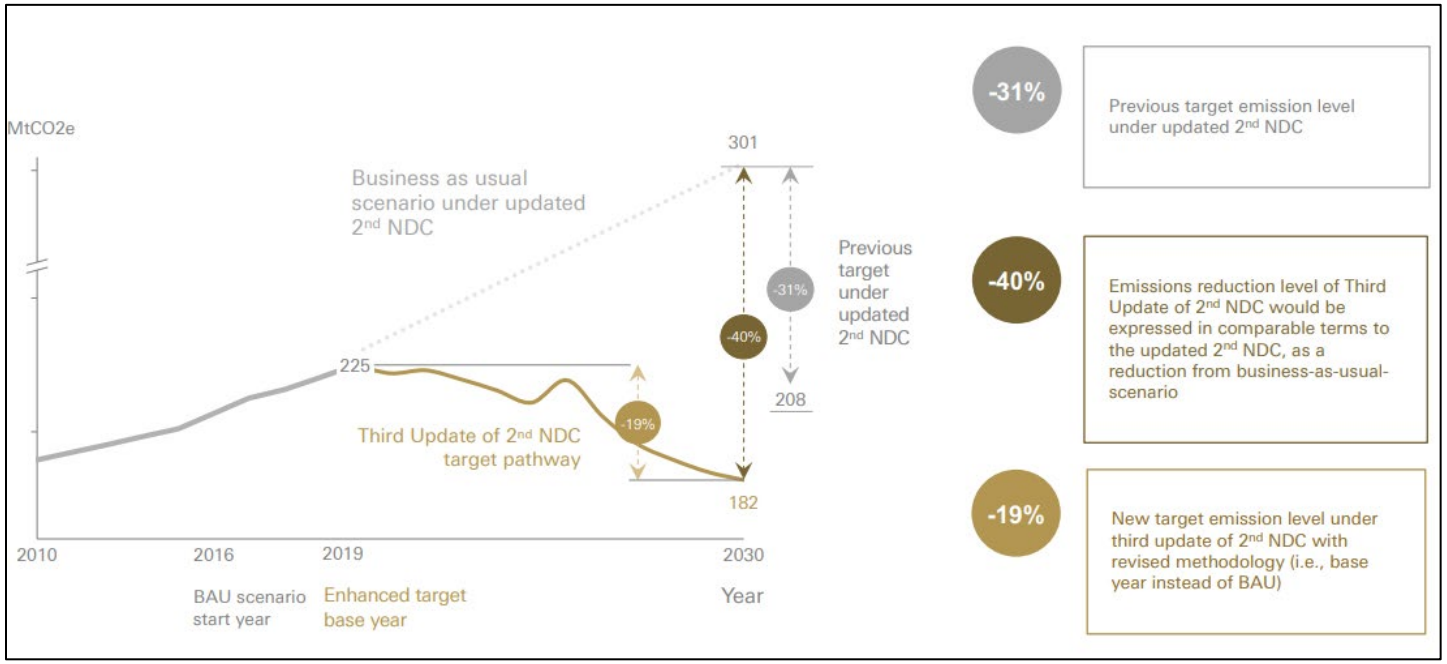


Potential areas of JCM projects in the UAE

Climate Change Policies in the UAE

- In October 2021, the UAE pledged to achieve **2050 net-zero** emissions ahead of other Gulf countries.
- In July 2023, the UAE government revised its **National Energy Strategy 2050**, released in 2017, setting targets to **triple its renewable energy generation capacity by 2030**. At the same time, it developed the **National Hydrogen Strategy**, which aims to **produce 1.4 million tons of hydrogen per year and create 2.1 million tons of domestic demand by 2031,** based on UAE's Hydrogen Leadership Roadmap (2021).
- The UAE's latest NDC (2023) strengthen the emission reduction target and aims for a 40% emission reduction from the 2030 BAU level and a 19% reduction in 2030 from the baseline 2019 emission level.

NDC Target in 2030



Source: Accelerating Action Towards a Green, Inclusive and Resilient Economy: Third Update of Second Nationally Determined Contribution for the UAE (2023)

GHG Emissions in the UAE

- GHG emissions from the **"Industry sector"**, which includes cement, steel, aluminum, and petrochemicals, account for about **46%** (103 MtCO2e) of total GHG emissions (302 MtCO2e) as of 2019 and have reduction potential.
- The NDC has indicated a target volume of reduction from 226 MtCO2e in 2019 to 182 MtCO2e in 2030. The majority of this reduction is planned to come from the **"Building sector"** (35MtCO2e), promoting energy conservation in buildings and decarbonization of the power supply sources that supply energy to buildings.
- Emissions from the **"Power and Water Generation sector"**, including cogeneration plants, is 76 MtCO2e (2019), with significant reduction potential.

