



Toward the Establishment of Circulating and Ecological Economy and the Promotion of Zero-Carbon Cities

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Paradigm Shift Toward A Sustainable Society

- September 2015: Adoption of the **"2030 Agenda for Sustainable Development"**
 - * Including **SDGs** addressing multiple issues in an integrated manner
- December 2015: Adoption of the **"Paris Agreement"**
 - * To keep average temperature rise below 2 degrees, aims to reduce greenhouse gas emissions to **practically zero** in the second half of this century
 - * Requires each signatory state to establish the **reduction targets, long-term strategies, and adaptation plans.**



Adoption of the Paris Agreement



Prime Minister Abe making a speech at summit meeting of world leaders at COP21 where the Paris Agreement was adopted
(from Prime Minister of Japan and His Cabinet website)

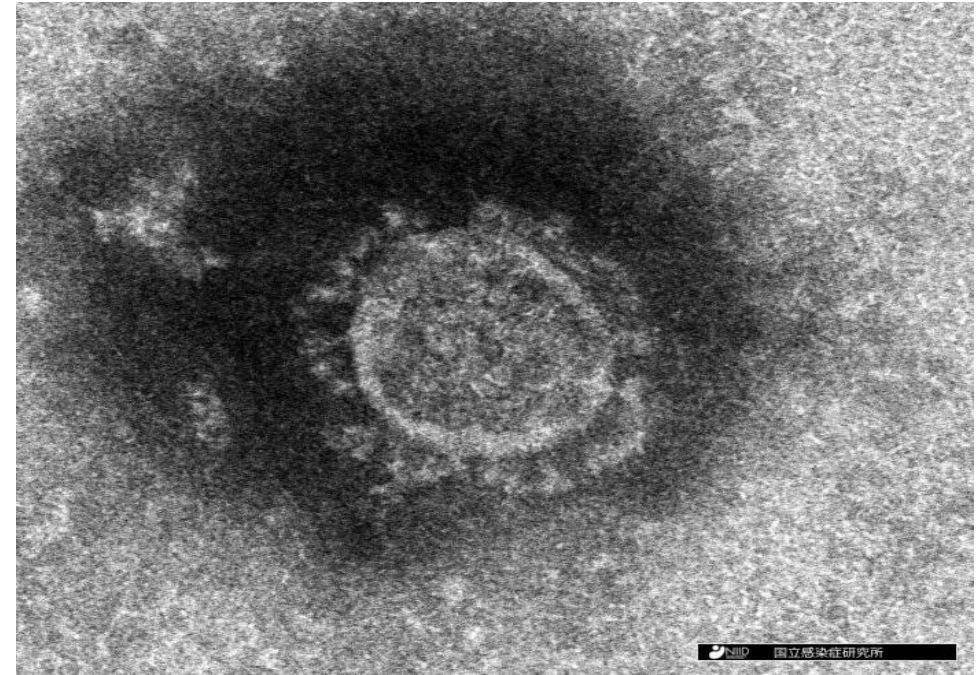
Time to start moving towards a new civilized society,
with **a major shift in our basic thinking (paradigm shift)**

Facing Two Crises: “Climate Crisis” and “COVID-19”

- Serious climate-related disasters, occurring frequently around the world, have increased the risk of such disasters even further
- On June 12, the Ministry of the Environment issued a “Climate Crisis Declaration”
- The significant impact of COVID-19 on global economies and societies, and human health



▲ Damage caused by the 2019 East Japan Typhoon
<Chikuma-gawa River, Nagano City, Nagano Prefecture>



▲ Electron micrograph of 2019-nCoV
(Material source: National Institute of Infectious Diseases)

Redesigning economy and society through three shifts

<Era of coexisting with / after COVID-19>

“Three Shifts” that Redesign Economies and Societies

⇒ Creation of a Circulating and Ecological Circulate Economy (local SDGs)

Decarbonized society

- Zero-carbon city and renewable energy promotion support package
- Decarbonize the “new normal”
- Accelerate innovation for decarbonization

