

ACTIONS BY THE NATIONAL GOVERNMENT, LOCAL GOVERNMENTS, BUSINESSES, ETC. TO BRING ABOUT SOCIAL CHANGE

As climate change increases the risk of meteorological disasters and other calamities, it may not only cause great damage to the economy and society, but could shake the very foundations of survival for humanity and all life on earth.

Below, as an especially important perspective on domestic trends regarding climate change, we present aspects of social change from the perspective of “climate action and DRR,” which incorporates the element of climate change into disaster prevention, and also actions in “climate change and digital” utilizing ICT and other elements that drive social change.

We also present an overview of actions and plans by the national government, beginning with the development of a decarbonized society, and introduce the efforts of various actors to bring about social change, such as pioneering efforts by local governments, businesses, financial institutions, etc., and actions and innovations for building a circular and ecological economy—that is, attractive regional development that can achieve decarbonization and sustainable development goals (SDGs).

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DOMESTIC TRENDS REGARDING CLIMATE CHANGE, ETC.

Social change from the perspective of “climate action and DRR”

To handle the current situation, which may be called a climate crisis, requires us to make use of our knowledge as a country that has experienced many disasters, and to also implement social change from the perspective of “climate action and DRR,” which incorporates the element of climate change into disaster prevention. The “Strategy for Enhancing the Synergy between Climate Action and Disaster Risk Reduction in the Era of Climate Crisis”, which was compiled in June, proposes that

“climate action and DRR” be incorporated into policies for all fields and be made the mainstream of policies hereafter. Also, in regard to recovery from disasters, rather than being bound by the idea of restoring things to their original shape—that is, simply restoring areas to their former conditions—importance has been placed on implementing responses with the idea of “adaptive recovery” that promotes adaptation to climate change through responses that include land-use control.

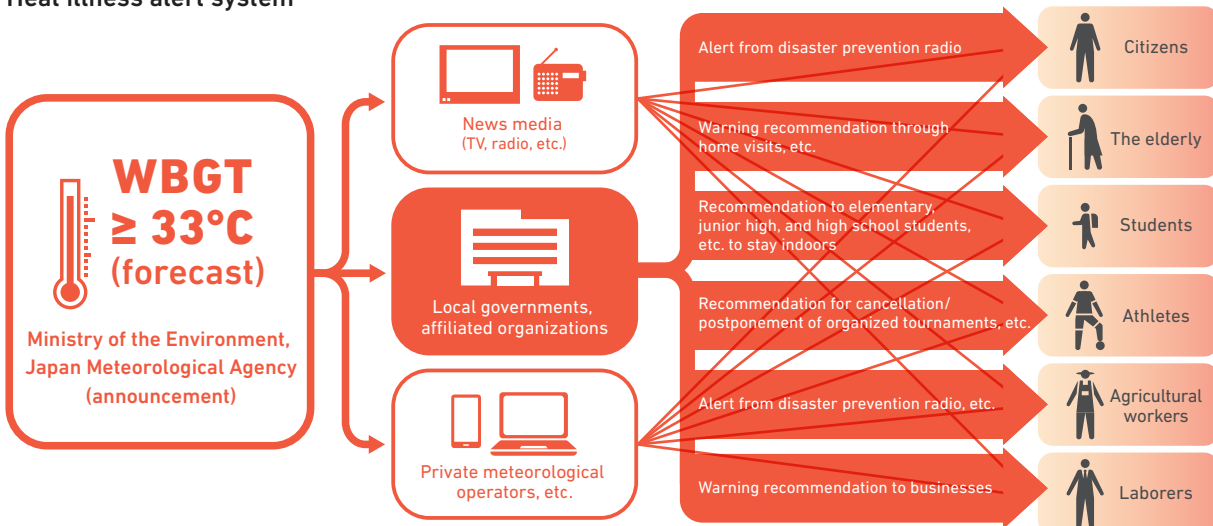
Disposal of disaster waste and countermeasures against heat illness

In regard to debris produced by large-scale meteorological disasters, to deal with damages due to disasters such as Typhoon Faxai, the Ministry of the Environment dispatched disaster site support teams, comprising Ministry staff and experts, to carry out technical support for such things as the setting up, management, and operation of temporary storage spaces and the disposal of disaster waste. Also, to strengthen cooperation with the Ministry of Defense and the Self-Defense Forces regarding the disposal of disaster waste, the Ministry of the Environment is progressing with

the developing of a disaster waste disposal manual together with the Ministry of Defense.

