Measurement, Report and Verification (MRV) of the JCM

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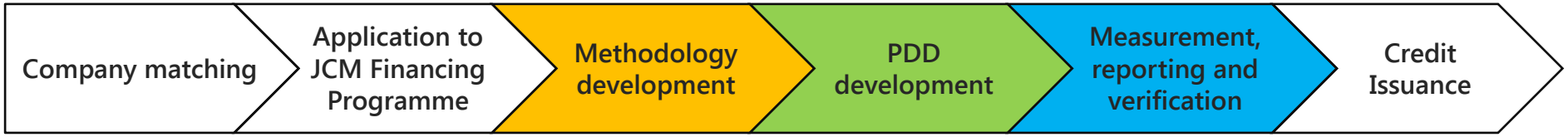
Overview of JCM MRV support



Support By IGES

Methodology Development:

- Developing draft methodology
- Coordination with both sides' governments to submit necessary documents
- Explanation to the JCM partner countries for further understandings on the proposed methodologies

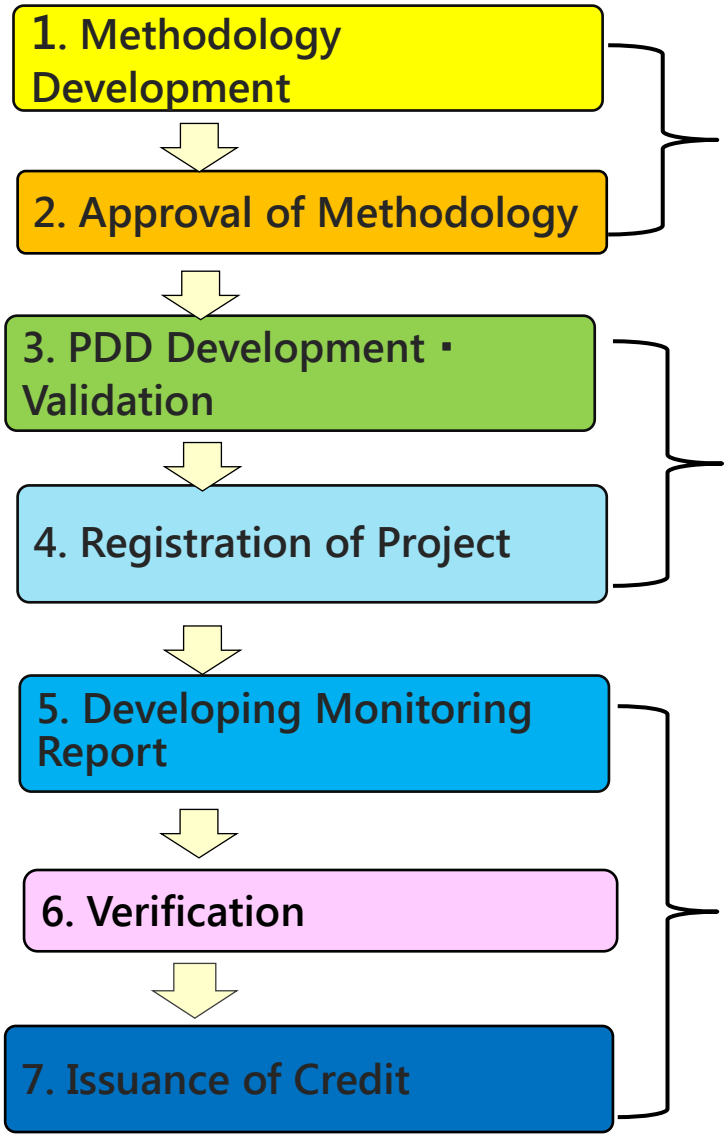
PDD (Project Design Document) Development:

- Developing draft PDDs
- Coordination with project participants, TPEs and both sides' governments to submit necessary documents for each procedural step

Monitoring report:

- Developing draft monitoring report
- Coordination with project participants, TPEs and both sides' governments to submit necessary documents for each procedural step

