



September 20, 2022

Ena City

NGK INSULATORS, LTD.

Ricoh Company, Ltd.

IHI Corporation

Ena City, NGK, Ricoh, and IHI

to Start Trial Project for Decarbonization and Economic Circulation System

Establishing a Scheme to Convert Environmental Value into Credits and Create a Positive Circulation between the Environment and the Economy

Ena City (Gifu Prefecture; Mayor: Takane Kosaka), NGK INSULATORS, LTD. (hereinafter “NGK”), Ricoh Company, Ltd. (hereinafter “Ricoh”), and IHI Corporation (hereinafter “IHI”) will start a trial project in October 2022 for a decarbonization and economic circulation system. The system will convert the environmental value^{*1} gained by Ena City through the generation and sales of electricity from the renewable energy of the regional power producer and supplier Ena Electric Power Co., Ltd. (hereinafter “Ena Electric Power”) into economically compensable value (“credits”) and make use of those credits. The credits generated will be used within Ena City, and a scheme will be developed to generate inflows of funds from outside the city. The system will help to turn Ena City into a zero-carbon city by promoting a cycle in which the scheme revitalizes the local economy and encourages further expansion of the introduction of renewable energy.

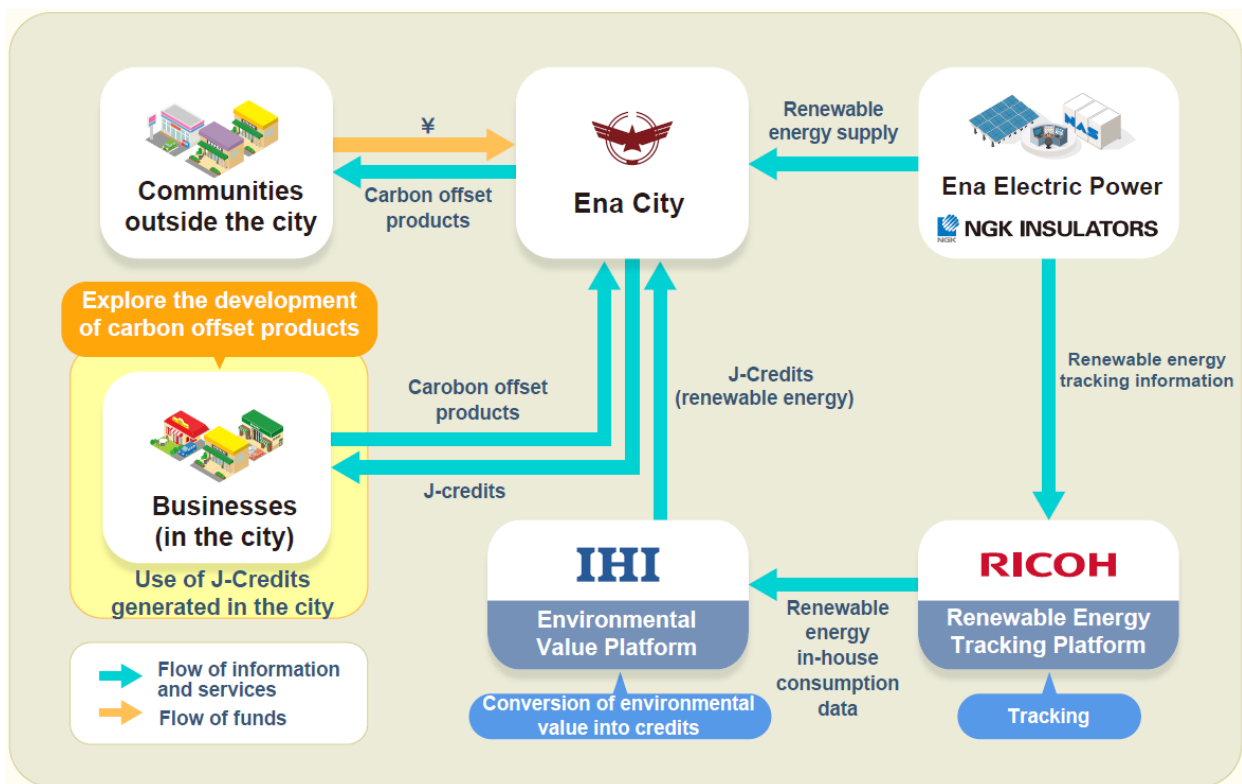
Since April 2022, NGK and Ricoh have been conducting a trial project^{*2} for using blockchain technology to perform tracking of all processes of Ena Electric Power’s renewable energy from generation to consumption, including charging and discharging of surplus energy to NAS[®] batteries for storing electricity. The project is tracking the consumption of renewable electric power generated and consumed in-house at Ena City’s public facilities, and it is deemed to represent environmental value held by the city in the form of carbon dioxide (CO₂) reductions.

