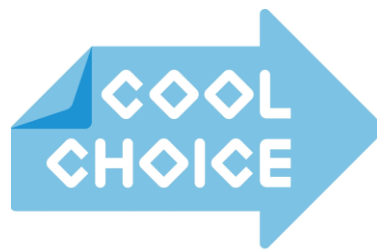


Outline of the Fifth Basic Environment Plan

April 2018

Ministry of the Environment

Japan



賢い選択



限りある資源を未来につなぐ。
今、僕らにできること。



What is the Basic Environment Plan?

- Plan stipulates **outline of comprehensive long-term measures on environmental conservation** based on Article 15 of the Basic Environment Act
- Plan is **revised approximately every 6 years** (Fourth Plan decided by the Cabinet in April 2012)
- Following **consultation** by the Minister of the Environment in February 2017 **on the revision of the Plan**, Central Environment Council discussed and **reported its findings** on 9 April 2018
- Based on the findings, **the Cabinet decided the Fifth Basic Environment Plan** on 17 April 2018

Part 1 Environmental, Economic and Social Conditions and Direction of Development of Environmental Policies

- Current state and recognition of challenges (Challenges facing Japan inseparably linked and ever-more complex. International trends include SDGs and Paris Agreement)
- Basic concepts for the development of future environmental policies (innovation creation, simultaneous solutions for economic and social challenges)

Part 2 Putting the Environmental Policy into Action

1. Set up **six** interdisciplinary cross-cutting **“priority strategies”** (economic, national land, community, life, technologies, international)
 - *To develop priority strategies, focus on **partnerships** (links with all stakeholders)
 - *Aiming to build a self-reliant and decentralized society in each region, creating a **“Circulating and Ecological Economy”** to complement and support regional resources
2. Steadily advance initiatives on environmental conservation including environmental risk management as **“environmental policies to support priority strategies”**

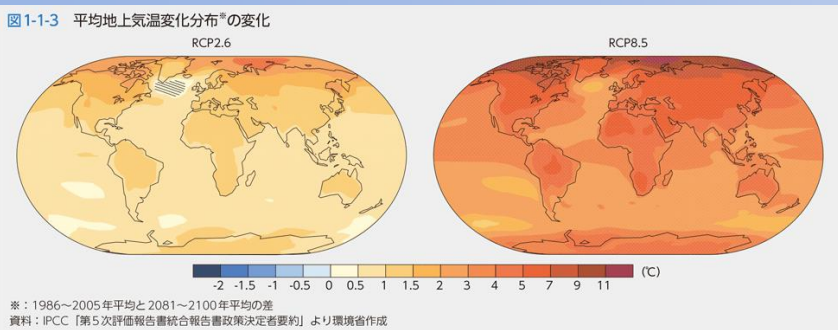
Part 3 Effective Implementation of the Basic Environment Plan

- Describe promotion of measures by government and other entities, review of the Plan and utilization of indicators, and revision of the Plan
- Mainly conduct interviews on good practices for “priority strategies” review

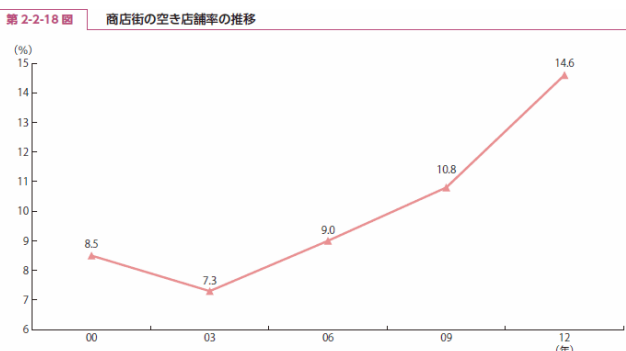
Part 4 System of Environmental Conservation Measures

- Describe system of environmental conservation measures

Environmental, Economic and Social Challenges Facing Japan



Changes in average ground temperature change distribution (from Annual Report on the Environment 2017)