Circular economy

- Implement the Resource Circulation Strategy for Plastics
- Establish a sustainable waste disposal system
- Resilient waste disposal

Decentralized society

- Create a resilient society through “climate change and disaster prevention” and “adaptive restoration”
- Drastically strengthen national parks measures
- Create new “SATOCHI, SATOYAMA and SATOUMI”

Efforts supporting the shifts

Change the society by utilizing ESG funding / nudges

- ESG financing, impact finance
- Nudges
- Support business management and start-ups making efforts for decarbonization

Strengthen environmental diplomacy

- Strengthen diplomacy toward COP26 and COP15
- Expand / deepen the Osaka Blue Ocean Vision
- Export environmental infrastructure in accordance with decarbonization principles

Efforts to support underlying health and environment

- Preventive measures against zoonoses
- Management of asbestos, PCBs / Minamata / animal welfare

Circulating and Ecological Economy—Consisting of Regional Circulating and Ecological Spheres— embodies the three shifts toward redesigning economy and society

Basic Direction of the Fifth Basic Environment Plan

What Does a Future Society Look Like?

1. Creation of the “Circulating and Ecological Economy”

- * Each region demonstrates its strengths by utilizing its unique characteristics
 - Makes use of regional resources and builds a **self-reliant and decentralized society**
 - Complements and **support one another** according to unique characteristics of each region

2. Establishment of “Japan as a global exemplary model”

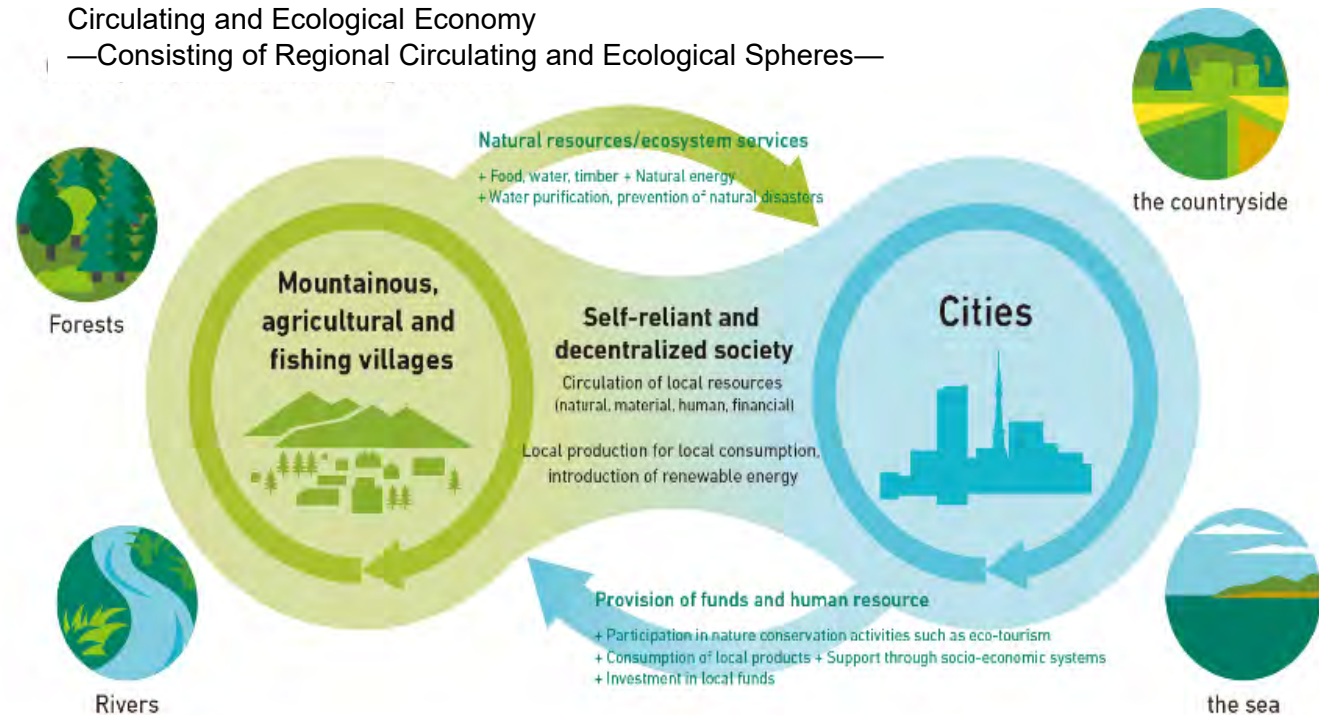
- * Possibly because of
 - 1) experience with **pollution**, 2) excellent **environmental technologies**, 3) spirit of circulation “Mottainai” and tradition of **living in harmony** with nature

