Japan Fund for the Joint Crediting Mechanism

JCM Workshop in Uzbekistan

27 February 2025

ADB's Engagement with Carbon Markets

ADB has a long-standing engagement with carbon markets, supporting its Developing Member Countries (DMCs) through:

- Carbon finance for enhanced climate action in Asia and the Pacific
- Catalyzing investments in low-carbon technologies and solutions through innovative financing mechanisms
- Enhancing DMCs' ability to leverage carbon markets to achieve their climate ambitions and decarbonization pathways cost-effectively

ADB Support on Carbon Markets

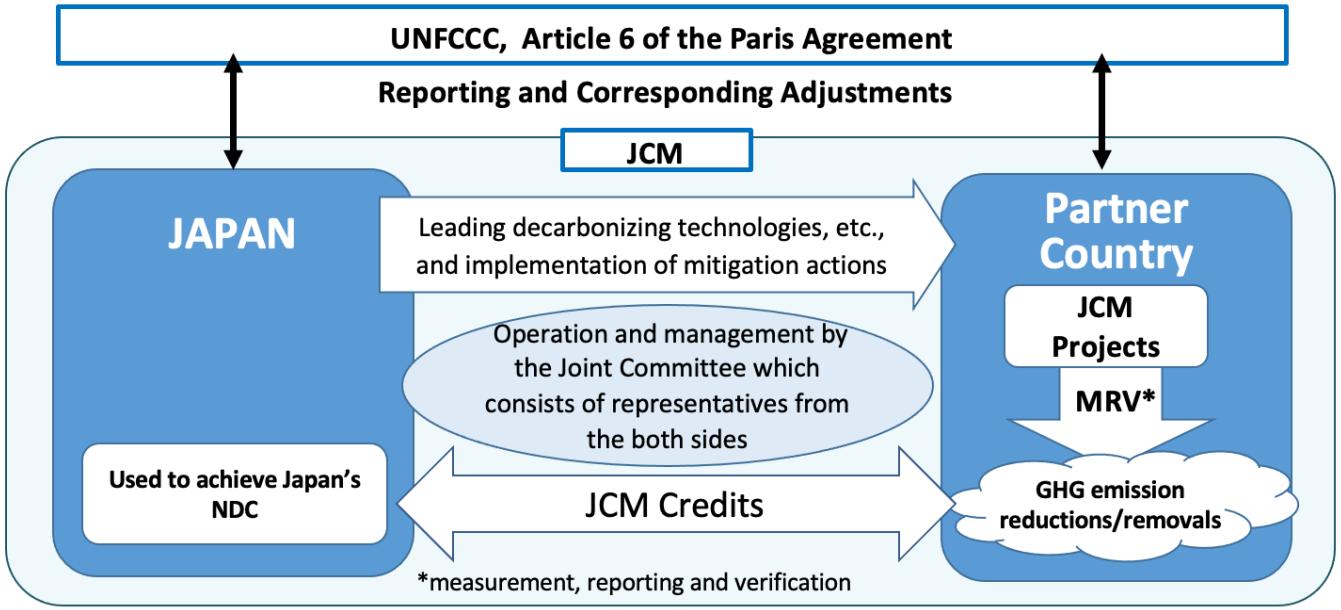
- Market Development
- Country Readiness
- Optimizing Carbon Market Opportunities in ADB Operations
- Technical and Capacity Building
- Carbon Finance
- Knowledge Creation and Management

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 Jan 2025).

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.