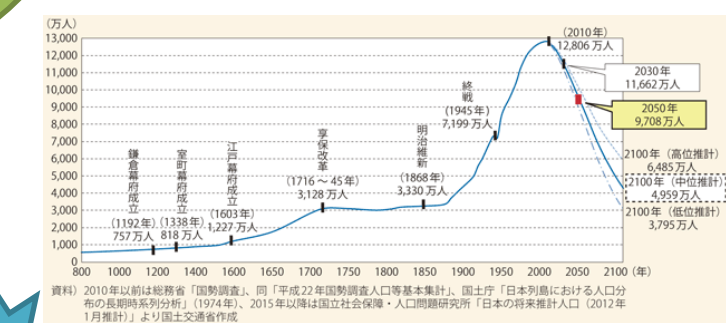
Changes in rates of vacant stores in shopping districts (from Small and Medium Enterprise Agency website)

Environmental Challenges

- Drastic reduction in GHG emissions
- Effective use of resources
- Destruction of forests and *Satochi-Satoyama* (socio-ecological production landscapes), damage by unmanaged wildlife
- Conservation of biodiversity etc.



Damage by Sika deer (from MOEJ website)



Long-term population trends in Japan (from Ministry of Land, Infrastructure, Transport and Tourism website)

Inseparably linked, ever-more complex

Economic Challenges

- Battered regional economies
- Global competition with emerging countries
- Response to technological innovation including AI and IoT etc.



Image of AI (from National Institute of Advanced Industrial Science and Technology website)

Social Challenges

- Decreasing birthrate and aging demographics / overall population decline
- Workstyle reform
- Preparations for large-scale disasters etc.



Heavy rain in northern Kyushu, July 2017 (from Ministry of Land, Infrastructure, Transport and Tourism website)

Integrated Improvements on Environment, Economy and Society (II2ES) !

International Trends for Sustainable Society

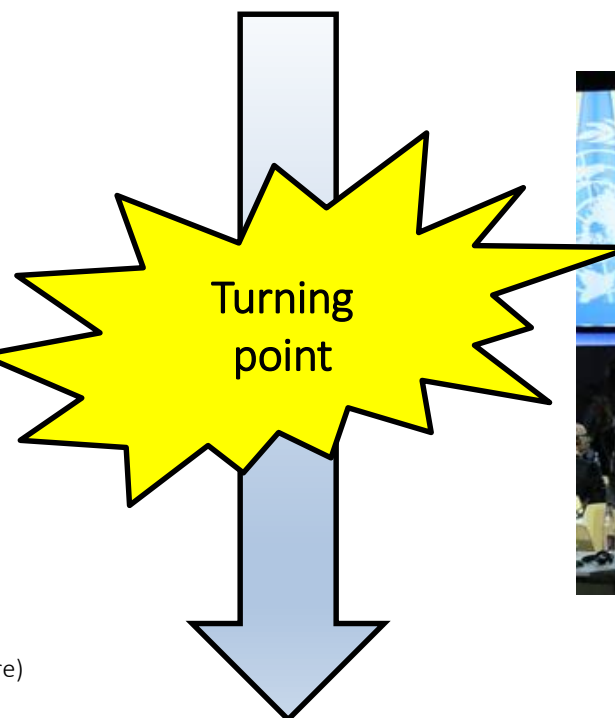
- September 2015: Adoption of the “2030 Agenda for Sustainable Development”
 - ✘ Including **SDGs** addressing multiple issues in an integrated manner
- December 2015: Adoption of the “Paris Agreement”
 - ✘ To keep average temperature rise below 2 degrees, aims to reduce greenhouse gas emissions to practically zero in the second half of this century

17 goals of SDGs

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD



(Reference materials: United Nations Information Centre)



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)

