

# City-to-City Collaboration for Zero-Carbon Society 2020



Ministry of the Environment

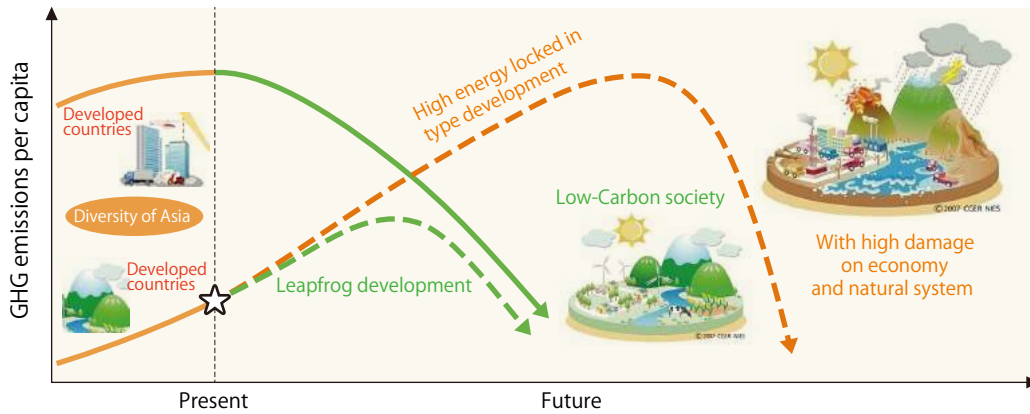
# City-to-City Collaboration for Zero-Carbon Society

## Programme Background

In response to the adoption of the Paris Agreement at the 21<sup>st</sup> Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC), “zero-carbon development”, which aims to achieve net zero greenhouse gas (GHG) emissions, has started to emerge on a global level, moving a step beyond “low-carbon development”, which aims to keep GHG emissions low. Even in countries where energy demand is rising as a result of ongoing economic development, there is a need to introduce zero- and low-carbon urban infrastructure, facilities and equipment that can be used for long periods of time and to promote the replacement of existing facilities and equipment with zero- and low-

carbon options at the time they should be updated.

The Ministry of the Environment, Japan has promoted the “City-to-City Collaboration for Low-Carbon Society” programme since 2013 with the aim of contributing to leapfrog development by packaging together the collective knowledge and expertise on zero- and low-carbon technologies and policies in Japan for cities in developing countries. In fiscal 2020, when the Paris Agreement entered its implementation phase, the term “zero-carbon society” was added to the programme’s name, and more layers of support are being added with the aim of creating this type of society as quickly as possible.



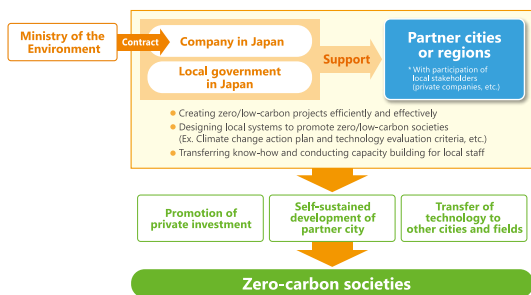
Conceptual diagram of leapfrog development

Source: National Institute for Environmental Studies

## Programme Overview

Under this programme’s framework of collaboration between local governments in Japan and cities in developing countries (partner cities), Japanese companies and municipalities work together with local partners to identify and conduct feasibility studies on zero-/low-carbon projects in partner cities, provide assistance in establishing systems, train human resources, and raise awareness to

promote zero-carbon development in local areas. This programme is expected to lead to the introduction of equipment and facilities, as well as the development of commercial operations using financial mechanisms (Box 2) under the Joint Crediting Mechanism (JCM, Box 1) scheme promoted by the Japanese government.



Conceptual diagram of the city-to-city collaboration programme

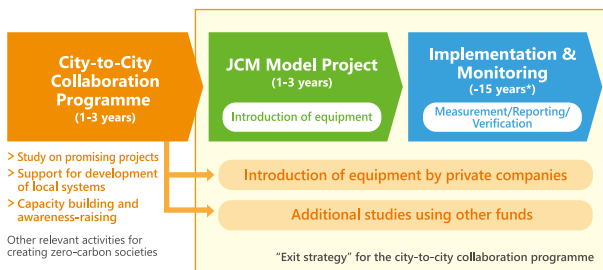


Image of activities under the city-to-city collaboration programme and exit strategies

## Benefits for participating stakeholders

Stakeholders participating in this programme can expect to receive a variety of benefits and effects, such as the development and expansion of networks both domestically and internationally, more visible profiles, and opportunities

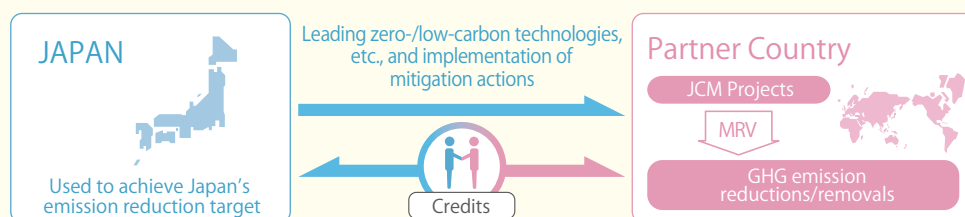
to develop global-minded human resources. Below are additional advantages stakeholders may gain from taking part in this programme.

Benefits for cities overseas	<ul style="list-style-type: none"> <li>● Opportunity to establish a foundation for a zero-carbon society to lead to zero-carbon development at an earlier stage</li> <li>● Realisation of co-benefits, such as improvements of the urban environment, and contributions to domestic policies and international agendas</li> <li>● Creation of business opportunities by encouraging the participation of local companies</li> <li>● Improved and enhanced urban environment to increase the appeal of the city and promote the development of industrial clusters and investment</li> <li>● Opportunities to foster civic pride in residents as they learn about the efforts and actions of local governments and companies</li> </ul>
Benefits for companies overseas	<ul style="list-style-type: none"> <li>● Use of the JCM to enable the introduction of superior zero- and low-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.</li> <li>● Improved corporate brand power as a result of being viewed as a company that is proactive on environmental measures</li> <li>● Potential to acquire new sales channels</li> </ul>
Benefits for cities in Japan	<ul style="list-style-type: none"> <li>● Use of their own knowledge to contribute to environmental improvement and development of the domestic policies and international agendas of partner cities</li> <li>● Use of the programme as a menu of support to promote the overseas expansion of local companies</li> <li>● Chances to help revitalise the local economy with an increase in the amount of sales by local companies and number of visitors from Japan and abroad</li> <li>● Opportunities to learn about the efforts and actions of local governments and companies to foster a sense of civic pride in residents</li> </ul>
Benefits for companies in Japan	<ul style="list-style-type: none"> <li>● Use of the JCM to facilitate overseas expansion and increase sales of company products</li> <li>● Easy conduct of research with a variety of support from local governments and consultants</li> <li>● Improved access to information on local policy trends and market trends, etc.</li> <li>● Opportunities to consider mid- to long-term sales strategies with an understanding of the company's position in light of global trends</li> <li>● Potential to acquire new sales channels</li> </ul>

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

The Joint Crediting Mechanism (JCM) is a framework under which the governments of Japan and a partner country agree to work together to reduce/remove GHG emissions. Under the JCM, GHG emission reductions are quantitatively evaluated to gain a sense of the level of Japan's support in the introduction of superior zero- and low-carbon technologies in the partner country (such as technologies and products, systems, services, infrastructure, etc.). JCM credits are issued to both Japan and the partner country to

achieve the GHG emission reduction targets of both countries. The JCM is one of the market mechanisms included in Article 6 of the Paris Agreement and contributes to the achievement of the ultimate objective of the UNFCCC. As of October 2020, Japan has developed JCM frameworks with 17 countries: Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Laos, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand, and the Philippines.



JCM outline figure

### Box 2 : JCM financial mechanisms: What is the JCM Model Project?

The JCM Model Project scheme is a funding mechanism supporting the introduction of superior zero- or low-carbon equipment and facilities in JCM partner countries and developing countries where the JCM is expected to be implemented, in order to achieve the reduction and removal of GHG emissions, and measure, report and verify (MRV) their impacts. JCM credits are

issued according to the amount of emissions reduced or removed. Eligible projects receive financial support for the introduction of facilities and equipment that use superior zero- and low-carbon technologies. As of October 2020, 172 projects (17 countries) have been adopted and are expected to reduce CO<sub>2</sub> emissions by approximately 1.95 million tonnes annually.