To prevent the increase of heat illness due to global warming, the Government provides weather information during summer in the form of high temperature warning information from the Japan Meteorological Agency and the heat stress index (WBGT) from the Ministry of the Environment, which is increasing awareness of the danger of heat illness. Furthermore, the Ministry of the Environment and the Japan Meteorological Agency are cooperating to provide new information

Heat illness alert system



Source: Ministry of the Environment and Japan Meteorological Agency

on heat illness prevention in the form of a heat illness alert system, which has undergone preliminary implementation in some parts of

Japan (the Kanto-Koshin region) from July 2020 and is scheduled for full-scale implementation nation-wide from 2021.

Construction of decentralized and self-reliant energy systems

It is essential to move forward with efforts to enable the use of regional renewable energy and other forms of self-reliant power supply in times of disaster, while promoting the construction of regional energy supply chains utilizing storage batteries, fuel cells, cogeneration, digital technology, etc., and to move toward the construction of decentralized energy systems, while considering such things as total system cost and stability.

The Ministry of Economy, Trade and Industry and the Ministry of the Environment have jointly hosted the Decentralized Energy Platform, bringing together businesses and local governments eager to achieve a decarbonized society and providing an opportunity to formulate new ideas for building regional business models that maximize the use of renewable energy.

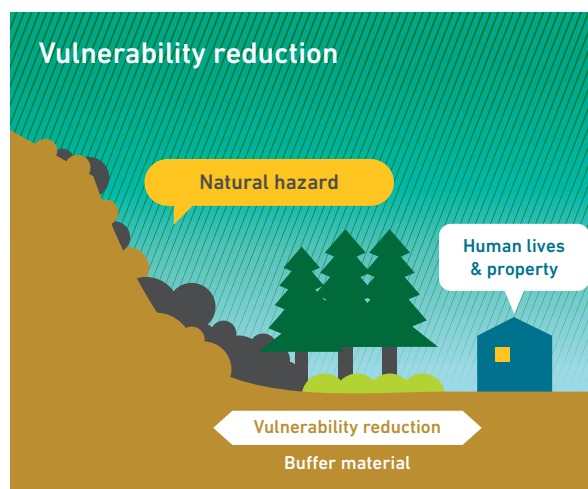
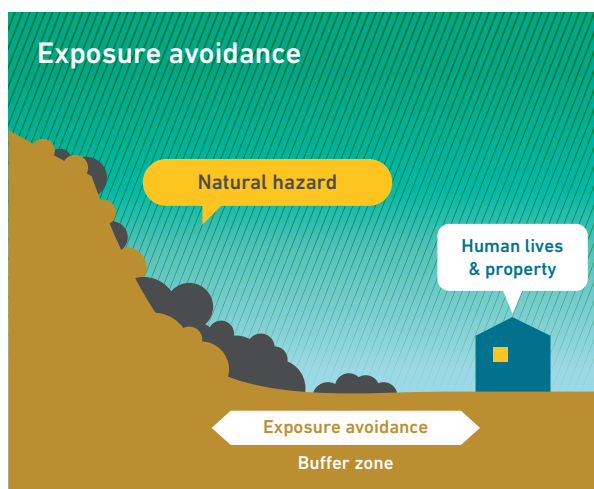
Green infrastructure and ecosystem-based disaster risk reduction

As policies for forming a sustainable society that is both disaster resilient and in harmony with nature, while also solving socio-economic issues, attention is being given to “Green Infrastructure” and “Ecosystem-based Disaster Risk Reduction” (Eco-DRR), which actively utilize the functions of an ecosystem.

For example, the Watarase water retention area is a Ramsar-registered internationally important

wetland that is home to a wide variety of plants and animals, including more than 700 species of plants and about 140 species of birds. During Typhoon Hagibis, the Watarase water retention area and three other water retention areas held a total of about 250 million m³ of floodwater, the most ever on record, greatly contributing to the prevention of flood damage in the metropolitan area.

Eco-DRR approach



Source: Ministry of the Environment

Social change through “Climate Change and Digital”

