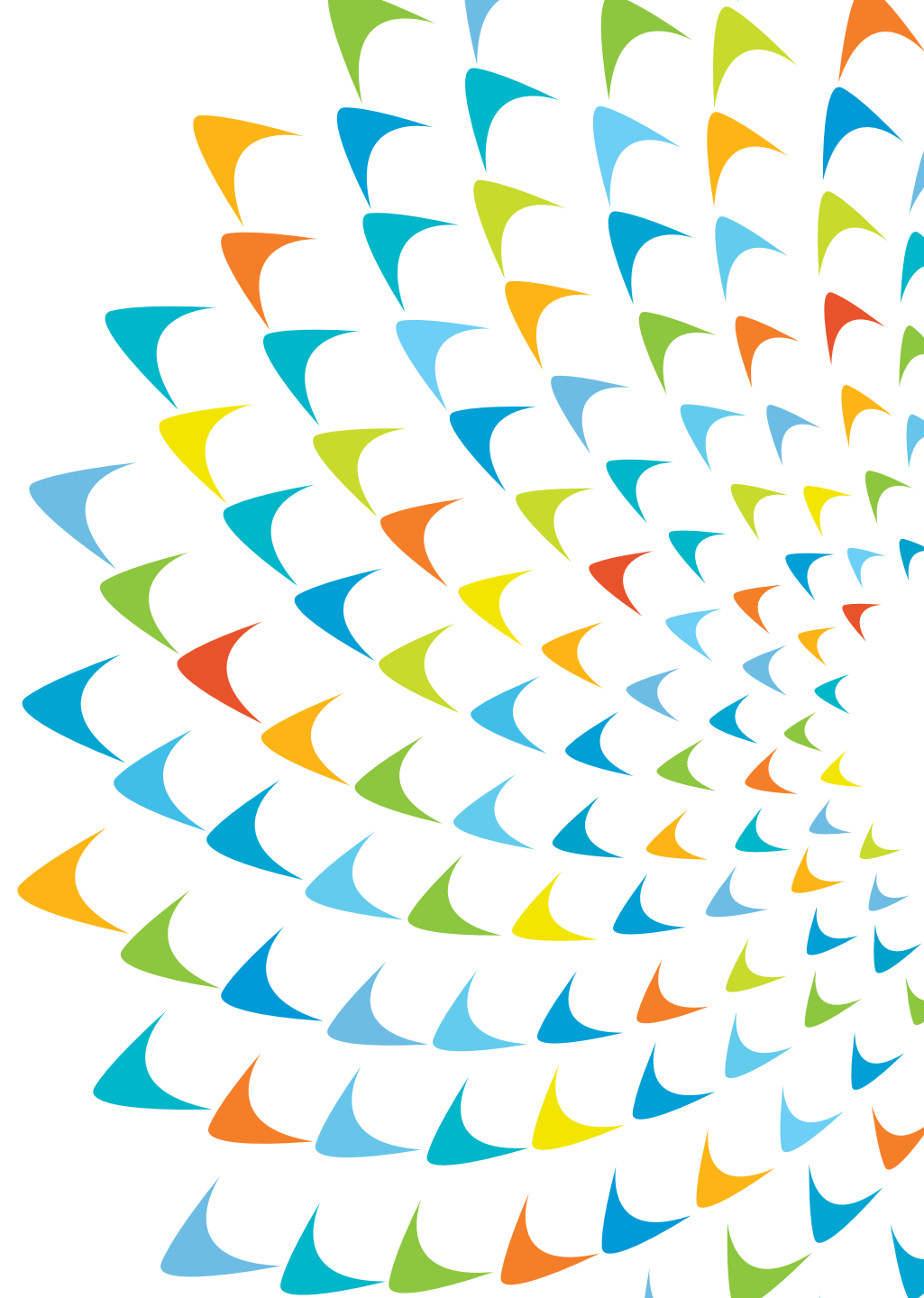




JFJCM

Japan Fund For The Joint Crediting Mechanism

November 2024





ADB's Climate Change Strategy

Strategy 2030 sets ADB's course on how best to respond to Asia and Pacific's changing needs



Addressing remaining poverty and reducing inequalities



Accelerating progress in gender equality



Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability



Making cities more livable



Promoting rural development and food security



Strengthening governance and institutional capacity



Fostering regional cooperation and integration

➔ Committed to mobilizing **\$100 billion in climate finance** cumulatively from 2019 to 2030; **75% of committed operations** to support climate change mitigation and adaptation by 2030 (October 2021)

➔ Updated ADB's Capital Adequacy Framework (CAF) to expand the bank's annual new commitments capacity to more than \$36 billion to unlock \$100 billion in new funding capacity over the next decade (September 2023)



ADB's Carbon Market Program

Mobilizing carbon finance for incentivizing investments in low-carbon technologies

Future Carbon Fund

- \$115 million Trust Fund to purchase post-2012 CERs
- Commenced operations in 2009
- Funding from 4 Sovereign and 2 private sector entities in Asia and Europe
- Providing \$53.7 million worth of carbon finance to 33 GHG mitigation projects
- Purchased 8.76 million post-2012 CERs from projects hosted in 10 DMCs
- Supports 1.1GW renewable energy projects
- Closed in 2023

JFJCM

- Commenced in June 2014
- Provides grants for advanced low-carbon technologies in ADB-financed and administered projects utilizing the Joint Crediting Mechanism initiated by Japan
- **\$137.30 million** contributed by the Government of Japan
- Supporting eight mitigation activities in **Indonesia, Maldives, Bangladesh, Mongolia and Palau** allocating \$52.68 million
- Supporting three TAs to prepare projects to be financed by JFJCM and build capacity of DMCs, allocating \$4 million.

Article 6 Support Facility

- Established in 2018
- Provides technical, capacity building, and policy development support to enhance DMC's preparedness to participate in new carbon markets envisaged under the framework of Article 6
- **\$7.776 million** facility funded by ADB and the governments of Germany and Sweden
- Supports **Armenia, Georgia, Indonesia, Mongolia, Pakistan, Philippines, Thailand and Viet Nam.**
- These countries are at different stages of readiness in operationalizing Article 6, and A6SF has been supporting them in line with their national circumstances and priorities.

