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## City-to-City Cooperation: global context and Japan's contribution

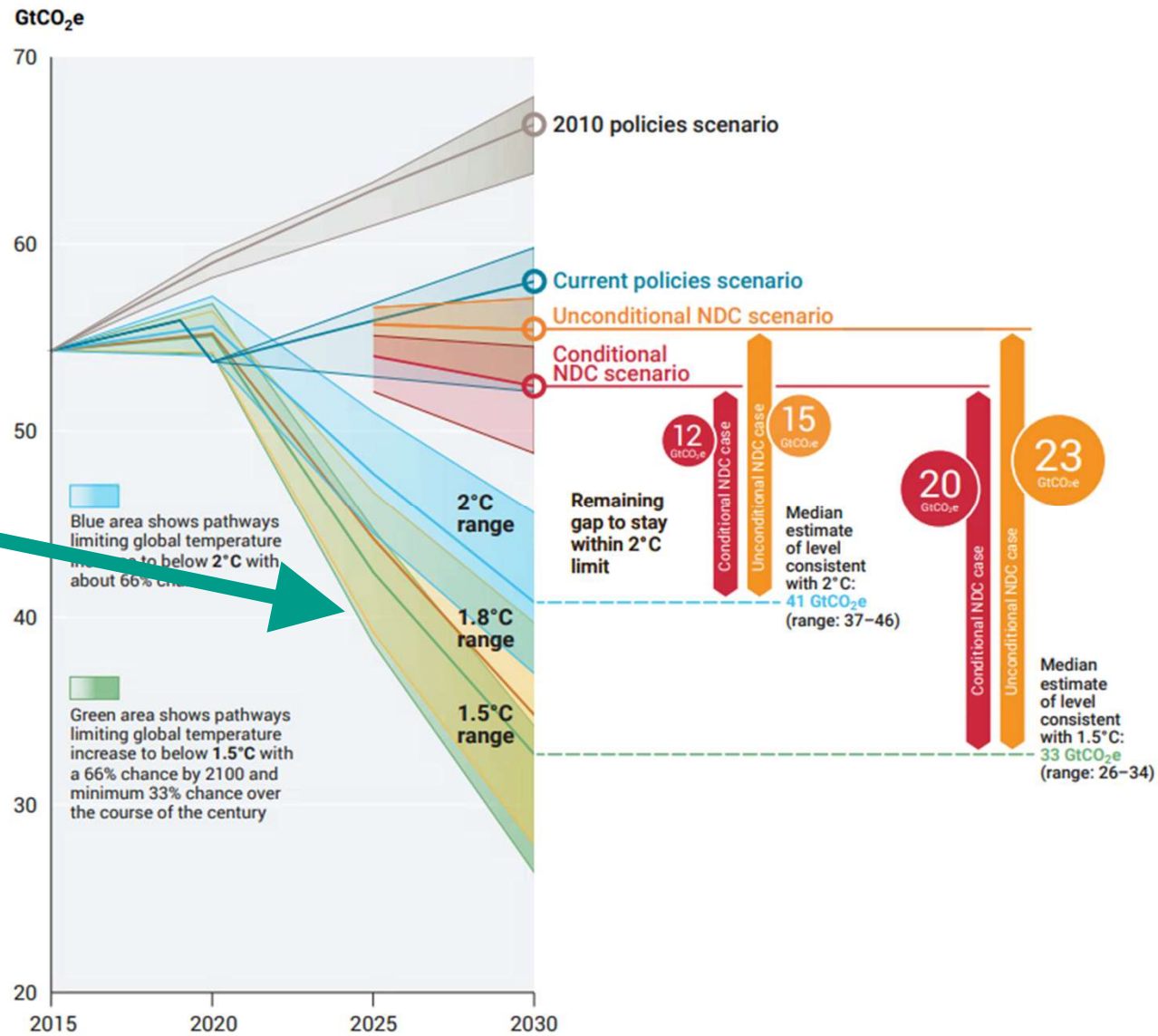
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7 Feb 2024