Responsibility of JCM project participants



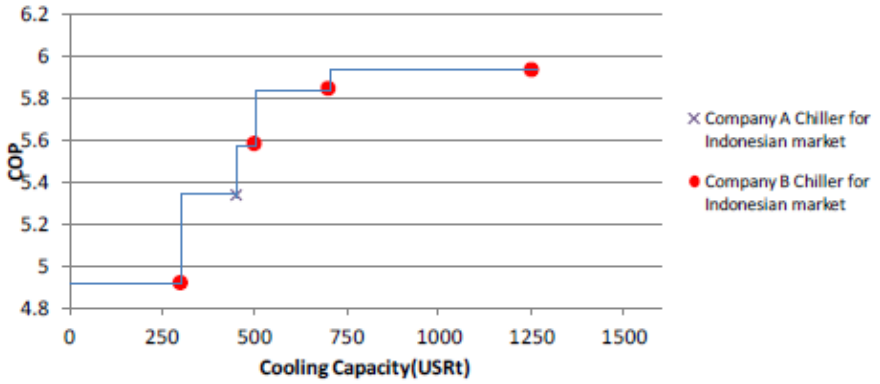
- Collecting data for methodology development

- PDD Development
- Organization of Local Stakeholder Consultation (LSC)
- Signature of MoC (Modalities of Communication)

- Monitor data
- Verification
- Allocation of issued credit
- Open an account in the registry

Collecting data for methodology development

- Setting default value is a key point in the development of JCM methodology. It is also important to reduce monitoring burdens for project participants.
- For example, it is very helpful to collect information and catalogue related to technology which will be similar to a proposed project.
- Fundamental approach is to develop JCM methodology by using only monitoring parameter which will be monitored anyway in the implementation of the project.



Source : Based on the manufacturer's information, Indonesian power specification etc., the above figure was prepared.

Figure 1 : COP Values of Candidate Reference Chillers

- COP values by cooling capacity were collected through investigation. The maximum value of collected COP values was adopted for reference COP.

（Indonesia : Chiller Project）

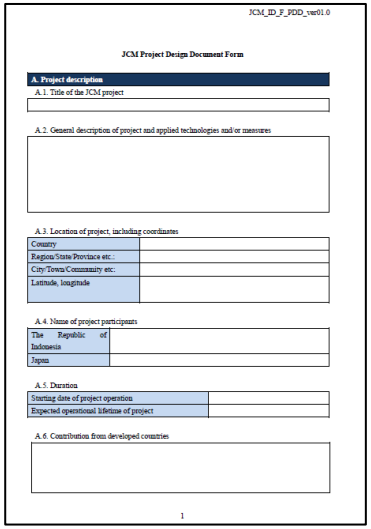
Source : JCM approved methodology ID_AM002 version2 additional information

PDD Development

- Emission reductions are calculated by spreadsheet automatically.
- Main point in the PDD development is that the result of LSC should be explained in the form of PDD.
  - ✓ The objective of LSC is to explain a proposed project to relevant stakeholders in the JCM partner country.
  - ✓ The scheme of the JCM is not necessarily explained in the LSC.
- Since PDD form is simplified, PDD can be developed for short term except for LSC information.

Necessary information for PDD

1) Overview of project & technology
2) Location of project
3) Starting date of project operation
4) Emission reduction
5) Monitoring point and structure
6) Result of LSC
7) EIA if applicable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JCM Project Design Document Form

A. Project description

A.1. Title of the JCM project

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

A.3. Location of project, including coordinates

Country	
Region/State/Province etc.:	
City/Town/Community etc:	
Latitude, longitude	

A.4. Name of project participants

The Republic of Indonesia	
Japan	

A.5. Duration

Starting date of project operation	
Expected operational lifetime of project	

A.6. Contribution from developed countries

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Monitoring Plan Sheet [Input Sheet] [Attachment to Project Design Document]