Source: Ministry of the Environment, Japan, "List of adopted JCM Model Projects in JCM partner countries (FY2013-2020)"  
 ※ Ref: [http://gec.jp/jcm/jp/wp-content/uploads/2020/10/20201005list\\_jp.pdf](http://gec.jp/jcm/jp/wp-content/uploads/2020/10/20201005list_jp.pdf)

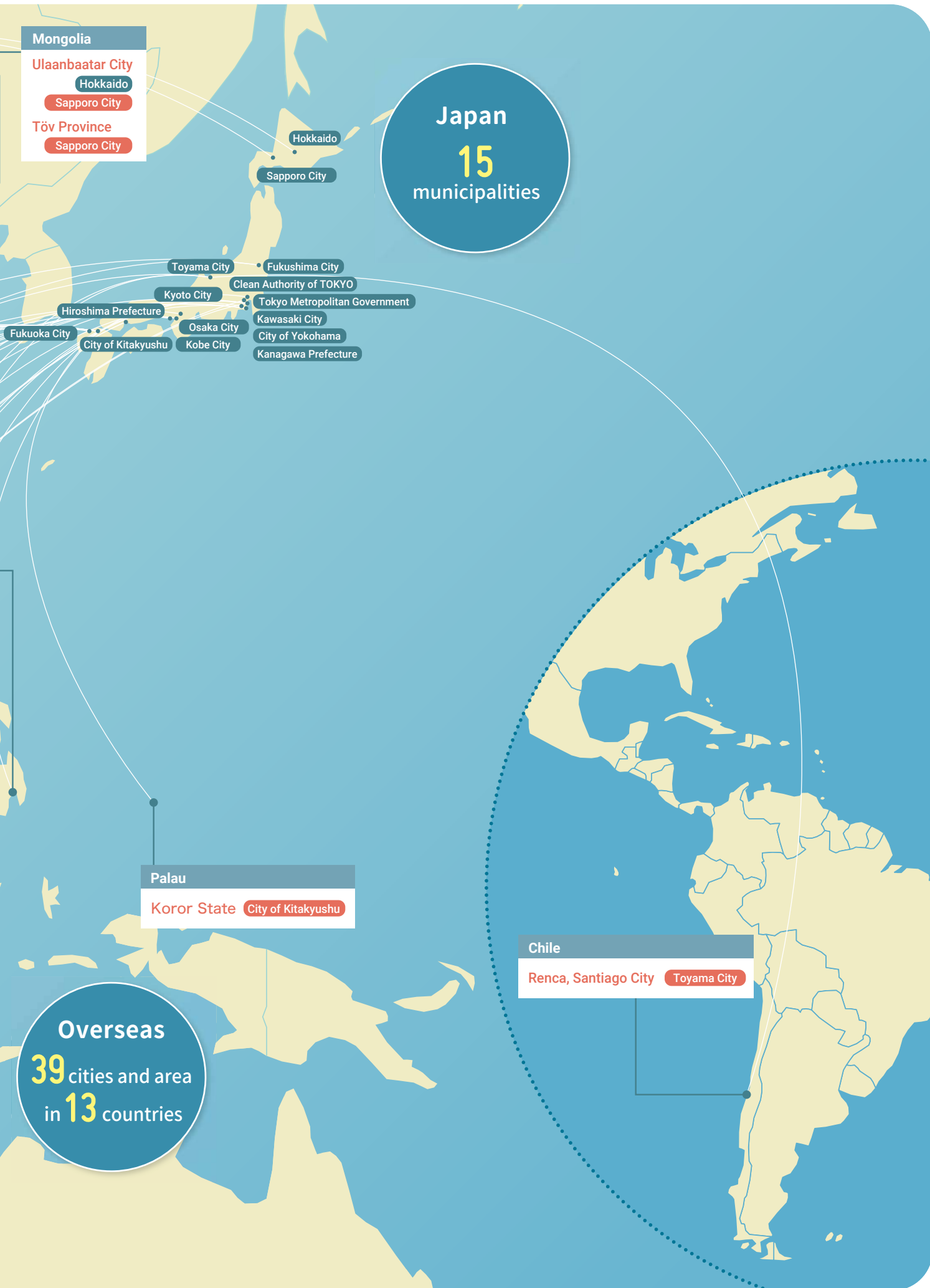
# Cities participating in the City-to-City Collaboration Programme (FY2013–2020)

Participating countries and cities

To date, **39** cities and area from **13** countries in the world and **15** municipalities in Japan have taken part in the City-to-City Collaboration Programme



Note: Cities for each country are listed in order from north to south. The cities in orange colour are for the FY2020 Programme.



**Mongolia**  
 Ulaanbaatar City  
 Hokkaido  
 Sapporo City  
 Töv Province  
 Sapporo City

**Japan**  
 15 municipalities

Toyama City  
 Fukushima City  
 Clean Authority of TOKYO  
 Tokyo Metropolitan Government  
 Kyoto City  
 Hiroshima Prefecture  
 Fukuoka City  
 City of Kitakyushu  
 Osaka City  
 Kobe City  
 Kawasaki City  
 City of Yokohama  
 Kanagawa Prefecture

**Palau**  
 Koror State  
 City of Kitakyushu

**Chile**  
 Renca, Santiago City  
 Toyama City

**Overseas**  
 39 cities and area  
 in 13 countries

(As of September 2020)

# List of City-to-City Collaboration for Zero-Carbon Society in FY2020

## Renca, Santiago, Chile – Toyama City

01	Project to Promote SDGs Future City with Renca, Santiago	Implementation Body Nippon Koei Co., Ltd.
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## DKI-Jakarta, Indonesia – Kawasaki City

02	Promotion of Green Innovation to Realise Zero-Carbon City by the Collaboration between DKI-Jakarta and Kawasaki City	Implementation Body Nippon Koei Co., Ltd.
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## Rokan Hulu Regency and Pekanbaru City, Indonesia – Kawasaki City

03	Project to Promote Development of Circular Economy for Oil Palm Industry and 2050 Zero-Carbon City in Riau Province Region	Implementation Body Nippon Koei Co., Ltd.
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## Bali Province and Semarang City, Indonesia – Toyama City

04	City-to-City Cooperation Project by Toyama City to Realise SDGs Future City for Bali Province and Semarang, Central Java Province	Implementation Body Japan NUS Co., Ltd.
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## Kuala Lumpur, Malaysia – Tokyo Metropolitan Government

05	Project Developing a Policy and Implementation Framework for Building Energy Efficiency through City-to-City Collaboration between Kuala Lumpur Government and Tokyo Metropolitan Government	Implementation Body Institute for Global Environmental Strategies (IGES)
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## Iskandar Region and Kota Kinabalu City, Malaysia – Toyama City

06	Urban Development Project through Decarbonised Transportation Using Bio-fuel and Zero-Carbon City Development Project through Dissemination of Renewable Energy	Implementation Body Japan NUS Co., Ltd.
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## Iskandar Development Region, Malaysia – City of Kitakyushu

07	Promotion of Carbon-Free Society in Iskandar Regional Area (Phase2) (City of Kitakyushu – Iskandar Regional Development Authority Collaboration Project)	Implementation Body NTT Data Institute of Management Consulting, Inc.
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## Male City, Maldives – Toyama City

08	Support Project for Developing a Sustainable Eco-friendly Smart City: City-to-City Collaboration between Toyama City and Male City	Implementation Body Japan NUS Co., Ltd.
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## Ulaanbaatar City and Tuv Aimag, Mongolia – Sapporo City

09	Zero-Carbon Society Development in Ulaanbaatar City and Tuv Aimag	Implementation Body Oriental Consultants Co., Ltd.
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## Sagaing Region and Ayeyarwady Region, Myanmar – Fukushima City

10	Promotion Project for Formulation of Circulating and Ecological Economy in Local Cities in Myanmar	Implementation Body Mitsubishi Research Institute, Inc.
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## Yangon City, Myanmar – Kawasaki City

11	Zero-Carbon Promotion Project toward Sustainable Urbanisation in Yangon City	Implementation Body Nippon Koei Co., Ltd.
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## Hlegu Township, Yangon Region, Myanmar – City of Kitakyushu

12	Decarbonisation in Smart City Development Project in Yangon Region (Phase2)	Implementation Body NTT Data Institute of Management Consulting, Inc.
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## Yangon City, Myanmar – Fukuoka City

13	Green Recovery Project by Installation of AI and ZEB Technologies in Yangon	Implementation Body Nippon Koei Co., Ltd.
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## State of Koror, Palau – City of Kitakyushu

14	Project to Accelerate Carbon-Free and to Create Co-Benefit through EV Vehicles in State of Koror, Palau (Kitakyushu-Koror Cooperation Project)	Implementation Body ATGREEN CO., Ltd.
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## Quezon City, Philippines – Osaka City

15	Zero-Carbon Development in Quezon City (Energy Saving Air Conditioning System (Fluorocarbons Management Plan))	Implementation Body Oriental Consultants Co., Ltd.
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## Port of Authority, Thailand – City of Yokohama