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Ministry of the Environment of Japan



Necessary to achieve  
**IMMEIDIATE, DEEP,  
RAPID, and  
SUSTAINED REDUCTIONS**  
in global GHG emissions



Source: UNEP 2022, Emission Gap Report 2022



70% GHG

From Cities

日比谷 **ダイヤル**



# SUSTAINABLE DEVELOPMENT GOALS





**BRVT Province and Sakai City  
signed an MOU at COP28, UAE**

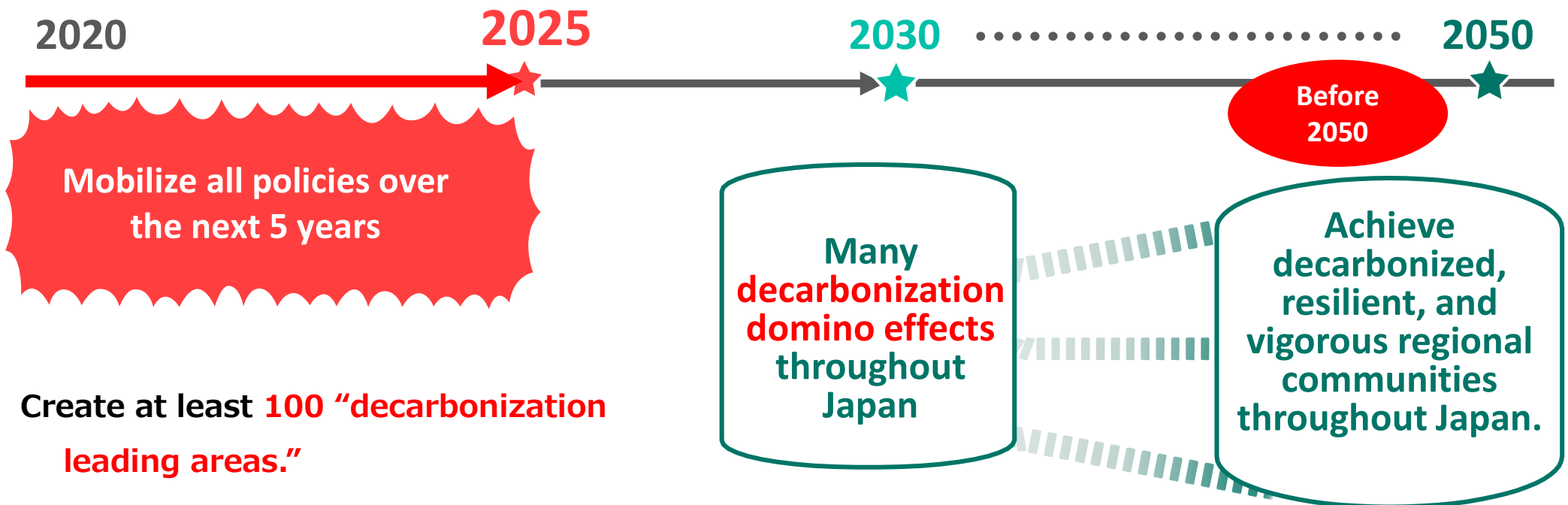
## **Outcome of the first global stocktake (COP28 decision)**

162. Encourages international cooperation and the exchange of views and experience among non-Party stakeholders at the local, subnational, national and regional levels, including conducting joint research, personnel training, practical projects, technical exchanges, project investment and standards cooperation;

# Japan's Regional Decarbonization Roadmap



- The Decarbonization Leading Areas aim to **achieve net-zero by FY2030**.
- **74 Decarbonization Leading Areas** have been selected to build the models of achieving net-zero in urban, agricultural, and tourist areas.



# City-to-City Collaboration Program(C3P)



- Support **City-to-City collaboration between cities in Japan and abroad** to promote **sharing of knowledge and experience** for decarbonization in partnership with private solution providers.

