METI
Ministry of Economy, Trade and Industry

Overview of JCM Rules & Guidelines for CCS and CCUS in Indonesia

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Overview of the recent discussion on the CCS under the JCM in Indonesia

【Current status】

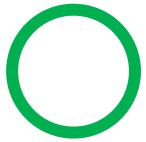
- METI conducted 3 feasibility studies to see whether CCS projects overseas can be made into JCM projects from 2020 to 2022.
- Additional rules for implementing CCS projects in the JCM were considered by domestic experts and discussed with the Indonesian side for a few times.
- In October 2024, the technical workshop on CCS under JCM was successfully held, inviting over 100 particpants. (hybrid format)
- In November 2024, the Ministry of Environment of Japan and the Ministry of Environment and Forestry of Indonesia signed a mutual recognition arrangement on JCM. https://www.env.go.jp/press/press_04057.html
- In December 2024, the guidelines for CCS/CCUS were adopted by the Joint Committee. https://www.meti.go.jp/policy/energy_environment/global_warming/jcm/id_jc10.html

【Way forward】

- To invite Japanese and indonesian companies to consider development of CCS projects under JCM (financial support for feasibility study, etc.)
- To spread a set of CCS guidelines to other countries (Malaysia, Thailand, Vietnam ,etc.)

※Please consult with us (METI JCM team) on your CCS projects: bzl-jcm@meti.go.jp

What are the JCM CCS rules and guidelines for ?



- The JCM CCS rules and guidelines provide
  - ✓ Common rules for **accounting emission reductions in addition to the general JCM rules and guidelines**.
  - ✓ Common rules for **monitoring GHG emission reductions and removals by JCM projects.**

- The JCM CCS rules and guidelines do **NOT provide**
  - Commercial arrangements
  - Details of compliance with domestic laws and regulations
  - Credit allocation

Adoption of CCS/CCUS Guidelines for Indonesia

- The guidelines for CCS/CCUS were adopted by the Joint Committee in December 2024.
- Of all the rules and guidelines, 2 documents for general, 3 documents for Project Cycle and 1 document for Third Party Entity were revised in order to address CCS as a new area of scope.

General	Project Cycle	Third Party Entity	Joint Committee
✓ Bilateral document	✓ Project Cycle Procedure (PCP) *	✓ Guidelines for Designation as a Third-Party Entity	✓ Rules of Procedures for the Joint Committee
✓ Rules of Implementation*	✓ Guidelines for Developing Proposed Methodology (GPM) **	✓ Guidelines for Validation and Verification	
✓ Glossary of Terms*	✓ Guidelines for Developing Project Design Document and Monitoring Report **		
✓ Common Specifications of the JCM Registry	✓ Guidelines for Developing Sustainable Development Contribution Plan and Report		

*Revision of the existing JCM document through insertion of the CCS specific matters
**Development of CCS specific JCM guidelines based on the existing JCM document

Overview of additional requirements for CCS Projects under the JCM（1/2）

Items added	Summary
1. Crediting Period	Added the credit period for CCS projects (the crediting period for CCS and CCUS is from the start of injection to the end of injection).
2. Participants' ability to monitor injected CO2	Added the requirement that project participants have access to the project site and data in order to carry out monitoring activities.
3. Addition of a new sectoral scope	Clarified that CCS and CCUS are included in the sectoral scope.
4. Eligible project	Clearly state that CCS and CCUS are included.
5. Net emission reduction for CCS Projects	Added "3 key concepts" to ensure net emission reductions (calculating the amount of emission reductions to be credited more conservatively than the actual reductions). 1) Establish reference emissions lower than BaU. 2) Establish project emissions higher than actual emissions. 3) Multiply emissions reduction by discount factor.

Overview of additional requirements for CCS Projects under the JCM (2/2)

Items added	Summary
6. Project Lifecycle and Methodology	Clarified that the project termination period is divided into the termination preparatory period and the post-project termination period, and the criteria for project termination are set by the methodology. Also clarified that monitoring is carried out in accordance with the laws and regulations of the host country.
7. GHG sources of CCS projects	Presented the sources and types of GHG emissions. GHG emissions from fossil fuel combustion, electricity consumption associated with project activities, and leakage from project facilities may be included. Emissions from combustion of fossil fuels produced by using EOR and EGR are not included.
8. Project termination period monitoring	Provided the criteria for project termination as well as requirements for project termination preparatory monitoring and post termination monitoring.
9. Response to risk of reversal	Project participants subtract a portion(in principle 3%) of credits from issued JCM credits as a reserve. Provided the processes to be followed in response to leakage after the completion of CO2 injection.
10. Reference documents	Referred ISO 27914, which provides recommendations for the effective storage of CO2 in underground reservoirs, and ISO 27916, which quantifies the CO2 to be stored in CO2-EOR projects, as both being international standards for CCS.