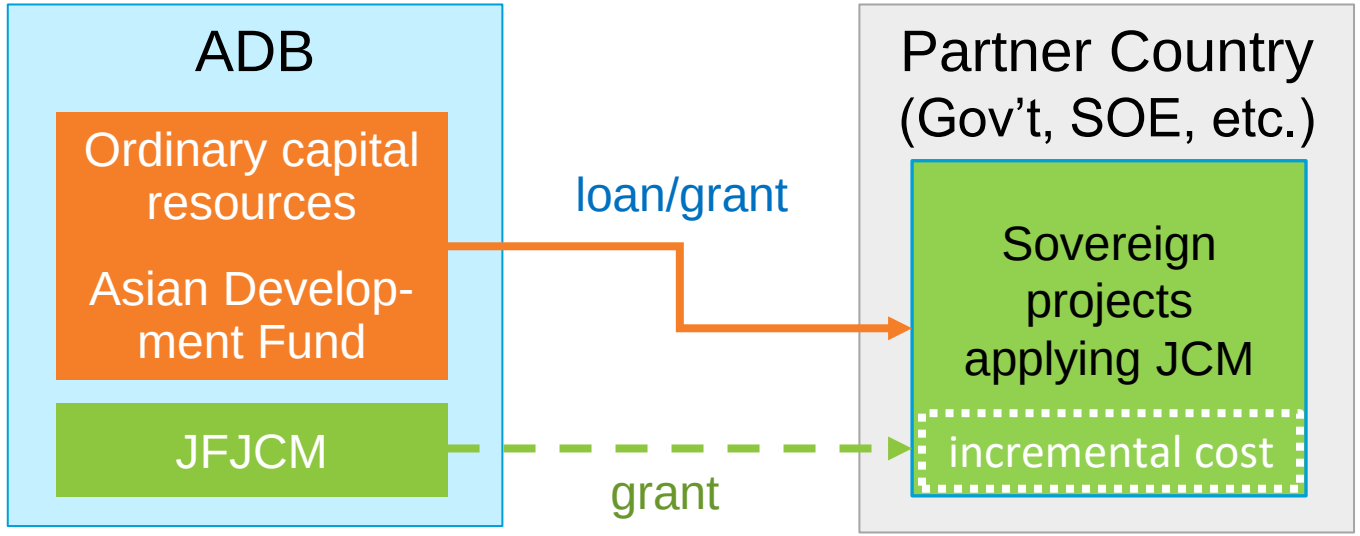
Eligible Technology

- Advanced low carbon technologies that reduce greenhouse gas (GHG) emission including CO_2 from energy source.
- The technologies must have a proven implementation and operation record of its technical effectiveness.

JFJCM Support Schemes

For Sovereign Project

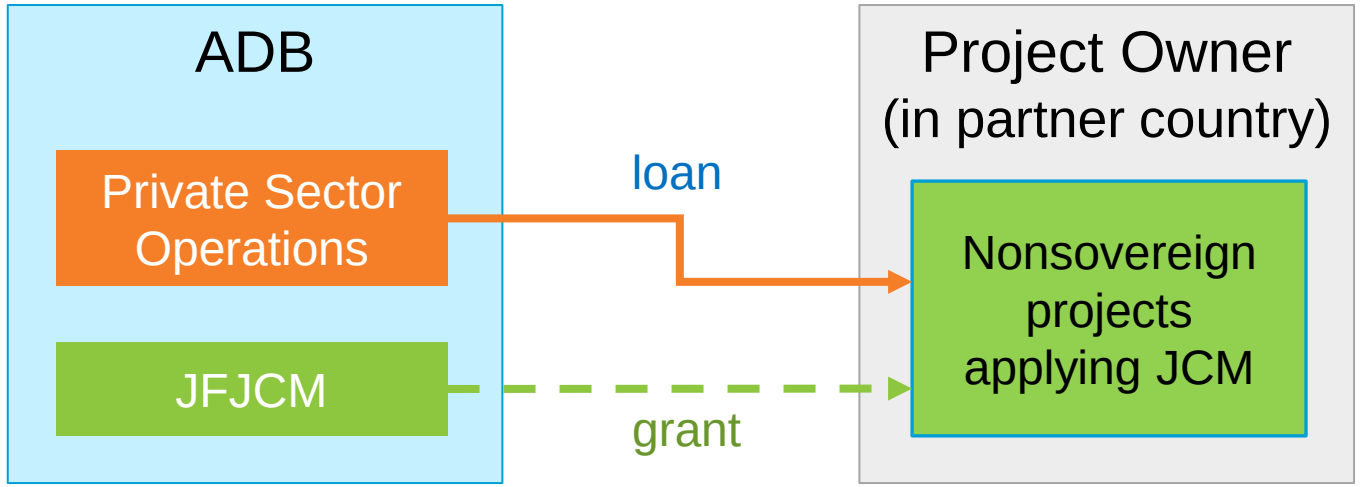
- JFJCM provides grant for incremental cost of advanced low-carbon technologies
- Maximum amount of grant:
  i. 10% of total project cost (capped to $10 million)
  ii. $5 million if the project cost < $50 million



