Focus One

Toward a Low-Carbon Society

Kyushu Electric Power is striving to minimize society's CO_2 emissions from the provision and consumption of electricity.

Nuclear power

◆Promoting nuclear power

While safely and stably operating nuclear power facilities that do not generate CO_2, we are undertaking the No. 3 unit of the Sendai Nuclear Power Station and other plans.

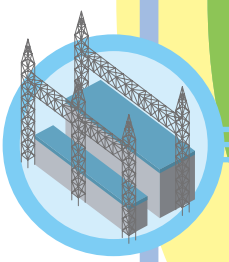
See pages 9 and 10 for details.

Thermal power

◆ High-efficiency thermal power

We are improving the efficiency of our thermal power plants.

See page 29 for details of high-efficiency thermal power.



Substation

Wind power

Geothermal power

Photovoltaic power

◆ Developing and harnessing renewable energy

We are working on wind, solar, geothermal, and other sources of renewable energy.

See pages 11 and 12 for details.

Glossary
Low-carbon society
Renewable energy

Reducing CO_2 emissions from transportation

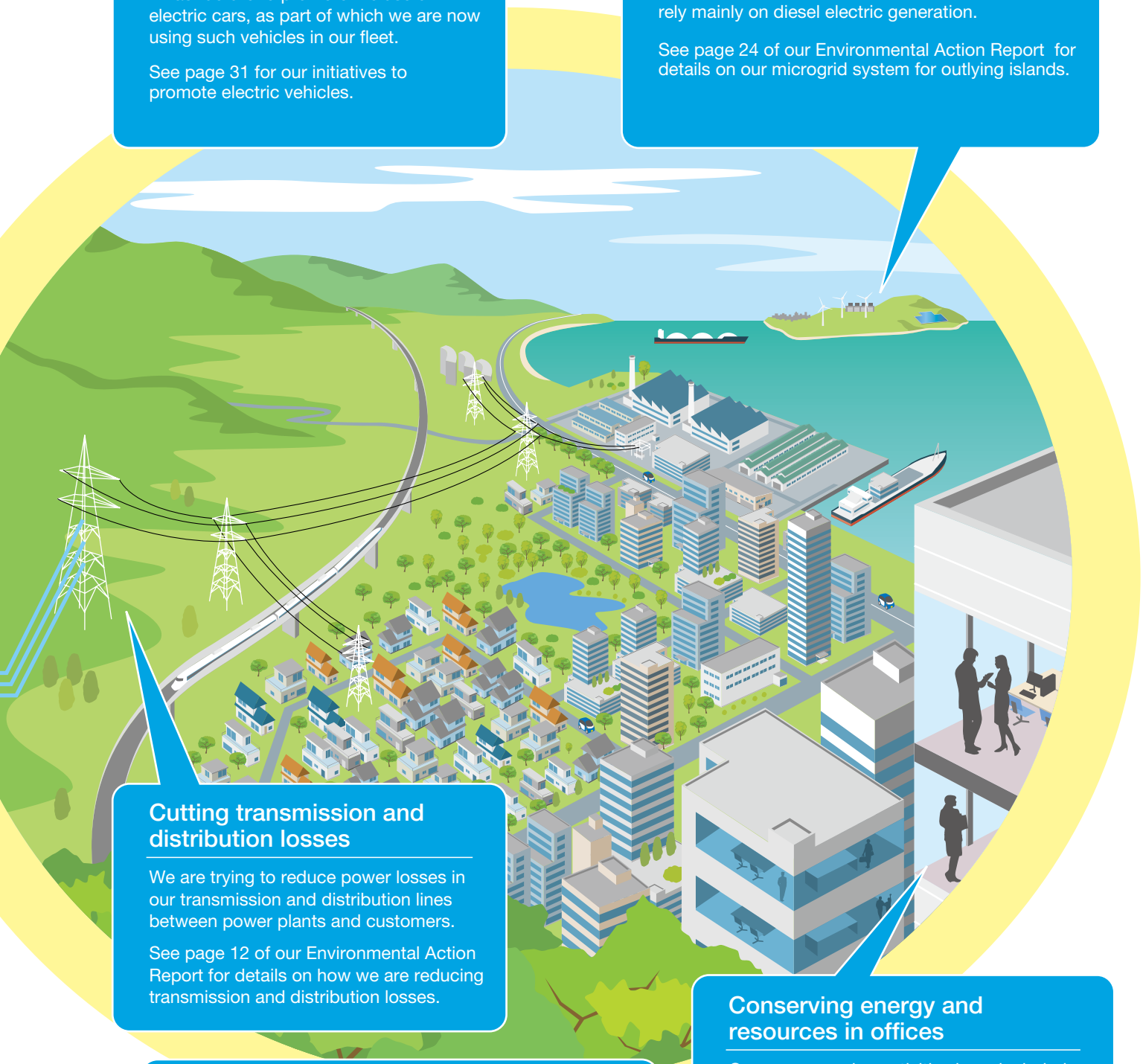
We are developing technologies and infrastructure to promote the use of electric cars, as part of which we are now using such vehicles in our fleet.