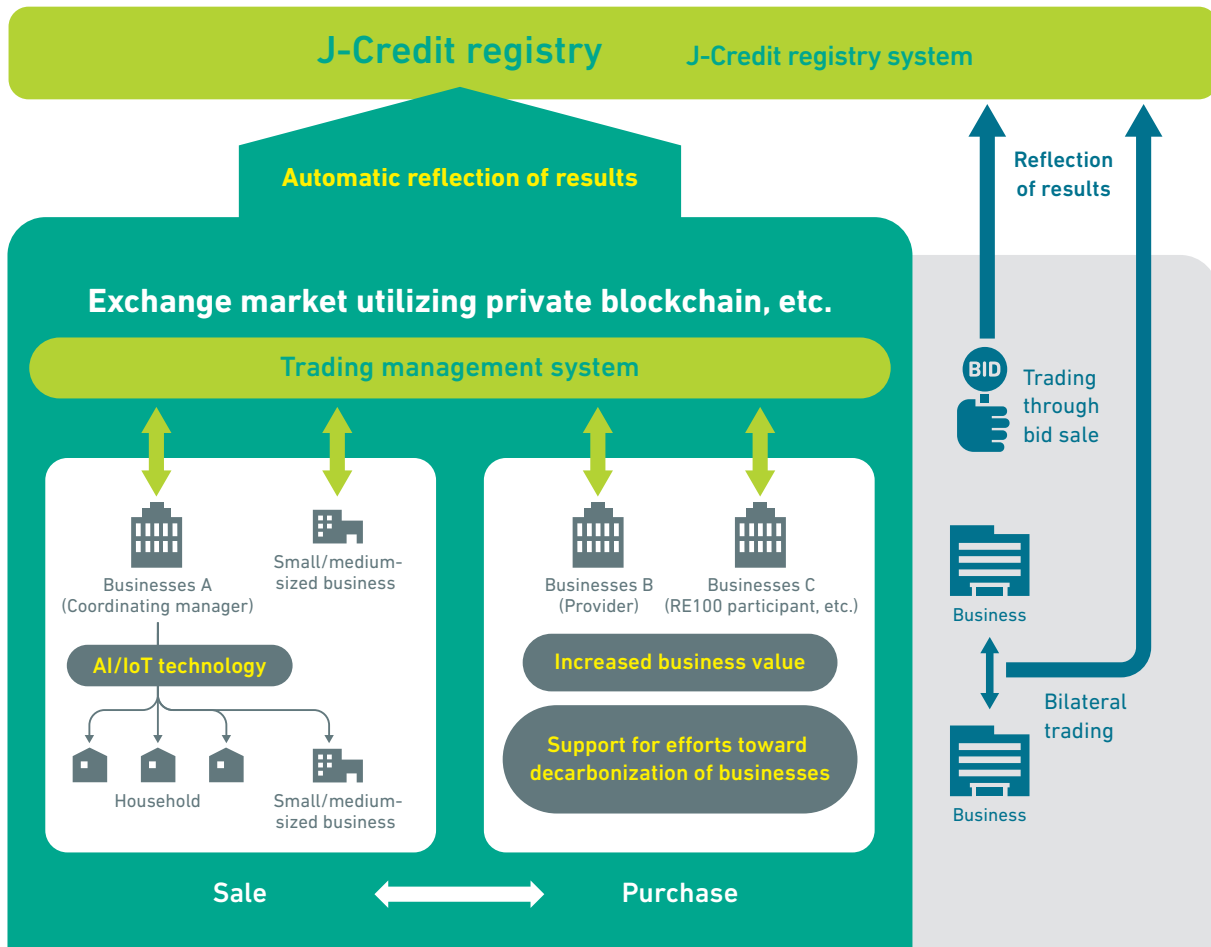
Information and communications technology (ICT), which is general-purpose technology applicable in a wide variety of fields, is also thought to be useful in climate change countermeasures. In this regard, promotion of pioneering climate change countermeasures through “Climate Change and Digital,” combining climate change with ICT and other digital elements, can be expected to bring about social change.

For the “Climate Change and Digital” project, by utilizing digital technology in the J-Crediting Scheme and taking steps to promote an all-in effort including small and medium-sized businesses and

households, the Ministry of the Environment is raising awareness of activities for greenhouse gas reduction and pushing forward investigations to promote further action. Through this, the Ministry hopes to achieve a “virtuous cycle” of environmental protection and growth by promoting environmental investment in such things as solar power generation systems, storage batteries, and electric cars through the visualizing of latent environmental value within households and small and medium-sized businesses and boosting efforts by businesses and local governments toward decarbonization.

Image of the future the “Climate Change and Digital” project aims for

Introduction of a mechanism in the J-Credit system to make trading in CO₂ reduction through implementation of renewable energy in households, small and medium-sized businesses, etc. easier, using digital technology such as blockchain and IoT



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ACTIONS BY THE NATIONAL GOVERNMENT FOCUSING ON CLIMATE CHANGE MITIGATION

Japan's Long-term Strategy under the Paris Agreement

On June 26, 2019, the national government submitted the long-term strategy for low greenhouse gas emission development to the Secretariat of the United Nations Framework Convention on Climate Change.

Japan was the first member among G7 nations to proclaim a decarbonized society in its long-term

society as its ultimate goal. Japan aims to accomplish this as early as possible in the second half of this century, for which Japan makes bold efforts to achieve 80% reduction of greenhouse gas emissions by 2050.