https://www.jcm.go.jp/id-jp/information/526

Reference Information on CCS/CCUS Guidelines

Additional requirements for the guideline（1/7）

1. Crediting Period

Added the following text to “B. Scope” of “Rules of Implementation:

. Each JCM project selects the crediting period which is either a fixed period of 10 years, or a renewable period of five (5) years which may be renewed twice at the maximum. The crediting period for carbon capture and storage and carbon capture, utilization and storage (hereinafter referred to as “CCS and CCUS") projects refers to a period from which the project participants of a JCM project start injection of CO_2 into a reservoir and to which the project participants terminate the injection of CO_2 collected through the JCM project.

Added the following to “3. crediting period” in “Glossary of Terms:

The period in which verified emission reductions or removals attributable to a JCM project can result in the issuance of JCM credits from that JCM project.

The crediting period is either a fixed period of 10 years or a renewable period of five (5) years which may be renewed twice at the maximum, which does not surpass the period of the JCM (RoI para.4).

The crediting period for carbon capture and storage/carbon capture, utilization and storage projects refers to a period from which the project participants of a JCM project start injection of CO_2 into a reservoir and to which the project participants terminate the injection of CO_2 collected through the JCM project.

2. Participants’ ability to monitor injected CO_2

The following was added to the “Rules of Implementation” section:

38. For CCS and CCUS projects, project participants implement monitoring in line with the methodology and the PDD of the JCM project through arrangements such as having access rights to a project site and data or contracts with access rights holders.

3. Addition of a new sectoral scope

The following was added to the “Guideline for Developing Proposed Methodology (GPM)” Annex:

16. Carbon capture and storage and carbon capture, utilization and storage

4. Eligible project

Added the following to “3.Key concepts” in “GPM”:

11. Eligible Projects are Carbon Capture and Storage and Carbon Capture, Utilization and Storage (CCS and CCUS) activities which result in associated storage of CO_2.

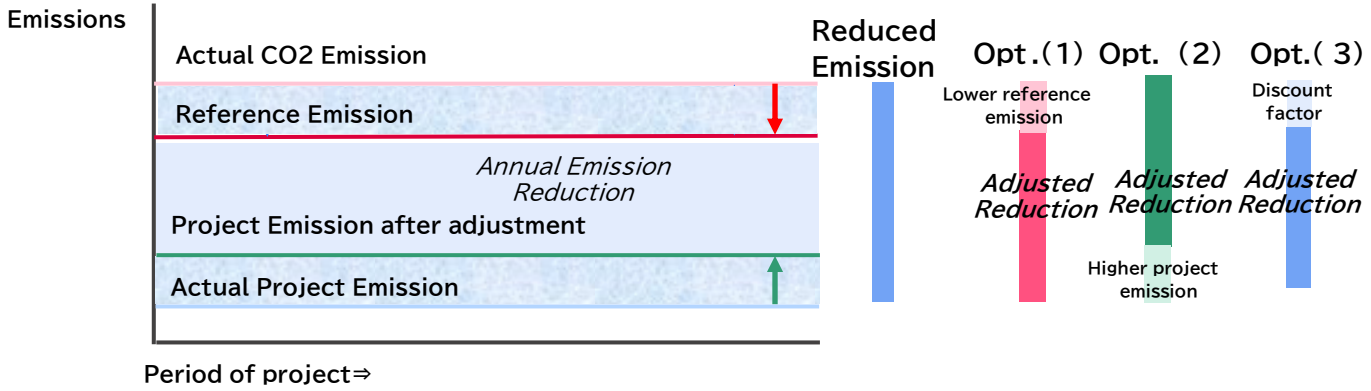
Additional requirements for the guideline（2/7）

5. Net emission reduction for CCS Projects

Added the following to "3.Key concepts" in "GPM":

9. CCS and CCUS projects under the JCM may apply at least one of the methods listed below to calculate emission reductions.
   Option (1): Establish reference emissions lower than business-as-usual (BaU):
   (1) In establishing reference emissions, functional equivalence* with project case is to be considered, and adjustment factor for reference scenario is to be applied if necessary. (Example of Option (1))
   (2) Reference emissions should be established by excluding recycle CO2 and/or non-anthropogenic CO2. (Example of Option (1))
   Option (2): Establish project emissions higher than actual emissions:
   (1) In establishing project emissions, in cases such as there is a range of emission factors available, a higher value should be selected. (Example of Option (2))
   Option (3): Multiply emissions reduction by discount factor.

