


CREATION OF A CIRCULAR AND ECOLOGICAL ECONOMY



The environmental, economic, and social challenges which Japan faces are linked, are set to become ever more complex, and involve issues that have a major impact on regions throughout the country. Against this background, as described in the Fifth Basic Environment Plan, regions will demonstrate their strengths by utilizing their unique characteristics, thereby building a self-reliant and decentralized society where different resources are circulated within each region. Neighboring regions will complement and support each other by providing local resources, to create a Circular and Ecological Economy.

This chapter introduces work that has already begun around the country toward making the Circular and Ecological Economy a reality.

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1. Creation of a Circular and Ecological Economy

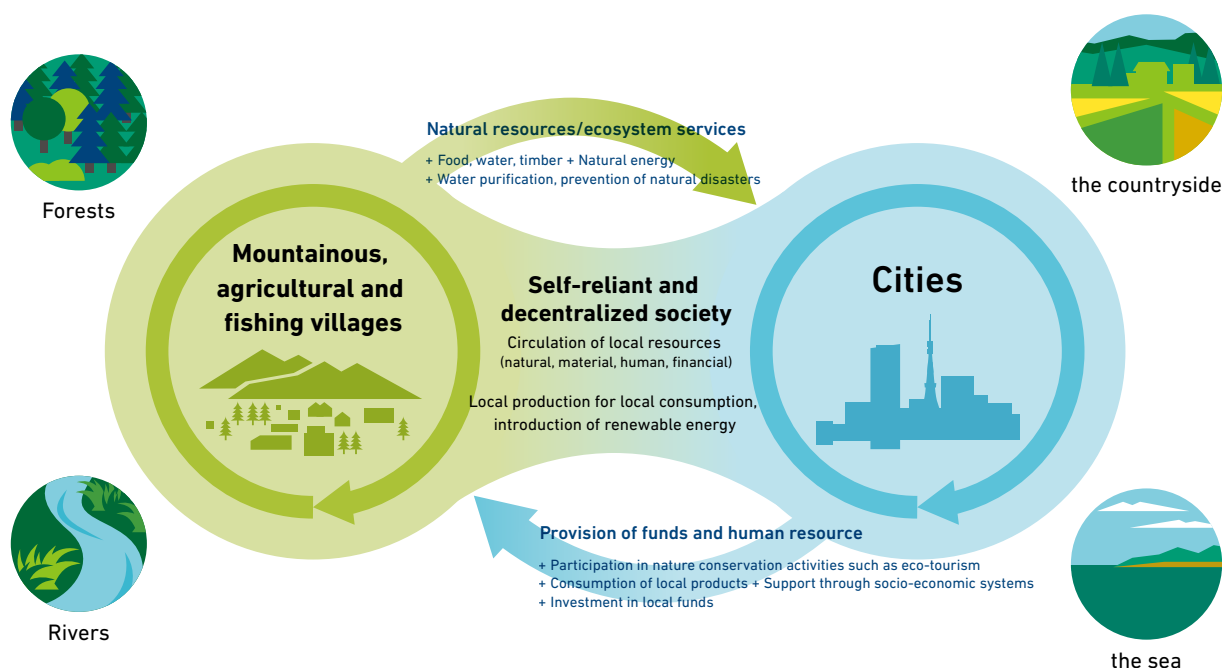
SUSTAINABLE COMMUNITY DEVELOPMENT THROUGH THE CREATION OF A CIRCULAR AND ECOLOGICAL ECONOMY

The Circular and Ecological Economy” is a new concept. It refers to new avenues for growth that will use local resources to create new business opportunities and improve the quality of life, for integrated improvements of the environment, economy and society. The idea is that each region will take advantage of its own resources and participate together with other regions in the formation of areas where different resources are used in a self-reliant and distributed fashion, for sustainable resource circulation. While creating innovations across all perspectives including socio-economic systems, lifestyles, and technologies, each region will carry out symbiotic exchanges with neighboring regions according to the unique characteristics of each region, to form networks across wider areas. Partnerships built via natural connections (connections among forests,

the countryside, rivers and the sea) and economic connections (including human resources and funding) are needed to allow regions to support each other with their own local resources.