See page 31 for our initiatives to promote electric vehicles.

Microgrid system for outlying islands

We are verifying a microgrid system that combines photovoltaic power, small wind power units, and storage batteries to supply to outlying islands that rely mainly on diesel electric generation.

See page 24 of our Environmental Action Report for details on our microgrid system for outlying islands.



Cutting transmission and distribution losses

We are trying to reduce power losses in our transmission and distribution lines between power plants and customers.

See page 12 of our Environmental Action Report for details on how we are reducing transmission and distribution losses.

Conserving energy and resources in offices

Our energy-saving activities have included systematically installing high-efficiency lighting in our offices.

See page 14 of our Environmental Action Report for details on our initiatives to conserve energy and resources in our offices.

Helping lower customers' CO_2 emissions

Our Eco Cute water heaters, communications on saving energy, and other efforts are helping customers to lower their CO_2 emissions.

See page 32 for the initiatives to help lower customers' CO_2 emissions.

Glossary

Transmission and distribution losses

Eco Cute

Promoting Nuclear Power

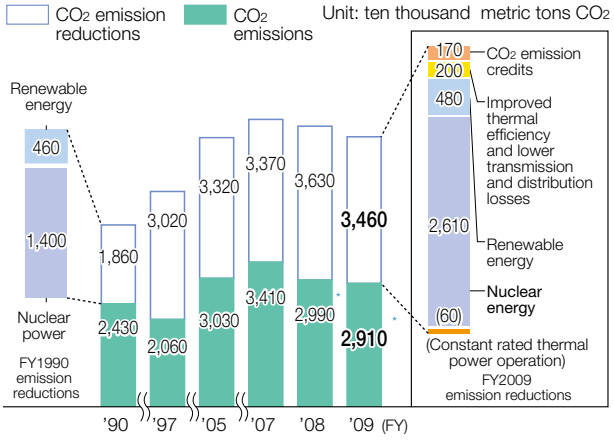
Nuclear power is free from operational CO_2 emissions, is important for maintaining energy security and tackling global warming, and is also highly economical.

1. Nuclear Power Today

The first commercial nuclear power station began operating 50 years ago. As of January 2010, the world's 432 such facilities had a combined capacity of around 390 million kilowatts. China, India, and many other countries are constructing or planning nuclear plants in light of new concerns about global warming and energy supply stability.

We operate the Genkai Nuclear Power Station (whose four units generate a total of 3,478,000 kilowatts) in Saga Prefecture and Sendai Nuclear Power Station (whose two units generate a total of 1,780,000 kilowatts) in Kagoshima Prefecture. These facilities account for about 40% of our electricity production. We intend to maintain high nuclear power usage rates by ensuring safe and secure operations, thereby cutting CO_2 emissions.

Impact of CO_2 reductions



Note: It is impossible to fully calculate reduction impacts for nuclear power and renewable energy because we cannot specify alternative power sources. Our calculations assume that thermal sources (coal, liquefied natural gas, and oil) accounted for all energy generated by nuclear and renewable energy. We have also calculated the reduction impacts by improving thermal efficiency and reducing transmission and distribution losses from a FY1990 baseline. We recalculated data for previous FYs because we reviewed methods for computing reduced transmission and distribution losses for this FY.

* After reflecting CO_2 emission credits

Glossary
Energy security
Renewable energy
Thermal efficiency
Transmission and distribution losses
Liquefied natural gas
CO_2 emission credits
Nuclear power usage rate
Global warming

2. Developing No. 3 Unit of Sendai Nuclear Power Station

We plan to complete the construction of the No. 3 unit of the Sendai Nuclear Power Station by FY2019. This is partly to accommodate increasing demand for electricity. Other factors are that it will become more challenging to procure fossil fuels as China, India, and other emerging nations develop, while it is also important to reduce CO_2 emissions in keeping with Japan's commitment to combating global warming.

Since applying to the Kagoshima prefectural governor and Satsuma-Sendai city mayor in January 2009 for permission to build the new unit, we have sought the understanding and support of residents through orientations and visits to 72 local districts.

