

City-to-City Collaboration Program for Zero Carbon Society | C3P

Creating Sustainable Cities with
Japan's Decarbonization Solutions

City-to-City
Collaboration
Program

Achieve local decarbonization through the City-to-City Collaboration Program [C3P]!

Cities account for about 70% of global greenhouse gas emissions and energy consumption. In order to achieve the 1.5°C target of the Paris Agreement, it is essential that all cities, whether developed or developing, make the transition to decarbonization as quickly as possible. Since fiscal 2013, the Ministry of the Environment of Japan (MOEJ) has supported efforts to accelerate decarbonization in municipalities overseas through a framework of collaboration between cities in Japan and developing countries. Let's take a look at some case studies from the program.

Malaysia

Kuala Lumpur City, Tokyo Metropolitan Government & Saitama City (Japan)

Laying the foundation for the decarbonization of buildings

Kuala Lumpur, the capital of Malaysia, is a large city with approximately 1.8 million people in the metropolitan area alone, and over 7.2 million when the greater metropolitan area is included. With the large amount of energy consumed by the residential and business sectors, it is a widely accepted belief that incorporating environmental considerations into building operations and management can significantly reduce CO₂ emissions. Against this backdrop, Kuala Lumpur began collaborating with the Tokyo Metropolitan Government, which has been implementing an urban cap-and-trade system since 2019, leading to the establishment of a data-driven system for promoting energy savings in public facilities. In 2022, Saitama City, which implements the "Smart City Saitama Model," joined the project, expanding the scope of carbon neutral activities from individual buildings to city blocks and districts.



Visit by the Mayor of Kuala Lumpur to Saitama City's "Smart Home Community"



Kuala Lumpur City Hall building (air-conditioning system after renovation)

Kuala Lumpur City

Indonesia

Gorontalo Province & Ehime Prefecture (Japan)

Co-creating sustainable development in a town surrounded by the rich tapestry of nature

Located in the northern part of Sulawesi, Gorontalo Province (population 1.2 million) is a peaceful region set amidst the beauty of nature. As the population increases, there is an urgent need to develop urban infrastructure and address deforestation caused by slash-and-burn agriculture.

Collaboration between Gorontalo and Ehime Prefecture began as an academic exchange between universities. In January 2023, the governors concluded a MoU to take steps toward decarbonization and identify solutions to regional issues through a more comprehensive approach, utilising the foundation of collaboration in industry, government, and academia that has been built up to date.

Under the MoU, active dialogue among diverse actors, business matching opportunities, and concrete project formation studies are being developed to create a sustainable development model suitable for Gorontalo Province.



MoU signing ceremony



Coconut plantation



PROGRAM OVERVIEW

The City-to-City Collaboration Program for Zero Carbon Society (C3P) provides comprehensive support to local governments in Japan working in partnership with research organisations, private companies and other Japanese entities to identify low-/zero-carbon projects, conduct feasibility studies, develop institutions, and train human resources in partner cities overseas, in order to realise decarbonization. Since its launch in fiscal 2013, 49 cities and regions in 13 countries, mainly in Asia, and 20 local governments in Japan have participated in the program.

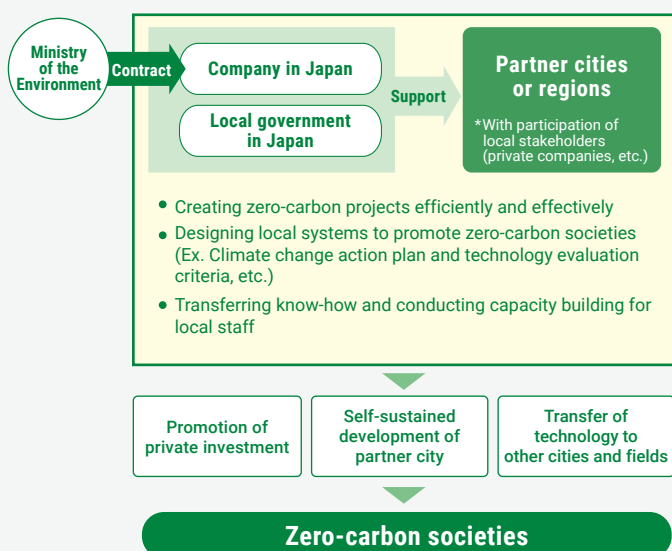
C3P has inspired carbon neutral declarations and the establishment of related systems in partner cities overseas, as well as the implementation of 25 environmental infrastructure

projects through the JCM (**BOX 1 and 2**). The program's scope has expanded to encompass new areas of cooperation for the introduction of new technologies, such as hydrogen.