16	FY 2020 Feasibility Study for Ports in Thailand to Reduce GHG Emission by Promoting Modal Shift and Enhancing Terminal Efficiency	Implementation Body Yokohama Port Corporation
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## Eastern Thailand (Eastern Economic Corridor), Thailand – Osaka City

17	Support for the Realisation of Zero-Carbon Society to Achieve Thailand 4.0	Implementation Body Nippon Koei Co., Ltd.
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## Danang City, Viet Nam – City of Yokohama

18	Support for Developing Danang's "10-Year Environment City Plan" and Low-Carbon Technology Projects under City-to-City Cooperation between Danang and Yokohama toward Low-Carbon Smart City	Implementation Body Institute for Global Environmental Strategies (IGES)
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## Ho Chi Minh City, Viet Nam – Osaka City

19	Promotion of Zero-Emission Technology to Industrial and Public Sectors in Ho Chi Minh City	Implementation Body Nippon Koei Co., Ltd.
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## Soc Trang Province, Viet Nam – Hiroshima Prefecture

20	Project to Promote the Formation of an Autonomous Decarbonised Society through City-to-City Collaboration between Hiroshima Prefecture and Soc Trang Province, Viet Nam	Implementation Body E-Square Inc.
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## Relevant Websites



### Web Portal for Low Carbon Development in Asia



<http://www.env.go.jp/earth/coop/lowcarbon-asia/english/>

This portal provides information regarding related policy trends and support systems for achievement of low-carbon development in Asia.



### JCM – The Joint Crediting Mechanism



<http://jec.jp/jcm/>

This site introduces JCM Model projects and provides information on call for proposals.



### Carbon Markets Express



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

This website will introduce JCM and carbon markets in the world, based on the information released by the government of Japan.



### The Joint Crediting Mechanism



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

This official platform provides information and updates for the JCM.



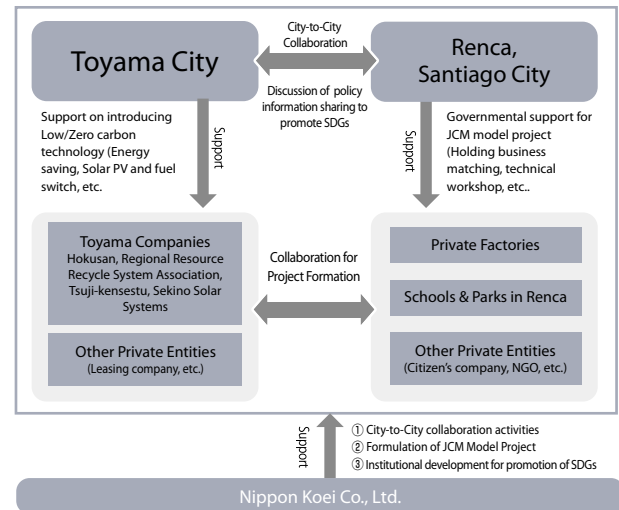
## Project to Promote SDGs Future City with Renca, Santiago

| Implementation Body | Nippon Koei Co., Ltd.

| Partner Entities | Toyama City, Hokusan, Regional Resource Recycle System Association, Tsuji-kensetsu, Sekino Solar System



In the wake of the OECD meeting in 2019, Toyama City and the Renca district, which is a part of Chile’s capital city of Santiago, signed an agreement on city parks and the environment and have continued their dialogue at COP25 and on other occasions. From this fiscal year, the project partners have been promoting a city-to-city collaboration project that aims to help address the challenges faced by Renca from environmental, social and economic perspectives based on the knowledge and experience gained from Toyama City’s SDGs plan. The Renca district is known for its industrial area located near the airport and a hill called Cerro Renca. There are plans to introduce renewable energy to the district’s schools and other facilities, as well as Cerro Renca, and decarbonise transportation, logistics and industries in the district through the city-to-city collaboration project.



Chile  
Indonesia  
Malaysia  
Maldives  
Mongolia  
Myanmar  
Palau  
Philippines  
Thailand  
Viet Nam



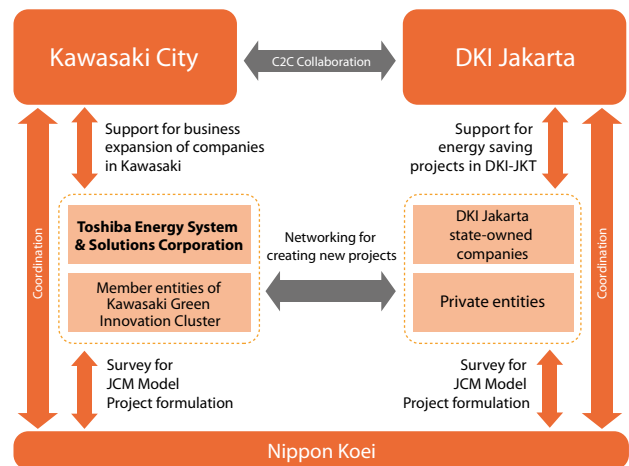
## Promotion of Green Innovation to Realise Zero-Carbon City by the Collaboration between DKI-Jakarta and Kawasaki City

| Implementation Body | Nippon Koei Co., Ltd.

| Partner Entities | Kawasaki City, Toshiba Energy System & Solutions Corporation, Institute for Global Environmental Strategies (IGES), Miura Co., Ltd., Shinwa Corporation



Kawasaki City and the Special Capital Region of Jakarta have engaged in city-to-city collaboration since 2017 with the aim of promoting green innovation in Jakarta. In March 2019, the cities signed a letter of intent on city-to-city collaboration to achieve a decarbonised society. Activities are also being carried out to achieve the SDGs through intercity cooperation reflecting Kawasaki City’s selection as an “SDGs Future City” in July 2019. This fiscal year, the two cities are conducting a feasibility study on stabilising electric power with the introduction of a self-sustaining hydrogen energy supply system to a remote island, promoting green industries with the introduction of energy-efficient technologies in factories, and the introduction of EV buses and charging systems. Kawasaki and Jakarta also aim to promote green innovation in the Special Capital Region of Jakarta through activities to achieve the SDGs.







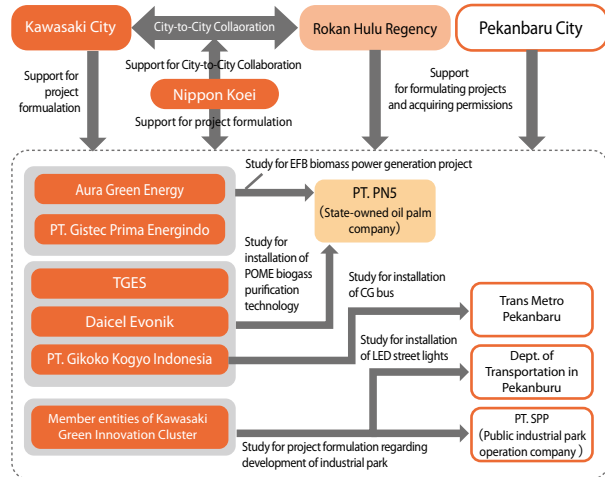
Chile, Indonesia, Malaysia, Maldives, Mongolia, Myanmar, Palau, Philippines, Thailand, Viet Nam

# Project to Promote Development of Circular Economy for Oil Palm Industry and 2050 Zero-Carbon City in Riau Province Region



Implementation Body | Nippon Koei Co., Ltd.  
 Partner Entities | Kawasaki City, Daicel-Evonik Ltd., PT. Gikoko Kogyo Indonesia, Aura Green Energy Co., Ltd., PT. Gistec Prima Energindo

In its aim to create an advanced sustainable city, Kawasaki City has positioned a “Zero-Emissions Initiative” as its basic concept for the formation of a local sustainable economy and society and promoting it as the key to regional development. This project aims to contribute to the sustainability and decarbonisation of the palm oil industry, a key industry in the area, through the generation of biomass power using empty fruit bunches (EFBs) owned by companies affiliated with Kawasaki City and technologies for refining and utilising biogas generated from palm oil mill effluent (POME) in the Riau region, the world’s largest production area of palm oil. The project will also examine green recovery from COVID-19 and implement initiatives for the formation of a zero-carbon city in Pekanbaru City by 2050.