Table 1: Parameters to be monitored *ex post*

(a) Monitoring point No.	(b) Parameters	(c) Description of data	(d) Estimated Values	(e) Units	(f) Monitoring option	(g) Source of data	(h) Measurement methods and procedures	(i) Monitoring frequency	(j) Other comments
(1)	$EG_{PJ,p}$	Total quantity of the electricity generated in the project during the period *p*	0.00	MWh/*p*	Option C	Measured data	The AC output of the inverters is measured to determine the amount of net electricity generation by the solar PV system. The reading is taken from an electricity meter or the inverters. The reading is taken manually or electronically using a data logger. The electricity meter is certified by an entity accredited under international/national standards. The electricity meter is replaced or tested for accuracy at an interval following the regulations in the country in which the electricity meter is commonly used or according to the manufacturer's recommendation. The electricity meter is calibrated or replaced when it fails to pass the test.	Monthly recording	N/A

Table 2: Project-specific parameters to be fixed *ex ante*

(a) Parameters	(b) Description of data	(c) Estimated Values	(d) Units	(e) Source of data	(f) Other comments
EF_{elec}	Reference CO_2 emission factor of grid and/or captive electricity	0.319	tCO_2/MWh	The default emission factor is derived from the result of the survey on the generation efficiency of major natural gas-fired power plants in Thailand. The default value should be revised if necessary from survey result which is conducted by the JC or project participants.	N/A

Table3: *Ex-ante* estimation of CO_2 emission reductions

CO_2 emission reductions	Units
	tCO_2/p

[Monitoring option]

Option A	Based on public data which is measured by entities other than the project participants (Data used: publicly recognized data such as statistical data and specifications)
Option B	Based on the amount of transaction which is measured directly using measuring equipments (Data used: commercial evidence such as invoices)
Option C	Based on the actual measurement using measuring equipments (Data used: measured values)

PDD Form and Spreadsheet

Local Stakeholder Consultation (LSC)

- It is important to communicate with project participants (partner country) as well as governments (partner country).
- Early preparation is necessary because it will take some time for coordination. Project participants have to identify stakeholders who participate in the LSC in advance.

Photo: LSC in the JCM project (ID005）

Necessary action for LSC by Project Participants

1. Selection of potential participants
2. Coordination to decide date and venue
3. Preparation of explanation material

Example of LCS's participants
- Project Participants
- Local Government
- Regional of chamber and commerce
- JCM secretariat

The following record should be prepared in the validation.
- Explanation material of LSC
- Minutes of meetings (prepared by English)