The trial project to be initiated will use an environmental value platform^{*3} developed by IHI to convert this environmental value into credits through the J-Credit Scheme^{*4}. The environmental value held by the city will be converted into credits and sold to businesses and producers in the city. This will encourage the development of carbon offset products with added environmental value, and will help to boost the environmental brand power of Ena City, which has been selected as an SDGs Future City^{*5}. In the future, the project aims to establish a positive environmental and economic circulation scheme that maximizes environmental value by using the inflow of funds generated from outside the city through the project to encourage further introduction of renewable energy and energy conservation.



In the past, there were mechanisms in place to generate and trade environmental value, such as CO₂ reductions, through in-house consumption of renewable energy. However, these mechanisms were burdened by time-consuming procedures because they required manual and complex work, such as data collection and the filing of applications with various documents. This project will strive to streamline the procedures through to credit conversion by utilizing Ricoh and IHI's digital technologies and IoT technology*6.

Through this trial project, the project's partners will help to turn Ena City into a zero-carbon city and establish a decarbonization and economic circulation system that will serve as a model case for local governments across the country, with the aim of achieving carbon neutrality by 2050.



Schematic diagram of decarbonization and economic circulation system

*1 Environmental value:

The added value provided by helping to reduce CO₂ emissions, which are one of the causes of global warming, using renewable energy and energy conservation. Electric power generated from conventional energy sources such as fossil fuels has value as electricity, whereas electric power generated from renewable energy sources has not only value as electricity but environmental value as well.

*2 Trial Project by NGK and Ricoh:

News release issued on November 12, 2021: "NGK and Ricoh to Start Renewable Energy Tracking Trial Project"



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^{*3} Environmental Value Platform:

As part of efforts to realize carbon neutrality, IHI has developed a digital platform to calculate CO₂ emissions and reductions from the operational data of equipment and facilities obtained through such means as IHI's IoT platform ILIPS (IHI Group Lifecycle Partner System). The platform visualizes the recorded data and tokenizes the data as environmental value using blockchain technology. started to be implemented since February 2022.

This project is the first of its kind to involve collaboration with a local government using this platform.

^{*4} J-Credit Scheme:

Under the J-Credit Scheme, the Japanese government certifies the amount of greenhouse gas emissions, such as CO₂, as credits if they are reduced through the introduction of energy-saving facilities or the use of renewable energy, or they are removed by sinks through appropriate forest management. This scheme, which was created by progressively integrating the Domestic Credit Scheme and the Offset Credit (J-VER; Japan's verified emissions reduction) Scheme, is administered by the national government. Credits created under the scheme can be used for various purposes, such as achieving the targets of the Keidanren Carbon Neutrality Action Plan, and carbon offsets. (Excerpted from the official website of the J-Credit Scheme: <https://japancredit.go.jp/english/>)

^{*5} SDGs Future City:

A local government that proposes excellent Sustainable Development Goals (SDGs) initiatives to achieve regional revitalization driven by the SDGs. The Cabinet Office selects SDGs Future Cities.

^{*6} Ricoh's digital technologies and IoT technology:

As an initiative to realize a zero-carbon society, Ricoh has developed a renewable energy tracking platform that uses blockchain technology and has been conducting a demonstration test of this platform since August 2020. The platform enables third parties to perform verifiable real-time tracking of the entire process from renewable energy generation to consumption. By doing so, the platform contributes to the diversification of renewable energy distribution and usage formats and simple, low-cost renewable energy certification through consistent digitalization of measurements and records.

* About Ena Electric Power Co., Ltd.

Ena Electric Power is a regional power producer and supplier established in April 2021 by NGK, Ena City, and Chubu Electric Power Miraiz Co., Inc. (operations began in April 2022). Ena Electric Power independently owns photovoltaic equipment and NAS batteries for energy storage and aims to realize a zero-carbon city through local production and local consumption of energy using the Ena Model. This model is characterized by independent renewable energy use without relying on the Feed-in Tariff system (FIT system), stable corporate management, and a strengthened capability to respond to natural disasters.