## Cooperation activities

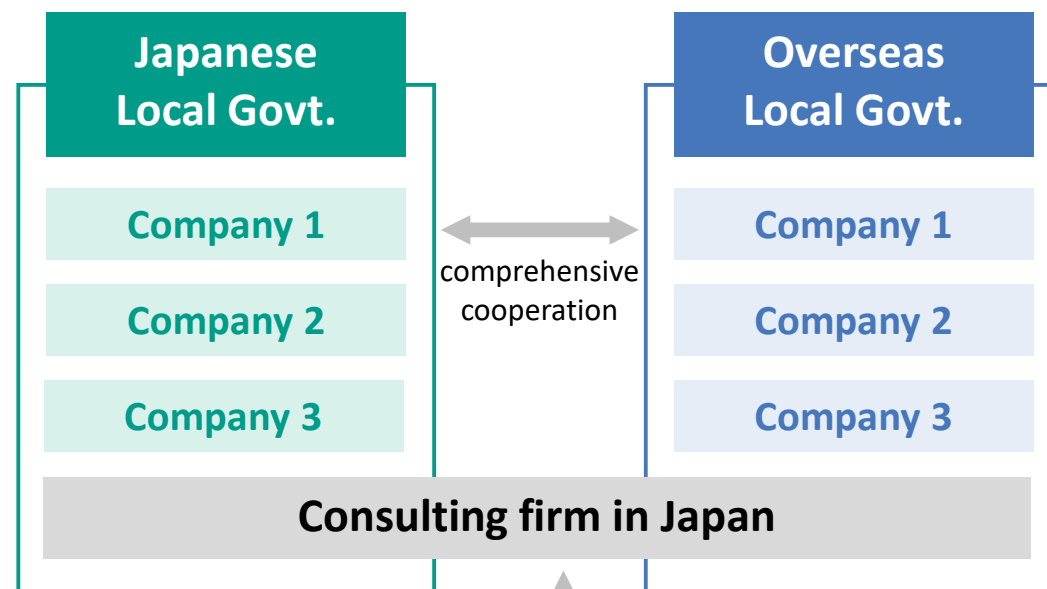
- Co-create low-carbon projects
- Support developing policies and plans to promote climate actions
- Build capacity for government staff
- Raise awareness of stakeholders



## Expected outcomes

- Deliver net-zero commitment
- Deploy decarbonized technologies/infrastructure
- Develop action plans and regulations

## Examples of structures for C3P



# Cities taking part in the City-to-City Collaboration Program (FY2013~2023)



Partnering 20 Japanese subnational governments with **49** subnational governments in **13** countries

Maldives		
1	Malé City	Toyama City

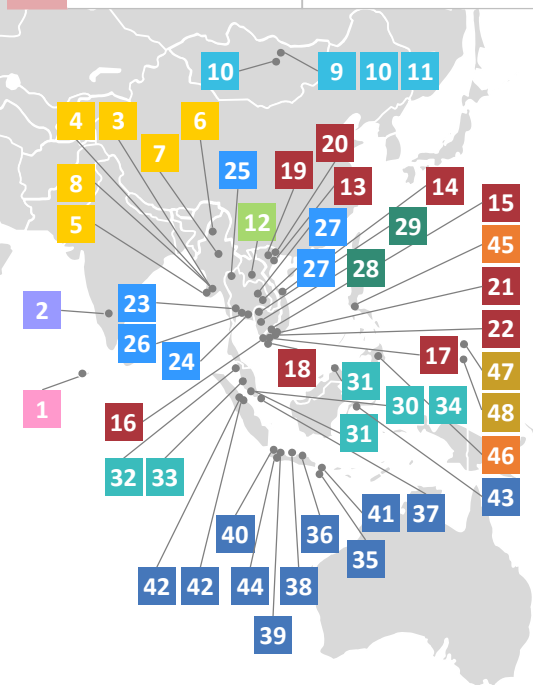
India		
2	Bangalore City	Yokohama City

Myanmar		
3	Yangon Region	Kitakyushu City
4	Yangon City	Kawasaki City
5	Ayeyarwady Region	Fukushima City
6	Sagaing Region	Fukushima City
7	Mandalay City	Kitakyushu City
8	Yangon City	Fukuoka City