Sector	2019	2030 Target	Reduction	rate
Industry	103 MtCO2e	98 MtCO2e	5 MtCO2e	-5%
Buildings	62 MtCO2e	27 MtCO2e	35 MtCO2e	-56%
Transport	42 MtCO2e	42 MtCO2e	0 MtCO2e	-5%
Waste	13 MtCO2e	14 MtCO2e	-	+8%
Agriculture	6 MtCO2e	4 MtCO2e	2 MtCO2e	-22%
Power grid emission coefficient	0.55 tCO2e /MWh	0.27 tCO2e/MWh	-	-51%
Power and Water Generation	76MtCO2e	68 MtCO2e		-11%

※Emissions from the "Power and Water Generation" sector is included in each other sector.

Source: Prepared by PACIFIC CONSULTANTS from "Accelerating Action Towards a Green, Inclusive and Resilient Economy: Third Update of Second Nationally Determined Contribution for the UAE (2023)

Main actions for Sectoral GHG Emission Reductions in NDC

Sector	Actions
Power and Water Generation **Power grid emission coefficient**	・ **Reduce grid emission factors by 51% by expanding clean energy sources by 19.8 GW by 2030**. ・ Produce potable water **using low-carbon reverse osmosis (RO) technology** to meet water demand. ・ Increase freshwater production to 100% using clean energy and waste heat by 2030.
Industry	・ By 2030, industrial production will be increased by about 100% while emission reductions will be achieved at the same time. Large emitting industries are cement, aluminum, and steel production. In particular, the **UAE DSM program aims to improve energy efficiency by 33% by 2050 for the top 50 energy consumers**. ・ Planning a **CCS package that will introduce CCS in the cement production process** and provide financial incentives. ・ **Developing a carbon registration and trading system.** ・ **Developing a National Hydrogen Strategy** to accelerate low-carbon hydrogen production for domestic demand as well as for export Abu Dhabi is also developing a low-carbon hydrogen strategy policy.
Transport	・ The UAE's goal is to reduce GHG emissions in the transportation sector **by 1% by 2030**. **Emissions per passenger kilometer traveled will be reduced by 20% and per freight ton-kilometer by 40%**. ・ Develop the **UAE National Smart Mobility Strategy, Dubai 2040 Urban Master Plan, and Abu Dhabi Surface Transportation Master Plan to expand the public transportation system and freight transportation** infrastructure. ・ Advance a policy package to promote the development of a comprehensive EV network throughout the UAE, with **all cabs in Dubai to be hybridized, electrified, and hydrogenated by 2027**.
Waste	・ More than 60% of the UAE's emissions in the waste sector come from landfills. ・ The projected 8% increase in emissions from the sector by 2030 is due to the additional electricity consumption for recycling and increased waste-to-energy use (waste-to-energy generation) that will increase GHG emissions in the short term as the UAE works to achieve an **80% recycling rate by 2031**. ・ **Reduce CH4 emissions by 30% by 2030.**
Buildings	・ The UAE population is expected to increase by 14% by 2030 compared to 2019, and **achieving -56% by 2030** is an ambitious goal. ・ The UAE DSM program for 2021 calls for a **40% reduction in energy use and a 20% reduction in water demand by 2050 through energy-efficient buildings** and cooling equipment, rooftop photovoltaics, solar water heating, and the **introduction of national building codes.**
Agriculture	・ The main sources of emissions are on-farm energy use and livestock enteric fermentation. ・ Increase agricultural and water use efficiency through the use of new technologies and artificial intelligence, while reducing the carbon intensity of electricity used. ・ Reduce GHG emissions through more efficient use of fertilizers. ・ Increase food supply chain efficiency through the use of blockchain and big data.

Source: Prepared by PACIFIC CONSULTANTS from “Accelerating Action Towards a Green, Inclusive and Resilient Economy: Third Update of Second Nationally Determined Contribution for the UAE (2023)

Examples of potential areas for JCM projects in the UAE

Prerequisite for JCM projectization:

- METI JCM FS/NEDO JCM Demonstration/MOE Model Project → Have to contribute to reduction of **energy-derived CO2 emissions reduction**.
- Private-sector JCM → Contribute to **all kinds of GHG emissions reduction** (including non-energy derived).
- **Projects that cannot quantitatively be calculated GHG emission reductions compared with reference scenario are not suitable for JCM.**

Energy-saving/conservation

- Energy conservation in and green energy supply to **buildings.**
- Energy conservation measures in the **industrial sector**, which accounts for 46% of emissions. Energy conservation measures in the **cement industry** (clinker manufacturing process, etc.), which is a particularly high emitter.。

Renewable Energy

- The Middle East is an ideal location for solar photovoltaic and solar thermal power generation (CSP).