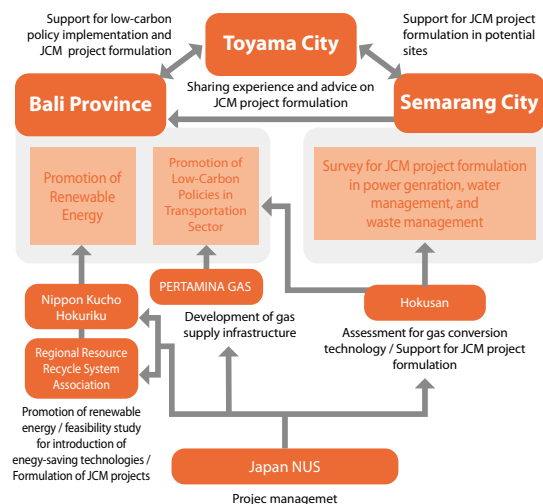


# City-to-City Cooperation Project by Toyama City to Realise SDGs Future City for Bali Province and Semarang, Central Java Province



Implementation Body | Japan NUS Co., Ltd.  
 Partner Entities | Toyama City, Regional Resource Recycle System Association, HOKUSAN CO., LTD., Nippon Kucho Hokuriku CO., LTD.

Toyama City is engaged in a variety of pioneering approaches to enhance its value as a SDGs FutureCity, making it possible to share its know-how with Bali and local municipalities. Specific areas include administrative support and shared knowledge based on initiatives in Toyama City, such as the strategy of the Compact City. In addition, the use of JCM model projects is being promoted with the aim to position municipalities in Bali as “tourism cities of the future” utilising the island’s rich tourism resources. In this project, studies are being conducted to develop JCM projects with the knowledge gained from Semarang, which has experience in developing JCM projects. These include the introduction of energy-efficient and renewable-energy equipment as well as fuel conversion projects. This will be carried out in cooperation with local companies in Toyama city to achieve the creation of tourism future cities in Bali. Studies on the feasibility of developing JCM projects in Semarang City, will also be conducted, such as the installation of renewable energy facilities and fuel conversion for factories and flood control pumps.





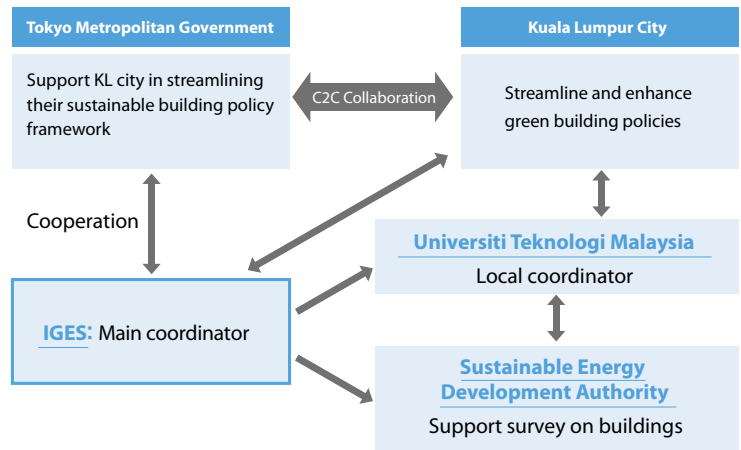
## Project Developing a Policy and Implementation Framework for Building Energy Efficiency through City-to-City Collaboration between Kuala Lumpur Government and Tokyo Metropolitan Government



| Implementation Body | Institute for Global Environmental Strategies (IGES)  
 | Partner Entities | Tokyo Metropolitan Government

The Tokyo Metropolitan Government and Kuala Lumpur have built up a relationship as member cities of the “Asian Network of Major Cities 21 (ANMC21)” established in 2001 and as members of the C40 (Cities Climate Leadership Group). Both IGES, the proponent of this project, and the local coordinator, Universiti Teknologi Malaysia (UTM), are organisations that collaborated in the formulation of the “Kuala Lumpur Low-Carbon Society Blueprint 2030” in 2018.

This project will help achieve the goals of this blueprint, which aims to reduce CO<sub>2</sub> emissions by 70% based on forecasts of the situation and events to 2030, and transfer the experience and expert knowledge of the Tokyo Metropolitan Government on systems to expand the use of energy-efficient buildings to Kuala Lumpur.

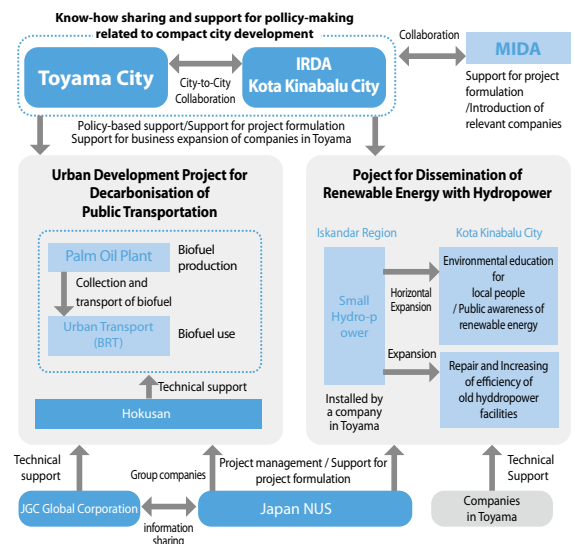


## Urban Development Project through Decarbonised Transportation Using Bio-fuel and Zero-Carbon City Development Project through Dissemination of Renewable Energy



| Implementation Body | Japan NUS Co., Ltd.  
 | Partner Entities | Toyama City, Hokusan Co., Ltd.

The Iskandar region has undergone large-scale urban development in recent years, a priority regional development project promoted by the Malaysian government, and is promoting the development of low-carbon and carbon-free systems in order to create eco-friendly public transportation networks. In addition, Kota Kinabalu City, the state capital of Sabah, is engaged in the implementation of environmental tours, awareness raising activities on environmental protection, and research on the development of biofuels as it aims to become one of the most livable cities in Asia. The project will be promoted with the objective of developing a candidate JCM model project, as the cities share Toyama’s collective knowledge gained over the years on compact city strategies based on public transportation and support urban development shaped by carbon-free public transportation using biofuels from local companies and the spread of renewable energy built upon small-scale hydropower.





# Promotion of Carbon-Free Society in Iskandar Regional Area (Phase2)

(City of Kitakyushu—Iskandar Regional Development Authority Collaboration Project)

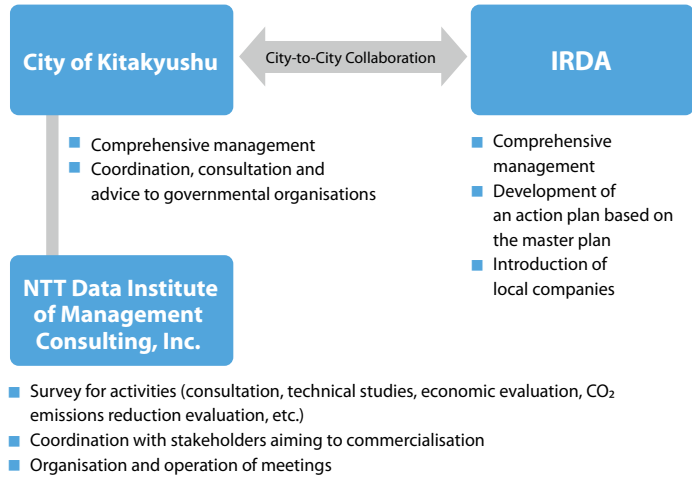


Implementation Body | NTT Data Institute of Management Consulting, Inc.

Partner Entities | City of Kitakyushu (Kitakyushu Asian Center for Low Carbon Society), IGES, Nippon Steel Engineering Co., Ltd., Iskandar Regional Development Authority (IRDA)

City of Kitakyushu has a history of implementing city-to-city collaboration projects with the Iskandar Regional Development Agency (IRDA) in Malaysia between fiscal 2015 and 2016. Both cities signed a Letter of Understanding (LOU) in August 2016 based on the results of this collaboration.

In this study, with the aim of promoting decarbonisation in Malaysia and formulating JCM projects, a follow-up survey is being conducted on potential projects that can contribute to simultaneously achievement of industrial symbiosis and industrial park as well as introduction of waste-to-energy, based on the “Low-Carbon Society Blueprint” formulated by IRDA.



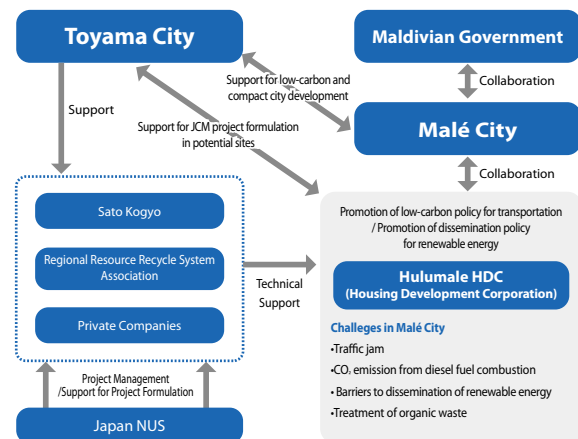
# Support Project for Developing a Sustainable Eco-friendly Smart City: City-to-City Collaboration between Toyama City and Male City



Implementation Body | Japan NUS Co., Ltd.