Mongolia		
9	Ulaanbaatar City	Sapporo City・Hokkaido Government
10	Ulaanbaatar City・Tuv aimag Prefecture	Sapporo City
11	Ulaanbaatar City	Sapporo City

Lao PDR		
12	Vieng chan City	Kyoto City

Vietnam		
13	Hai Phong City	Kitakyushu City
14	Da Nang City	Yokohama City
15	Ho Chi Minh City・Thu Duc City	Osaka City
16	Kiên Giang Province	Kobe City
17	Can Tho City	Hiroshima Prefecture
18	Soc Trang Province	Hiroshima Prefecture
19	Hanoi City	Fukuoka Prefecture
20	Quang Ninh Province	Shiga Prefecture
21	Ba Ria-Vung Tau Province	Sakai City
22	Ben Tre Province	Ehime Prefecture



Thailand		
23	Bangkok Metropolitan Administration	Yokohama City
24	Rayong Prefecture	Kitakyushu City
25	Chiang Mai Prefecture	Kitakyushu City
26	Eastern Economic Corridor (EEC)	Osaka City
27	Ubon Ratchathani Province・Warin Chamrap Town Municipality	Kitakyushu City

Cambodia		
28	Phnom Penh Capital Administration	Kitakyushu City
29	Siem Reap Province	Kanagawa Prefecture

Malaysia		
30	Iskandar Development Area	Kitakyushu City
31	Iskandar Development Area・Kota Kinabalu City	Toyama City
32	Penang State	Kawasaki City
33	Kuala Lumpur City	Tokyo・Saitama City
34	Iskandar Development Area	Toyama City

Indonesia		
35	Denpasar City	Clean Authority of Tokyo
36	Surabaya City	Kitakyushu City
37	Batam City	Yokohama City
38	Semarang City*	Toyama City
39	Bandung City	Kawasaki City
40	Special Capital Territory of Jakarta	Kawasaki City
41	Bali Province*	Toyama City
42	Rokan Hulu Prefecture, Riau Province・Pekanbaru City	Kawasaki City
43	Gorontalo Province	Ehime Prefecture
44	West Java Province	Kitakyushu City