The Plan for Global Warming Countermeasures and Japan's Nationally Determined Contribution (NDC)

In response to the Paris Agreement, Japan has formulated its Plan for Global Warming Countermeasures. Within this plan, as a mid-term goal for FY 2030, Japan aims to reduce greenhouse gas emissions by 26% compared to FY 2013. Also, as a long-term goal, under a fair and practical international framework with participation of all principal countries, Japan aims to lead the way of the international community in efforts to reduce emissions, according to the abilities of each of the principal emitters, with Japan's goal being an 80% reduction of greenhouse gas emissions by 2050, while accomplishing both global warming countermeasures and economic growth.

Japan's nationally determined contribution (NDC) was decided by the Global Warming Prevention Headquarters on March 30, 2020, and submitted to the Secretariat of the United Nations Framework Convention on Climate Change on March 31. In the NDC, Japan has resolutely stated it will achieve the reduction target of 26% by FY 2030. In addition, Japan will pursue further efforts to reduce greenhouse gas emissions beyond this level. Based on this, a review of the Plan for Global Warming Countermeasures has begun, and additional information will be presented to the UN after the review is completed.

Measures for controlling fluorocarbon emissions

In 2019, Japan strengthened regulations on fluorocarbons emission control in order to ensure that fluorocarbons in commercial equipment are properly recovered and the recovery rate is improved. The enhanced act requires each actor involved in the equipment disposal process to obtain a certificate of fluorocarbons recovery/destruction/recycling through designated examination.

In addition to the domestically-strengthened policy, Japan launched the Initiative on Fluorocarbons Life Cycle Management (IFL) at the

25th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP25). It aims to promote better understanding of the life cycle management of fluorocarbons globally as well as to facilitate action towards the entire lifecycle of fluorocarbons. Japan, being a global leader in the management of fluorocarbons, remains steadfast as it continues to work towards climate change mitigation.

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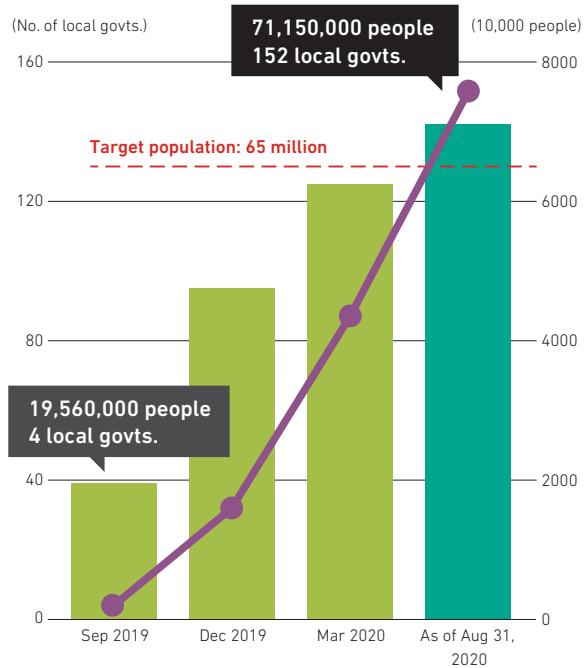
ACTIONS BY NON-GOVERNMENT PLAYERS TOWARD DEVELOPMENT OF A DECARBONIZED SOCIETY

Actions by local governments (zero-carbon cities)

Those local governments that have declared (or whose municipal leaders have declared) their intention to achieve virtually zero greenhouse gas or CO₂ emissions by 2050 are positioned as “zero-carbon cities.” The initiatives by the zero-carbon cities were announced at the COP25, and have received international acclaim. Moreover, as of August 31, 2020, the number of local governments that have made zero-carbon declarations reached 152 municipalities, comprising a population of approximately 71,150,000, a number that exceeds the goal of half of Japan’s total population (65 million).

To encourage zero-carbon initiatives of local governments, the Ministry of the Environment has begun to create places of learning to promote the horizontal expansion of effective and practical initiatives of local governments, such as expanding usage of renewable energy and development of decarbonized regional transportation models, and the implementation of new initiatives.