Technical Support Facility

- Established in 2006 and implemented through a series of 6 TA projects, with a cumulative amount of \$13.20 million
- Funded by the governments of Austria, Finland, Japan, Luxembourg, Republic of Korea, Spain, and Switzerland
- Support DMCs in enhancing the financial viability of mitigation actions through carbon markets
- Provides technical and capacity building support for DMCs to pursue, international, bilateral and domestic carbon markets
- Currently promoting life cycle management of fluorocarbons in **Maldives, Mongolia, Philippines and Viet Nam.**

CACF

- **New first-of-its-kind carbon fund** to mobilize carbon finance to purchase carbon credits under Article 6 of the Paris Agreement
- **\$100 million plus*** to support DMCs in achieving NDC commitments cost effectively and raising ambition over time
- Will support a diverse range of **transformative actions** including projects, programs, and scaled-up activities such as sectoral and policy interventions
- ADB has signed a Contribution Agreement with the Swedish Energy Agency for their contribution of 300 million Swedish Krona (approx. \$27m) to the fund.
- Commenced Operations in 01 January, 2024

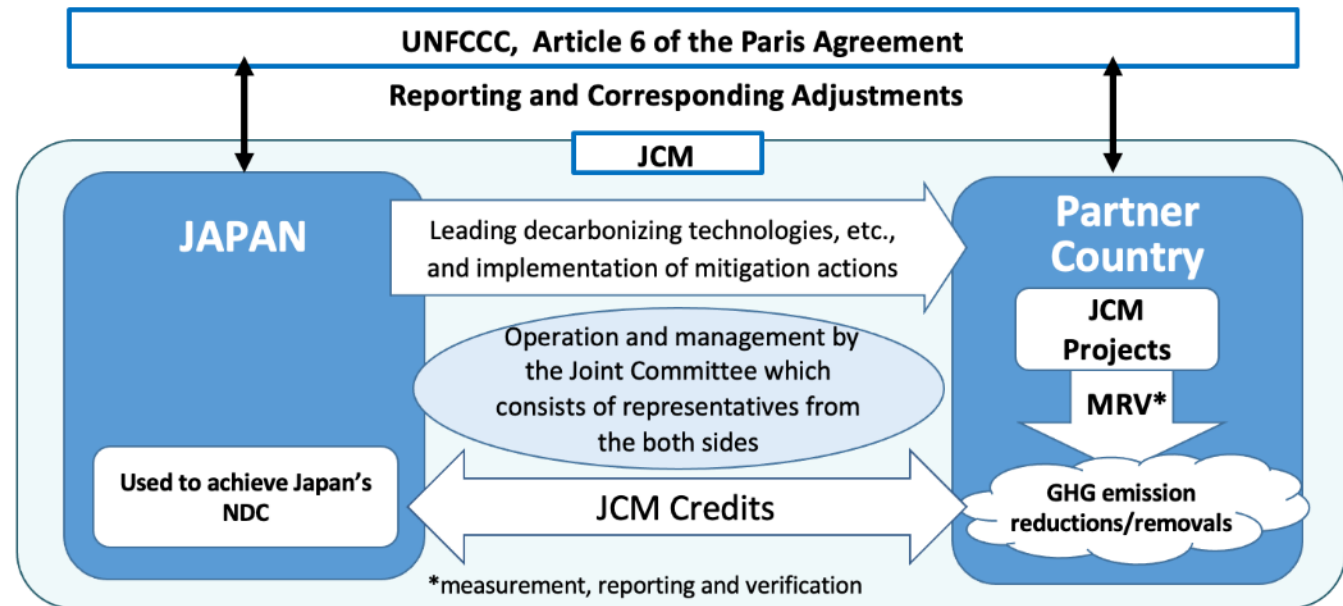


Japan Fund for the Joint Crediting Mechanism

- Established in June 2014 as one of ADB's trust funds
- Contribution by Government of Japan: **\$137.30M** (2014-2024)
- Provides **financial incentives (grant)** for adoption of **advanced low-carbon technologies** in **ADB-financed projects** that use the Joint Crediting Mechanism (JCM)*
- Both **sovereign** and **nonsovereign** projects are eligible

*Concept of the JCM

- **Project-based bilateral offset crediting mechanism** managed by Japan and partner countries
- Facilitates the diffusion of **low-carbon technologies** that lead to GHG emission reductions that are **measurable, reportable & verifiable**
- A forerunner to cooperative approaches under **Article 6 of the Paris Agreement**.
- Carbon credits from JCM projects will be shared among the countries and **used to achieve their emission reduction targets** while ensuring the avoidance of double counting through corresponding adjustment.





JFJCM Eligibility

Eligible Country

- All ADB developing member countries that **have signed bilateral agreements on the JCM** with the Government of Japan (18 out of 29 JCM partner countries).
- Azerbaijan, Bangladesh, Cambodia, Georgia, Indonesia, Kazakhstan, Kyrgyz Republic, Laos, Maldives, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Sri Lanka, Thailand, Uzbekistan, and Viet Nam (as of Oct 2024).

Eligible Project

- Investment project financed by ADB or ADB administered funds.
 - ADB technical assistance for developing JFJCM pipeline projects.
- * Can be used for additional financing to ongoing ADB project.

Eligible Technology

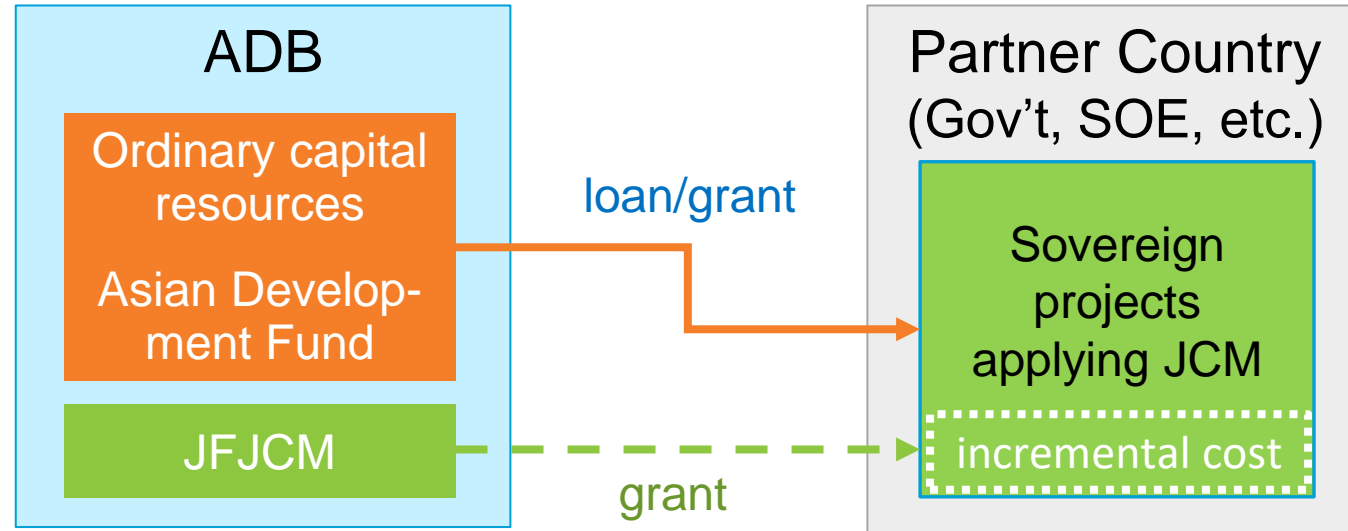
- **Advanced low carbon technologies** that reduce greenhouse gas (GHG) emission including CO₂ from energy source.
- The technologies must have a **proven implementation and operation record** of its technical effectiveness.