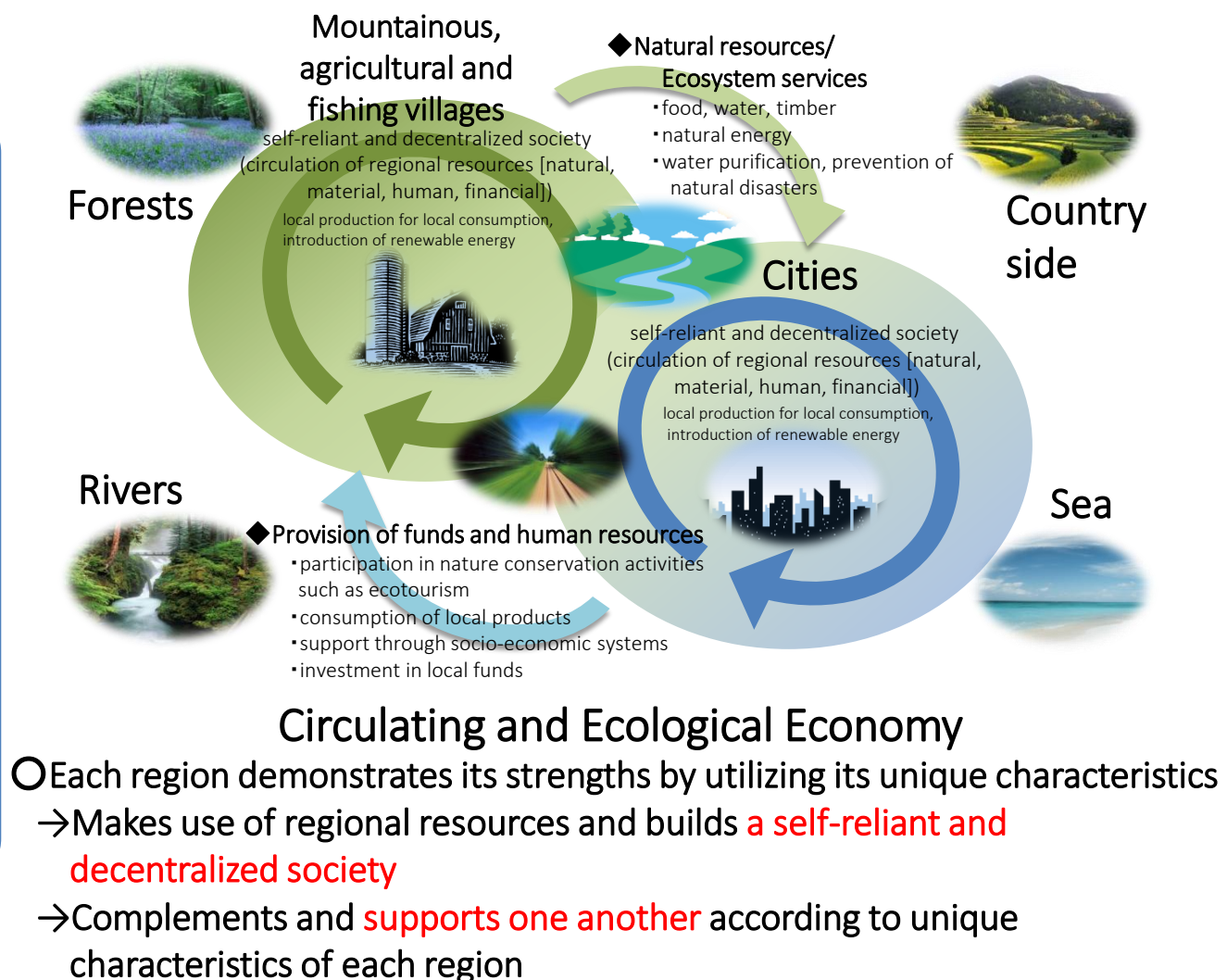
Basic Direction of the Fifth Basic Environment Plan

What Does a Future Society Look Like?

