

**City to City Collaboration for Zero-carbon Society in FY2022**

	Main Proposer	Research-Group	Field	Country	Area/City	Project Name	Project Description
1	Institute for Global Environmental Strategies	Tokyo Metropolitan Government, Bureau of Environment, Saitama City Hall, City Strategy Headquarters	energy efficiency, renewable energy, mobility and infrastructure, policy development	Malaysia	Kuala Lumpur City	Developing an Institutional Framework Towards Kuala Lumpur Zero Carbon City and Neighbourhood in Collaboration with Tokyo Metropolitan Government and Saitama City	Contribute to Kuala Lumpur's plan to achieve carbon neutrality by 2050, with the Tokyo Metropolitan Government sharing its expertise and knowledge in the cap-and-trade system and other decarbonization policies for office buildings, and Saitama City (and Loop Inc.) in smart home communities. The input will be used to support KL City in updating its plan and implementing decarbonization projects.
2	Institute for Global Environmental Strategies (IGES)	OSUMI Co.,Ltd., MACNICA, Inc., MURATA Keisokuki Service Co., Ltd., Yokohama Urban Solution Alliance (YUSA), Yokohama city	Energy saving and renewable energy	Vietnam	Da Nang city	Support for developing low carbon technology projects under city to city cooperation between Danang and Yokohama toward sustainable and zero carbon society	Based on the results of sustainable urban development efforts being promoted by Yokohama City and Da Nang City through inter-city cooperation, this project will support Da Nang City's decarbonization efforts by supporting the formulation of the city's 10-year environmental plan and climate change action plan, and introducing Japanese technology using JCM for project formation that will contribute to decarbonization. This project is to be implemented for 3 years (FY2020-2022). The first year of the project was to mainly support the formulation of the "10-year environmental plan (2021-2030)" for Da Nang City, and the second year was to support the formulation of a climate change action plan and climate change education for junior and secondary schools. During the two years, energy conservation and renewable energy projects that will utilize JCM were studied. This year (third year), following the results of these activities, aims to develop a feasible JCM business plan utilizing JCM scheme. Specifically, the feasibility study combining solar power generation, storage batteries, LED smart street lights, and radiant heating and cooling systems will be conducted focusing on companies in industrial parks including Hoa Khanh Industrial Park in Da Nang city, in order to apply to the JCM equipment subsidy project in near future.
3	Institute for Global Environmental Strategies	Environment Bureau, City of Kitakyushu Department of Foreign Affairs, Hai Phong City Daiseki Co., Ltd. Dhowa Technos Co., Ltd.	Energy efficiency, Renewable Energy, Waste Handling and Disposal, Policy support	Socialist Republic of Vietnam	Hai Phong City	Promotion of Eco-Industrial Parks Toward Carbon Neutrality in Hai Phong City, Vietnam	This study aims to achieve a zero-emission industrial parks by promoting an Eco-Industrial Parks concept that reduces GHG emissions and environmental impacts and promotes resource recycling through city-to-city collaboration between the sister cities of Haiphong and Kitakyushu. Specifically, the following projects will be carried out: (1) survey on the introduction of solar power generation, (2) Survey on liquid and solid waste energy utilization, (3) survey on the introduction of energy-saving and high-efficiency equipment, and (4) survey and sharing of expertise for decarbonisation in Haiphong City.
4	ATGREEN Co., Ltd.	•City of Kitakyushu, Environment Bureau, Overseas Environmental Project Department, International Environmental Strategies Division •EV Motors Japan Co., Ltd. •Amita CORPORATION •Quand, Inc.	Energy Saving Renewable Energy Waste Management Transportation Infrastructure Capacity building support	Republic of Palau	State of Koror	Support project for the introduction of technology and establishment of measures to promote for carbon-free society and co-benefits in State of Koror.(City to city collaboration project between Kitakyushu-City of Kitakyushu and State of Koror, Republic of Palau)	We conduct both a technology introduction study and a policy study under an inter-city collaboration between Kitakyushu City and the State of Koror, Republic of Palau. The former will promote decarbonization and realize co-benefits through the introduction of electric vehicles in the tourism sector and waste collection and transportation sectors, and study the introduction of energy saving and renewable energy in tourist facilities. The latter conduct GHG emissions from public buildings in the state of Koror to understand the current situation and to study ways to reduce emissions in the future.