We consider it vital to consistently undertake community-based initiatives to progress with our construction plan. We will remain fully prepared to listen to the opinions and requests of residents, reflecting their concerns in this plan.

Computer-generated image of No. 3 unit of Sendai Nuclear Power Station when completed

Based on satellite photo by ©Japan Space Imaging Corporation

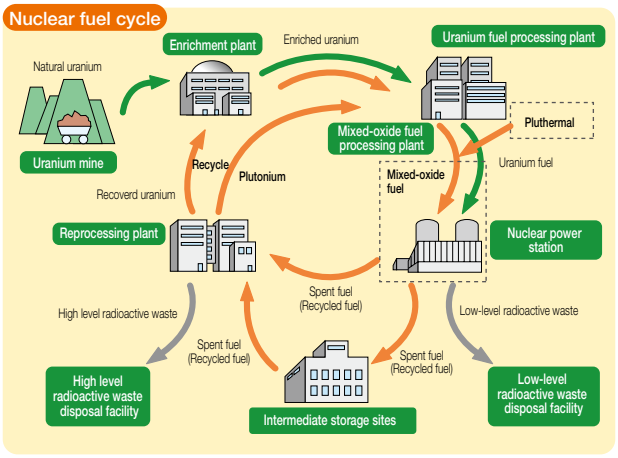
3. Promotion of initiatives to establish nuclear fuel cycle

The nuclear fuel cycle reprocesses spent fuel from nuclear power plants to create new fuel. This is essential for Japan because it has few stable natural sources of energy for the future. The cycle is also necessary for reducing high-level radioactive waste and preventing nuclear proliferation.

We began pluthermal power operations at the No. 3 unit of the Genkai Nuclear Power Station in December 2009. The mixed-oxide fuel is based on reprocessed plutonium.

Storage pools at our nuclear plants temporarily hold spent fuels. We plan to increase the storage capacity of the No. 3 unit of the Genkai Nuclear Power Station.

We will look into building intermediate storage sites to ensure the long-term flexibility of the entire nuclear fuel cycle.