Partner Entities | Toyama city, SATO KOGYO CO., LTD., Regional Resource Recycle System Association

The Male metropolitan area, where one-third of the population of the Maldives is concentrated, is promoting smart, compact, and environmentally-friendly urban planning and has requested support from Toyama City, a FutureCity, in the areas of renewable energy, waste treatment and transportation. This project is examining ways to promote low-carbon development by replacing the increasing number of automobiles with low-carbon transportation systems, such as light rail, which are at the core of Toyama City’s compact city policies. In addition, since Male is currently dependent on diesel power for most of its electricity needs, the project will examine how to increase the use of low-carbon and renewable energy sources, such as natural gas co-firing technologies and photovoltaic power generation systems, and explore the possibility of introducing methane fermentation gasification of organic waste and its use in generating power, with the aim of contributing to the realisation of sustainable and eco-friendly cities in island regions.



Chile  
Indonesia  
Malaysia  
Maldives  
Mongolia  
Myanmar  
Palau  
Philippines  
Thailand  
Viet Nam



## Zero-Carbon Society Development in Ulaanbaatar City and Tuv Aimag

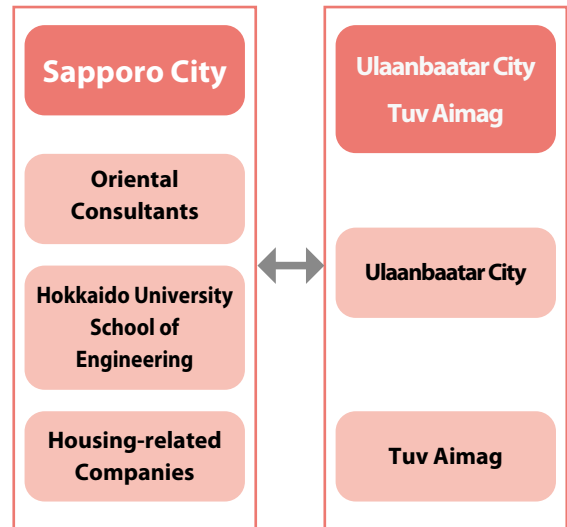
| Implementation Body | Oriental Consultants Co., Ltd.

| Partner Entities | Sapporo City Government, School of Engineering of Hokkaido University, Trade & Development Bank in Mongolia



The cities of Sapporo and Ulaanbaatar are members of the World Winter Cities Association for Mayor (WWCAM), an international network organised by Sapporo. Both cities have also participated in a city-to-city collaboration project since fiscal 2016.

In this project, Sapporo and Ulaanbaatar will conduct a series of studies and support activities to promote the formation of a carbon-free society in Ulaanbaatar City and Töv Province in Mongolia, which is also a country with a cold climate as well as a JCM member country. These studies and support activities will be carried out by sharing Sapporo's experience and knowledge on the formation of a carbon-free city in a cold climate area. The project aims to help promote energy efficiency and the introduction of renewable energy by showcasing energy-efficient administrative systems in the housing and building sectors in Sapporo and energy-reduction technologies in the housing and building sectors of the private sector, as well as by providing support for capacity building.



## Promotion Project for Formulation of Circulating and Ecological Economy in Local Cities in Myanmar

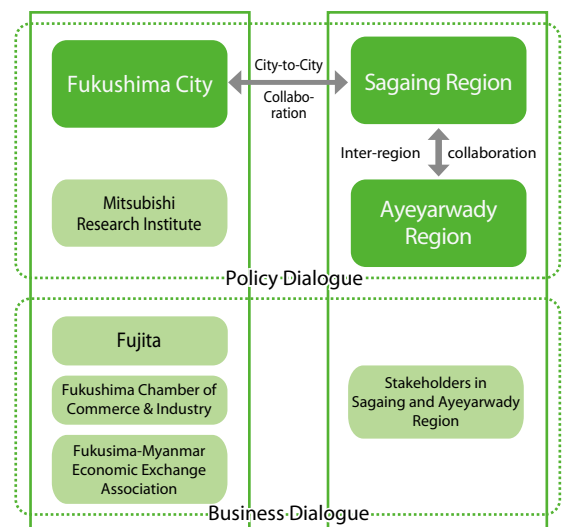
| Implementation Body | Mitsubishi Research Institute, Inc.

| Partner Entities | Fukushima City, Fujita Corporation, The Fukushima Chamber of Commerce and Industry (FCCI)



In 2015, the Chief Minister of the Ayeyarwady Region in Myanmar submitted a request for cooperation to the Mayor of Fukushima City, which led to the start of a city-to-city collaboration project between the Ayeyarwady Region and Fukushima. In 2017, the Ayeyarwady Region sent a request for developmental cooperation in collaboration with the jurisdictions of the Sagaing and Ayeyarwady regions.

In this project, a survey will be conducted on the formation of a "circulating and ecological economy" (carbon-free, local SDGs-type regional development using local resources) in regional cities in Myanmar. The project will support the development of a circulating and ecological economy centred on independent and decentralised regional energy in the Ayeyarwady Region and the realisation of a circulating and ecological economy based on a carbon-free, CO<sub>2</sub>-efficient and sustainable waste management system in the Sagaing Region.





# Zero-Carbon Promotion Project toward Sustainable Urbanisation in Yangon City

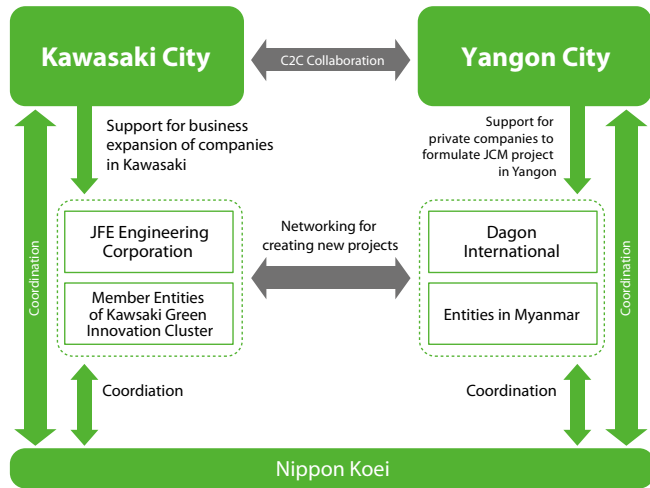
| Implementation Body | Nippon Koei Co., Ltd.

| Partner Entities | Kawasaki City, JFE Engineering Corporation



The cities of Kawasaki and Yangon launched a city-to-city collaboration project in the field of climate change in 2015 and signed a memorandum of understanding on creating low-carbon cities in Kawasaki and Yangon in March 2016. Since then, both cities have shared knowledge in the field of waste management, exchanged information and held regular meetings with staff from both cities. To date, energy-saving equipment has been installed in waste-to-energy plants and food factories through a JCM model project.

This fiscal year, a study will be conducted on the formation of JCM model projects for common-use infrastructure in industrial parks, starting with the introduction of a cogeneration system in the new Dagon Industrial Zone. A survey has also been launched on the introduction of energy-efficient and renewable energy facilities in other industrial zones that are currently being planned. Surveys will continue to be implemented with a view to the formation of carbon-free and sustainable cities throughout Yangon.



# Decarbonisation in Smart City Development Project in Yangon Region (Phase2)

| Implementation Body | NTT Data Institute of Management Consulting, Inc.

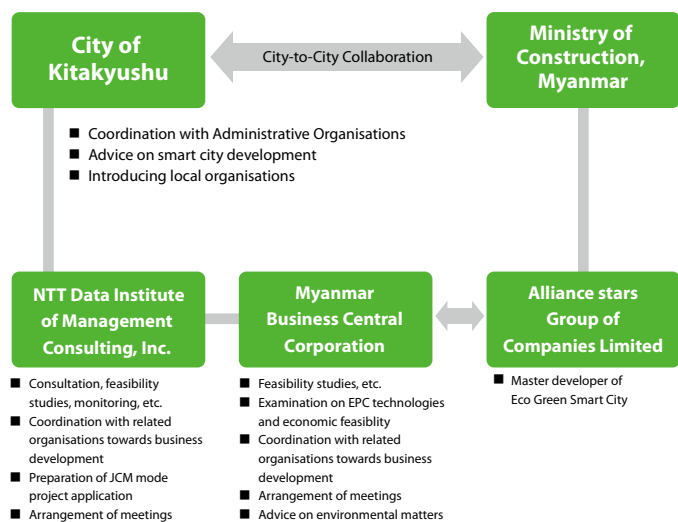
| Partner Entities | City of Kitakyushu (Kitakyushu Asian Center for Low Carbon Society), Myanmar Business Central Corporation Co., Ltd.