1. Creation of a **“Circulating and Ecological Economy”**
2. Establishment of **“Japan as a global exemplary model”** ✖ Possible 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”**

Basic Approach

1. Utilizing the concepts of SDGs, **realizing the Integrated Improvements on Environment, Economy and Society (I2ES)**
○ Taking environmental policies as opportunities, **create innovations across all perspectives**
→ **Simultaneous solutions** for economic, regional and international challenges
→ **“New avenues for growth”** that ensure quality of life is maintained into the future
2. **Maximize the sustainable use of regional resources** for improvements in economic and social activities
○ Focus on maintenance and development of regions → **Providing vitality to regions through various environmental measures !**
3. **Partnerships** with a wide range of stakeholders
○ **Enriching and strengthening partnerships** with a wide range of stakeholders



Development of Measures in the Fifth Basic Environment Plan

- **Set up six** interdisciplinary cross-cutting **priority strategies**
 - **Realizing the Integrated Improvements** on Environment, Economy and Society (IIES) under **partnerships**
 - **Creating innovations across all perspectives** including those concerning socio-economic systems, lifestyles, and technologies

Six Priority Strategies

1. Formulation of a Green **Economic** System for Realizing Sustainable Production and Consumption

- Promotion and expansion of ESG investment and green bond etc.
- Promotion of greening of the whole tax system
- Servicizing and sharing economy
- Hydrogen production from renewable energy, hydrogen supply chain
- Utilization of urban mining etc.



Offshore wind power generation facility
(from Annual Report on the Environment 2016)

2. Improvement of Value of **National Land** as Stock

- Resilient society including climate change adaptation
- Eco-DRR
- Maintenance and conservation of forests including utilization of forest environmental tax
- Compact cities, small hubs + renewable energy/energy saving
- Measures to deal with marine litter including microplastics etc.



Forest reserve for landslide prevention
(from MOEJ website)

3. Sustainable **Community** Development Using Local Resources

- "Human development"
- Expansion of green finance in local areas
- Improve balance making use of resources and energy
- Local revitalization centering on national parks
- Conservation, regeneration and use of forests, the countryside, rivers and the sea with cities involved
- Symbiosis and exchange among mountainous, agricultural and fishing villages, and cities etc.



Biomass power generation
(from Annual Report on the Environment 2017)

4. Realization of a Healthy and Prosperous **Life**

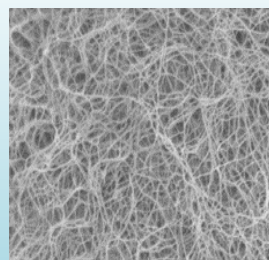
- Switching to a sustainable consumption behavior (ethical consumption, COOL CHOICE etc.)
- Reduction of food waste, appropriate treatment of waste
- Dissemination of low carbon and healthy housing
- Workstyle reform by teleworking + reduce CO2 and resources
- Promotion of rural migration and dual-residence lifestyle + management of forests, the countryside, rivers and the sea
- Conservation of a good living environment etc.



Connecting forests, the countryside, rivers, and the sea
(from MOEJ website)

5. Development and Dissemination of **Technologies** Supporting Sustainability

- Fukushima Innovation Coast concept → driving towards decarbonization (hydrogen production from renewable energy and floating offshore wind power etc.)
- "Logistics revolution" using unmanned autos and drones
- Production of chemical products from biomass (cellulose nanofiber etc.)
- Optimization of production using AI etc. etc.



Cellulose nanofiber (from Annual Report on the Environment 2017)

6. Demonstration of Japan's Leadership through **International** Contributions and Building Strategic Partnerships

- Exporting environmental infrastructure
- Adaptation support through Adaptation Platform
- Greenhouse gas observation satellite "IBUKI" (GOSAT) series
- Support for building "sustainable societies" in other countries as an "advanced nation to solve modern challenges" etc.