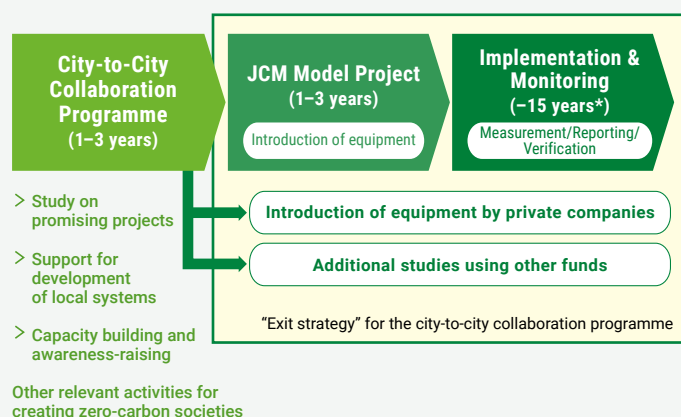
Furthermore, this program is positioned as a core component of the Clean City Partnership Program (C2P2, **BOX 3**) launched jointly with JICA in February 2023, which provides comprehensive and synergistic support to partner cities in collaboration with international development finance institutions and other funders.

The program inspires local actors to implement policies to decarbonize their cities, creating a ripple effect that will drive decarbonization efforts around the world (also known as the decarbonization domino effect).

Program outline



Program exit strategies



Program Support

Eligible activities:

Multi-stakeholder projects by Japanese local governments and partner cities overseas working together with research institutes, private companies and academic institutions in Japan to promote decarbonization at the local level in developing countries

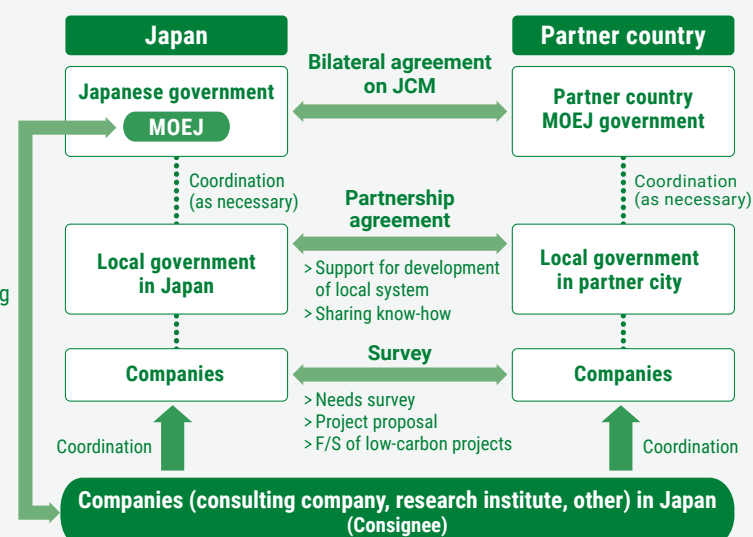
Eligible countries:

Developing countries, with priority given to JCM partner countries

Target areas:

Diverse range of sectors in which decarbonization technologies such as energy saving, renewable energy, and hydrogen can be applied (i.e., projects that help reduce energy-related carbon dioxide emissions and promote the formation of a decarbonized society), including support for the establishment of systems to promote the introduction of facilities in each sector