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)



Approved JFJCM Projects

#	Project	Country	JFJCM grant ($ million)	ADB Approval	Technologies supported
1	Preparing Outer Islands for Sustainable Energy Development Project (POISED)	Maldives	5	Mar 2015	Advanced battery and energy management system (EMS)
2	Southwest Transmission Grid Expansion Project	Bangladesh	7	Jul 2018	Energy efficient transmission lines
3	Upscaling Renewable Energy Sector Project	Mongolia	6	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	Aug 2020	Waste-to-energy plant (incineration)
6	Geothermal Power Generation Project (Phase 1)	Indonesia	10	Jun 2023	Geothermal power plant with advanced designs
7	Accelerating Sustainable System Development Using Renewable Energy Project (ASSURE)	Maldives	6.2	Sep 2023	Advanced flow battery system Ocean renewable energy pilot
8	Disaster Resilient Clean Energy Financing Project (DRCEF)	Palau	5	Dec 2023	Financial intermediation to support investment in low-carbon technologies
		Total	**52.68**		

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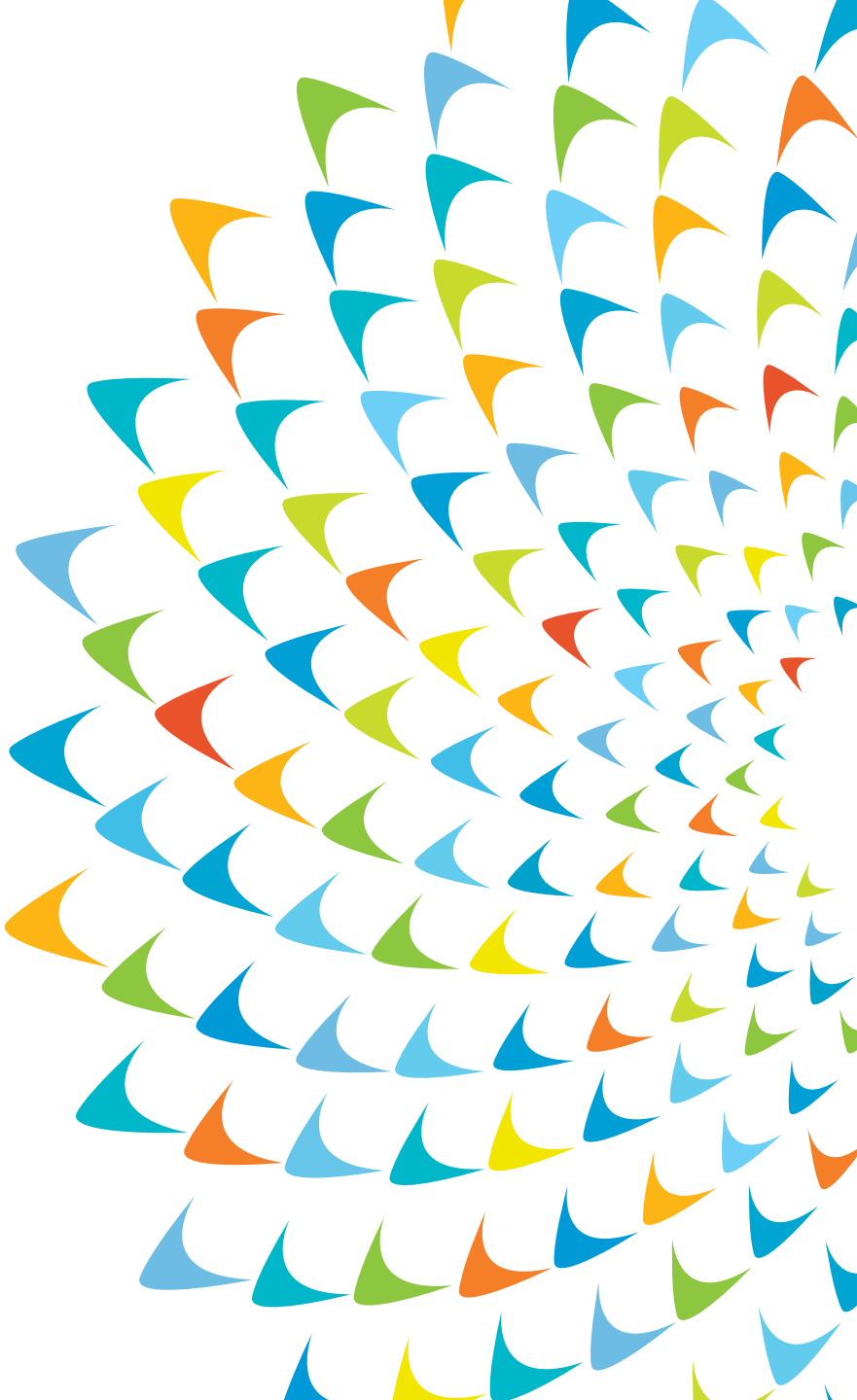
Thank you.