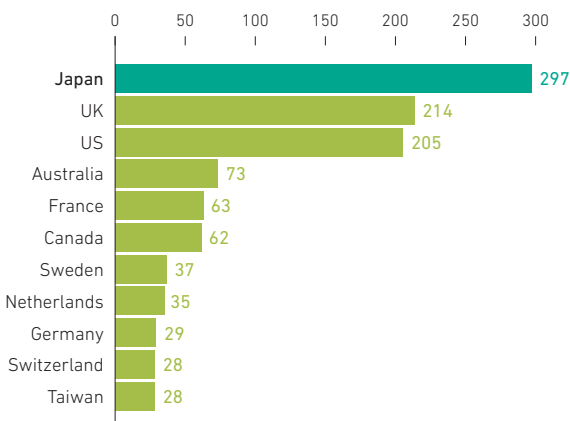
Changes in populations and number of local governments (zero-carbon cities)



Source: Ministry of the Environment

Task Force on Climate-related Financial Disclosures (TCFD)

Number of TCFD-supporting businesses (top 11 countries and regions)



Source: TCFD Website: TCFD Supporters; produced by Ministry of the Environment

Expressing its agreement with the Task Force on Climate-related Financial Disclosures (TCFD), the Ministry of the Environment is providing support to business implementing initiatives based on the task force’s recommendations on voluntary information disclosure (TCFD report) issued in June 2017. Around the world, 1,388 institutions (including financial institutions, businesses, and national governments) have issued statements of agreement with the TCFD, and as of the end of August 2020, Japan ranked at the top, with 297 institutions having issued statements of agreement.

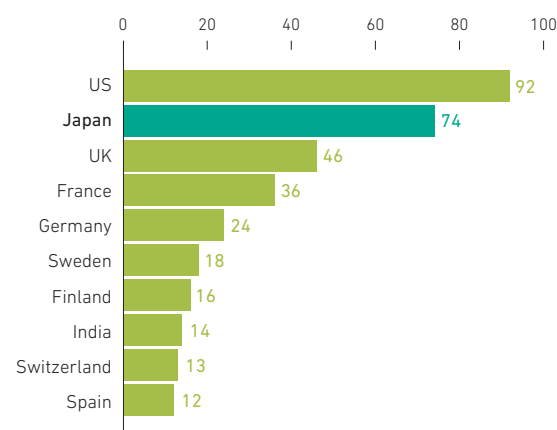
Goal-setting in conformity with the Paris Agreement (SBT: science-based targets)

Around the world, much attention has been given to the initiative to certify businesses that establish mid-term and long-term greenhouse gas reduction targets based on scientific rationale (SBT) in conformity with the Paris Agreement.

The number of businesses around the world that have received certification as of the end of August 2020 is 454, of which 74 are Japanese businesses.

The Ministry of the Environment also provides support to businesses that incorporate decarbonization into their corporate management, to set ambitious targets in conformity with the Paris Agreement and effectively carry out reduction across the entire supply chain.

Number of SBT-certified businesses by country (top 10 countries)



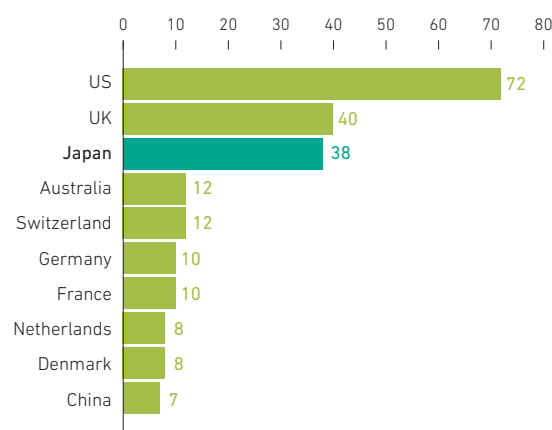
Source: Science Based Targets Website: Companies Take Action; produced by Ministry of the Environment

International initiative “RE100”

The RE100 is an international initiative to encourage businesses to aim for 100% renewable energy for the power consumption in their own operations, and as of the end of August 2020, the number of businesses participating in the RE100 around the world is 254, of which 38 are Japanese businesses.

Taking the initiative to become a pioneer in adopting renewable energy as a main power supply, in June 2018, the Ministry of the Environment became the world’s first public institution to participate as an ambassador of the RE100. Also, from 2020, power consumption of the Shinjuku Gyoen National Garden has been switched entirely to renewable energy, and initiatives have been implemented to achieve 100% power supply from renewable energy sources for power consumption within the jurisdiction of all regional environment offices.

Number of RE100-participating businesses by country (top 10 countries)



Source: RE100 Website; produced by Ministry of the Environment

ACTIONS BY THE NATIONAL GOVERNMENT REGARDING MARINE PLASTIC AND BIODIVERSITY

Trends in major domestic policies regarding plastic resource circulation

Although Japan practices proper domestic disposal of plastic, is taking the initiative in practicing the 3Rs (reduce, reuse, recycle), and is making international contributions, it is also the world's 2nd largest producer of container and packaging waste, per capita. To deal with this problem, and to respond to the issue of import restrictions by other Asian countries, the Resource Circulation Strategy for Plastics was established on May 31, 2019. With

“3R + Renewable” as the basic response policy, this strategy was developed by setting ambitious, top-ranking milestones on an international level as the direction to aim for, and promoting the necessary investments and innovations to achieve those goals through collaboration and cooperation with people from all areas and all levels of society.