Example of C3P project implementation system



Benefits of Participating in the Program

Benefits for cities

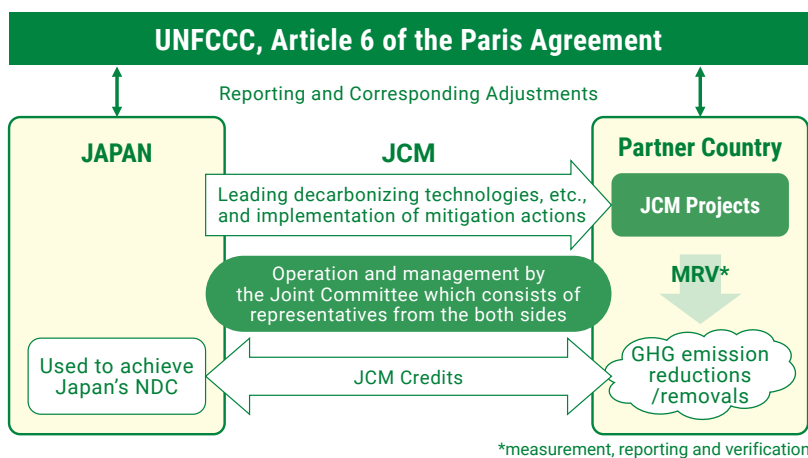
- > Opportunity to establish a foundation for a zero-carbon society to lead to zero-carbon development at an earlier stage
- > Realisation of co-benefits, such as improvements of the urban environment, and contributions to domestic policies and international agendas
- > Creation of business opportunities by encouraging the participation of local companies
- > Improved and enhanced urban environment to increase the appeal of the city and promote the development of industrial clusters and investment
- > Opportunities to foster civic pride in residents as they learn about the efforts and actions of local governments and companies

Benefits for companies

- > Use of the JCM to enable the introduction of superior zero-carbon technologies at low costs, and as a result, lower electric power and running costs. Companies will also be able to gain management know-how for the technologies introduced
- > Improved corporate brand power as a result of being viewed as a company that is proactive on environmental measures
- > Potential to acquire new sales channels

BOX 1: What is the Joint Crediting Mechanism (JCM)?

The JCM was established to quantitatively evaluate the extent of contributions by Japan and partner countries to the achievement of greenhouse gas emission reductions and removals in developing countries through the diffusion of advanced decarbonization technologies and implementation of mitigation actions in the form of JCM Model Projects and others. Credits acquired through these projects can be used to achieve the nationally determined contributions (NDC) for both countries under the Paris Agreement. To date, Japan has established partnerships with 28 countries under this mechanism*.



* Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Vietnam, Laos, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand, Philippines, Senegal, Tunisia, Azerbaijan, Moldova, Georgia, Sri Lanka, Uzbekistan, Papua New Guinea, United Arab Emirates, Kyrgyz, Kazakhstan

Source: Government of Japan, Recent Developments of the Joint Crediting Mechanism (JCM) (November 2023)

BOX 2: What are JCM Model Projects?

JCM Model Projects are financed by the Japanese government through subsidies that cover a portion of the installation costs of facilities and equipment to reduce energy-related CO₂ emissions. To date, 235 projects have been developed that can contribute to a reduction in CO₂ emissions by approximately 2.8 million tonnes per year.

Source: MOEJ, List of JCM Financing Program by MOEJ (FY2013–2023) as of October 5, 2023

BOX 3: What is the Clean City Partnership Program (C2P2)?

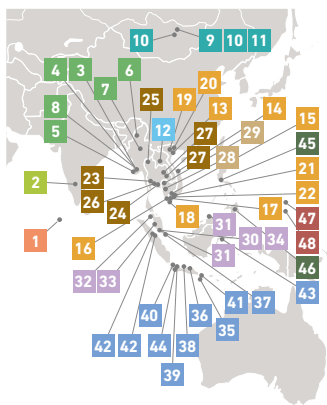
Launched in February 2023 by the MOEJ together with Japan International Cooperation Agency (JICA), this program aims to address challenges faced by cities around the world from multiple perspectives. With the participation of Japanese local governments, private companies, financial institutions, and in collaboration with international development finance institutions (MDBs), the program aims to provide comprehensive and synergistic support to partner cities overseas to address urban challenges including climate change, environmental pollution, circular economy, and ending and reversing nature loss.

C3P cities FY2013–2023

Forty-nine cities and regions in 13 countries and 20 municipalities in Japan have participated in this program since it was launched in 2013.