JFJCM Support Schemes

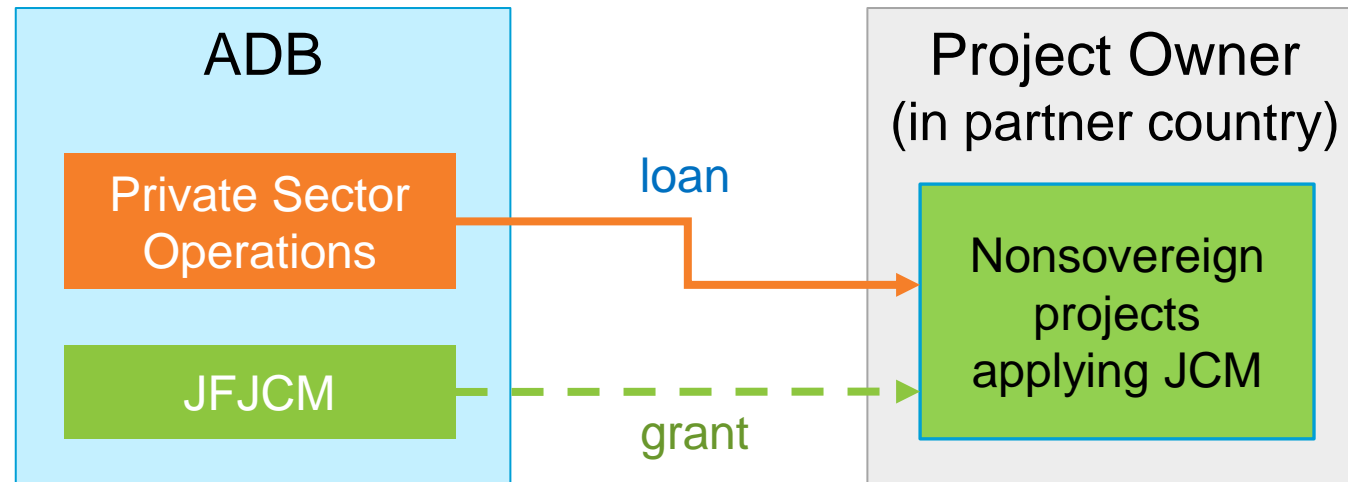
For Sovereign Project

- JFJCM provides grant for **incremental cost** of advanced low-carbon technologies
- Maximum amount of grant:
 - 10% of total project cost (capped to \$10 million)
 - \$5 million if the project cost < \$50 million



For Nonsovereign project

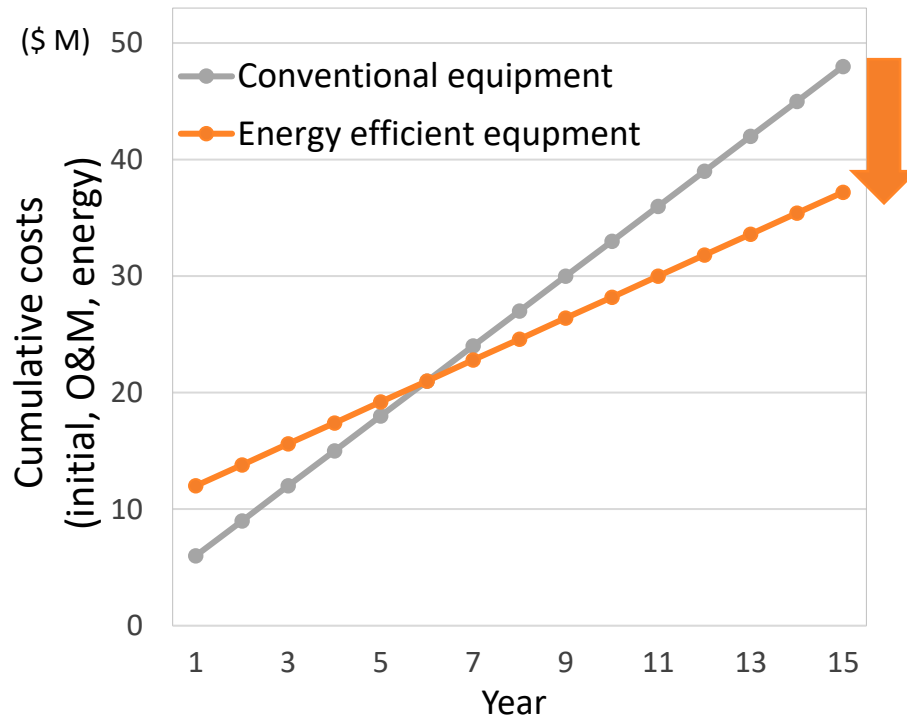
- On top of the ADB loan, JFJCM provides grant by milestones to support deployment of advanced low-carbon technologies
- Maximum amount of grant:
10% of total project cost (capped to \$10 million)





Requirements for procurement (Sovereign)

- All procurement for the JFJCM subcomponent will be carried out in accordance with ADB's Procurement Policy (2017).
- **International competitive bidding** is required in principle.
- Technical specifications, evaluation and qualification criteria for procurement of the JFJCM subcomponents will be included in the JFJCM proposal. After approval, the procurement shall be in line with what is approved in the JFJCM proposal.
- For JFJCM subcomponents, price adjustment methodologies to account for the **life cycle cost (LCC)** shall be used in financial evaluation of the bids.