Hydrogen / Ammonia

- Based on the National Hydrogen Strategy, UAE accelerate in increase hydrogen production and export as well as domestic demand.
- In January 2021, METI Japan signed a Memorandum of Cooperation (MoC) with ADNOC to accelerate bilateral cooperation in the areas of fuel ammonia and carbon recycling.

CCU/CCUS

- ADNOC plans to increase its CO2 capture capacity to 5 million tCO2 per year by 2030, more than six times the current capacity.
- UAE will introduce CCS in the cement production process.

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Examples of JCM projects (Registered/Preparing)

Sector	Examples	Japanese company	Estimated Emission Reduction (tCO2/y)	JCM Country	Ref
Power and Water Generation **Power grid emission coefficient**	・Introduction of Amorphous High Efficiency Transformers in Power Grid ・Introduction of 5MW Floating Solar Power System on Industrial Water Reservoir in Thailand ・48MW Offshore Wind Power Generation Project in Duyen Hai District, Tra Vinh Province	• Yuko-Keiso • TSB Bangko • Shizen Energy	• 2,109 • 2,552 • 36,597	• Lao PDR • Thailand • Vietnam	• LA004 • TH014 • Preparing
Industry	・Energy Saving for Semiconductor Factory with High Efficiency Centrifugal Chiller and Compressor ・Power Generation by Waste Heat Recovery in Cement Industry ・Energy Saving for Air conditioning in Tire Manufacturing Factory with High Efficiency Centrifugal Chiller ・Power generation by waste heat recovery in the PT Semen Indonesia (Persero) Tbk factory in Tuban ・Energy saving by optimum operation at an oil refinery ・Introduction of High-efficiency Once-through Boiler in Film Factory ・Introduction of High Efficiency Water Pumps in Da Nang City	• Sony Semiconductor Manufacturing • NTT Data Institute of Management Consulting • INABATA & CO • JFE Engineering • Yokogawa Electric • Mitsubishi Chemical • Yokohama Water	• 365 • 29,746 • 208 • 149,063 • 1,275 • 960 • 738	• Thailand • Thailand • Thailand • Indonesia • Indonesia • Indonesia • Vietnam	• TH004 • TH006 • TH007 • ID013 • ID014 • ID021 • VN012
Transport	・**Zenmov Inc., studied possibility of JCM for efficient EV public transportation in Abu Dhabi in FY2023.**	• -	• -	• -	
Waste	・Yangon Waste to Energy plant by introducing power generation and avoidance of landfill gas emissions through combustion of municipal solid waste (MSW) ・Waste to Energy Project in Bac Ninh Province	• JFE Engineering • JFE Engineering	• 2,000-8,000 • 41,804	• Myanmar • Vietnam	• MM001 • Preparing
Buildings	・Installation of Energy Saving Equipment and Solar Power System to Complex Building ・Introduction of High Efficiency Chiller and High Efficiency LED Lighting with Dimming Function to Shopping Center ・Introduction of Air Cooled Chiller to Office Building	• Yuko Keiso • Tokyu Corp • Hitachi-Johnson Controls Air Conditioning	• 1,493 • 732 • 86	• Indonesia • Vietnam • Vietnam	• Preparing • Preparing • Preparing
Agriculture	・6MW Solar Power Project Utilizing Farmland in Maule and Nuble Region	• Farmland	• 4,400	• Chile	• Preparing

Source: https://www.jcm.go.jp/ and https://gec.jp/jcm/projects/

Individual consultation is also available.

- Individual consultations (TEAMS/Zoom etc) are available to discuss your JCM FS project ideas.

- Please contact the JCM FS secretariat after the webinar.

(Please indicate your request for a consultation in the questionnaire after the webinar)

If you have a project idea that might be a candidate for JCMFS, please contact the secretariat!

■If you have a project idea that may be applicable to JCM FS, Please download the information sheet and send it to us [JCM_pckk@tk.pacific.co.jp].

- Information sheet
  - https://pckk.box.com/s/aihbocgd1h105kfje4nwl6f50yczww6m

    File : 【記入用】将来的なJCMFSに繋がる可能性のある案件候補情報, or
    [Please fill in] Project information sheet for JCMFS

Useful Links

■JCM Official Website (incl. Rules and Guidelines, Methodologies for each partner country)
- https://www.jcm.go.jp/

■About JCM
- http://carbon-markets.env.go.jp/index.html
- http://carbon-markets.env.go.jp/eng/

■Guidance for the Development of Private-Sector JCM Projects
- https://www.meti.go.jp/press/2022/03/20230328004/20230328004.html
- https://www.meti.go.jp/english/press/2023/0328_002.html

■2023 JCM-FS website for application （No English website）
- https://www.pacific.co.jp/news/2023/20230724-001119.html
- FAQ https://www.pacific.co.jp/news/upload_files/20230724_proposal_QandA.pdf

Thank you so much for
allowing us to make a presentation.

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