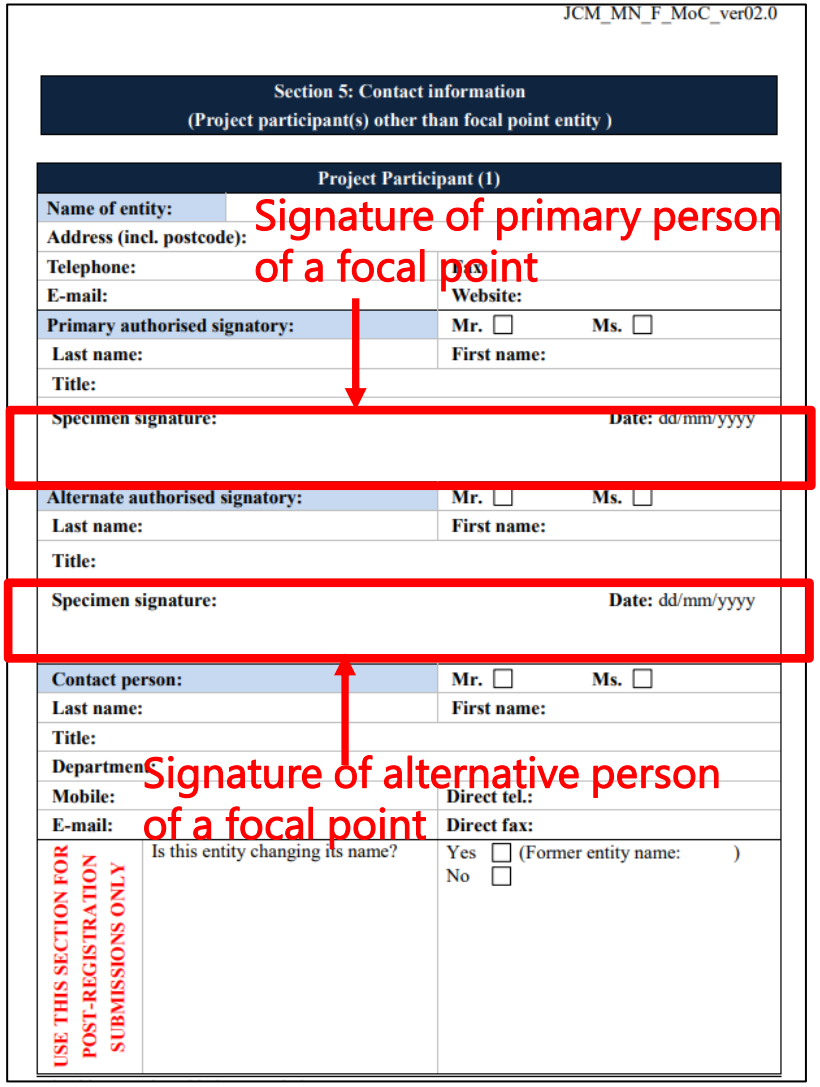
Note: In particular, comments from participants

※ It is recommended that participant's list with signatures and photo of LSC should be recorded for validation. (Not mandatory)

Signature of MoC

What is MoC? : Modalities of Communication State Form

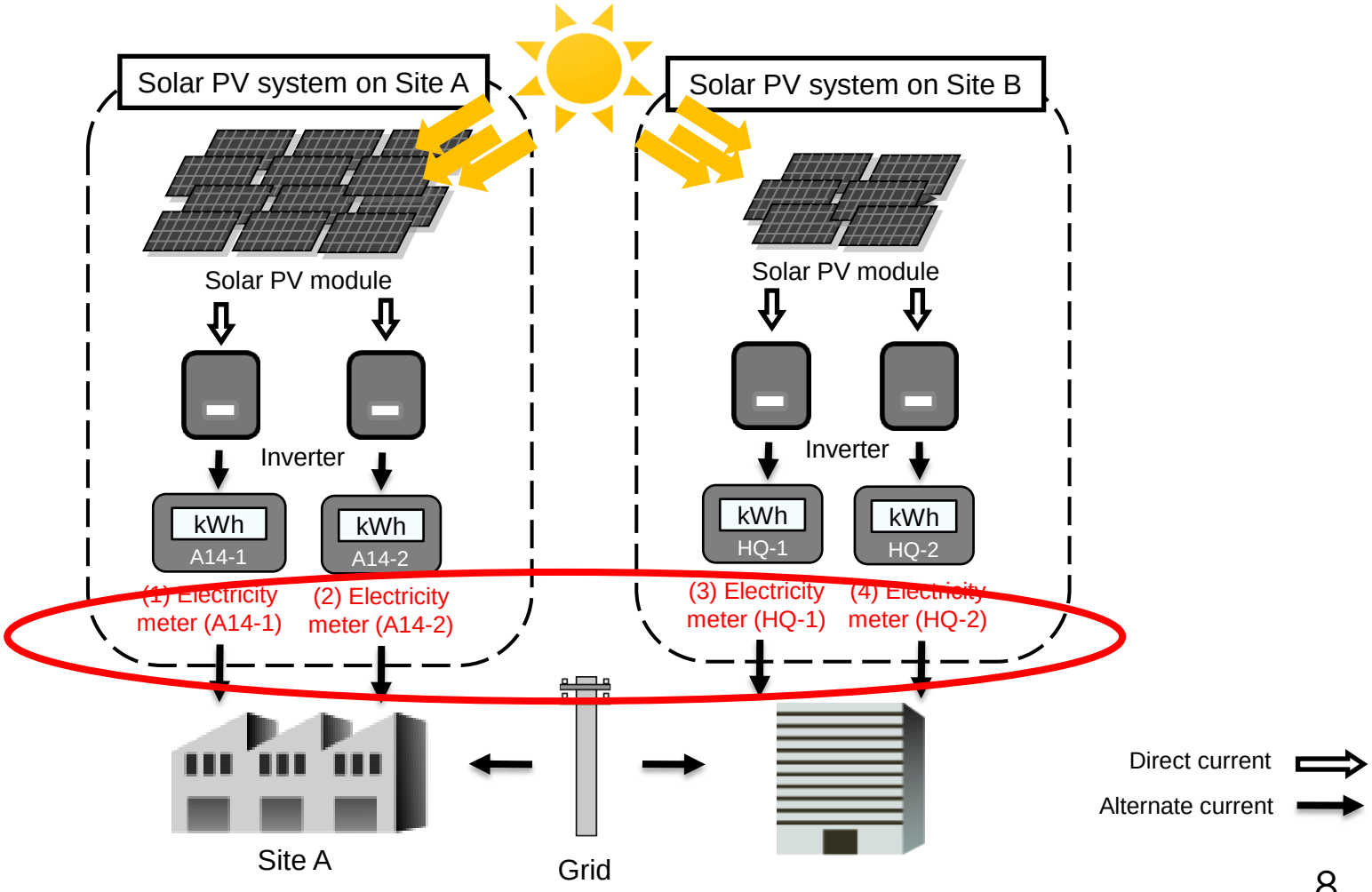
- MoC is a form to designate a focal point of a project participant in order to communicate the JCM secretariat and JC.
- It may take time to prepare MoC because the signature of focal point (primary and alternate persons) is necessary in the form.
- It is also needed to prepare the signature of a project participant (host country).