The creation of Circular and Ecological Economy is not only beneficial for mountainous, agricultural and fishing villages but also for cities. People in urban areas could become more aware of the fact that they are supported by agricultural, forestry, and fishing products from mountainous, agricultural and fishing villages, and other benefits from nature (ecosystem services). In other words, the Circular and Ecological Economy is a concept to maximize the vitality of all regions, making full use of mountainous, agricultural and fishing villages as well as cities.

Conceptual illustration of Circular and Ecological Economy



Source : Ministry of the Environment

CONSTRUCTION OF A CIRCULAR AND ECOLOGICAL ECONOMY

Utilization of local renewable energy

Community development can begin with the introduction of renewable energy. Profits from renewable energy projects can be devoted to programs such as child care support or the development of new industries. Relationships built up via the supply and demand for energy can encourage networking within the region and motivate exchanges between cities and mountainous, agricultural and fishing villages.

In Japan, there are many examples of local energy companies that supply energy generated from local renewable energy resources. Such local initiatives are becoming more common throughout the country. Utilizing local resources to supply electricity is efficient, because consumption is close to production, and self-sufficiency allows local capital resources to be cycled back into the region.

Regional total energy services company supports energy saving

Hamamatsu Energy Co., Ltd. is a regional power producer and supplier. It was founded in October 2015 with funding from the city of Hamamatsu and eight companies from the Hamamatsu region and elsewhere in Japan. The company began supplying electricity from renewable energy sources in April 2016, when complete liberalization of the electricity retail market in Japan came into effect.

Taking advantage of the favorable insolation (amount of solar radiation) characteristics of this region, Hamamatsu Energy supplies renewable energy from multiple solar power plants, biomass, and other sources. Purchasers include private enterprises as

well as elementary schools, junior high schools, and other public customers. In October 2018, the company supplied 16,603 kW of electric power, enabling local production for local consumption.

In addition to the purchase and sale of electric power, the company dispatches energy and management experts to medium- and small-sized businesses in the city for free-of-charge advice on ways to save energy. With the goal of becoming a total energy services company, Hamamatsu Energy is working to establish decentralized and self-reliant energy systems in areas throughout the city and to coordinate the commercial launching of smart energy projects.



**Hamamatsu Hamanako
Solar Power Plant**

Source: Hamamatsu City

Utilization of local circulating resources

Food waste, livestock waste, sewage sludge, plastic, metal, and other materials are all local resources that will be required for the creation of a Circular and Ecological Economy. Such resources must be circulated at the optimal scale for each region and type of resource.

Although appropriate processing is always a prerequisite when dealing with waste, new approaches are possible with respect to the waste itself and also with respect to local circumstances. When resources left unused up to now are circulated at optimal scales, they can be expected to result in new businesses, new jobs, and more activity in local economies.

Circulation of hydrogen from livestock

The town of Shikaoi, Hokkaido Prefecture is in a farming and dairy region that was faced with the need to process large volumes of livestock waste. It responded by introducing centralized processing in a biogas plant. The plant converts methane gas to energy, and also produces nutrient-rich fertilizer from the biogas residue. The plant lessens the burden on dairy farmers, and has a low environmental impact. Surplus heat from the facility is contributing to local industry.