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

* Ongoing projects in FY2023




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 *

* Ongoing projects in FY2023

**Joint project for Bali and Semarang

JCM Model Projects formulated under the C3P framework FY2013–2023

Twenty-five JCM Model Projects have been developed in seven countries (as of fiscal 2023). Note: There are also non-JCM projects realized through C3P.

Myanmar		Thailand		Vietnam	
<ul style="list-style-type: none"> Introduction of Waste to Energy Plant in Yangon City (Yangon City–Kawasaki City) FY2015 Introduction of Energy Saving Brewing Systems to Beer Factory (Yangon City–Kawasaki City) FY2016 Introduction of High-efficiency Once-through Boiler in Instant Noodle Factory (Yangon City–Kawasaki City) FY2016 Rice Husk Power Generation in Rice Mill Factory in Ayeyarwady (Ayeyarwady Region–Fukushima City) FY2016 		<ul style="list-style-type: none"> Introduction of 12MW Power Generation System by Waste Heat Recovery for Cement Plant (Rayong Province–Kitakyushu City) FY2016 Introduction of High Efficiency Once Through Boiler to Garment Factory (Eastern Thailand–Osaka City) FY2021 		<ul style="list-style-type: none"> Eco-Driving by Utilizing Digital Tachograph System (Ho Chi Minh City–Osaka City) FY2014 Introduction of Solar PV System at Shopping Mall in Ho Chi Minh (Ho Chi Minh City–Osaka City) FY2015 Energy Saving in Factories with Air-Conditioning Control System (Ho Chi Minh City–Osaka City) FY2015 Introduction of High Efficiency Water Pumps in Da Nang City (Da Nang City–Yokohama City) FY2016 Introduction of High Efficiency Air-conditioning System and Air Cooled Chillers to Office Buildings (Ho Chi Minh City–Osaka City) FY2019 Introduction of High Efficiency Boiler System to Food Factory (Ho Chi Minh City–Osaka City) FY2020 Introduction of High Efficiency Air-conditioning System to Hotel in Ho Chi Minh City (Ho Chi Minh City–Osaka City) FY2020 Introduction of High Efficiency LED Lighting with Dimming and Tunable Function to Office Building in Ho Chi Minh City (Ho Chi Minh City–Osaka City) FY2021 Introduction of 9.8 MW Rooftop Solar Power System in Industrial Park (Ho Chi Minh City–Osaka City) FY2021 Introduction of High Efficiency Chiller and High Efficiency LED Lighting with Dimming Function to Shopping Center (Ho Chi Minh City–Osaka City) FY2021 Mini Hydro Power Plant Project (Ha noi City–Fukuoka Prefecture) FY2022 Introduction of Rooftop Solar Power System (JCM Eco Lease Scheme) (Ho Chi Minh City–Osaka City) FY2022 	
Philippines		Cambodia		Indonesia	
<ul style="list-style-type: none"> Introduction of Energy Saving Air Conditioning System to Quezon City Hall Compound (Quezon–Osaka City) FY2021 		<ul style="list-style-type: none"> Introduction of 1MW Solar Power System and High Efficiency Centrifugal Chiller in Large Shopping Mall (Phnom Penh Capital–Kitakyushu City) FY2016 		<ul style="list-style-type: none"> Energy Saving for Air-Conditioning at Shopping Mall with High Efficiency Centrifugal Chiller (Surabaya City–Kitakyushu City) FY2015 Energy Saving for Industrial Park with Smart LED Street Lighting System (Surabaya City–Kitakyushu City) FY2015 Introduction of CNG-Diesel Hybrid Equipment to Public Bus in Semarang (Semarang City–Toyama City) 2FY018 Introduction of High Efficiency Boiler System to Carton Box Factory (Jakarta–Kawasaki City) FY2019 	
Chile					
<ul style="list-style-type: none"> Energy Supply Project by 2.0MW Rooftop Solar Power System (Renca Municipality Santiago–Toyama City) FY2022 					

No. of projects selected by year

FY2014	1
FY2015	5
FY2016	6
FY2018	1
FY2019	2
FY2020	2
FY2021	5
FY2022	3

25 projects in 7 countries

Dissemination of Local Decarbonization Initiatives and Policies to the World

COP28 Japan Pavilion Seminar

Clean City Partnership Program (C2P2) Seminar: Urban Agenda on Climate Change, Pollution and Biodiversity Loss

December 6, 2023

Organizer: MOEJ / Co-organizers: JICA, IGES

The Clean City Partnership Program (C2P2), launched by the MOEJ together with JICA, was introduced at this seminar during COP28. The seminar also featured presentations by local officials on good C2P2 practices implemented in fiscal 2023 between Shiga Prefecture (Japan) and Quang Ninh Province (Vietnam), Urasoe City (Japan) and Airai Province (Palau), and Sakai City (Japan) and Ba Ria Vung Tau Province (Vietnam).