3. Building a sustainable, circulation- and symbiosis-based society “Environmental and Life Centered Civilized Society”

- ✓ Create innovations across all perspectives
- ✓ Partnerships with a wide range of stakeholders

Achieve “a new growth” that improves the quality of life

Circulating and Ecological Economy —Consisting of Regional Circulating and Ecological Spheres—

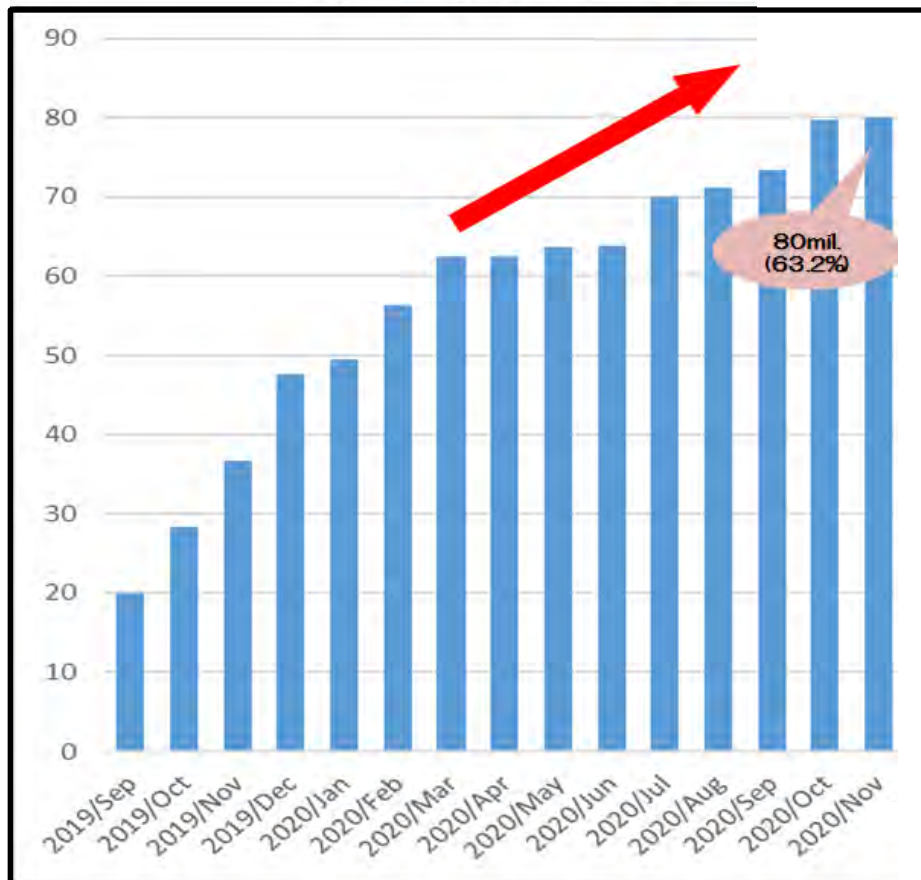