5	KANSO TECHNOS CO., LTD.	Shiga Prefecture Hiyoshi Corporation The Kansai Electric Power Company, Incorporated Kawasaki Thermal Engineering Co., Ltd. EN2+Co.,Ltd. Kansai Energy Solutions (Vietnam) Co., Ltd.	Energy conservation Renewable energy Waste treatment Institutional establishment support Others	Vietnam	Quang Ninh Province	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	This project will strengthen and continue the ongoing support and cooperation for Quang Ninh Province's Green Growth Strategy from the perspective of decarbonization, based on the "Memorandum of Understanding for Mutual Cooperation in the Environment and Economy" signed by Shiga Prefecture and Quang Ninh Province. Shiga Prefecture will provide support for the various efforts and needs that Quang Ninh Province is considering for decarbonization, based on the knowledge and experience it has gained in the process of working toward Net-Zero. In addition, as a model case, companies from Shiga Prefecture and other prefectures will implement decarbonization projects in the main centers of Quang Ninh Province's main industries of tourism and industry, aiming for a ripple effect within Quang Ninh Province.
6	Japan NUS Co., Ltd.	Toyama city SATO KOGYO CO.,LTD. HOKUSAN CO.,LTD. Nihon Air-conditioning Hokuriku CO.,LTD.	Renewable energy Energy daving Waste treatment Transportation infrastructure Institution building support	Maldives	Male city	Support Project for Developing a Sustainable Eco-friendly Smart City: An Intercity Collaboration between Toyama City and Male' City	Male City, Maldives, is requesting the assistance of Toyama City, which has succeeded in compact city policies, in urban development in the Hulhumale region. This study examines the introduction of low-carbon public transport based on intercity cooperation with Toyama City, a future city of the environment and the future city of the SDGs. In addition, as support for low carbonization and decarbonization, we will study the introduction of a photovoltaic power generation system using an unused roof, and low carbonization by switching fuel to Hydrogen and/or gas. In addition, the possibility of composting of organic waste will be investigated. These studies will contribute to the achievement of the SDGs in Male City.
7	Japan NUS Co., Ltd.	Toyama city Hokusan Co., Ltd. Nihon Kucho Hokuriku Ltd. Hokuden Engineering Consultants Co.,Ltd. Toyama University of International Studies	Renewable energy Waste treatment Transportation infrastructure System construction support	Malaysia	Iskandar region in Johor state Kota Kinabalu City	Zero Carbon City development project through decarbonized transportation and renewable energy	Toyama City, a "FutureCity" and a "SDGs FutureCity" (as promulgated by the Japanese government) is promoting international cooperation for the achievement of a decarbonized society to fully play its part as an environmental advanced city. To that end, Toyama City has signed a cooperation agreement with Iskandar Area (Johor State, Malaysia) and Kota Kinabalu City (Capital of Sabah State, North of Borneo Island, Malaysia) for the use of renewable energy and the revitalization of public transport. Through this City-to-City Collaboration Project between Toyama city and the city's companies who own decarbonization technologies, the aim is to conduct: ① an urban development project focused on Zero-carbon public transportation using biofuels and EV bus. ② a renewable energy diffusion project focused on small scale hydropower ③Electrify off-grid area by utilizing renewable energy In addition, we will propose and develop policies and systems that are indispensable for the smooth implementation of projects by utilizing Toyama city's expertise of policy making regarding decarbonization.

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8	Japan NUS Co., Ltd.	Ehime Prefecture Kanematsu Corporation Daiki Axis Co., Ltd. Aiken Kakoki K.K. Ehime University	Saving energy Renewable energy Waste treatment Institution building support Forest conservation	Indonesia	Gorontalo Province	Support project for the achievement of SDGs and developing a sustainable decarbonized society: City-to-City Collaboration between Ehime Prefecture and Gorontalo Province	Gorontalo Province of the Republic of Indonesia, is requesting Ehime province to support environmental and decarbonization technologies for the environmental and social issues facing based on the formulation of a decarbonization policy. Ehime prefecture developed a "The Implementation Plan for Global Warming Countermeasures" in February 2020. In this plan, Ehime prefecture has set a long-term goal of carbon neutrality by 2050, and also has developed basic policies such as "implementing business style of low carbon model", "low carbon energy promotion" and "low-impact community development". Ehime Prefecture has also promoted international cooperation with "Technical cooperation for pollution control" and "Promotion of international cooperation at the private level", "Supporting the development of overseas markets of companies in the prefecture". In this City-to-City Collaboration Project between Ehime prefecture, the prefecture's companies who own decarbonization technologies and Ehime university, we will support the formulation of decarbonization policies and plans in Gorontalo Province, and implement the project below as the proposed projects (1) Regional water infrastructure development by decarbonization energy, (2) Sustainable use of forests by cacao cultivation. We will select JCM candidate projects, including proposals for JCM equipment subsidy projects, and propose and develop policies and systems to facilitate project implementation in the future. Throughout this project, support and proposition for policy and institution building will be provided to execute the project smoothly. Support to select and implement JCM candidate projects will also be provided, including making propositions for future JCM projects.