Minister for the Environment attending COP to the Minamata Convention on Mercury First meeting

Environmental Policies to Support Priority Strategies

Steadily advance initiatives on environmental conservation as the roots and trunk of environmental policy

○ Climate Change Measures

Based on the Paris Agreement, implement measures listed in the Plan for Global Warming Countermeasures, promotion of low carbonization of electric power sector including thermal power generation (coal-fired power etc.) for long-term drastic reductions, implement measures listed in the National Plan for Adaptation to the Impacts of Climate Change



Collection of CFC
(from MOEJ website)

○ Establishment of Sound Material-Cycle Society

Implement measures listed in the Fundamental Plan for Establishing a Sound Material-cycle Society



Waste separation
process (from MOEJ
website)

○ Securing Biodiversity and Living in Harmony with Nature

Implement measures listed in the National Biodiversity Strategy of Japan 2012-2020



Endangered species
(Itasenpara bitterling)

○ Environmental Risk Management

Environmental conservation of water, air and soil, chemical substance management, environmental health measures



Water environment
conservation (from
MOEJ website)

○ Various Basic Measures

Environmental Impact Assessment (EIA), environmental research & technology development, environmental education & learning, environmental information etc.



Environmental
education (from
MOEJ website)

○ Reconstruction After the Great East Japan Earthquake/Responses to Future Large-scale Disasters

Construction of Interim Storage Facility (ISF), development of specified reconstruction and revitalization bases in Areas where Returning is Difficult (ARD), health management and response to health concerns of residents regarding radiation exposure, reconstruction of disaster-hit areas through resource circulation, disaster waste treatment, environmental conservation measures in disaster-hit areas etc.



Interim storage facilities, soil
storage facilities

(Reference Material)
Outline of Priority Strategies

- To ensure sustainable production and consumption patterns, this Plan will aim for socio-economic system innovation, as well as improved **resource productivity** and **carbon productivity**
- **Renewable energy** and **energy conservation** are major pillars of measures against global warming and contribute to better energy security and strengthen industrial competitiveness
- Greening of the economic system using **finance and tax system**



Fuel cell vehicle and hydrogen station
(from Kyushu University website)

1. **Expansion of Environmental Business and Mainstreaming of Environmental Considerations** in Corporate Strategy

- Expansion of environmental business
 - Gain better understanding of the market size of environmental business, develop best operating practices
- Promotion of environmental management throughout the value chain
 - Formulation of mid and long-term reduction targets for individual companies, promotion of efforts to calculate and reduce value chain emissions, introduction and promotion of environmental management system
- Servicizing and sharing economy
 - Visualization of contributions to low carbonization and resource saving of new business models
- Green procurement / Green contract
- Promotion of exporting green products/services/ environmental infrastructure
 - Utilize bilateral policy dialogues, regional forums etc.



Cycle port
(from MOEJ website)

2. Improvement of the Balance of Payments and Strengthening of the Industrial Competitiveness through **Maximum Use of Domestic Resources**

- Promotion of all-out efforts for energy conservation
 - Local governments action plans based on the Act on Promotion of Global Warming Countermeasures, Energy Conservation Act
- Maximum introduction of renewable energy
 - Wider operation of the grid system, introducing a self-reliant and decentralized renewable energy
- Expansion of the use of hydrogen
 - Technological development and dissemination of stationary fuel cells, fuel cell vehicles, technological development and demonstration of low-carbon hydrogen
- Utilization of biomass
 - Expansion of power generation and heat utilization by using woody biomass and biogas
- Utilization of circular resources, urban mining
 - Promotion of recycling of small household appliances

3. Formulation of a Green Economic System through **Finance**

- Promotion and expansion of ESG investment
 - Maintain and improve platform to boost active dialogue between investors and companies based on environmental information etc.
- Promotion of investment and loans to green projects
 - Support low carbon projects, support green bond issuance and subsequent investment

4. **Tax System** as the Basis of Green Economic System

- Promotion of greening of the whole tax system



Wind power generation (from MOEJ website)