* Functional equivalence refers to situations where project and reference provide the same function while delivering comparable products in quality and quantity. In case of CCS and CCUS projects, increase in energy consumption and/or product output may result in increase in quantity of GHG emissions produced at the capture site. It refers to adjustment of applied data as necessary in such cases, since using actual capture data in calculating reference emissions may result in over-estimation of emissions reduction from the CCS and CCUS project if applied data is not appropriately adjusted.



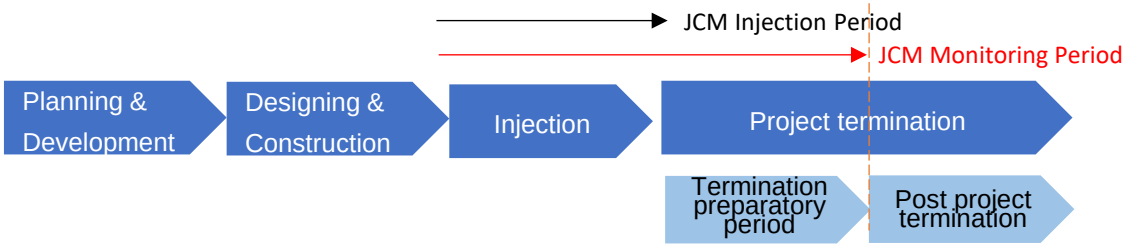
Additional requirements for the guideline (3/7)

6. Project Lifecycle and Methodology

Added the following to "3.Key concepts" in "GPM":

3.4. Project Lifecycle and Methodology for CCS and CCUS

12. In general, the CCS and CCUS project life cycle from the project planning / development, start of the project operation, completion of CO_2 injection, and to the termination of the project is shown below.
13. For each stage of the project, (1) site selection, reservoir characterization, and risk assessment at the project planning / development stage, (2) monitoring and accounting of GHG emissions reduction at the injection stage, and (3) project termination criteria and monitoring during termination preparatory period may be considered in methodologies of CCS and CCUS.
14. The project termination stage is divided into two; the termination preparatory period to which JCM project applies and the post-termination period.
15. The termination preparatory period begins after the completion of CO_2 injection and may include monitoring required in accordance with regulations or standards of the host country as well as abandonment of ground CCS and CCUS facilities related to the JCM project among CO_2 recovery, transportation, and monitoring facilities, except for some facilities which would be continued to be used after the project termination.
16. The criteria for project termination should be set by the methodology if there are no criteria in the host country.
17. Project termination refers to the termination of CO_2 injection project which is in the scope of JCM and include both projects that accompany site closure and projects that do not accompany site closure.
18. Post-project termination period begins after demonstration of compliance with the criteria for project termination and is implemented in accordance with the host country's regulations or standards outside of JCM monitoring scope.
19. Also, in case of CO_2 that are not in the scope of GHG emissions reduction under a JCM project (i.e., CO_2 transported and injected from CO_2 sources that are not part of the said JCM project) is stored using the JCM project facilities, even after the cessation of CO_2 injection under the JCM project, the project termination does not necessarily accompany injection well / site closure and/or transfer of liability to host country government