LCC
Energy Efficient Equipment < Conventional Equipment



JFJCM support for nonsovereign investment projects

- The grant will be documented in a grant agreement between ADB and the borrower (as grant recipient).
- JFJCM can be used to finance project costs in relation to planning, design, financing, construction, commissioning and completion of projects that deploy advanced low carbon technologies for nonsovereign investment projects, in accordance with ADB's nonsovereign lending policies and procedures.
- The grant amount will be committed and disbursed in USD, regardless of the currency of the ADB loan.
- Private Sector Operations Department (PSOD) and the fund secretariat, in consultation with clients, will prepare a grant disbursement schedule with milestones. For example:
 1. achievement of critical phases during construction of the project;
 2. completion of commissioning of the project;
 3. the first JCM credit issuance; and
 4. continued operation of the project for three years after the first JCM credit issuance.
- PSOD, with support from the fund secretariat, will supervise the JFJCM-supported projects once the grant is approved by the GoJ, including the implementation of the JCM Requirements (e.g. monitoring and reporting of GHG emission reductions to ADB at least once a year).
- The grant will be conditional, and may become repayable upon the recipient's noncompliance with the JCM Requirements.



Other Requirements of the JFJCM support

➤ Environment and Social Impact

- The project should benefit recipient DMCs through:
 - a reduction of environmental pollution, including air or water pollution, solid waste treatment, or conservation of natural resources; and/or
 - other social economic benefits, including increased job creation opportunities, better access to basic infrastructure, and gender equality.

➤ Cost effectiveness*

- Cost of reducing 1tCO₂e ≤ \$40

* grant amount / (annual GHG emission reduction x project period)

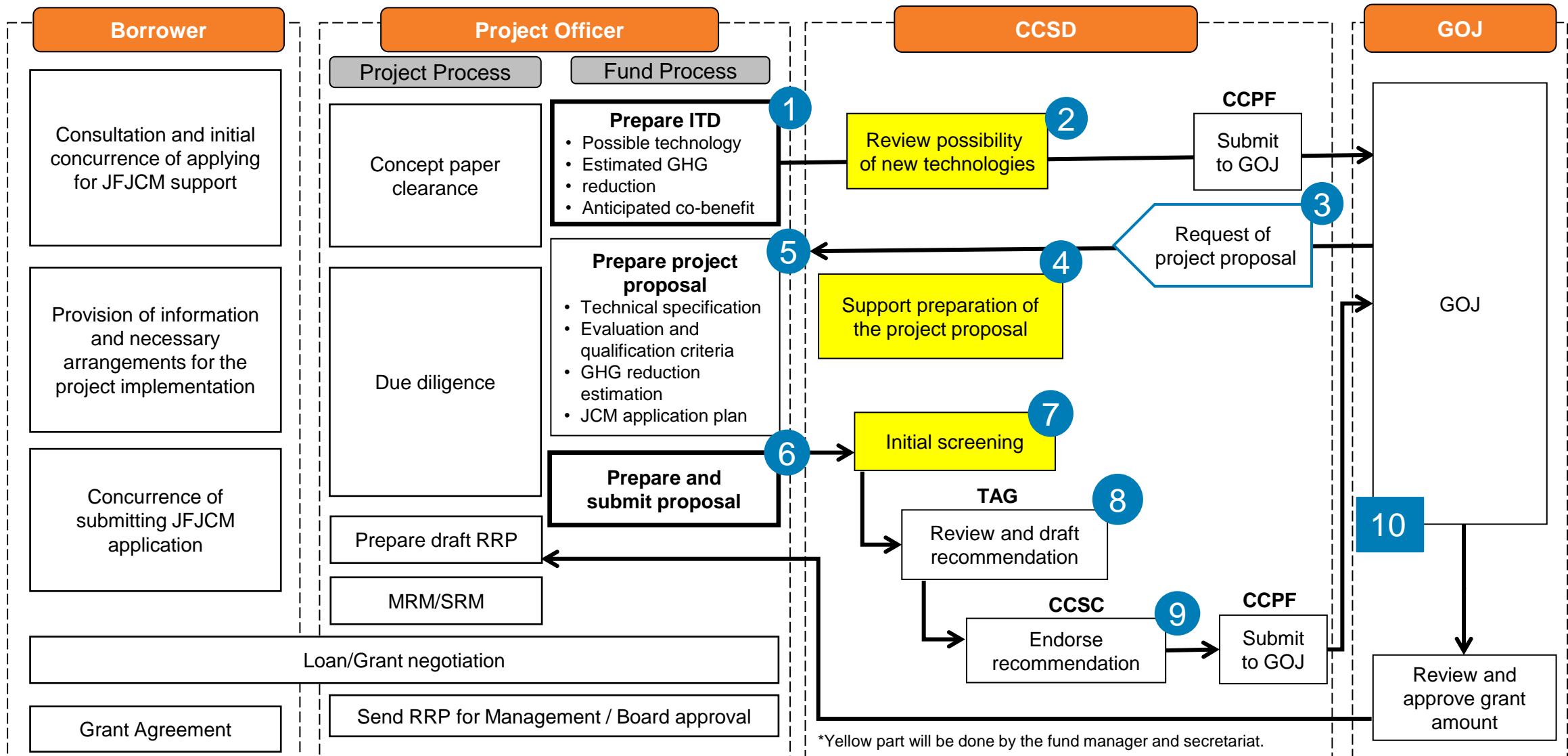
This sets a ceiling of the grant amount.

➤ Others

- The JFJCM subcomponents cannot apply for other international carbon market mechanisms.