\* Joint project for Bali and Semarang

Philippines		
45	Quezon City	Osaka City
46	Davao City	Kitakyushu City

Palau		
47	Koror Province	Kitakyushu City
48	Airai Province	Urasoe City

Chile		
49	Renca Municipality, Santiago City,	Toyama City

Red: Ongoing projects in FY2023 8

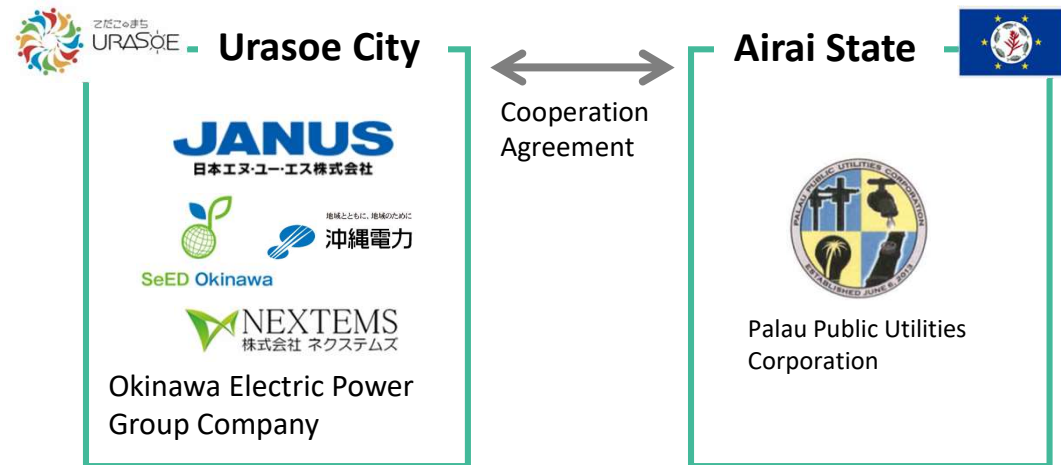


## Airai State (Palau) - Urasoe City

Okinawa Electric Power's technologies and experience **that achieved 100% renewable energy in electricity supply for 10 consecutive days** in Hateruma Island. Based on this experience, the collaboration supports Palau's commitment for renewable energy.

### 【Project Summary】

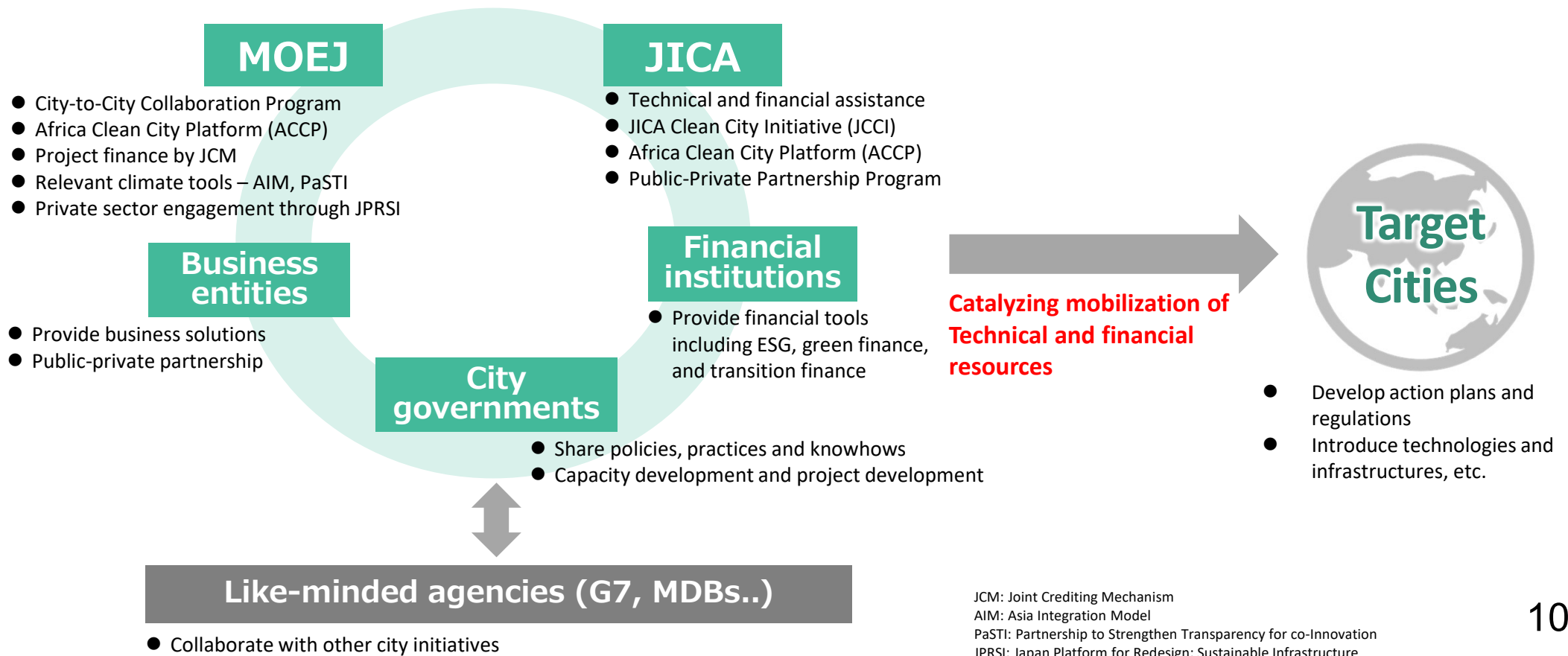
- ◆ Model project of PVs, storage batteries, and an integrated management system for stabilized small-scale grids.
- ◆ Scaling up the model project
- ◆ Study on the introduction of tiltable wind turbines that are suitable for remote small islands.