Priority Strategy 2: Improvement of Value of National Land as Stock

- Develop national land **responding to economic and social challenges with environmental considerations incorporated**
- Create sustainable and attractive cities through **compact cities** and **appropriate maintenance and effective utilization of stock**
- **Improve resilience using environmental and green infrastructure** including strengthening capacity to prevent and reduce disasters utilizing diversified functions held by the natural environment

1. Maintenance of the Diversity of the National Land Centered on **Living in Harmony with Nature**

- Maintain, enhance and utilize natural capital
 - Promoting sustainable use of natural capital as stock, promotion of national land use responding to economic and social challenges with environmental considerations incorporated
- Maintenance and conservation of forests including utilization of forest environmental tax
 - Diversified and healthy forests
- Establishment of ecosystem networks
- Conservation of marine environment such as measures to deal with marine litter
- Maintenance and restoration of sound water circulation
- Appropriate land management responding to a declining population and national land use that conserves, regenerates, and utilizes the natural environment
- Measures against invasive alien species



Conservation and regeneration of Satochi-Satoyama

2. **Creation of Sustainable and Attractive Cities and Communities**

- Realization of compact urban space with neighborhood nature
 - Formation of compact cities
- Formation of “Small hubs”
 - Maintain a “community living area”, support introduction of renewable energy utilizing local resources
- Maintenance and utilization of traffic networks
 - Collaboration among multiple public transportation companies, encourage bicycle use
- Appropriate maintenance and effective utilization of the existing infrastructure stock
 - Improving value of stocks of existing infrastructure by ensuring prolonged use, improved disaster prevention function, and promotion of energy efficiencies



Toyama Light Rail (from MOEJ website)

3. Improvement of Resilience by Use of **Environmental and Green Infrastructure**

- Promotion of green infrastructure and Eco-DRR
 - Ecosystem-based Disaster Risk Reduction (Eco-DRR)
- Promotion of climate change adaptation measures
 - Promotion of adaptation measures in agriculture and disaster prevention etc.



Flood mitigation through regeneration of wetlands (from MOEJ website)

- Securing consistent safety in usual times and in times of accident/disaster
 - Strengthening the waste treatment system, promotion of coherent initiatives to strengthen resilience of national land and reduce carbon emissions

Sustainable **Community** Development Using Local Resources

- **Improve the quality of local resources** and maximize utilization of the natural capital, the artificial capital and the human capital of the area in a sustainable way
- Contribute to developing major parts of Regional CES through **utilizing circular resources and renewable resources**

1. Maximizing Utilization of **Local Energy and Biomass Resources**

- Introduction of renewable energy utilizing local resources
 - Improve local energy balance, improve local resilience in times of disaster
- Promotion of new local power producers and suppliers
- Promotion of farming photovoltaics (FPV)
- Community development with un-utilized biomass resources
 - Use of woody biomass resources as self-reliant and decentralized energy
- Resource circulation including utilization of waste biomass in local areas
 - Local circular resources and renewable resources circulated and utilized through reuse and recycling



Solar sharing (from MOEJ website)

2. Maximizing Utilization of Local **Natural Resources and Tourism Resources**

- Local revitalization centering on national parks etc.
 - Branded as world-class “National Parks”, create a virtuous cycle of revitalization of the local economy and nature conservation
- Promotion of tourism including ecotourism
 - Promotion of creation of a sustainable community by taking full advantage of the local-specific natural resources, promotion of green and blue tourisms
- Utilization of diverse cultural resources from nature
 - Using and passing on local features rooted in the nature of each area and diverse histories and cultures unique to the area
- Improvement of added value of local industries focusing on environmental conservation and sustainability
 - Promotion of sextiary industries by utilizing natural capital
- Drastic measures to strengthen capture of designated wildlife species for management
 - Recruitment and education of hunters, promotion of control measures in accordance with target wildlife



Akan-Mashu National Park (from MOEJ website)