9	Nippon Koei Co., Ltd.	•Osaka City Government •Osaka Gas Co. Ltd. •YUASA TRADING CO., LTD. •ENDO Lighting Vietnam Co., Ltd. •Sumitomo Mitsui Trust Panasonic Finance Co., Ltd. (SMTDFC) •Toyota Daihatsu Engineering & Manufacturing Co., Ltd. (TDEM)	• Energy saving • Renewable energy • Institutional support •Transportation infrastructure •Recovery and destruction of Fluorocarbons	The Socialist Republic of Vietnam	Ho Chi Minh City	Promotion of Carbon Neutrality based on Climate Change Policies in Ho Chi Minh City and Thu Duc City	Based on the achievements of the City-to-City Collaboration projects between Osaka City and HCMC, this project will promote carbon neutrality in HCMC and newly established Thu Duc City as Phase 2 (for new 3 years). Osaka City will strengthen the support for policy formulation and contribute to the decarbonization dominos in Vietnam based on the MOU between Osaka City and HCMC by supporting implementation of "HCMC Climate Change Action Plan (CCAP)" through policy dialogue and sharing information to neighboring cities and other countries. In addition, this project will promote expansion of energy-saving and renewable technologies, such as "high efficiency air-conditioner, boiler, LED lighting" and "solar power generation." Furthermore, aiming to formulate projects for "transportation infrastructure" and "fluorocarbon recovery and destruction," as a new sector, and promote "JCM eco-leasing scheme".
10	Nippon Koei Co.,Ltd.	City of Toyama Hokusan Co., Ltd. Toyama Hydrogen Energy Promotion Council Nissan Chemical Corporation	Energy saving, Renewable energy, Transport infrastructure, Support for development of institution, Others (Hydrogen)	Republic of Chile	Renca, Santiago	Project to Promote SDGs Future City with Renca, Santiago	Through the transfer knowledge and experience of Toyama as SDGs Future City and various technologies enabling the compact city, the project aims at materializing the plan to tackle issues of Renca from the viewpoint of three values, environmental, social and economic values. Particularly, the project supports the implementation of local plan for climate change of Renca and Renca's Race-to-Zero with JCM model project scheme and Co-Innovation scheme etc. Two potential projects, "Renewable energy program with Solar PV" and "Fuel conversion program with green hydrogen production system and hydrogen mobility" will be studied and applied to JCM this year. In addition, TSUMUGI@, a municipal SDGs assessment tool, will be implemented to contribute to improvement of Renca's approach towards SDGs by visualization..
11	Nippon Koei Co., Ltd.	Osaka City Government, Osaka Gas Co., Ltd., Sumitomo Corporation Asia & Oceania Pte. Ltd., SoftBank Corp., Hitach Zosen Corporation, Tokyo Century Corporation, Fuji Furukawa Engineering & construction Co., Ltd., Toyota Daihatsu Engineering & Manufacturing (TDEM), THS Innovations Co., LTD.	Energy saving Renewable energy Waste to energy Transportation infrastructure Institutional support Electric Vehicle Digital Transformation Smart city development/Industrial Park	Thailand	Eastern Economic Corridor (EEC)	Support for Designing Decarbonization Society with BCG Economy	The project has been carried out in the Eastern Economic Corridor (EEC), which leads the zero-carbon society in Thailand to realize the Bio-Circular-Green Economy (BCG) model by formulation of JCM model projects, such as the introduction of EV and waste-to-energy project and promotion of DX project. Based on the collaboration in Phase1 and Memorandum of Understanding (MOU) between Osaka City and EEC, this year as Phase 2 activities, Osaka City will support the realization of zero-carbon society through holding policy dialogue and strengthening cooperation with other related organizations.