Triggering an upward spiral towards decarbonization with subnational leaders— from the G7 Roundtable on Subnational Climate Actions

December 2, 2023

Organizer: MOEJ / Co-organizers: Ministry of Land, Infrastructure, Transport and Tourism, Japan, ICLEI, Governments for Sustainability, Urban 7 (U7), Global Covenant of Mayors (GCoM), IGES

The G7 Roundtable on Subnational Climate Actions was established at the G7 Ministers' Meeting on Climate, Energy and Environment in Sapporo in April 2023, with the first roundtable held in October of the same year. This seminar at COP28 provided an opportunity to share the outcomes of that meeting and deliver a message on creating a decarbonization domino effect in partnership with local governments and municipalities that will reverberate around the world.

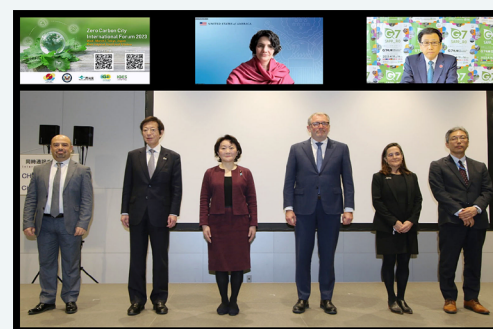


Zero Carbon City International Forum 2023

March 1, 2023

Organisers: MOEJ & Office of Special Presidential Envoy for Climate, United States of America / Co-Organisers: ICLEI - Local Governments for Sustainability & IGES

This forum, held under the U.S.-Japan Global Subnational Zero Carbon Promotion Initiative, discussed measures to promote collaboration between national and local governments in preparation for the G7 Ministers' Meeting on Climate, Energy and Environment in Sapporo, and shared advanced case studies on local decarbonization transitions, enhancing resilience, and multi-benefits.



Connections



Web Portal for Zero Carbon Development in Asia

Information on policy trends and support systems for decarbonized development in Asia

www.env.go.jp/earth/coop/lowcarbon-asia/english



JAPAN PLATFORM for REDESIGN: SUSTAINABLE INFRASTRUCTURE

A comprehensive public-private partnership platform to encourage Japanese companies to develop environmental infrastructure overseas

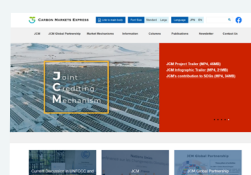
jprsi.go.jp/en



JCM - The Joint Crediting Mechanism

Case studies of JCM Model Projects and information on the open application process

gec.jp/jcm



CARBON MARKETS EXPRESS

Information on the carbon market from the Japanese government with a focus on the JCM