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	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: ➢ Smoothing out the fluctuation of variable solar PV generation ➢ Optimizing diesel generator operation ➢ Integrating large amounts of renewable energy to the grid The BESS and EMS have started operation since August 2021.
Location	Addu, Maldives
Emission reductions	1.3 thousand tCO_2/year (estimate)

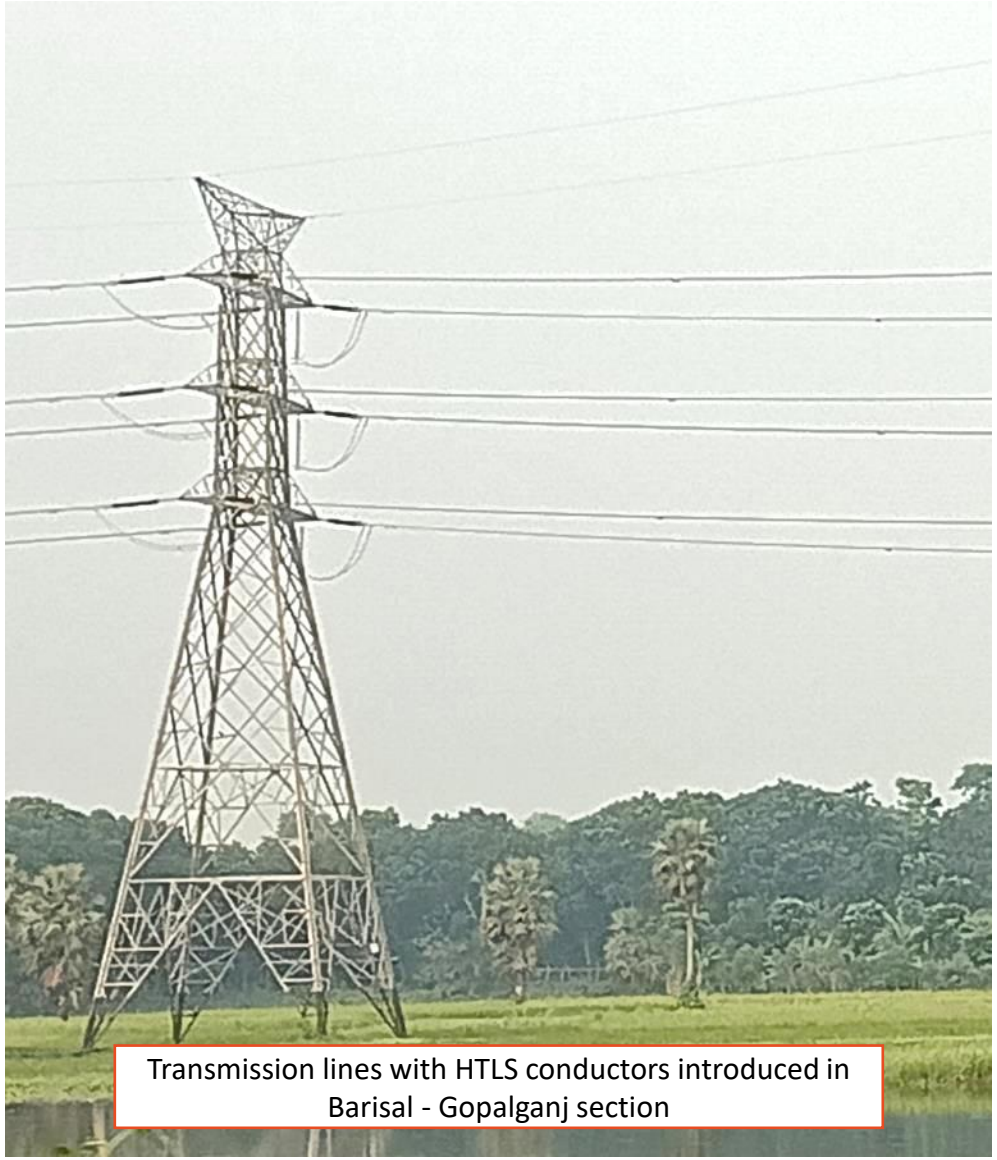
BESS at the project site


Training local staff for EMS operation


Solar PV at the project site