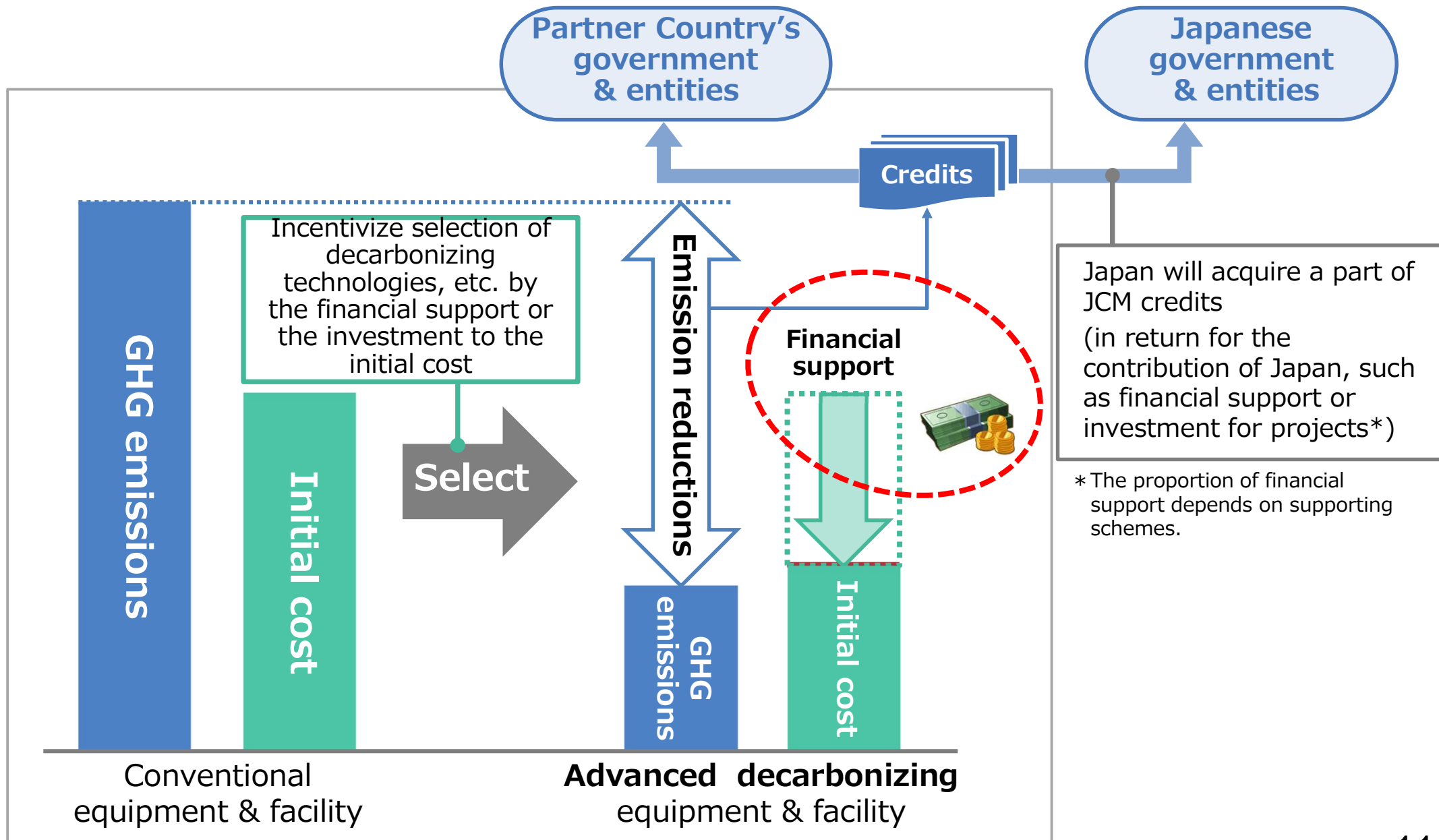
Tiltable wind turbines(OEPG)