carbon-markets.env.go.jp/eng



List of FY2023 projects under the C3P

	Cities in collaboration	Project title	Implementation Body
01	Renca Municipality, Santiago City (Chile)—Toyama City	Project to Promote Decarbonization and SDGs Dominoes through Participation in the Race to Zero by Renca, Santiago	Nippon Koei Co., Ltd.
02	Bali Province (Indonesia)—Toyama City	City-to-city collaboration project for realize decarbonization society by Toyama City and Bali province	Japan NUS Co., Ltd.
03	Bandung City (Indonesia)—Kawasaki City	Zero Carbon Society Development in Bandung City through Energy Saving of Infrastructure System and Mobility Improvement	Oriental Consultants Co., Ltd.
04	Gorontalo Province (Indonesia)—Ehime Prefecture	Support project for the achievement of SDGs and developing a sustainable decarbonized society: City-to-City Collaboration between Ehime Prefecture and Gorontalo Province	Japan NUS Co., Ltd.
05	Pekanbaru City (Indonesia)—Kawasaki City	Project to Promote 2050 Zero Carbon City in Riau Province Region through Cooperation with Pekanbaru City	Nippon Koei Co., Ltd.
06	West Java Province (Indonesia)—Kitakyushu City	Feasibility Study on Decarbonization of Cement Industry in West Java Province, Indonesia	IGES
07	Iskandar Development Region (Malaysia)—Kitakyushu City	Support project for the realization of decarbonized transportation and city by promoting the spread of renewable energy in the Iskandar region	NTT Data Institute of Management Consulting, Inc.
08	Johor Iskandar Development Area (Malaysia)—Toyama City	Carbon-Free Model Area Development Project (Phase2) (City of Kitakyushu—Iskandar Regional Development Authority Collaboration Project)	Japan NUS Co., Ltd.
09	Kuala Lumpur City (Malaysia)—Tokyo Metropolitan Government & Saitama City	Developing an Institutional Framework Towards Kuala Lumpur Zero Carbon City and Neighbourhood in Collaboration with Tokyo Metropolitan Government and Saitama City	IGES
10	Ulaanbaatar City (Mongolia)—Sapporo City	Zero Carbon Society Development by Conversion of Energy from Coal in Ulaanbaatar City	Oriental Consultants Co., Ltd.
11	Airai State (Palau)—Urasoe City	Support Project for Developing a Sustainable Eco-friendly City: An Intercity Collaboration between Urasoe City and Airai State	Japan NUS Co., Ltd.
12	Koror State (Palau)—Kitakyushu City	City to City collaboration project for the promotion of decarbonized cities and realization of co-benefits in Koror State, Republic of Palau	ATGREEN Co., Ltd.
13	Quezon City (Philippines)—Osaka City	Zero Carbon Development in Quezon City for the Realization of Carbon Neutral Society	Oriental Consultants Co., Ltd.
14	Bangkok Metropolitan Administration (Thailand)—Yokohama City	Project for accelerating GHG net zero emission under the Bangkok Master Plan on Climate Change	Overseas Environmental Cooperation Center
15	Eastern Economic Corridor (EEC) (Thailand)—Osaka City	Support for Designing Decarbonization Society with BCG Economy in EEC, Thailand	Nippon Koei Co., Ltd.
16	Ubon Ratchathani Province & Warin Chamrap Town Municipality (Thailand)—Kitakyushu City	JCM Project Development Study for Realization of Carbon Neutral in Ubon Rachatani Province, Thailand	EX Research Institute Ltd.
17	Ba Ria-Vung Tau Province (Vietnam)—Sakai City	Promotion of Zero-Carbon Smart City through City-to-City Collaboration between Ba RiaVung Tau Province and Sakai City	Nippon Koei Co., Ltd.
18	Ben Tre Province (Vietnam)—Ehime Prefecture	City-to-City Collaboration for realizing a decarbonized and circular society by Ehime Prefecture and Ben Tre Province	Japan NUS Co., Ltd.
19	Da Nang City (Vietnam) —Yokohama City	Yokohama / Da Nang City to City Collaboration Project for Realization of a Decarbonized Society through the Introduction of a Carbon Management System (CMS) and Decarbonization Technologies	Carbon Free Consulting Co., Ltd.
20	Hai Phong City (Vietnam)—Kitakyushu City	Promotion of Eco-Industrial Parks Toward Carbon Neutrality in Hai Phong City, Vietnam	IGES
21	Hanoi City (Vietnam)—Fukuoka Prefecture	Promotion of Zero-Carbon Technology to Improve the Environment in Hanoi City	Nippon Koei Co., Ltd.
22	Ho Chi Minh City & Thu Duc City (Vietnam)—Osaka City	Promotion of Carbon Neutrality based on Climate Change Policies in Ho Chi Minh City and Thu Duc City	Nippon Koei Co., Ltd.
23	Quang Ninh Province (Vietnam)—Shiga Prefecture	Project to support the achievement of green growth and the realization of a decarbonized society through city-to-city collaboration between Quang Ninh Province and Shiga Prefecture	KANSO TECHNOS CO., LTD.

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