Case study 2: Energy efficient transmission lines in Bangladesh

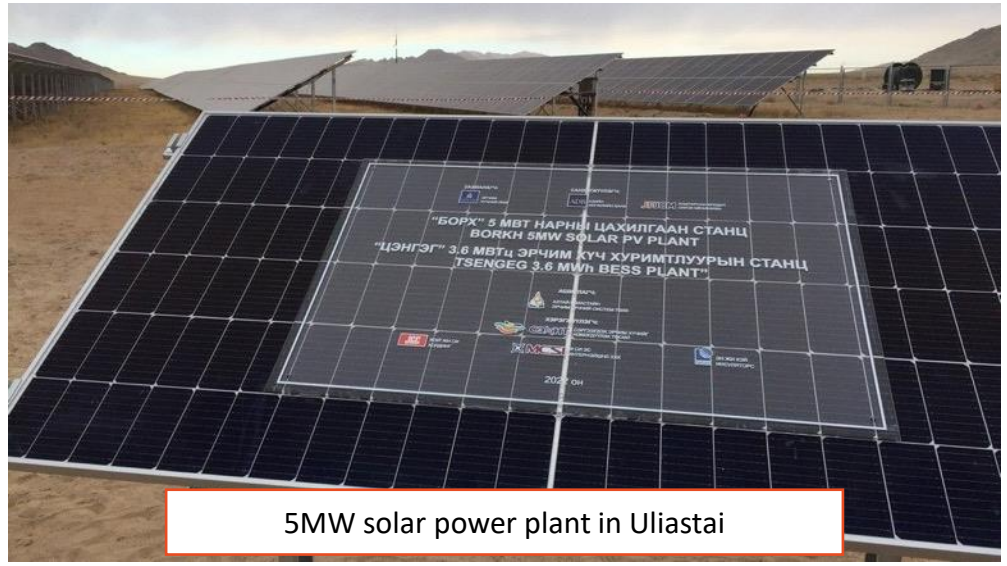
Project name	Southwest Transmission Grid Expansion Project
JFJCM grant	$7 million
Technology supported	Energy efficient transmission lines
Description	Energy efficient transmission lines will increase high-voltage network capacity while reducing transmission losses and emissions including carbon dioxide. 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
JFJCM 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 introduced