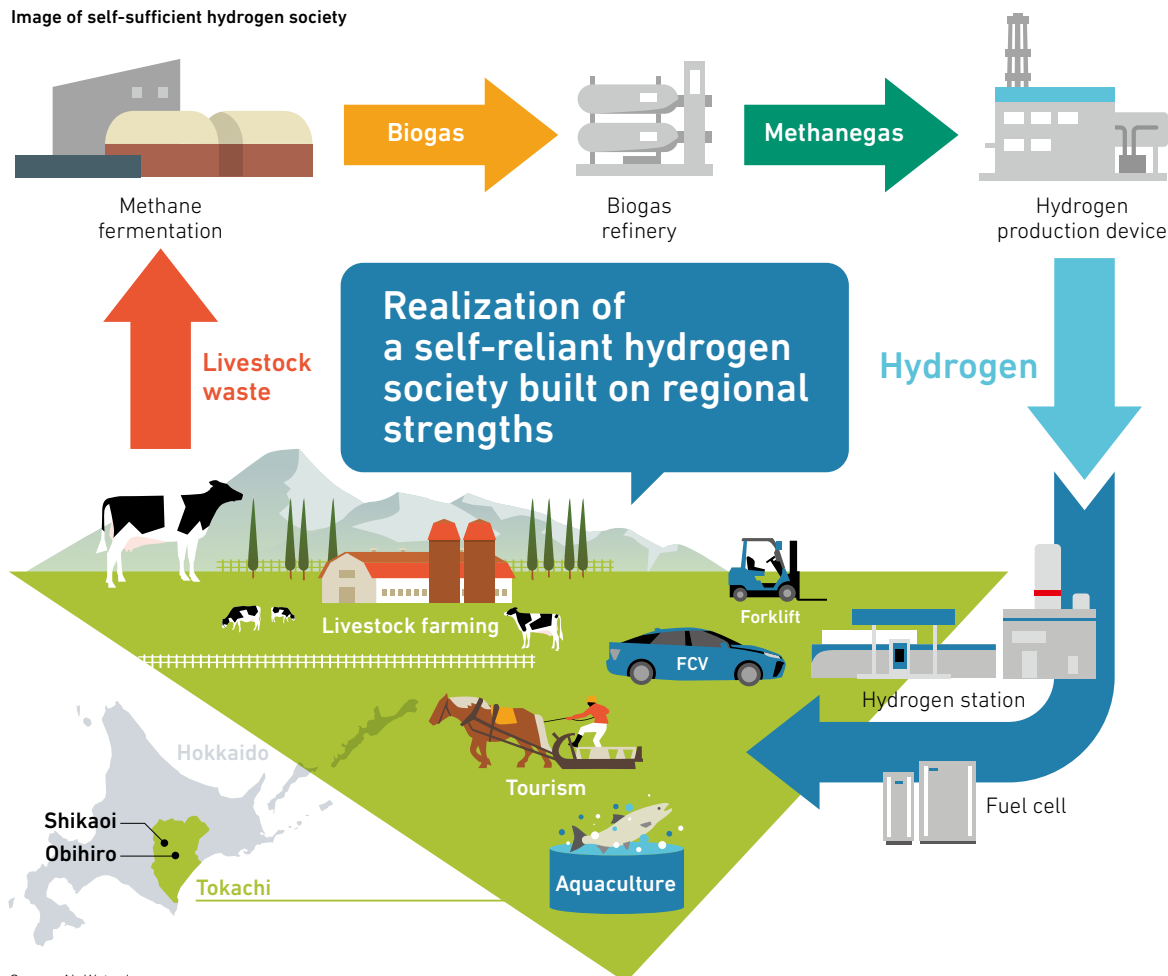


Shikaoi Hydrogen Farm

Source: Air Water Inc.

Currently the plant produces hydrogen from biogas. The hydrogen is being used to power fuel cells for heat and electricity supply, and for fuel-cell autos and forklifts. Trials are underway toward establishment of a low-carbon hydrogen supply chain, with the circulation of local resources contributing to decarbonization.

Image of self-sufficient hydrogen society



Source: Air Water Inc.

Utilization of local natural resources

The rich natural bounty (ecosystem services) provided by forests, the countryside, rivers, the sea and their connectivity can be recognized as local resources. They can be used to realize cultural and

local values that are unique to the area. Various activities are utilizing local natural resources to respond to demand for higher added value in local products and services.

Glamping at the national parks through tie-ups with the private sector

Glamping (glamorous camping) at the camping grounds managed by Ministry of the Environment in national parks is promoted by offering services which reflect the know-how of private companies, in cooperation with private companies and regional partners.

A model glamping project is underway at Aso-Kuju National Park, with the cooperation of Snow Peak, Inc. It features local activities and dinners of local cuisine in a dining tent. At the Yumoto Camping Ground of Nikko National Park, Wonder Wanderers Inc. is implementing a project called "The Travelling Outdoor Hotel, The Caravan" , with local chefs and activities.



Aso Glamping

Source: Snow Peak Inc.



The Travelling Outdoor Hotel, "The Caravan"

Source: Wonder Wanderers Inc.