12	Nippon Koei Co., Ltd.	Kawasaki City Aura Green Energy Co., Ltd. PT. Gistec Prima Energindo Polyplastics-Evonik Corporation Air Water Inc. PT. Gikoko Kogyo Indonesia Nanofuel Co., Ltd. Kowa Company, Ltd. CSD Co., Ltd.	Energy saving Renewable Energy Waste management Transportation Institutional support	Indonesia	Pekanbaru City	Project to Promote 2050 Zero Carbon City in Riau Province Region through Cooperation with Pekanbaru City	This project supports the realization of decarbonization domino effect in Riau Province region, starting with the development of a roadmap for Zero Carbon City in 2050 in Pekanbaru City, through city-to-city collaboration between Pekanbaru City and Kawasaki City. To support decarbonization, the project aims to promote circular economy in Riau Province Region through cooperation with palm sector companies that give special consideration to the environment and human rights. In addition, the introduction of IoT, energy management systems, and energy-saving technologies, especially in urban areas and industrial parks, will be promoted.
13	Nippon Koei Co., Ltd.	•Fukuoka Prefectural Government •Seibu Giken Co., Ltd. •Riamwind Corporation •Agritree Co., Ltd. •Kanematsu KGK VIETNAM Co., Ltd. •Weathernews.inc	• Energy saving • Renewable energy • Institutional support •Others (CCS, Hydrogen)	The Socialist Republic of Vietnam	Hanoi City	Promotion of Zero-Carbon Technology to Improve the Environment in Hanoi City	To solve environmental issues in Hanoi City, which is a sister city of Fukuoka prefecture, this project will support on Human Resources Development related to promotion of Zero-carbon and introduction of advanced decarbonization technology such as hydrogen and CCS etc. by information sharing based on the environmental policies of both cities and basic policies such as SDGs. In and around Hanoi, there are major issues for Energy shortage & Air pollution due to economic activities. Through this City-to-City Collaboration, JCM project formulation and other activity will be considered in wide sectors such as Energy saving in building, Renewable Energy (wind power) in surrounding city area and solar sharing in agricultural area.



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14	Nippon Koei Co., Ltd	<ul style="list-style-type: none"> <li>• Sakai City Government</li> <li>• Osaka Gas Co., Ltd.</li> <li>• AIR WATER INC.</li> <li>• TAKUMA CO., LTD.</li> </ul>	<ul style="list-style-type: none"> <li>• Energy saving</li> <li>• Renewable energy</li> <li>• Waste handling and disposal</li> <li>• Institutional support</li> </ul>	The Socialist Republic of Vietnam	Ba Ria-Vung Tau province	Promotion of Zero-Carbon Smart City through City-to-City Collaboration between Ba Ria-Vung Tau Province and Sakai City	This project will promote the formation of sustainable urban environment and smart city in Ba Ria-Vung Tau Province under the city-to-city collaboration between Sakai City and Ba Ria Vung Tau Province. The three main areas of collaboration are zero-carbon city, circular economy, and smart city (including smart industrial park), where there are needs in Ba Ria-Vung Tau Province and where Sakai City has strengths. In addition to sharing knowledge in these areas and supporting related study and institutional development, the project will conduct a JCM project formation study on the introduction of renewable energy, energy saving, waste-to-energy, and biomass energy utilization, and promote the comprehensive carbon neutral of the urban environment in Ba Ria-Vung Tau Province.
15	E-Square Inc.	Hiroshima Prefecture Hiroshima Environmental Business Promotion Council Tromso Co., Ltd. Ogawa Econos Inc. Institute for Global Environmental Strategies	Energy conservation / Renewable energy / Waste disposal / System development	Socialist Republic of Viet Nam	Soc Trang Province	Project to Promote the Formation of an Autonomous Decarbonized Society through City-to-City Collaboration between Hiroshima Prefecture and Soc Trang Province, Vietnam	Support the creation of a decarbonized and low-carbon society in Soc Trang Province and neighboring regions while supporting business development of companies in Hiroshima by mainly implementing the following activities. ① Continuously create projects through the "Hiroshima-Soc Trang City to City Collaboration Council". ② Capacity building on the know-how of Hiroshima Prefecture to educate citizens to disseminate renewable energy ③ Implementation of FS by companies in Hiroshima Prefecture that possess decarbonization and low-carbon technologies