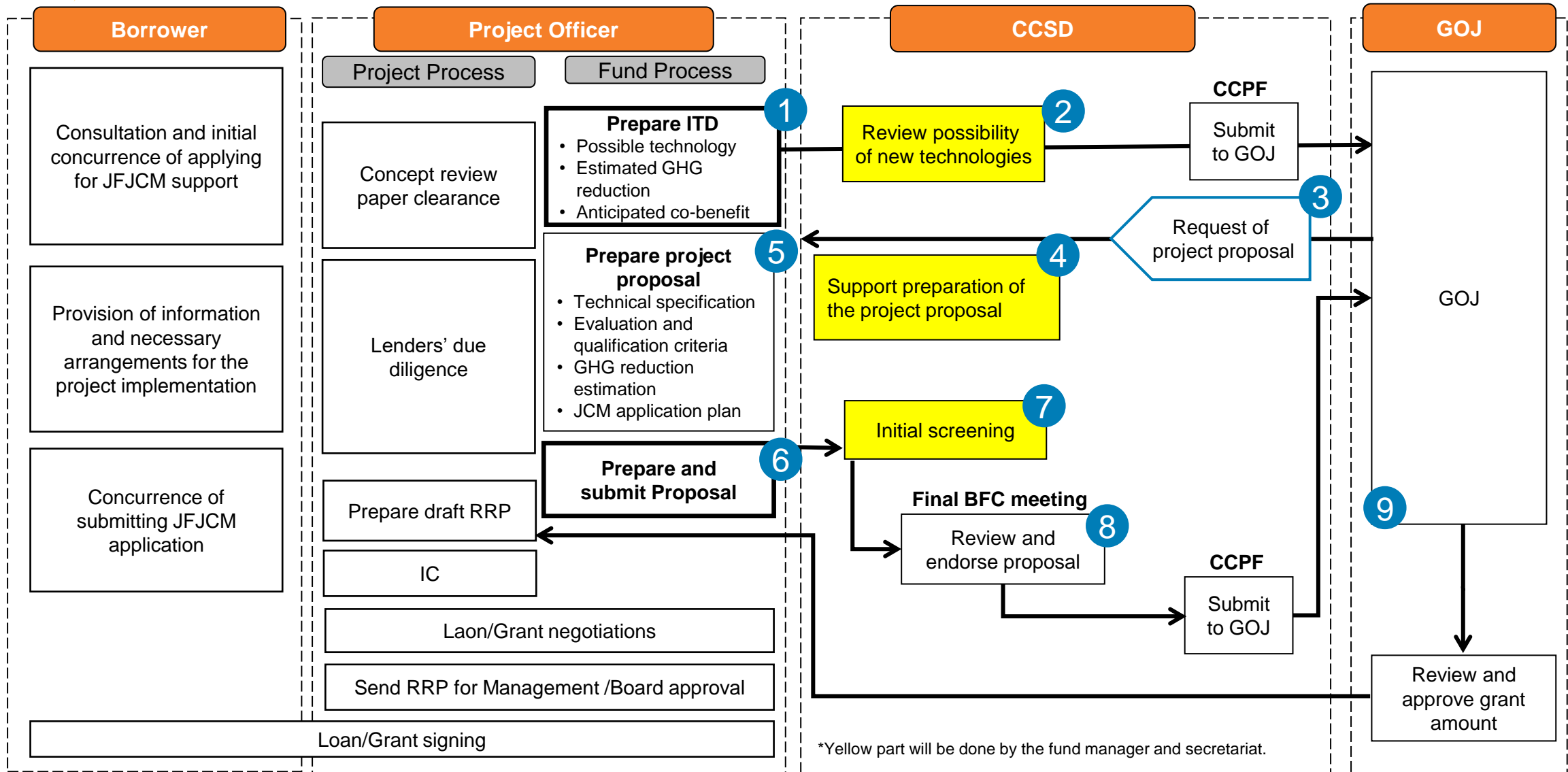
JFJCM Application Process (Sovereign)



CCSC = Climate Change Steering Committee; GHG = greenhouse gas; GOJ = Government of Japan; ITD = Initial Title and Description; JCM = Joint Crediting Mechanism; MRM = management review meeting; RRP = report and recommendation of the President; CCSD = Climate Change and Sustainable Development Department; CCPF = Partner Funds Division, CCSD; TAG = Technical Advisory Group; TRTA = transaction technical assistance.



JFJCM Application Process (Nonsovereign)



BFC = Blended Finance Committee; GHG = greenhouse gas; GOJ = Government of Japan; IC = investment committee; ITD = Initial Title and Description; JCM = Joint Crediting Mechanism; RRP = report and recommendation of the President; CCSD = Climate Change and Sustainable Development Department; SDPF= Partner Funds Division, CCSD.



Requirements for the JCM (after grant approval)

- After approval of the JFJCM funding, a borrower (grant recipient) is required to meet JCM application requirements as follows.

JCM Requirements

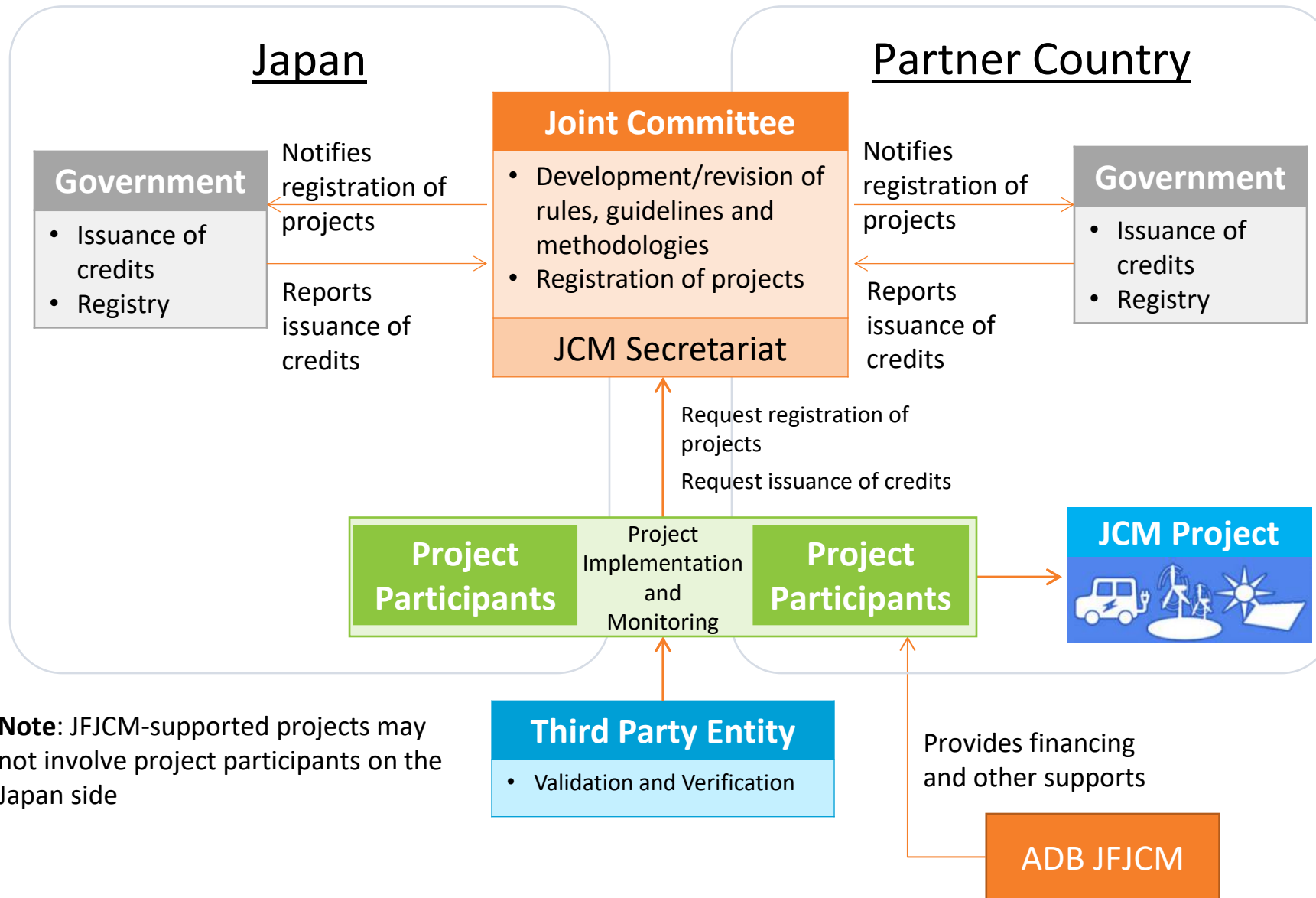
- Preparation and approval of **JCM Methodology**
- Preparation of **Project Design Documents (PDD)**
- **Validation** by Third Party Entities (TPEs), and **registration** of the project
- **Monitoring, reporting and verification** of GHG emission reduction
- **Issuance** of the JCM credits and delivery to government(s)