# Clean City Partnership Program (C2P2)

- MOEJ and JICA, in partnership with other key stakeholders, roll out a **Clean Cities Partnership Program (C2P2)**, which:
  - Mobilize **engagement of multi-stakeholders** on target cities.
  - Provide a **comprehensive and synergetic support to urban agenda** including climate change, environmental pollution and circular economy.
  - Collaborate with ongoing and new city initiatives by G7 members and MDBs.



# JCM: Contribution from Japan (example)



# Finance Programme for JCM Model Projects by MOEJ

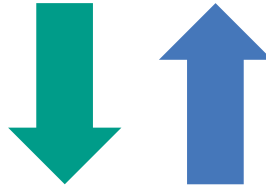


Budget for projects starting from FY 2023 is approx. **15 billion JPY** (approx. **USD 109 million**) in total by FY2025 (1 USD = 137 JPY)

**Government of Japan**

\* Includes collaboration with projects supported by JICA and other governmental-affiliated financial institute.

Finance part of an investment cost (**up to half**)



Conduct MRV and expected to deliver JCM credits issued

**International consortiums**  
(which include Japanese entities)



- Scope of the financing: facilities, equipment, vehicles, etc. which reduce CO<sub>2</sub> from fossil fuel combustion as well as construction cost for installing those facilities, etc.
- Eligible Projects: starting installation after financing is awarded and finishing installation within three years.

# ADB Trust Fund: Japan Fund for Joint Crediting Mechanism (JFJCM)



## Budget

Cumulative contribution from 2014: JPY 14 billion (approx. USD 100 million)  
 ※Budget for 2023: JPY 0.2 billion (approx. USD 1.5 million)