Source : Ministry of the Environment

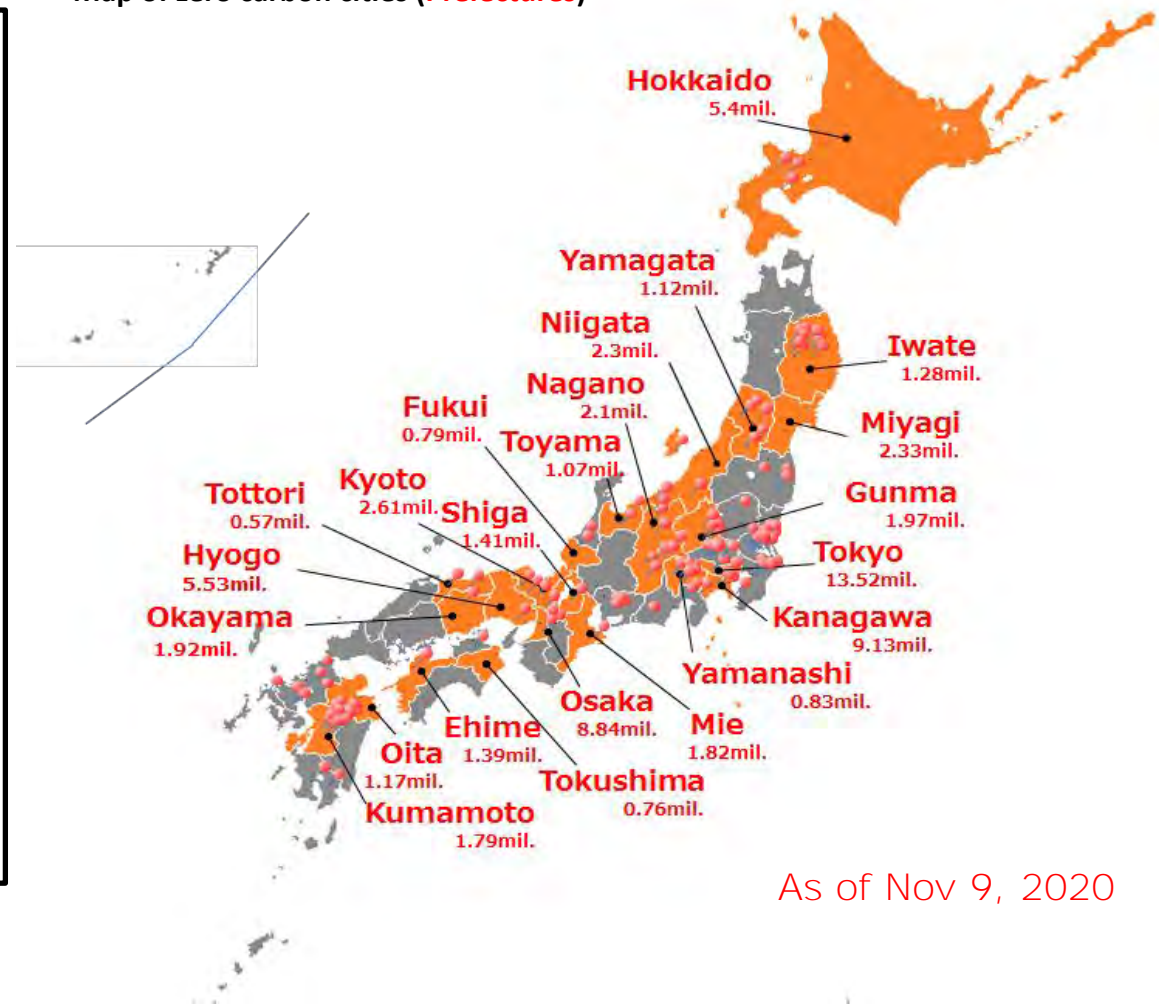
2050 Zero Carbon Cities in Japan

- 170 local governments including Tokyo, Kyoto, and Yokohama announced their commitment to net zero carbon emissions by 2050.
- These local governments represent 80 million people (63.2% of Japan's population), and 3.5 trillion USD in GDP. The population is more than a half of that of Japan; a further increase is aimed at.