**Borrower needs to engage consultant
by using the JFJCM grant
JFJCM secretariat may help the process**

Reference: [Handbook for Developing JCM Projects](#)

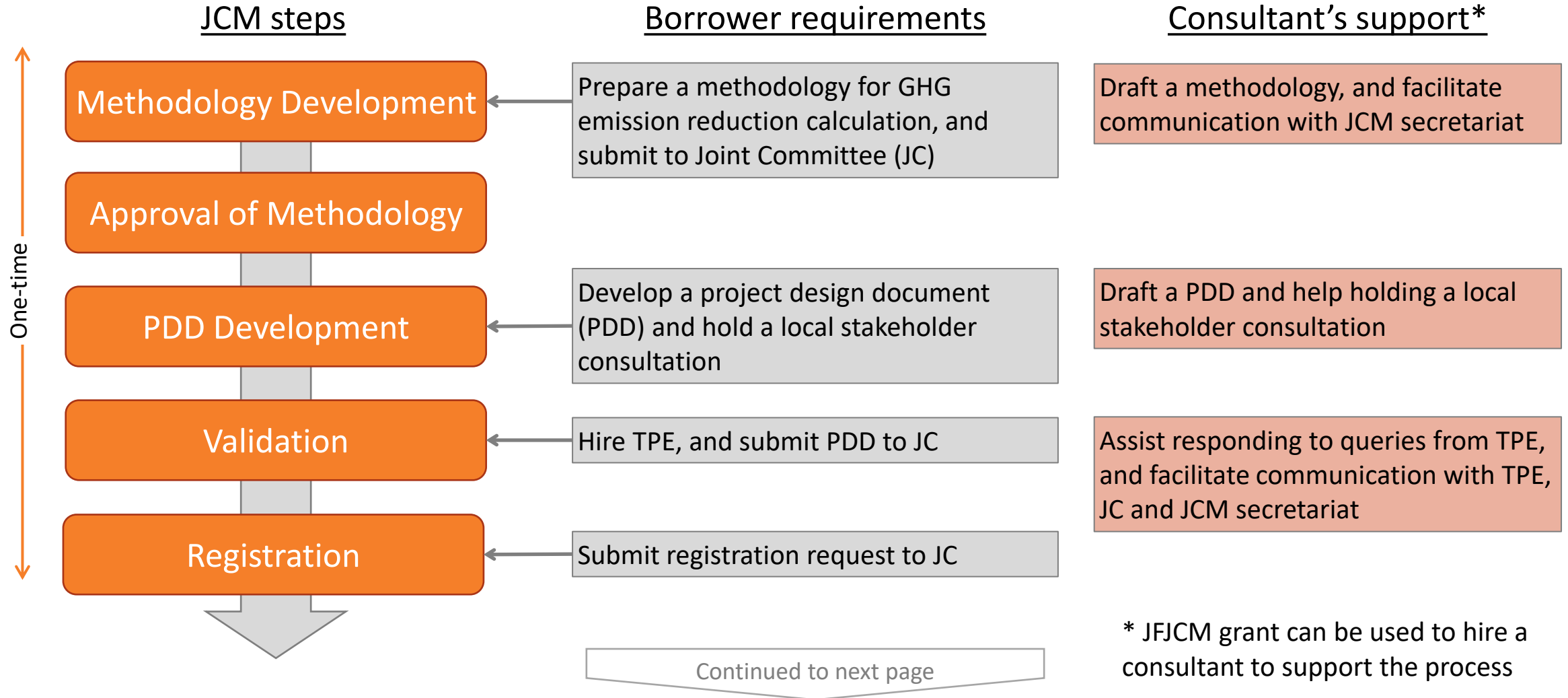


Roles of key entities in JCM projects



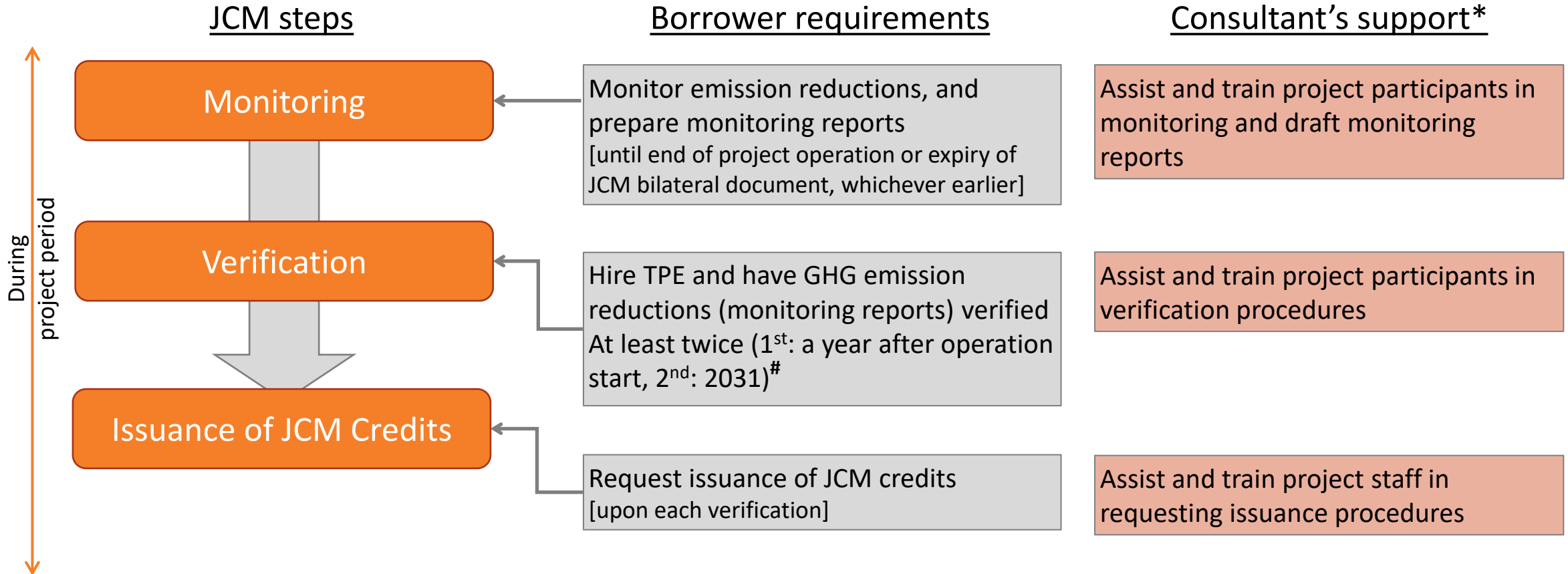


JCM project cycle and requirements (1)





JCM project cycle and requirements (2)



[#] Cost for hiring TPE will be borne by Borrower for the verification to be done if the timing is after the ADB project implementation period.

* JFJCM grant can be used to hire a consultant to support the process



Credit allocation for JFJCM-supported projects

1. General principle

Project participants of a JFJCM-supported project consult among themselves and with both governments the percentage of JCM credit allocation among the Government of Japan and the partner's country respectively, taking into consideration their respective contribution to GHG emission reductions or removals by the project.

2. Credit allocation for JFJCM-supported projects

Project participants should calculate the percentage of JCM credit allocation with the following equation:

A percentage of JCM credits that Japan will acquire from a JFJCM-supported project (%)

$$= \frac{\text{Amount of financial support from JFJCM grant}}{\text{Total project costs}} \times 100$$

Where

"Japan" includes the Government of Japan.

"JFJCM grant" is the actual grant amount utilized by the project participants to implement the JCM project

"Total project costs" are capital expenditures directly attributable to a JFJCM-supported project but do not include, among others, cost to purchase of land and existing structures, insurance cost, and operating expenses of the project.



Approved JFJCM Projects

#	Project	Country	JFJCM grant (\$ million)	ADB Approval	Technologies supported
1	Preparing Outer Islands for Sustainable Energy Development Project (POISED)	Maldives	5.00	Mar 2015	Advanced battery and energy management system (EMS)
2	Southwest Transmission Grid Expansion Project	Bangladesh	7.00	Jul 2018	Energy efficient transmission lines
3	Upscaling Renewable Energy Sector Project	Mongolia	6.00	Sep 2018	Solar PV with advanced battery system and EMS
4	Improving Access to Health Services for Disadvantaged Groups Investment Program	Mongolia	3.48	Oct 2019	Energy efficient HVAC, high insulation window, rooftop solar PV and ground source heat pump