3. Symbiosis and Exchange among **Mountainous, Agricultural and Fishing Villages, and Cities,** and Creation of a Wide-area Network

- Efforts to connect and support forests, the countryside, rivers and the sea
 - Sustainable use of local resources from forests, the countryside, rivers and the sea
- Symbiosis and exchange among mountainous, agricultural and fishing villages, and cities
 - Symbiosis through mutual contribution of mountainous, agricultural and fishing villages, and cities

- Community development through human development
 - Promote human resource development aimed at creating sustainable communities that feature cooperation with diverse stakeholders
- Expansion of green finance in local areas
 - Promote understanding of green finance among local financial institutions



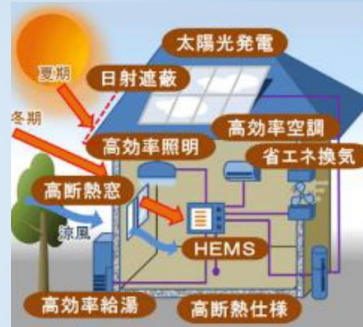
Projects to experience nature (from MOEJ website)

Priority Strategy 4: Realization of a Healthy and Prosperous **Life**

- Create **lifestyle innovation** and shift to environmentally friendly, healthy and high quality lifestyles and workstyles
- Recognize the values of nature including **forests, the countryside, rivers and the sea** and reconstruct the connection between people and nature, and within communities
- Assess **environmental risk** which threatens to people's health and prosperous lives, and promote precautionary approaches

1. Switching to Environmentally Friendly, Healthy and **High Quality Living**

- Switching to a sustainable lifestyle and consumption
 - Promotion of consumption behavior considering people, society and environment etc.
- Reduction of food waste
 - Setting a target for reduction of food waste, measuring the amount of food waste etc.
- Low carbon and healthy housing
 - Promote well-insulated and airtight housing including ZEH for seniors etc.
- Extension of healthy life expectancy by walking, riding bicycle, etc.
 - Contribute to reduce greenhouse gas emissions, benefit health and ease traffic congestion etc.
- Promotion of a workstyle reform by teleworking
 - Reduce transport-related CO2 emissions and see a decrease in paper consumption, "visualization" of environmental effects etc.



Zero energy housing
(from MOEJ website)

2. Transformation of Lifestyles More in Contact with **Forests, the Countryside, Rivers and the Sea**

- Promotion to experience nature and lifestyles of mountainous, agricultural and fishing villages
 - Build a social system to experience nature etc.
- Promotion of rural migration and dual-residence lifestyle that contribute to sound management of forests, the countryside, rivers and the sea
 - Unified information sharing and consultation for rural migration and dual-residence/dual-activity lifestyles etc.
- Creation of new timber demand and educating consumers
 - Expansion of using wood such as CLT, promote "Ki-Zukai (wood-using) movement" and "Wood Education" etc.



Ceremony for appointment of Nature Ambassadors
(from MOEJ website)

3. Conservation of a **Good Living Environment** as a Basis for Safe and Secure Life

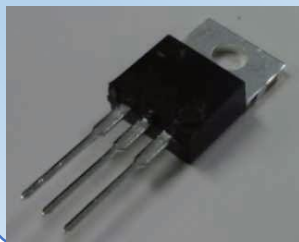
- Maintenance and restoration of healthy and rich water environment
 - Evaluate, maintain and restore habitats for living creatures etc.
- Comprehensive domestic and international measures
- Promotion of appropriate treatment of waste
 - Waste treatment facilities to be enhanced, concentrated to serve wider areas, utilized intensively over much longer periods, business operators taking full responsibility for waste they generate, response to aging society etc.
- Comprehensive management throughout the entire life cycle of chemical substances
 - Promote proper use of chemical substances etc.
- Promotion of measures against marine litter including microplastics
 - Promote studies to gain accurate information, measures for collection & treatment and preventing generation, and international cooperation etc.
- Measures against heat island effect

Priority Strategy 5: Development and Dissemination of Technologies Supporting Sustainability