16	NTT Data Institute of Management Consulting, Inc.	City of Kitakyushu, Overseas Environmental Project Department, International Environmental Strategies Division, Environment Bureau/ Nippon Steel Engineering Co., Ltd/ IRDA(Iskandar Regional Development Authority)	Energy Saving, Renewable Energy, Waste Disposal, Support for System Development	Malaysia	Iskandar Development Region	Carbon-Free Model Area Development Project (Phase 1) (City of Kitakyushu—Iskandar Regional Development Authority Collaboration Project)	Under the partnership between Malaysia's Iskandar Regional Development Authority and Kitakyushu, the following activities will be carried out in FY2022. •Activity 1 Create inter-industry collaboration projects for decarbonization of the industrial sector •Activity 2 Introduce renewable energy for decarbonization of the consumer sector 1)Introduction of solar PV facilities based on the 100% renewable energy Kitakyushu model 2)Realize Waste-to-Energy as a base-load power source
17	Overseas Environmental Cooperation Center, Japan (OECC)	City of Yokohama Finetech CO.,LTD. Tokyo Century Corporation Yokohama Urban Solution Alliance (YUSA)	Energy efficiency, renewable energy, waste handling and disposal, transport, support of policy development	Thailand	Bangkok	Realizing carbon neutral under the Bangkok Master Plan on Climate Change – Promoting mitigation policy and projects through the public-private partnership platform–	Bangkok, capital of Thailand, will play a significant role towards realizing carbon neutrality by 2050 in Thailand. Bangkok is working on climate change with a long-term vision to reach net zero by 2050. This project will promote implementation of the Bangkok Climate Change Master Plan through support at policy level and enhancement of public-private collaboration with active participation of private sector based on collaborative relation between City of Yokohama and Bangkok Metropolitan Administration (BMA). Main activities of the project consist of (1) Collaboration with private sector, (2) Acceleration of Climate Change Master Plan, and (3) Development of mitigation projects.
18	Oriental Consultants Co., Ltd.	Joint proposer: Osaka City Government  Cooperating companies: Azbil Corporation ENDO Lighting Corporation PUES Corporation Green Blue Corporation Tokyo Century Corporation NEC Corporation	Energy Saving Renewable Energy Transport Infrastructure Cooperation for Building Systems	The Philippines	Quezon City	Zero Carbon Development in Quezon City for the Realization of Carbon Neutral Society	This project will provide support mainly in the areas of buildings, energy, and transportation, which account for the majority of GHG emissions in Quezon City, a member of the C40, and will contribute to achieving carbon neutrality by the year 2050. This year, the first year of the three-year plan, the project will utilize the knowledge of the City of Osaka, with the themes of energy management and promotion of smart buildings and air quality improvement through traffic flow measures, and will identify current conditions and issues for the technology implementation with the support of Japanese companies.
19	Oriental Consultants Co., Ltd.	Joint proposer: Sapporo City  Cooperative organization: Hokkaido University Cooperative companies: Iwata Chizaki Inc. Hokuden Sogo Sekkei Corporation Ariga Industry Co., Ltd. Zeneral Heatpump Industry Co., Ltd. Hokkaido Gas Co., Ltd. Trade & Development Bank	Energy Saving Renewable Energy Cooperation for Building Systems	Mongolia	Ulaanbaatar City	Zero Carbon Society Development by Promoting Architecture and Renewable Energy Suitable for Cold Regions in Ulaanbaatar City	In Ulaanbaatar City, coal accounts for 70% of primary energy consumption. Based on the experience and know-how of Sapporo City, which has declared its commitment to reduce CO2 emissions to net zero by 2050, this project will promote energy reduction technologies in the building sector and introduce regional heat supply system. , and making recommendations on environmental measures and appropriate energy management for indoor air pollution. The project will also make recommendations on environmental measurements of indoor air pollution and appropriate energy management.
20	Oriental Consultants Co., Ltd.	Joint proposer: Kawasaki City  Cooperating companies: Green Blue Corporation Azbil Corporation NEC Corporation Daikin Airconditioning Indonesia Tokyo Century Corporation	Energy Saving Transport Infrastructure Cooperation for Building Systems Fluorocarbons Recovery and Destruction	Republic of Indonesia	Bandung City	Zero Carbon Society Development in Bandung City through Energy Saving of Infrastructure System and Mobility Improvement	Bandung City and Kawasaki City has signed an MOU in the environmental field. This project aims to support high-priority GHG reduction projects in Bandung City and contribute to the realization of zero-carbon society. The project will promote energy-saving in building sector through the introduction of BEMS and high-efficiency air conditioning systems, and also street lights with smart LEDs as energy-saving of infrastructure system. In addition, the project will propose measures to promote the use of public transportation and eco-drive management with the knowledge of Kawasaki City. Introducing air quality monitoring system will be planned for the reduction of GHG emissions and improving air quality management through mobility improvement.