In this project, a study will be conducted on introducing technologies to achieve the development of carbon-free facilities in the Eco-Green Smart City (EGSC) project in the Yangon region (This is an ongoing project under the FY 2019 City-to-City Collaboration Programme).

The EGSC project is the first large-scale project by Myanmar's Ministry of Construction for developing areas around the country's capital city and is expected to become a benchmark for future urban development in Myanmar.

The introduction of Japanese technology in this project using the Joint Crediting Mechanism is expected to lead to the development of other facilities in the city area, as well as urban development outside of the Yangon region if urban development that incorporates decarbonisation technologies can be achieved.



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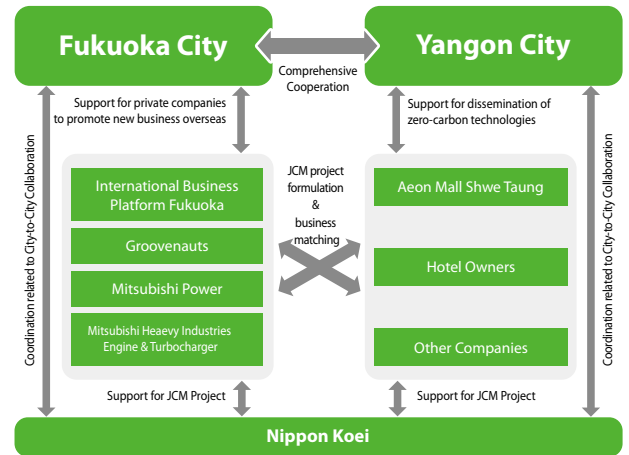


## Green Recovery Project by Installation of AI and ZEB Technologies in Yangon

| Implementation Body | Nippon Koei Co., Ltd.  
 | Partner Entities | Fukuoka City, Groovenauts, Inc., AEON MALL SHWE TAUNG Co., LTD., Mitsubishi Power, Ltd., Mitsubishi Heavy Industries Engine & Turbocharger, Ltd.



Fukuoka City has provided technical assistance for urban infrastructure to its sister city, Yangon, since 2012. In this project, Fukuoka will provide a wide range of support to Yangon for its “green recovery” efforts to regain its urban functions from the COVID-19 pandemic together with carbon-free development, as a part of the international cooperation initiatives promoted by Fukuoka, in order to achieve the objectives set out in the Fukuoka City Basic Plan. In the areas of waste management and transportation which have become particular challenges for Yangon, this project will promote the reduction of fuel consumed by optimising transportation routes using AI technology and the carbon-free development of the private sector with the introduction of ZEB technologies (Net Zero Energy Buildings) in new commercial facilities. In addition, a study will be conducted on the introduction of high-efficiency power generation equipment that will help stabilise the supply of electricity in the city.

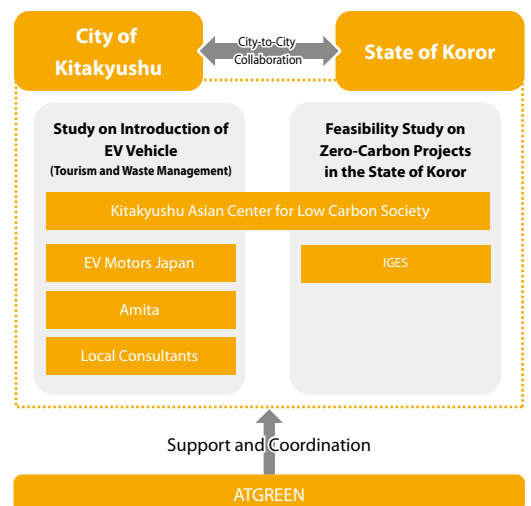


## Project to Accelerate Carbon-Free and to Create Co-Benefit through EV Vehicles in State of Koror, Palau (Kitakyushu-Koror Cooperation Project)

| Implementation Body | ATGREEN CO., Ltd.  
 | Partner Entities | City of Kitakyushu (Kitakyushu Asian Center for Low Carbon Society), EV Motors Japan CO., Ltd., Amita CO., Ltd., IGES



Since 2015, City of Kitakyushu has carried out ongoing cooperation for a project formation study on establishing a resource circulation system in Koror, the capital of the Republic of Palau. In this project, a feasibility study will be conducted on a transportation model to control the use of fossil fuels by operating electric vehicles (EVs) using existing (or possibly newly constructed) photovoltaic power generation systems in Koror as one of the measures to solve issues unique to island regions, such as a dependence on imported fossil fuels and unstable power sources. Specifically, the project will (1) consider how to increase the ratio of renewable energies and decarbonise the key tourism industry by promoting the use of EVs for passenger vehicles (sightseeing buses, etc.) and (2) examine a plan to achieve the use of 100% renewable energies, including the promotion of EVs in waste treatment and recycling flows. In addition to examining the possibility of introducing subsidies for JCM model projects for each project, surveys will also be conducted on other decarbonisation needs in Koror and their feasibility.





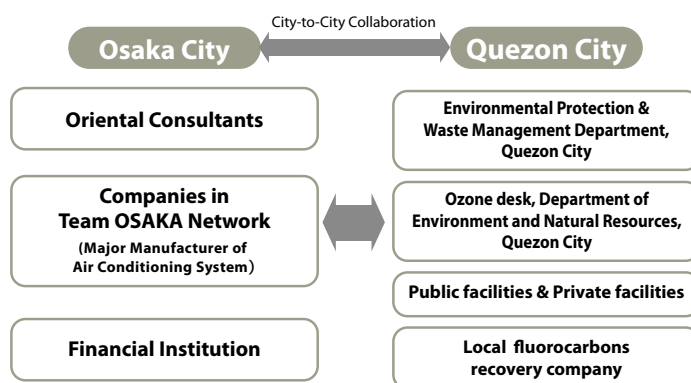
## Zero-Carbon Development in Quezon City (Energy Saving Air Conditioning System (Fluorocarbons Management Plan))

| Implementation Body | Oriental Consultants Co., Ltd.  
 | Partner Entities | Osaka City



The cities of Osaka and Quezon have engaged in city-to-city collaboration and held a mayor-level policy dialogue, starting with a Ministry of the Environment project in fiscal 2015. In August 2018, they signed a memorandum of understanding (MOU) on cooperation to develop low-carbon cities in Osaka and Quezon. To date, the team of Osaka side helped to draft a low-carbon society (LCS) scenario connected with the Quezon City Climate Change Action Plan.

In this project, a study is being carried out on the development of a model project that combines the introduction of a high-efficiency air conditioning system and CFC compliance in Quezon City government buildings. The study will also identify demand for energy-efficient air-conditioning in schools, hospitals and shopping malls and examine appropriate project schemes, including subsidies for JCM model projects. Support is also being provided to Quezon City for expanding its environmental policies and climate change action plan by sharing information on Osaka City's knowledge, experience and legal systems.



## FY 2020 Feasibility Study for Ports in Thailand to Reduce GHG Emission by Promoting Modal Shift and Enhancing Terminal Efficiency

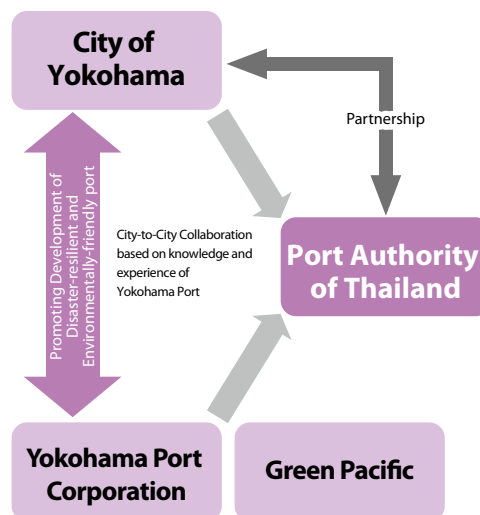
| Implementation Body | Yokohama Port Corporation  
 | Partner Entities | City of Yokohama, Green Pacific Co., Ltd.



City of Yokohama signed a memorandum of understanding on developing a partnership with the Port Authority of Thailand in April 2014 and concluded a basic agreement on specific activities in January of the following year. Since fiscal 2016, activities have been promoted based on these agreements to leverage city-to-city collaboration in developing smarter ports in Thailand.

This fiscal year, in its aim of achieving zero/low-carbon development, the programme again provides support to promote the efficient operation of railway and coastal shipping terminals at Laem Chabang Port, which is managed and operated by the Port Authority of Thailand, and to promote a modal shift in wide-area distribution based on the achievements of activities to promote a modal shift at Yokohama Port.