Source : JCM Modalities of Communication Statement Form version2.0 （Japan-Mongolia)

Monitoring Parameter: MN_AM003

Monitoring parameter is only one : the quantity of the electricity generated by the project solar PV system(s).



Promotion of SD under the JCM in Mongolia

SDCP: Sustainable Development Contribution Plan

SDCP sets out a plan of the JCM project to contribute to SD during **registration stage**.

- 8 items
  1) Policy Alignment
  2) Environmental Impact Assessment
  3) Pollution Control
  4) Safety and health
  5) Natural Environment & biodiversity
  6) Economy
  7) Social Environment and Community Participation
  8) Technology
- 22 Yes/No questions to identify potential of negative impact
- If any potential negative impact of the project on sustainable development is identified, appropriate action plans are described.

SDCR: Sustainable Development Contribution Report

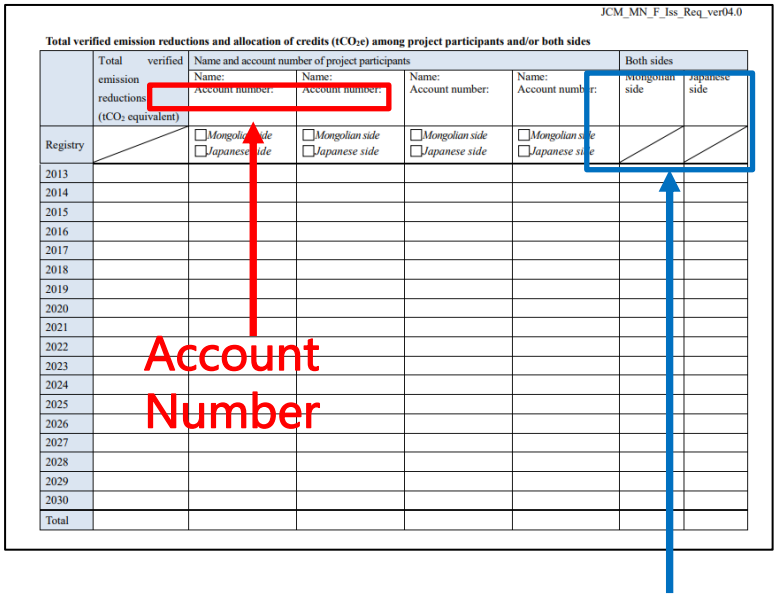
SDCR sets out the achievement of SDCP implementation for a particular **monitoring period**, based on **ex-post** evaluation.