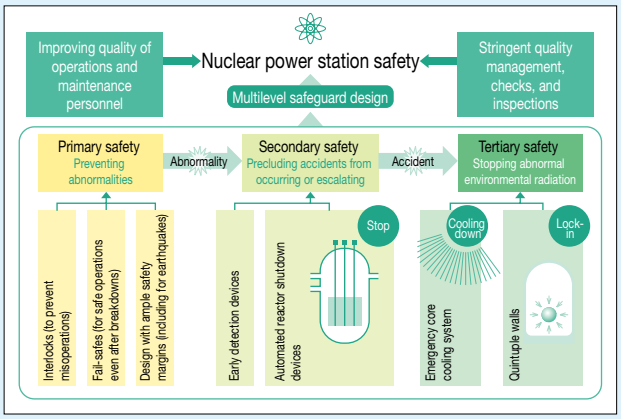


Highlight

Framework for Maintaining Nuclear Power Station Safety

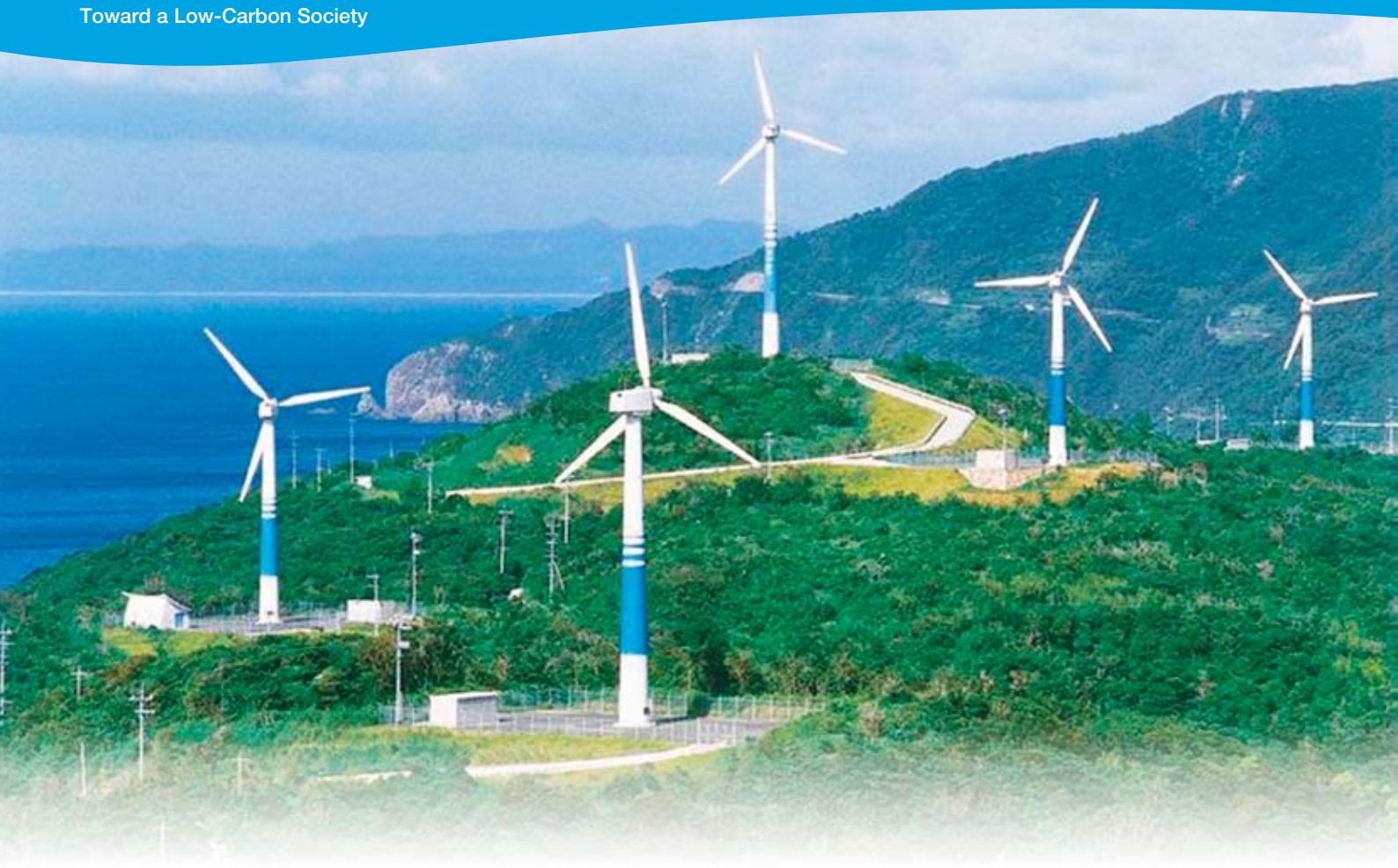
Our nuclear power stations employ safety measures based on a multilevel safeguard concept of preventing accidents resulting from abnormal releases of radioactive substances. This concept is based on 1) preventing abnormalities, 2) precluding accidents from occurring or escalating, and 3) stopping abnormal environmental radiation.

Please read Maintaining Our Safety-First Principle on pages 25 and 26 for details of initiatives to ensure nuclear power safety.



Glossary

Pluthermal
Nuclear fuel cycle
Plutonium
Mixed-oxide fuel
Intermediate storage sites
Interlock
Fail-safe
High-level radioactive waste
Low-level radioactive waste
Spent fuel
Global warming
Low-carbon society

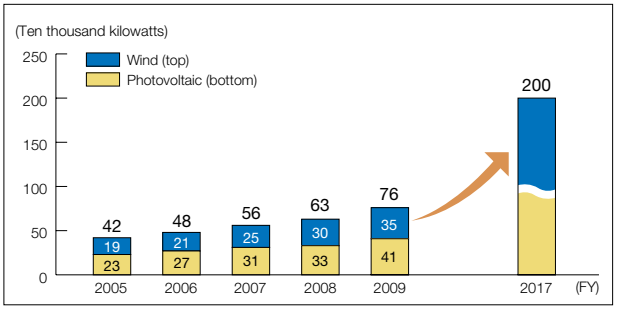


Initiatives to Develop and Harness Renewable Energies

We are effectively developing and deploying such domestic renewable energies as wind, solar, biomass, hydroelectric, and geothermal power, which are also excellent for helping to combat global warming.

We plan to add two million kilowatts of capacity from wind and photovoltaic power generation by FY2017. We are exploring next-generation power systems, notably in terms of enhancing the efficiency of transmission and distribution lines and of supply and demand systems, to prepare for a far greater reliance on distributed renewable energy sources. We have always fulfilled our Renewable Portfolio Standard requirements, satisfying our 890 million kilowatt-hour quota in FY2009.

▼ Wind and photovoltaic power generation facility deployments



1. Wind Power

We have already installed 350,000 kilowatts out of a potential one million kilowatts of the interconnection capacity in Kyushu, based on grid impact surveys from power generation data. We will continue to accept wind power interconnections, expanding our use of such energy. We will also conduct wind condition surveys and assessments of promising wind sources while looking into ways of harmonizing facilities with surroundings with a view to developing our own wind power facilities.