Case study 4: Green Hospital in Mongolia

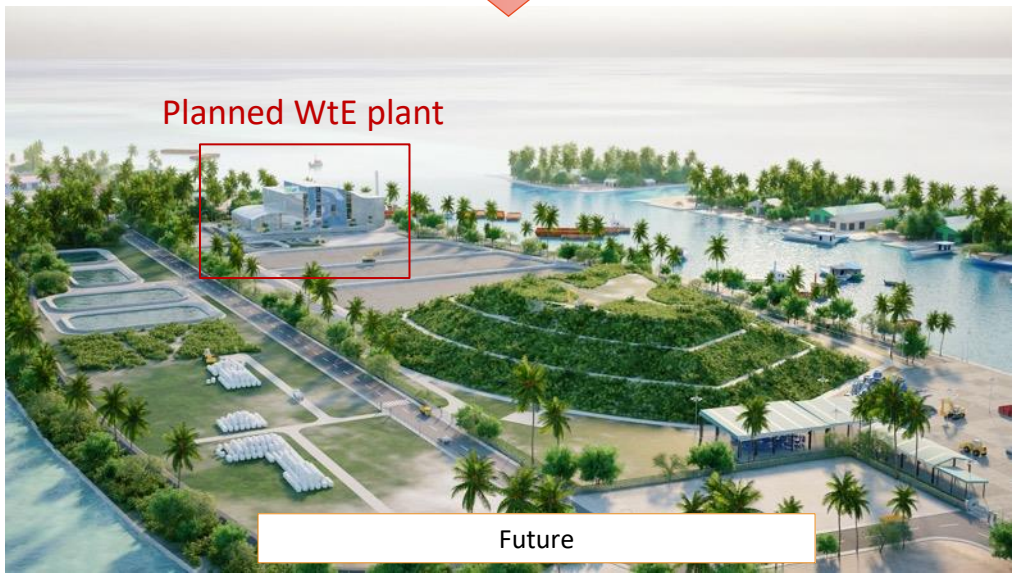
Project name	Improving Access to Health Services for Disadvantaged Groups Investment Program
JFJCM grant	$3.48 million
Technology supported	Energy efficient heating, ventilation and air-conditioning (HVAC) system, high insulation window, rooftop solar PV, and ground source heat pump (GSHP)
Description	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)

Project site for a family health center with GSHP

Test drilling for GSHP

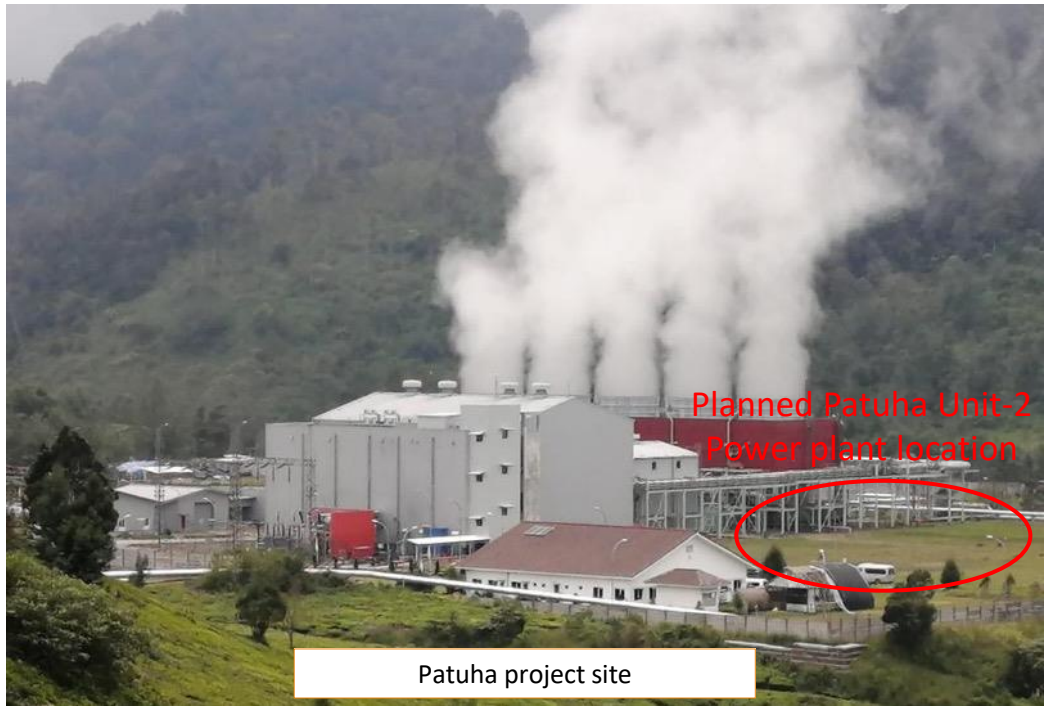
Case study 5: Waste to Energy in Maldives

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_2e/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_2e/year (estimate) *Average of emission reductions for 20 years



Patuha project site


Geothermal steam pipes

Case study 7: Flow BESS and Ocean Renewable Energy 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_2e/year (estimate) (ii) 211 tCO2e/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_2e/year (estimate) *Average of emission reductions by Cycle-1 for 20 years

Rooftop solar panels installed under Phase 1 of DRCEF Project.