Plastic shopping bag charging scheme

In the Resource Circulation Strategy for Plastics, thorough implementation of reduction has been positioned as one of the primary components, and as part of that effort, the plastic shopping bag charging scheme (e.g., abolishing of free distribution) has been implemented to encourage lifestyle change among consumers.

The uniform, nation-wide implementation of the shopping bag charging scheme commenced from July 1, 2020, to promote the reduction of plastic shopping bags by having retail-related businesses charge consumers for plastic shopping bags to carry their purchased products in.

Initiatives for achieving and assessing Aichi Targets

In 2012, the cabinet decided on the National Strategy on Biological Diversity 2012-2020, which acts as a roadmap for Japan to achieve its Aichi Targets. In regard to national goals in response to the Aichi Targets within this national strategy, in the 6th National Report submitted to the Secretariat of the Convention on Biological Diversity in 2018, progress status was evaluated, the expectation of achieving part of the targets was described, and the overall need for ongoing effort was reported. Ongoing initiatives continue to be carried out to achieve the national goals.

For example, for Target 19 of the Aichi Targets, survey results on the current state and trends of ecosystems representative of Japan obtained through the Monitoring Sites 1000 project were summarized and published in a Summary Report Outline in November 2019, made to be

understandable even to people without expert knowledge, which was widely distributed to local governments and environmental conservation groups. In the same report, for example, it was reported that in community-based forest areas and the surrounding countryside (in those areas surveyed), decreases in butterfly population have been confirmed for approximately 40% of butterfly species surveyed.

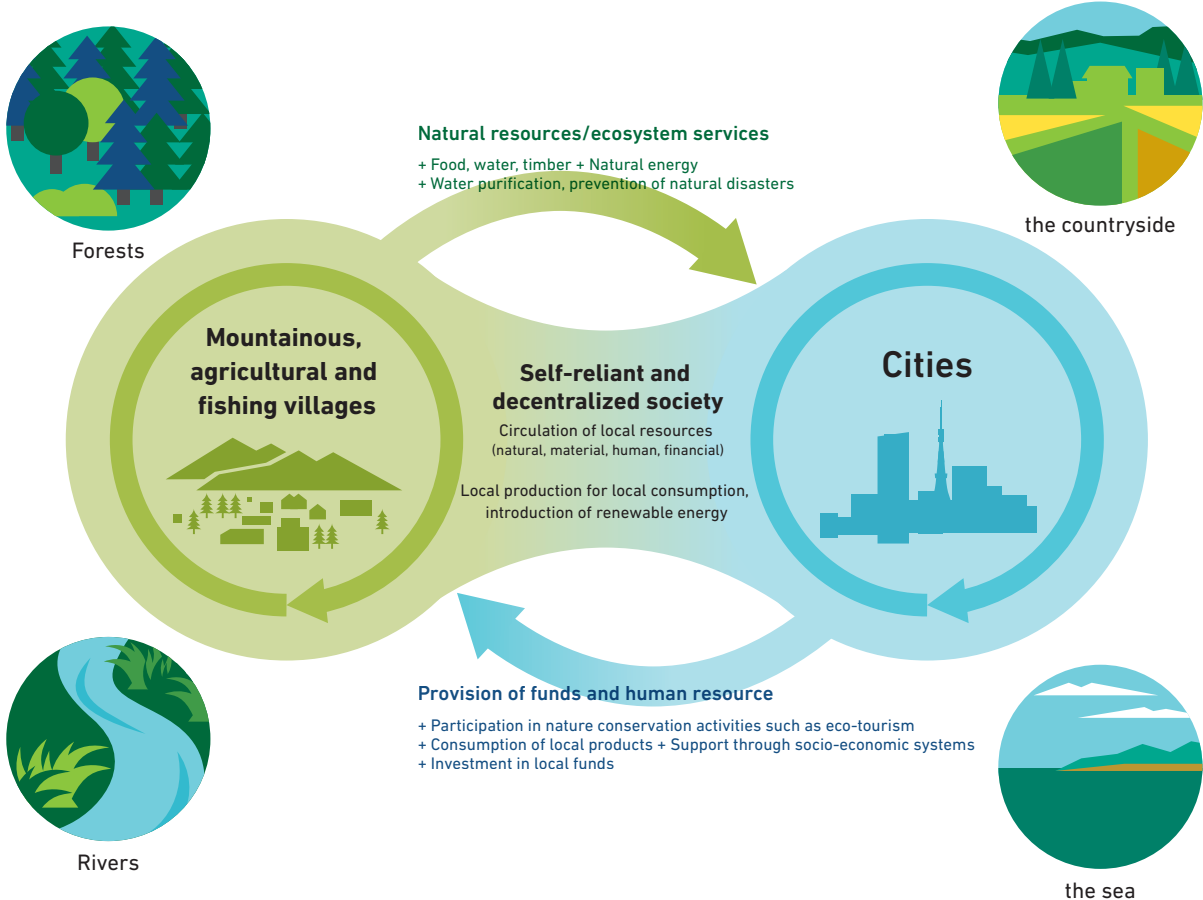
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SUSTAINABLE, DECARBONIZED REGIONAL DEVELOPMENT – CREATING A CIRCULAR AND ECOLOGICAL ECONOMY