Population of zero carbon cities



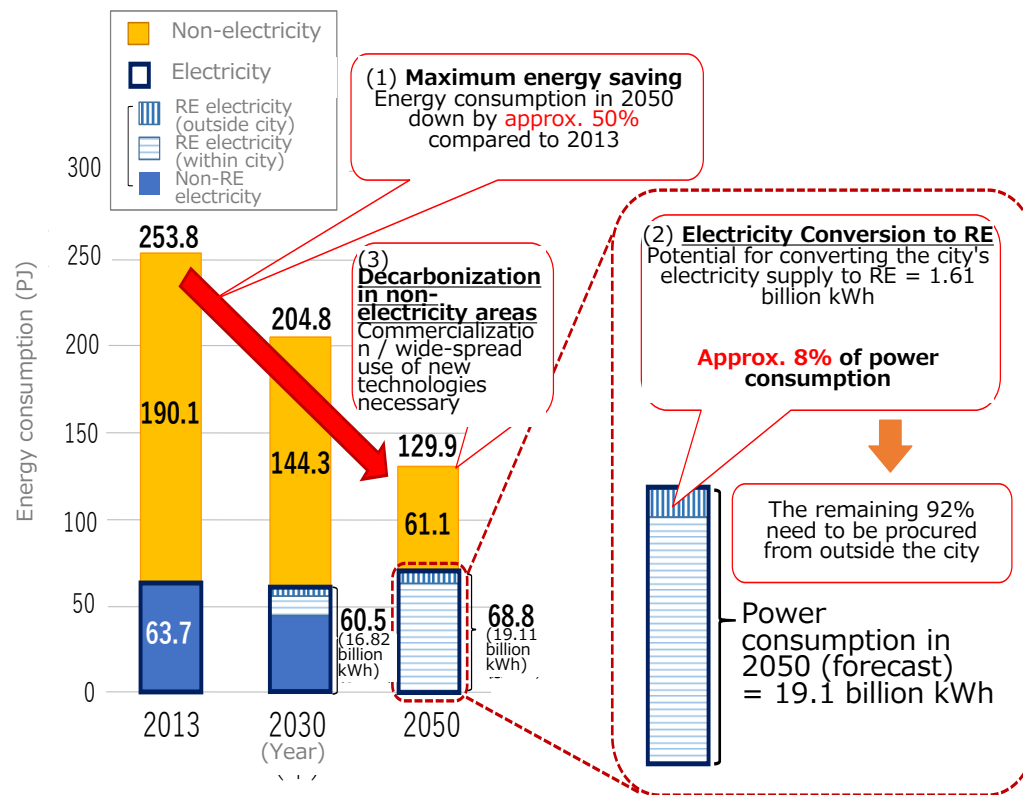
Map of zero carbon cities (Prefectures)