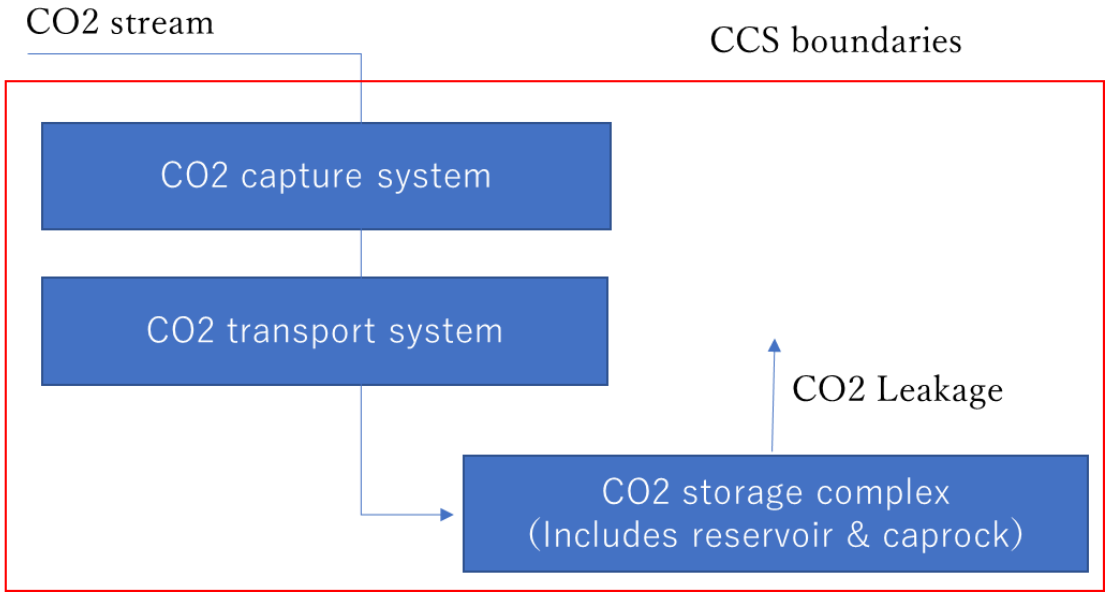


Additional requirements for the guideline (4/7)

7. GHG sources of CCS projects

Added the following to "3.Key concepts" in "GPM":

3.5. Emission sources of CCS and CCUS Projects
20. GHG sources to be considered, in principle, are sources of anthropogenic greenhouse gases (GHG) related to CO2 capture, CO2 transportation and CO2 storage.
21. These GHG sources may include GHG emissions from fossil fuel combustion and electricity consumption associated with project activities, and greenhouse gases emissions from leakage from project facilities (including wells and storage complex).
22. Emissions from combustion of fossil fuels produced by using EOR (Enhanced Oil Recovery) and EGR (Enhanced Gas Recovery) are not included.
23. GHG sources and types are indicated in the methodology.
24. The Joint Committee may update the procedure of monitoring and accounting of methane (CH4) according to the future rule development.



Additional requirements for the guideline（5/7）

8. Project termination period monitoring

Added the following to "3.Key concepts" in "GPM":

3.6. Project Termination Period Monitoring for CCS and CCUS Projects

25. Criteria for project termination:

At the project planning stage, criteria for project termination that needs to be met during the project termination preparatory period are established in the JCM methodology. In doing so, the following in relation to impacts of a JCM project may be taken into account in addition to laws and regulations of host country and region*.

(a) The project operator should demonstrate that the site meets established project objectives, including those relating to the absence of detectable leakage and significant impacts to human health, the environment, and economic resources based on laws and regulations of host country and region.

(b) The total CO2 storage complex should be understood sufficiently to assess its long-term storage capability with a high degree of confidence. Particular attention should be given to the following aspects of the storage complex and evaluation criteria should be established in a JCM methodology:

(1) Ensure effective containment of the injected CO2 for long term;

(2) Ensure environmental and human health impacts of the storage project minimized to acceptable risk for long term

26. Project termination preparatory period monitoring:

Project participants monitor during the project termination preparatory period. Required monitoring content and monitoring duration follow, in principle, laws and regulations of host country and region and are established in a JCM methodology.

27. Post termination monitoring:

The post termination monitoring is carried out in accordance with the laws and regulations of the host country or region. Project participants consent with site owner by the start of a JCM project on the handling of the period between post termination and transfer of liability taking into consideration that where project termination is not necessarily associated with sealing of injection well, site closure or procedure for transfer of liability in host country, in case CO2 not under the scope of GHG emissions reduction of a JCM project is injected and stored using the same facility as the JCM project after the completion of CO2 injection in the JCM project.

* It is to be noted the type and amount of information that can be gathered may be limited in case of continuation of non-JCM project related CO2 injection using the same facilities as a JCM project after termination of the applicable JCM project and in such cases, understanding the conditions required for project completion needs to be limited to information specifically related to the impacts of the applicable JCM project.

Additional requirements for the guideline（6/7）

9. Response to risk of reversal（1/2）

Added the following to "2.8 Addressing the risk of reversal in carbon capture and storage projects" in "Project Cycle Procedure":

2.8. Addressing the risk of reversal in carbon capture and storage and carbon capture, utilization and storage (CCS and CCUS) projects

212. Taking into consideration leakage risk, project participants of CCS and CCUS projects subtract a portion of credits from issued JCM credits as a reserve or may purchase insurance or credits from other schemes that provide equivalent assurance for supplementing JCM credits of CO2 leakage.

(a) Each project participant holds JCM credits to be reserved in a reserve account separately opened in the respective side's registry.

(b) The reserve rate, in principle, is established at three (3) % as default. Alternatively, project participants may establish a specific reserve rate in a methodology.

213. When CO2 leakage is detected, project participants cancel credits at the time of credit issuance in line with Sections 2.8.1 and 2.8.2. Any remaining JCM credits in the reserve account at the end of the monitoring period will be allocated to the project participant.