Based on the critical state of the global environment, the local communities in which we live must also shift to sustainable, decarbonized regional development. In order to create a sustainable society, each region needs to be sustainable. The Fifth Basic Environment Plan proposes a “Circular and Ecological Economy” as a new concept for accomplishing the integrated improvement of environment, economy and society at a regional level, the generation of business that utilizes local resources, and new growth that improves quality of life.

This is an approach for each region to accomplish self-reliant, decentralized regional development with sustainable circulation of the resources that differ according to regional characteristics, while making use of the diverse resources specific to each region, including renewable resources such as water, renewable energy, and timber and artificial stock such as transportation and buildings.

Conceptual illustration of Circular and Ecological Economy



Source : Ministry of the Environment

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DEVELOPMENT OF A CIRCULAR AND ECOLOGICAL ECONOMY NOW UNDERWAY

Initiatives for dealing with social issues using regional renewable energy

Circular and Ecological Economy initiatives utilizing renewable energy and other resources are being implemented in various regions. In addition to electrical power from regional renewable energy sources being sold within those regions, it can also be utilized for decarbonization of transportation by supplying it for use in electric cars, light rail transit

(LRT), etc., and can enable self-reliant energy supply, even in times of disaster, through the installation of private distribution lines. Moreover, the profit made from selling electrical power generated from renewable energy sources can be put back into the community to help solve regional social issues.

A regional comprehensive energy operation centered on waste incineration plants (Smart Energy Kumamoto Co., Ltd.)

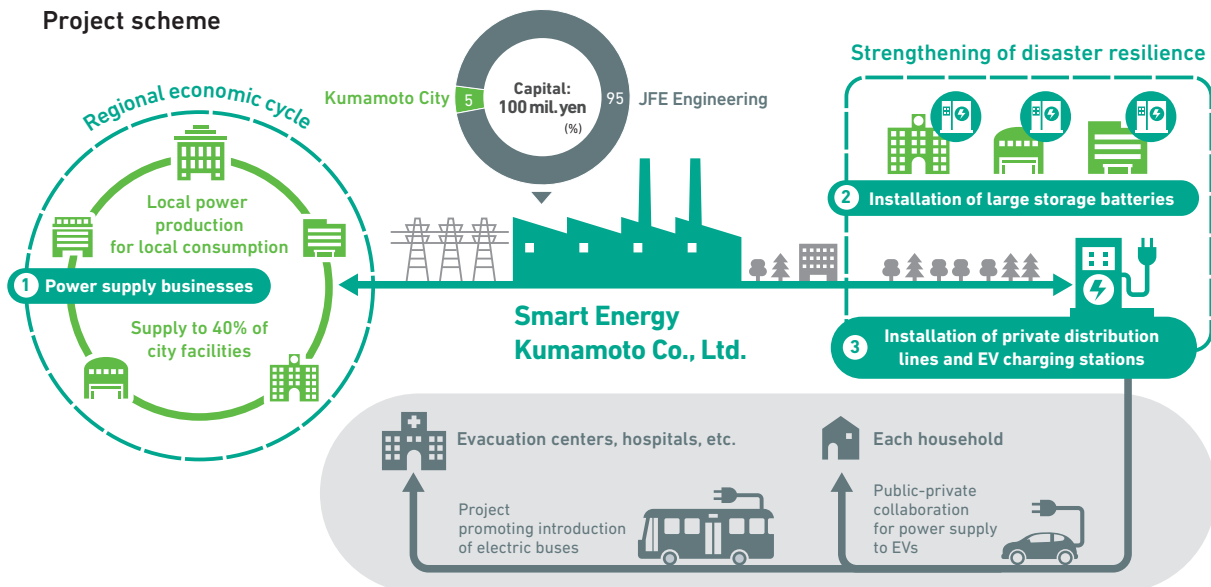
Smart Energy Kumamoto Co., Ltd. is taking action to support city-wide energy-saving project of Kumamoto City through the installation and operation of facilities to contribute to electrical power supply, optimization of the supply and demand of electrical power, and strengthening of disaster resilience through renewable energy sources, with a focus on surplus power from waste incineration plants.