- 8 items:
  1) Policy Alignment
  2) Environmental Impact Assessment
  3) Pollution Control
  4) Safety and health
  5) Natural Environment & biodiversity
  6) Economy
  7) Social Environment and Community Participation
  8) Technology
- 22 checklist for Identified/Not Identified negative impacts
- If any negative impact of the project on sustainable development is identified, corrective action plans are described.

17 checklist are set to check the contribution to Sustainable Development Goals (SDGs).

Allocation of issued credits

- Allocation of credits is decided by project participants between Japan and Mongolia.
- Since Mongolian government will acquire the part of credits, it is recommend the coordination between PP depending on their contribution is helpful for project participants.
- The project supported by the JCM financial programme is required to provide more than 50% of the issued credits to Japanese government.
- It is important to coordinate among project participants about the allocation ratio in advance. The account number of project participants is necessary to be filled in the JCM credit issuance form.
- Opening the account of the credit among both countries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Total verified emission reductions and allocation of credits (tCO_2e) among project participants and/or both sides

	Total verified emission reductions (tCO_2 equivalent)	Name and account number of project participants				Both sides	
		Name: Account number:	Name: Account number:	Name: Account number:	Name: Account number:	Mongolian side	Japanese side
Registry		☐Mongolian side ☐Japanese side	☐Mongolian side ☐Japanese side	☐Mongolian side ☐Japanese side	☐Mongolian side ☐Japanese side		
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
Total							

Account Number

Amount of allocation credit for government

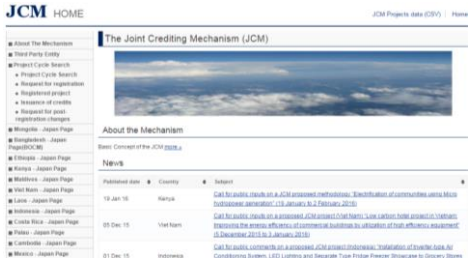
Source：JCM Credit Issuance Form version4.0 (Japan- Mongolia)

For further information

Official JCM Webpage

https://www.jcm.go.jp/

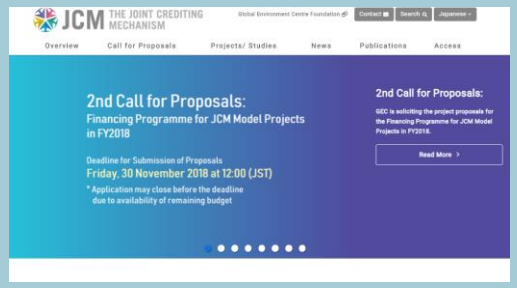
Content: rules and guidelines, JCM methodology, projects



GEC website

http://gec.jp/jcm/

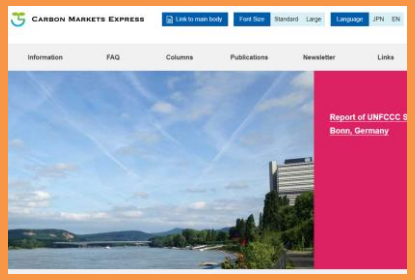
Content: call for proposals, financial and project development, feasibility study, JCM booklet



Carbon Markets Express

https://www.carbon-markets.go.jp/eng/

Content: recent development of the JCM



IGES JCM Database

https://pub.iges.or.jp/pub/iges-joint-crediting-mechanism-jcm-database

Content: details of methodologies, projects, feasibility studies

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