- Promote **development and dissemination of environmental technologies** to contribute to addressing challenges facing Japan
- Aim to **realize the Society 5.0** using ICTs such as AI
- **Contribute to improving global environmental problems** by superior environmental technologies, as an advanced nation to solve modern challenges

1. **Development of State-of-the-art Technology** Supporting the Realization of a Sustainable Society

- Ensuring efficient use of energy and secure a stable supply of energy
 - Energy conservation technologies (GaN device etc.)
 - Improving efficiency and lowering cost of renewable energy
 - Fukushima Innovation Coast concept, driving towards decarbonization (hydrogen production from renewable energy and floating offshore wind power)
- Responding to climate change
 - Technologies that will contribute to drastic reduction of global greenhouse gas emissions, such as CCUS (Carbon dioxide Capture, Utilization and Storage)
- Securing stable supply of resources and circular utilization
 - Resource efficient technologies, technologies to produce safer substitute materials
- Utilization of ICTs such as AI, IoT
 - Optimization of production using AI etc.
- "Logistics Revolution" by utilizing new technologies
 - Promote low carbon logistics using unmanned autos and drones



GaN device to drastically reduce energy consumption (from MOEJ website)



Facility to capture CO2 emissions from power plant (from MOEJ website)

2. Development of Technologies Applying **Natural Laws and Mechanisms**

- Production of high-value-added chemical products from biomass
 - Biomass-derived chemical products such as cellulose nanofibers and biomass plastics etc.
- Boosting innovative biotechnology
 - Maximize application of potential biological functions through integration with ICTs
- Utilization of technology closer to natural laws and mechanisms
 - Low impact environmental technologies utilizing biomimetics etc.
- Conservation and restoration of biodiversity
 - Technologies for sustainable management and utilization of ecosystem services
- Ecosystem-based disaster risk reduction (Eco-DRR)
 - Establishment of construction methods, maintenance and management methods, and evaluation of relevant ecosystem functions



Tide prevention forest (Ishigaki-shi, Okinawa) (from MOEJ website)

3. **Promotion of Early Social Implementation** of Technology

- Acceleration of dissemination and development through standardization and streamlined regulations
 - To institutionalize technologies, and accelerate dissemination and development, cross-governmental integrative approach is needed to promote standardization and streamlining of regulations
- Support for technical evaluation / demonstration

Priority Strategy 6: Demonstration of Japan's Leadership through International Contributions and Building Strategic Partnerships

- Active involvement and contributions to **international rule-making** and support to build a sustainable society in **developing countries**
- Present to the world the model advocated by the **Circulating and Ecological Economy** in Japan as a package and contribute to the formation of a sustainable region

1. Active Involvement and Contributions to International Rule-making

- Active involvement in discussions of international rule-making
 - Active participation in international negotiations
 - Aim to formulate rules that can make use of our strengths, and contribute to international consensus building
- Enhancement and active provision of scientific knowledge as a basis for international rules
 - Input and support to IPCC and IPBES, enhancement and active provision of scientific knowledge
 - Contribute to the advancement of international research on climate change through continuous global observation by Greenhouse gases Observing Satellite "IBUKI" (GOSAT) series



Greenhouse gas observation satellite GOSAT-2 (from JAXA website)

2. Support for Building Sustainable Societies in Other Countries

- Dissemination of excellent environmental infrastructure overseas
 - Facilitate dissemination of environmental infrastructure through the JCM etc.



JCM joint committee
(from MOEJ website)

- Support for climate change mitigation in developing countries
 - Developing infrastructure by creating a package of complimentary systems among institutions, technologies and funds
- Adaptation support in developing countries, international development of good practices in Japan
 - Promote the "Satoyama Initiative"



Launch of "International Partnership for the Satoyama Initiative" (from MOEJ website)

- Institution building, capacity development support, and awareness raising in developing countries
 - Create innovations in collaboration with developing countries