2.8.1. Injection period:

214. When leakage is detected in monitoring in the injection period, project participants account for leakage emissions as project emissions when calculating emissions reduction.

(a) Based on the calculation in (1) of the figure below, in a case where emissions reduction results in a negative figure, corresponding amounts of JCM credits are deducted from credits generated from subsequent monitoring periods.

(b) Based on the calculation in (2) of the figure, in a case where net emissions reduction results in a negative figure, corresponding amounts of JCM credits are canceled from the reserve account after verification by the TPE.

(c) If credits canceled in line with (3) of the figure are not enough to cover the leakage, corresponding amounts of JCM credits are canceled from accounts held by project participants.

(d) If credits canceled in (4) of the figure are not enough to cover the leakage, corresponding amounts of credits are canceled from credits purchased by project participants from other JCM projects or JCM credits to be compensated by insurance or other assurance schemes.

Additional requirements for the guideline（7/7）

9. Response to risk of reversal（2/2）

Add the following to "2.8 Addressing the risk of reversal in carbon capture and storage and carbon capture, utilization and storage (CCS and CCUS)" in "Project Cycle Procedure":

2.8.2. Post injection:

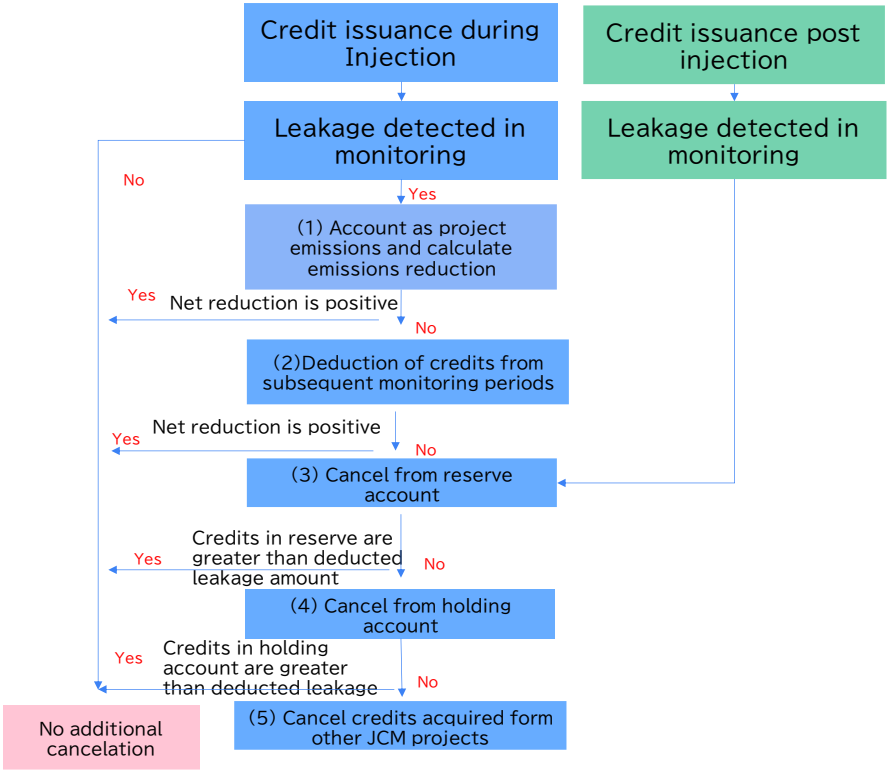
215. When leakage is detected in monitoring in the post-injection period, project participants cancel corresponding amounts of JCM credits in the reserve account after verification by a TPE as follows.

(a) If credits canceled in line with (2) of the figure below are not enough to cover the leakage, corresponding amounts of credits are canceled from accounts held by project participants.

(b) If credits canceled in (2) are not enough to cover the leakage, corresponding amounts of credits are canceled from credits purchased by project participants from other JCM projects or JCM credits to be compensated by insurance or other assurance schemes.

216. In the case of small-scale projects with a small amount of injection where monitoring during the termination period is exempted, JCM credits are issued based on emissions reduction calculated with a deduction of a certain amount of emissions reduction. The amount to be deducted is established in a methodology.

217. The Indonesian side properly adjusts all the credits reserved in reserve accounts from the national GHG inventory of the Indonesian side to prevent possible double counting.



10. Reference documents

Added the following to "3.Key concepts" in "GPM":

- In applying this guideline to CCS and CCUS projects, ISO27914 and ISO27916 are referred. In case of revision of ISO27914 and ISO27916, this guideline will also be reviewed.