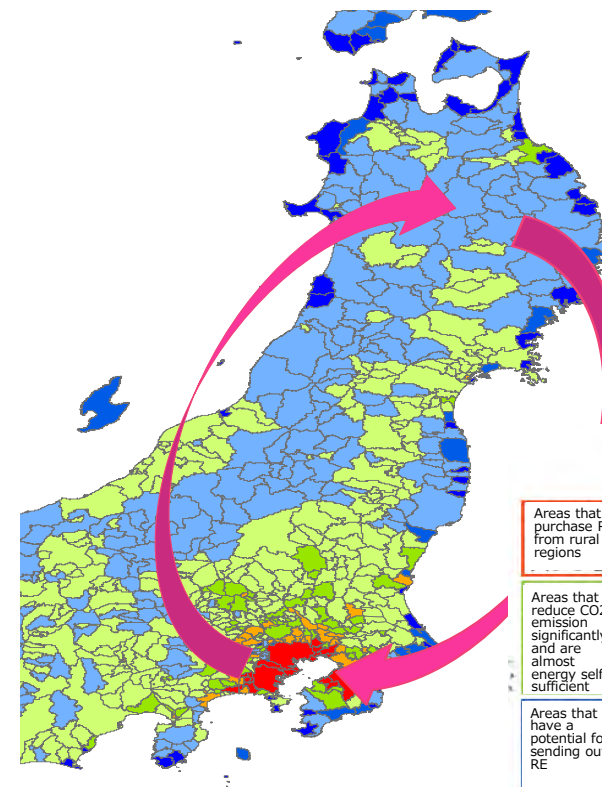
As of Nov 9, 2020

Example of the Circulating and Ecological Economy: (Collaboration between Yokohama City and 12 local governments in Tohoku)

- Yokohama City declared "Zero Carbon Yokohama."
- The plan consists of reductions of approx. 50% through maximum energy conservation, approx. 25% through decarbonization of energy other than electricity (practical application / spread of new technologies), and the rest through renewable energy (RE). However, Yokohama City's potential accounts for only 8% (1.61 billion kWh) of the assumed renewable energy.
- To address this, Yokohama City collaborates with the Tohoku region, where renewable energy is abundant, to supply renewable energy in the city, and thereby aims to create a positive economic cycle, including renewable energy / environmental value, and to form the Circulating and Ecological Economy.
- Under the collaboration agreement concluded between Yokohama City and 12 local governments in Tohoku in February 2019, they have had meetings for renewable energy collaboration and purchased electricity generated by renewable energy.



2020 Zero-carbon vision
Source: Yokohama City Strategy on the Use of Renewable Energy
(launched in May 2020)



Potential for renewable energy
Source: Ministry of the Environment

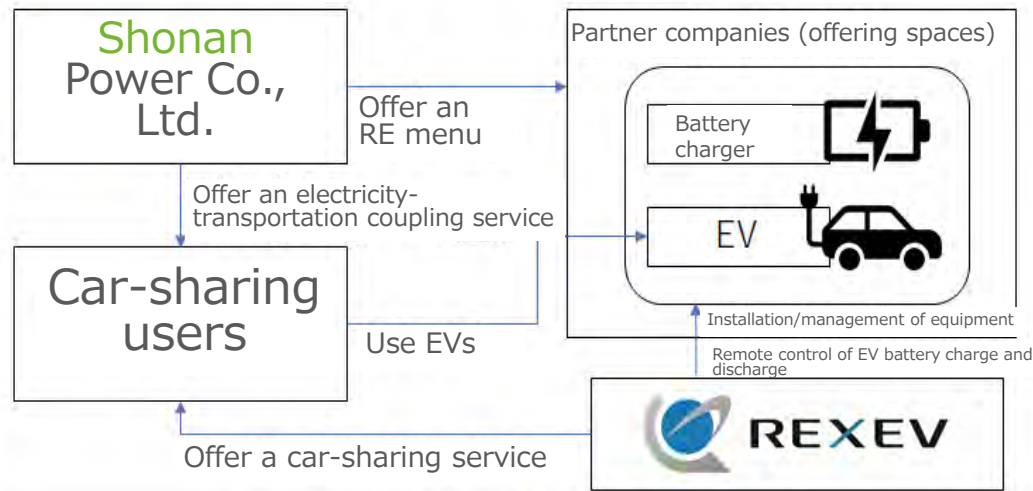


Wind turbines in Yokohama Town, Tohoku

Example of the Circulating and Ecological Economy: (Odawara City. A regional transportation model through renewable energy and EV sharing)

- In Odawara City in Kanagawa Prefecture, Shonan Power Co., Ltd., a local electric power company, and the Odawara municipal office joined forces to create a regional transportation model based on EV sharing that utilizes renewable energy (RE) and electric vehicles which are mobile storage batteries.