5	Greater Male Waste to Energy Project	Maldives	10.00	Aug 2020	Waste-to-energy plant (incineration)
6	Geothermal Power Generation Project (Phase 1)	Indonesia	10.00	Jun 2023	Geothermal power plant with advanced designs
7	Accelerating Sustainable System Development Using Renewable Energy Project (ASSURE)	Maldives	6.20	Sep 2023	Advanced flow battery system Ocean renewable energy pilot
8	Disaster Resilient Clean Energy Financing Project (DRCEF)	Palau	5.00	Dec 2023	Financial intermediation to support investment in low-carbon technologies
		Total	52.68		



Case study 1: advanced micro-grid technology in Maldives

Project name	Preparing Outer Islands for Sustainable Energy Development Project (POISED)
JFJCM grant	\$5 million
Technology supported	Advanced battery energy storage system (BESS) and energy management system (EMS)
Description	<p>On top of 1.6 MW of solar PV installed under the POISED project, the advanced BESS and EMS are supported by JFJCM. The systems enable:</p> <ul style="list-style-type: none">➤ Smoothing out the fluctuation of variable solar PV generation➤ Optimizing diesel generator operation➤ Integrating large amounts of renewable energy to the grid <p>The BESS and EMS have started operation since August 2021.</p>
Location	Addu, Maldives
Emission reductions	1.3 thousand tCO ₂ /year (estimate)



BESS at the project site



Training local staff for EMS operation



Solar PV at the project site



Case study 2: Energy efficient transmission lines in Bangladesh

Project name	Southwest Transmission Grid Expansion Project
JFJCM grant	\$7 million
Technology supported	Energy efficient transmission lines
Description	Energy efficient transmission lines will increase high-voltage network capacity while reducing transmission losses and emissions including carbon dioxide. The key technology is high-temperature low-sag (HTLS) conductors . HTLS conductors have less sag at high temperatures and higher capacity compared to conventional aluminum conductor steel reinforced (ACSR) cables, which are currently widely used in Bangladesh. HTLS utilize cores made of steel alloys, composite-reinforced metal, or carbon fiber composite material.
Location	Between Barisal and Gopalganj, Bangladesh
Emission reductions	23.1 thousand tCO ₂ /year (estimate)