Since May 2019, Smart Energy Kumamoto Co., Ltd. has collected over 10,000 kW of surplus power from two waste incineration plants—Kumamoto City Seibu Incineration Plant operated by JFE Engineering Corporation and Tobu Incineration Plant built, owned

and operated by Kumamoto City—and has supplied that power to approximately 220 public facilities in Kumamoto City, accomplishing local production of electrical power for local consumption.

Through this, Kumamoto City has been able to reduce its annual spending on electricity by approximately 160 million yen, and has pooled half that amount (80 million yen) as energy-saving funds, which it returns to the public as funds to support the purchases of energy-saving household electrical appliances (e.g., zero-energy houses (ZEH) and electric vehicles (EV)).

Project scheme



Source: Smart Energy Kumamoto Co., Ltd.

Regional initiatives for use of circulating resources

Livestock waste, food waste, sewage sludge, plastic, metal, and other recyclable resources, as well as infrastructure like waste treatment facilities, are all local resources that can be used for the creation of a circular and ecological economy.

If recyclable resources are circulated on a scale appropriately adjusted according to each region

and each type of resource (e.g., items appropriate for small-region recycling are circulated within those small regions, as much as possible, and items appropriate for wide-region recycling are circulated with a broad scope), this can generate interactions between diverse people and contribute to solving regional welfare issues.

Creating gathering places for diverse people in the region through “community station” resource-collection points (Ikoma City, Nara Prefecture)

Ikoma City, in Nara Prefecture, has conducted a model project to demonstrate the usefulness of “resource-recycling community stations,” setting up collection points for recyclable waste, thereby creating opportunities for citizens to gather when putting out garbage, which can be linked to various community projects such as shopping assistance for senior citizens, health promotion, and preventive care.

Community stations have permanent staff on hand and are operated with a system to always provide support for proper separation of garbage. Through this, the 3Rs (Reduce, Reuse, Recycle) initiative has become something close and familiar to local residents, and this has greatly facilitated the separation of garbage. Also, local residents bringing

in unneeded household tableware and books, uneaten canned foods and snack foods, and kitchen scraps and recyclable garbage promote resource-recycling initiatives such as composting kitchen scraps, conducting food drives, and running tableware and clothing reuse markets, and the profit from the sale of resources also leads to profit for neighborhood associations.

Using the every-day activity of taking out the garbage as an opening, this resource-recycling initiative has become an opportunity to change local residents’ way of thinking and encourage concrete actions, such as promoting interactions with people who previously did not have any point of contact with their local communities.

Vision of community stations



Source: Ikoma City, Nara Prefecture

PROMOTION OF ESG FINANCING FOR BUILDING A CIRCULAR AND ECOLOGICAL ECONOMY

To build a circular and ecological economy, it is important to establish profitable, self-reliant operations, and it is essential to have not only public funding but also private sector financing.

In recent years, the expansion and spread of ESG financing (investment and lending with consideration of environmental, social, and corporate governance factors) has been progressing globally, and in Japan too, there has been a rapid expansion, with the ESG investment balance having increased approximately 6-fold in the previous 3 years, from 2016 to 2019, and the portion of global ESG investment balance made up by Japan having risen from 2% in 2016 to approximately 7% of the global total in 2018.

From the High Level Meeting on ESG Finance, set up with the initiative of the Minister of the Environment, a collection of recommendations entitled “Toward becoming a big power in ESG finance” was compiled and released in July 2018.

Based on these recommendations, since 2019, the Japanese government and the leaders of each industry in the fields of finance and investment have cooperated in holding the ESG Finance High Level Panel to hold discussions and implement actions to promote awareness and initiatives regarding ESG finance.

To encourage ESG financing among regional financial institutions, the Ministry of the Environment has produced the “Practical Guide for ESG Regional Finance.” Also, since 2019, the Ministry of the Environment has established the ESG Finance Awards Japan to facilitate the spread and expansion of ESG finance by evaluating and commending the disclosure efforts of the organizations responsible for implementing advanced ESG finance initiatives and those companies that incorporate environmental factors into their corporate management, and widely sharing those efforts with the public.