Project to create a decarbonized regional transportation model



Odawara Mega Solar Civic Power Station

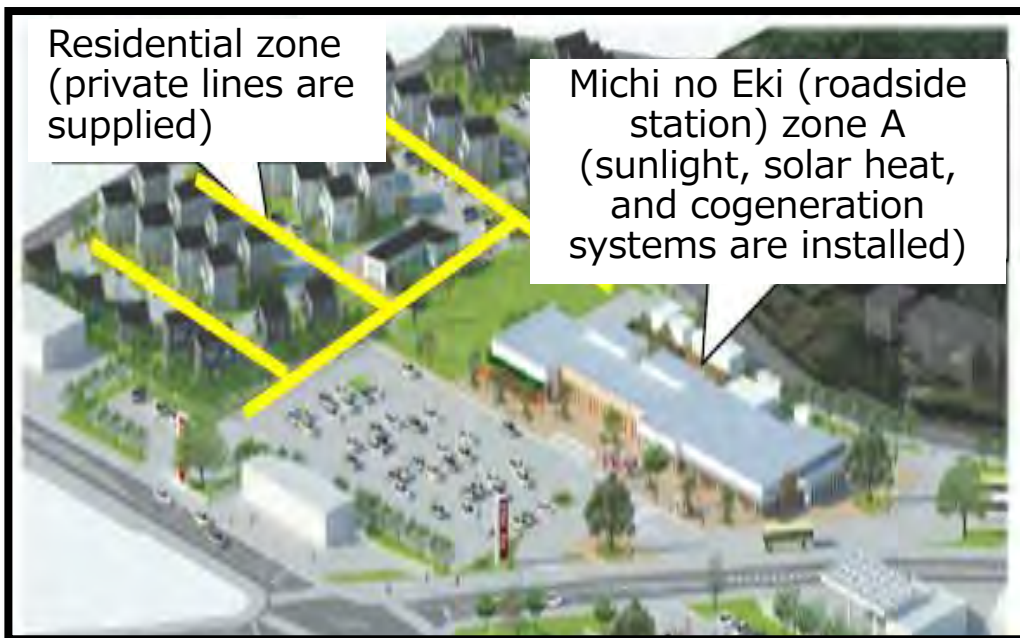


Shonan Bellmare Hayatogawa Power Station (small hydro)



Example of the Circulating and Ecological Economy: (Mutsuzawa-town. A resilient disaster prevention base utilizing renewable energy)

- CHIBA Mutsuzawa Energy, **a regional power producer and supplier** (*) **financed by organizations including the local government (Mutsuzawa-town)**, created a **“CO2-saving/energy self-sufficient disaster prevention base area”** based on **underground private lines** and initiated a local production for local consumption project for electric power and heat by utilizing an independent distributed power supply system.
- In September 2019, due to the influence of Typhoon No. 15, which was designated as a devastating disaster, a blackout occurred temporarily in this disaster prevention base area.
- Immediately after the blackout had occurred, the affected electric power systems were isolated to switch this area to a **“microgrid.”** As a result, the area restored power promptly, allowing the residents in the area to regain access to electric power as usual.
- Moreover, in the hot spring facility in the area, **the use of warm-water showers and restrooms were offered free of charge to nearby residents living outside the area (over 800 residents in two days: Sep. 10 and 11)** who lost access to electric power and gas due to the blackout. This demonstrated the function as a **“resilient disaster prevention base.”**



[CO2-saving/energy self-sufficient disaster prevention base area in Mutsuzawa-machi: conceptual drawing]

[Brightly shining Michi no Eki and houses while the surrounding stores and houses are without power]



[A long queue formed at the hot spring facility]

• I was grateful that I could use warm water.
• I felt so good that I thought it was worth 2,000 to 3,000 yen.
(Voices from people who used the hot spring facility)

Circulating and Ecological Economy in an era of coexisting with/after COVID-19

Approach to cope with the Corona Crisis and Climate Crisis

**Three shifts toward redesigning economy and society:
A shift toward a decarbonized society, a circulating economy,
and a decentralized society**

Embodied by a Circulating and Ecological Economy

Supported by open innovation involving people from a variety of fields such as researchers, engineers, and investors, in addition to governments, residents, companies, universities, and NPOs



Thank you.