This fiscal year, the project will consider measures to address challenges identified in the previous year and move forward with the development of plans to shape the promotion of a modal shift.



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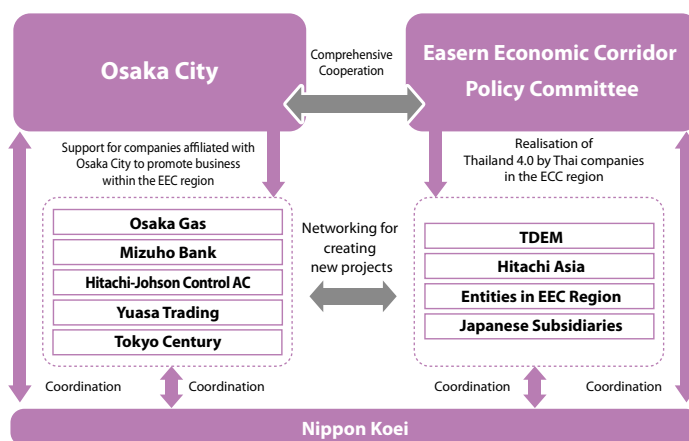
## Support for the Realisation of Zero-Carbon Society to Achieve Thailand 4.0



- | Implementation Body | Nippon Koei Co., Ltd.
- | Partner Entities | Osaka City, Osaka Gas Co., Ltd., Hitachi-Johnson Controls Air Conditioning Inc., Mizuho Bank, Ltd., Toyota Daihatsu Engineering & Manufacturing (TDEM), Hitachi Asia (Thailand) Co., Ltd., Yuasa Trading Co., Ltd., Tokyo Century Corporation

The Thai government has positioned the Eastern Economic Corridor (EEC), which is located in the eastern region of Bangkok and encompasses three provinces (Chonburi, Rayong and Chachoengsao), as the core of industrial development in its “Thailand 4.0” policy for industrial development and advancement. The EEC, where large industrial parks are concentrated, contributes about 15% of Thailand’s annual GDP. It is expected to expand and promote industrial development, and draws considerable attention to introduction of advanced and decarbonisation technologies for realisation of Thailand 4.0.

This fiscal year, the project will confirm the feasibility of several JCM candidate projects that were identified in the previous fiscal year and will investigate the feasibility of biogas mobility projects, fuel cell promotion projects, and EEC Green Plan support projects.



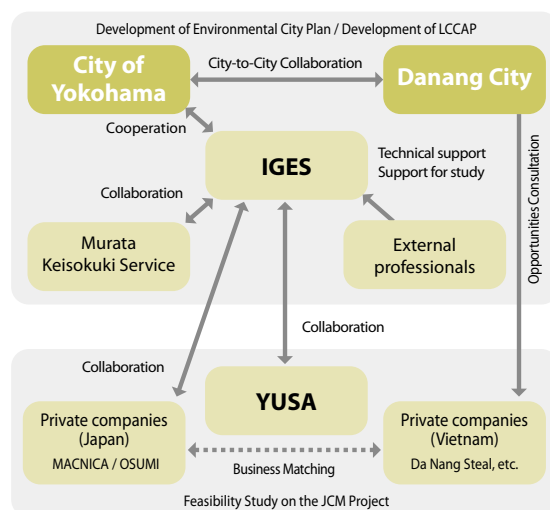
## Support for Developing Danang's “10-Year Environment City Plan” and Low-Carbon Technology Projects under City-to-City Cooperation between Danang and Yokohama toward Low-Carbon Smart City



- | Implementation Body | Institute for Global Environmental Strategies (IGES)
- | Partner Entities | City of Yokohama, OSUMI Co.,Ltd., MACNICA, Inc., MURATA Keisokuki Service Co., Ltd., Yokohama Urban Solution Alliance (YUSA)

City of Yokohama signed a memorandum of understanding on technical cooperation for sustainable urban development with Danang City in 2013 and is providing support to promote sustainable urban development in Danang in collaboration with companies in Yokohama.

In light of the achievements of past city-to-city collaboration projects, this project will focus on two main activities: support for the formulation of the 10-year environmental plan (2021-2030) in Danang and examining the feasibility of new low-carbon projects. In addition to providing recommendations for Danang’s 10-year environmental plan, this year, Yokohama will also submit proposals on the formulation of a local climate change action plan (LCCAP) and conduct a survey on the applicability of JCM for energy-saving projects in factories and other facilities in Danang.







## Promotion of Zero-Emission Technology to Industrial and Public Sectors in Ho Chi Minh City

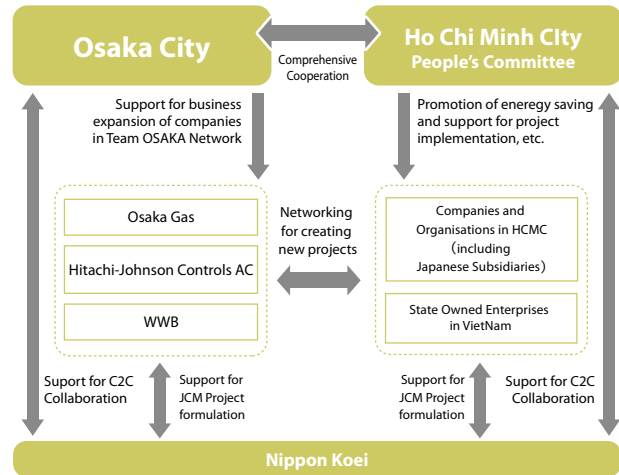


| Implementation Body | Nippon Koei Co., Ltd.

| Partner Entities | Osaka City, Osaka Gas Co., Ltd., Hitachi-Johnson Controls Air Conditioning, Inc., WWB Corporation

In October 2013, the cities of Osaka and Ho Chi Minh concluded a memorandum of understanding on the development of low-carbon cities in Ho Chi Minh and Osaka, and formulated the “Ho Chi Minh City Climate Change Action Plan 2017-2020 and 2020 Outlook” (CCAP 2017-2020) with support from Osaka City and other stakeholders. The two cities promote effective and efficient city-to-city collaboration through the organisation of policy dialogues every year to clarify issues and needs in Ho Chi Minh City.

Under city-to-city collaboration between these two cities, this project will consider the introduction of energy-efficient technologies, such as high-efficiency air-conditioning facilities and high-efficiency gas boilers in the industrial and public sectors in Ho Chi Minh City. The project will also provide support for the implementation of the CCAP 2021-2025 plan and outlook, which was updated in 2019 to achieve zero-emissions in Ho Chi Minh City, with the aim of creating a synergy effects between support for system development and formation of JCM projects.



## Project to Promote the Formation of an Autonomous Decarbonised Society through City-to-City Collaboration between Hiroshima Prefecture and Soc Trang Province, Viet Nam

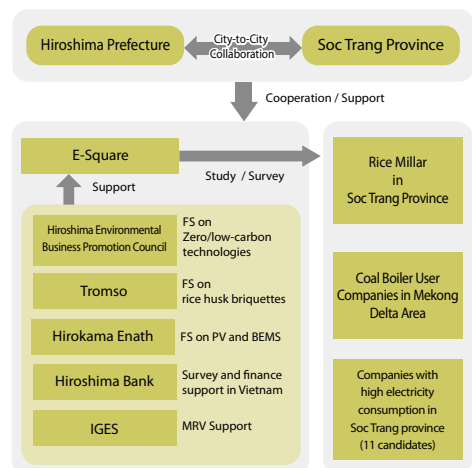


| Implementation Body | E-Square Inc.

| Partner Entities | Hiroshima Prefecture, Hiroshima Environmental Business Promotion Council, Tromso Co., Ltd., Hirokawa Enath Co., Ltd., Hiroshima Bank, Ltd., IGES

Hiroshima Prefecture and Soc Trang Province have been involved in business exchanges in the environmental field since 2013 through the Japan External Trade Organization’s (JETRO) Regional Industry Tie-Up (RIT) programme. In 2017, Hiroshima and Soc Trang signed a memorandum of understanding on cooperation in the field of environmental purification industries with the aim of offering the technologies and services of local companies in Hiroshima Prefecture to address the environmental issues being faced by Soc Trang Province and local companies in the province in a sustainable manner.

In order to support the development of an independent, decarbonised and low-carbon society in Soc Trang Province and neighbouring areas, this project will create a system for the continuous identification and formulation of projects with the establishment of the “Hiroshima-Soc Trang City-to-City Collaboration Council (tentative name)”, provide soft support in relation to Hiroshima Prefecture’s expertise on projects to introduce renewable energy that will benefit the community, and have studies conducted by companies in Hiroshima Prefecture that have carbon-free and low-carbon technologies.