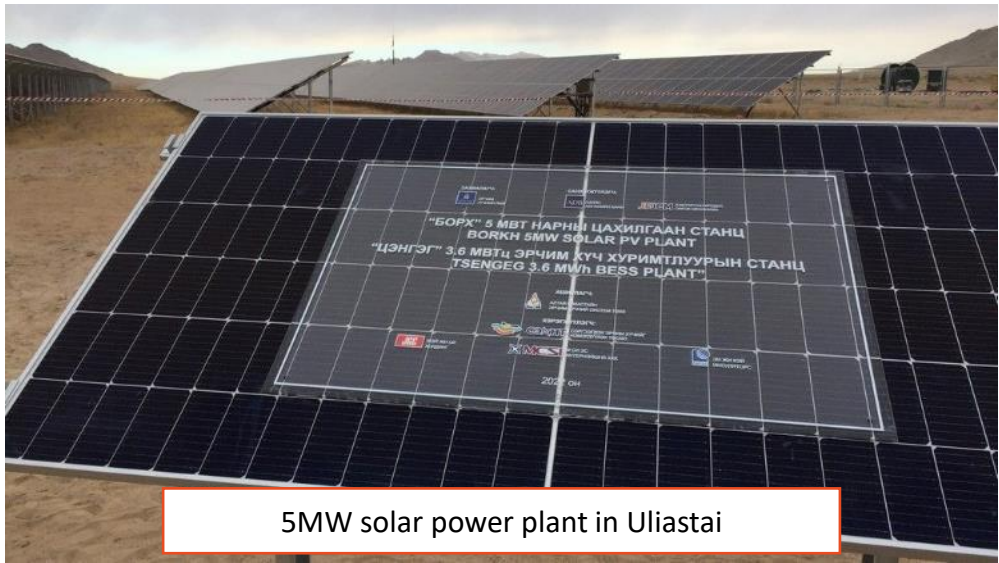


Transmission lines with HTLS conductors introduced in Barisal - Gopalganj section



Case study 3: Upscaling renewable energy in Mongolia

Project name	Upscaling Renewable Energy Sector Project
JFICM grant	\$6 million
Technology supported	5MW solar PV system, advanced battery energy storage system (BESS) of 3.6 MWh and energy management system (EMS)
Description	This solar power plant with advanced BESS and EMS can supply as much locally produced renewable energy as possible to local consumers, reducing carbon intensive domestic and imported grid electricity, while strengthening the country's power self-sufficiency. This is the very first utility scale battery system in Mongolia combined with a grid connected renewable energy. The plant started operation in Nov 2022.
Location	Uliastai, Mongolia
Emission reductions	6.4 thousand tCO ₂ /year (estimate)



5MW solar power plant in Uliastai



NAS (Sodium-Sulfur) battery energy storage system



Case study 4: Green Hospital in Mongolia

Project name	Improving Access to Health Services for Disadvantaged Groups Investment Program
JFJCM grant	\$3.48 million
Technology supported	Energy efficient heating, ventilation and air-conditioning (HVAC) system, high insulation window, rooftop solar PV, and ground source heat pump (GSHP)
Description	A new annex building as expansion of the existing Khan Uul district hospital in Ulaanbaatar will be constructed with adoption of advanced low carbon technologies including HVAC system, high insulation window and rooftop solar PV . New construction of three family health centers is also planned with GSHP installation, which replace the heat supply from electric heaters powered by coal fired power plants.
Location	Ulaanbaatar, Mongolia
Emission reductions	2.9 thousand tCO ₂ /year (estimate)





Case study 5: Waste to Energy in Maldives

Project name	Greater Male Waste to Energy Project
JFJCM grant	\$10 million
Technology supported	Waste to energy plant (incineration)
Description	The project will establish an integrated regional solid waste management system in Greater Male consisting of collection, transfer, treatment using advanced waste-to-energy (WtE) technology , disposal, recycling, and dumpsite closure and remediation. The WtE facility can process 500 tons/day of municipal solid waste, with up to 12 MW power generation. Installation of MSW incinerators avoids emissions of methane associated with disposed organic waste in a solid waste disposal site.
Location	Thilafushi, Maldives
Emission reductions	40.4 thousand tCO ₂ e/year (estimate) *Average of emission reductions for 20 years





Case study 6: Geothermal Energy in Indonesia

Project name	Geothermal Power Generation Project
JFJCM grant	\$10 million
Technology supported	(i) Anomaly predictive diagnosis using Internet of Things (IoT) and Artificial Intelligence (AI), (ii) steam turbine with advanced design, (iii) direct drive motors for cooling tower fans, (iv) hybrid type cooling tower fill, and (v) optical fiber monitoring for temperature distribution inside cooling tower
Description	PT Geo Dipa Energi (GDE), a state-owned geothermal company, will develop a single-flash geothermal power plant with 55 MW at the Patuha geothermal field (Patuha Unit-2). The project will introduce the first-of-its-kind technologies for large scale geothermal power plant in Indonesia , which lead to improving plant efficiency, minimizing degradation of plant performance, and reducing unplanned shutdown periods of the geothermal power plant, and thereby increasing renewable energy penetration into the existing grid system.
Location	West Java, Indonesia
Emission reductions	273.8 thousand tCO ₂ e/year (estimate) *Average of emission reductions for 20 years



Patuha project site



Geothermal steam pipes



Case study 7: Advanced Flow BESS and Ocean Renewable Pilot

Project name	Accelerating Sustainable System Development Using Renewable Energy Project
JFJCM grant	\$6.2 million
Technology supported	(i) Advanced flow battery energy storage (BESS) (ii) Ocean renewable energy pilot
Description	(i) Flow BESS of 3 MWh each for two target outer islands together with advanced EMS will be introduced to enable further integration of solar power generation by the private sector. The flow BESS will be used for time-shifting to bring the renewable energy penetration to 40-60% in energy term. (ii) Current and/or wave power generation with 100 kW capacity will be deployed on a pilot basis in selected outer islands.
Location	Several outer islands, Maldives
Emission reductions	(i) 4.5 thousand tCO ₂ e/year (estimate) (ii) 211 tCO ₂ e/year (estimate) *Average of emission reductions for 20 years



Renewable Energy Installation in Maldives



Case study 8: Low Carbon Financing Intermediation in Palau

Project name	Disaster Resilient Clean Energy Financing (DRCEF) - Additional Financing
JFJCM grant	\$5 million
Technology supported	Cycle 1: Roof-top solar photovoltaic (PV) with battery energy storage systems (BESS) Cycle 2: clean energy technologies to be identified at the time of commencement of this cycle (e.g. wind, ocean energy and other renewable power generation, hydrogen, electric vehicle) that can meet JCM requirements
Description	National Development Bank of Palau (NDBP) will establish a new loan product with subsidized interest rate to promote low-carbon technologies , which is also expected to improve disaster resilience. The product is designed to support clean energy investment by the private sector in Palau, with particular focus on micro, small and medium enterprises (MSMEs) borrowers, including women-led businesses. The funding will be managed as a revolving fund, where the repaid principal will be used for multiple cycles by NDBP.
Location	MSMEs' premises within Palau
Emission reductions	3.1 thousand tCO ₂ e/year (estimate) *Average of emission reductions by Cycle-1 for 20 years



Rooftop solar panels installed under Phase 1 of DRCEF Project.



JFJCM

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Thank you.