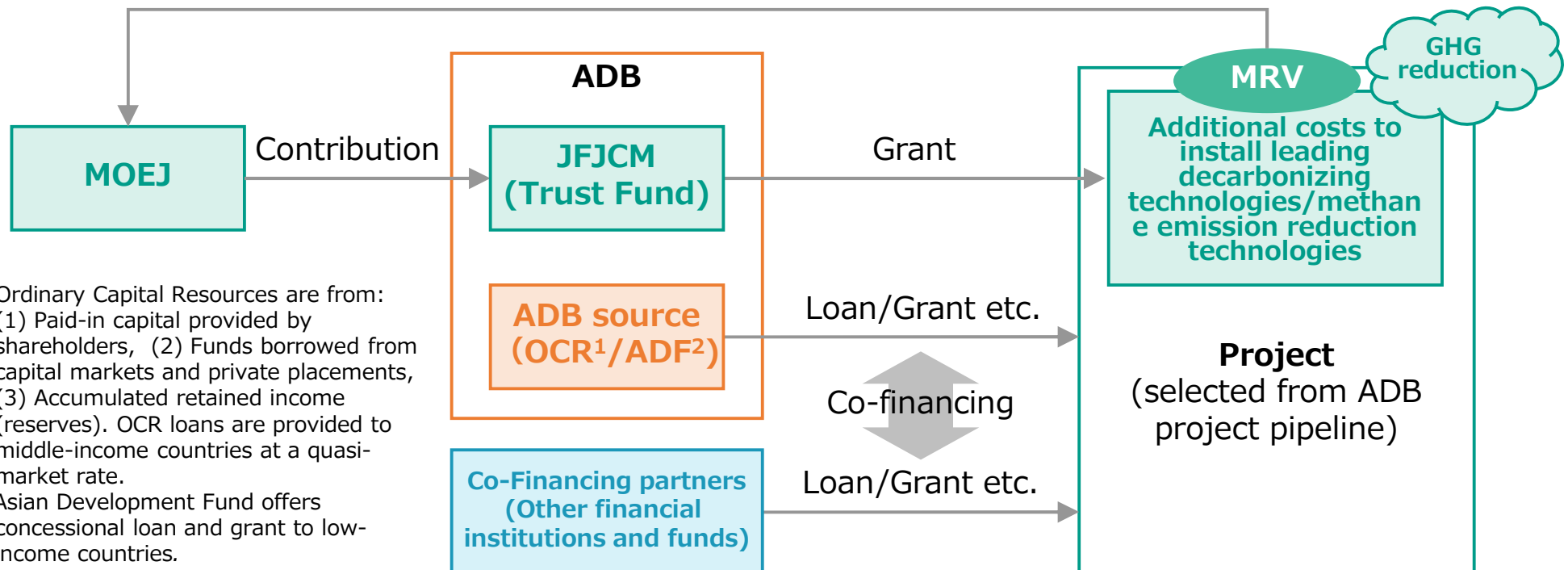
## Overview

To provide financial incentives for the adoption of expensive but leading decarbonizing technologies/methane emission reduction technologies in projects financed by Asian Development Bank (ADB)

## Purpose

To develop ADB projects with sustainable and decarbonizing transition perspective by introducing advanced decarbonizing technologies as well as to acquire JCM credits

JCM credits



<sup>1</sup> Ordinary Capital Resources are from:  
 (1) Paid-in capital provided by shareholders, (2) Funds borrowed from capital markets and private placements, (3) Accumulated retained income (reserves). OCR loans are provided to middle-income countries at a quasi-market rate.

<sup>2</sup> Asian Development Fund offers concessional loan and grant to low-income countries.



# Projects supported by the JCM financing programmes



## Renewable Energy



Solar power, FARMLAND Co., Ltd., Chile



Floating Solar PV, TSB Co., Ltd., Thailand



Hydro Power Plant, Toyo Energy Farm Co., Ltd., Indonesia



Biogas Power Generation, ITOCHU Corporation, Philippines



Binary Power Generation Project at Geothermal Power Plant, MHI, Ltd., Philippines

## Energy efficiency [Consumer sector]



Energy saving at convenience stores, Panasonic, Indonesia



High-efficiency refrigerator, Mayekawa MFG, Indonesia

## Energy efficiency [Industrial sector]

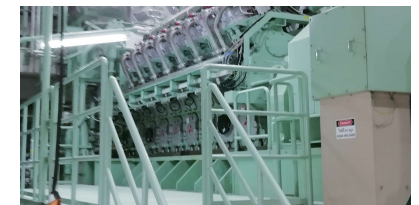


Optimization in petroleum refining plant, Yokogawa Electric Corp. Indonesia



Energy-saving of mobile communications base transceiver stations, KDDI Corp. Indonesia

## Effective Use of Energy



Gas Co-generation System and Absorption Chiller, Kansai Electric Power, Thailand

## Energy efficiency [Urban sector]



LED street lighting system with wireless network control, MinebeaMitsumi, Cambodia



Amorphous transformers in power distribution, Yuko-Keiso, Vietnam

## Waste



Power Generation with Methane Gas Recovery System, NTTDATA, Mexico



Waste to Energy Plant, JFE engineering, Myanmar

## Transport



CNG-Diesel Hybrid Public Bus, Hokusan Co., Ltd., Indonesia

# JFJCM Project : Patuha Unit-2 55MW Geothermal Power Generation Project



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 <a href="#">the first-of-its-kind technologies for large scale geothermal power plant in Indonesia</a> , 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 <sub>2</sub> e/year (estimate) *Average of emission reductions for 20 years



Patuha project site



Geothermal steam pipes



# JFJCM Project : 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 <b>high-temperature low-sag (HTLS) conductors</b> . 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 Gopalganj and Barisal, Bangladesh
Emission reductions	23.1 thousand tCO <sub>2</sub> /year (estimate)