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# Supporting the efforts of partner cities in building policy frameworks through city-to-city collaboration

## Kuala Lumpur (Malaysia) & Tokyo Metropolitan Government (Japan)

Support for developing a carbon-free policy framework to promote energy efficiency in buildings

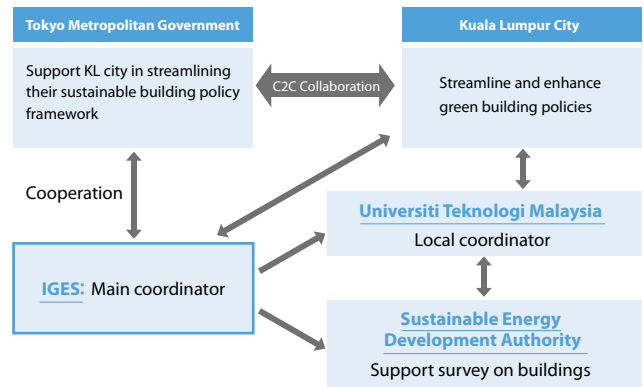
### Overview of city-to-city collaboration

The Tokyo Metropolitan Government and Kuala Lumpur City have been active in the establishment of the Asian Network of Major Cities 21 and the activities of the C40, a network of major cities that are taking advanced approaches to climate change. By sharing the Tokyo Metropolitan Government's know-how on creating energy-efficient buildings, an internationally-acclaimed initiative that has received awards from the C40 and World Green Building Council, this project is helping to expand the application of zero-emission buildings in Malaysia.

### Achievements of city-to-city collaboration

The Malaysian government has endeavoured to guide low-carbon development policies in buildings with the use of several systems to encourage consideration of the environment, including guidelines on energy-efficient performance, mandatory energy-efficiency audits, and "Green Pass", a certification system for energy efficiency and renewable energy. Malaysia's capital city of Kuala Lumpur is striving to transform 1,955 city-owned buildings into low-carbon structures by establishing an original system based on the energy-efficiency and CO<sub>2</sub> reduction measures promoted by the Tokyo Metropolitan Government in its facilities.

The two years that have passed since the project first started have seen the relationship between the two cities grow stronger with Tokyo sharing its know-how on the development of energy-efficient buildings. A database on city-owned buildings is being developed in Kuala Lumpur city hall, which will serve as the foundation for actual reduction planning and management. The project is also contributing to the budgeting process by estimating the potential for reducing CO<sub>2</sub> emissions and costs and supporting the formulation of plans to update city-owned facilities.



Meeting between both cities

## Knowledge Exchange and Dissemination of the Programme

The Ministry of the Environment, Japan organises trainings and workshops as a place for cities to learn from one another to create zero-carbon cities, with the aim of promoting understanding and expanding the base of city-to-city collaboration projects. In fiscal 2019, a training session was held in Toyama City in November, and a workshop was organised in Yokkaichi City in February 2020. Local government officials, companies and related organisations from 24 cities in 9 countries took part and learned about policies and case studies on zero- and

low-carbon development in cities in Japan through classroom-style lectures and field visits. Through practical exercises in developing proposals, they were able to deepen their understanding of points to consider when preparing proposals for city-to-city collaborative projects.

In addition, a seminar was held in Tokyo in January 2020 to introduce relevant policy trends and good practices in Japan and abroad as an opportunity to disseminate information to a broader audience.

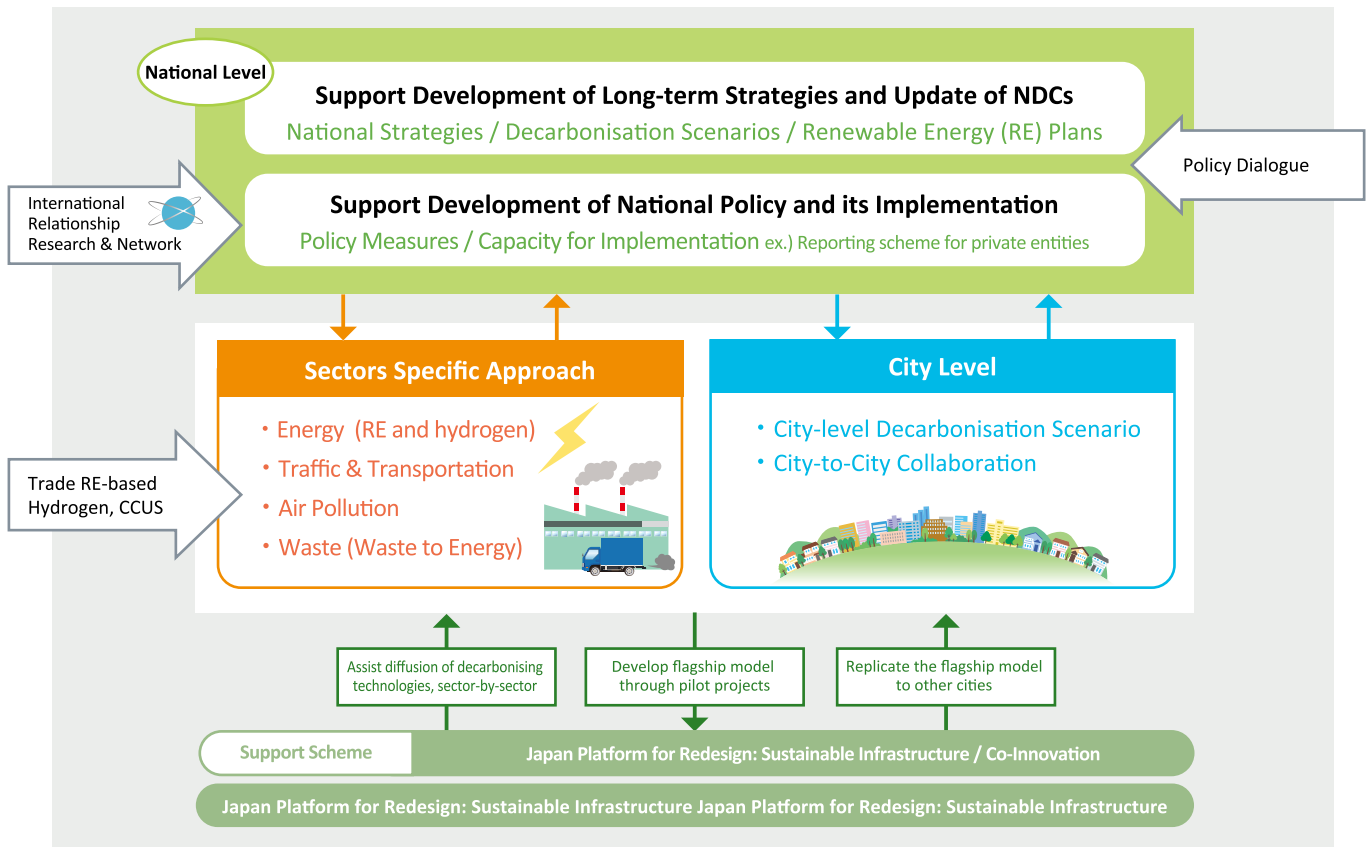


## Support Package for Transition to Decarbonised Society through Diffusion of Environmental Infrastructure and Technologies

The Ministry of the Environment (MOEJ) launched the “Support Package for Transition to Decarbonised Society through Diffusion of Environmental Infrastructure and Technologies” in the “Outline of a New Strategy of the Promotion

of Environmental Infrastructure” (July 9, 2020). The City-to-City Collaboration Programme is implemented as part of this support package.

- Promoting virtuous cycle of growth and environment through diffusion of environmental infrastructure
- Proposing comprehensive cooperation that would contribute to realise decarbonised society



Support Package for Transition to Decarbonised Society through Diffusion of Environmental Infrastructure and Technologies

### Guidebook “Creating Sustainable, Zero-Carbon Societies through City-to-City Collaboration”

The Ministry of the Environment, Japan has published a guidebook “Creating Sustainable, Zero-Carbon Societies through City-to-City Collaboration” to encourage participation in the programme. The guidebook provides an easy-to-understand overview of the background of the programme, the overall process from open calls for proposals to the completion of projects, and the introduction of case studies and outcomes.

The guidebook can be downloaded from the “Web Portal for Low Carbon Development in Asia”.

<http://www.env.go.jp/earth/coop/lowcarbon-asia/english/>



### Japan Platform for Redesign: Sustainable Infrastructure

The Ministry of the Environment, Japan launched the Japan Platform for Redesign: Sustainable Infrastructure (JPRSI) in September 2020 as a framework to support the activities of private companies and related stakeholders in Japan that are actively engaged in the overseas development and export of environmental infrastructure. The platform’s website (<https://www.oecc.or.jp/jprsi/>) features information by country and city with a focus on JCM signatory countries. The members-only section of the website also provides advanced notice of information on related events. (Information on the website is available only in Japanese.)



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