Nagashima Windhill

Glossary

Biomass
Renewable energy
Renewable Portfolio Standard
Interconnection capacity
Global warming

2. Photovoltaic Power

We are installing photovoltaic power systems at all operational sites and idle power stations. As part of these efforts, we are currently setting up a mega solar power system with
a total capacity of 3,000 kilowatts at the idle site of the former Minato Power Station in Omuta, Fukuoka Prefecture. Production is scheduled to start in November 2010.

Outline of Omuta Photovoltaic Power Station

Location:	Shinkomachi, Omuta, Fukuoka Prefecture
Scale:	Output of 3,000 kilowatts Site area about 80,000 square meters
Annual capacity:	Around 3.2 million kilowatt-hours
Annual CO_2 savings:	About 1,200 metric tons
Operation:	Fully automatic and unmanned

Computer-generated image of Omuta Photovoltaic Power Station

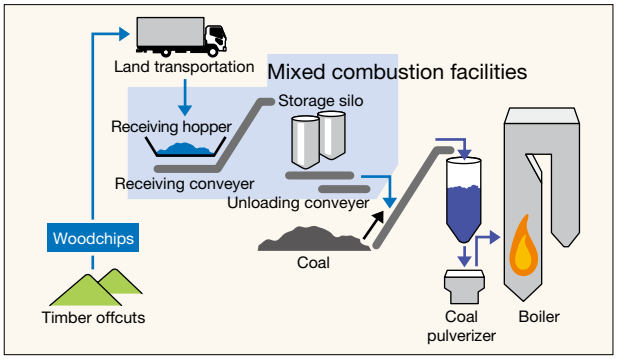
3. Initiatives for Biomass and Waste Power Generation

Group company Miyazaki Biomass Recycle Co., Ltd., generates electricity using poultry droppings. Fukuoka Clean Energy Co., Inc., which we established with Fukuoka city, runs on household waste.

From FY2010 to 2014, we will test mixed power generation with wood biomass from timber offcuts and other unused forestry resources at the Reihoku Power Station in Kumamoto Prefecture.

Wood biomass mixed combustion at Reihoku Power Station

New facilities that incorporate wood chips in coal pulverizer for burning together in boiler.



4. Hydroelectric Power

While we will systematically survey and develop hydroelectric power stations based on site economic and environmental considerations,we will develop maintanace flow power generation to discharge dam water to regulate river flows to preserve scenery and river environments.

5. Geothermal Power

Kyushu is blessed with excellent geothermal resources. The combined capacity of our geothermal power stations accounts for about 40% of national output from this energy source. Our facilities have earned considerable recognition. Hatchobaru Binary Power Station won an environmental business award in the eco japan cup 2009. The 110,000-kilowatt Hatchobaru Geothermal Power Station, one of Japan's biggest geothermal facilities, ranked as one of the Shin Ene top 100 best applications of the New Energy.

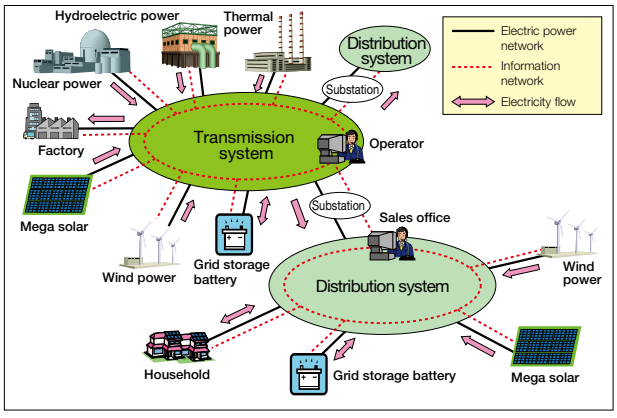
Compared with other renewable energy sources, geothermal power provides stable supplies year-round. We will continue to survey and collect information for new development opportunities, assessing potential new geothermal sites.

Hatchobaru Geothermal Power Station

6. Next-Generation Power Systems

Massive amounts of distributed solar, wind power, and other renewable energy could eventually be interconnected with transmission and distribution lines. The issue is the supply instability of such sources. To reliably maintain high-quality electricity supplies in the years ahead, we are taking steps to minimize voltage and frequency fluctuations. We are also looking to construct the Kyuden Smart Grid, a next-generation power system that would optimize operations from all power sources, including nuclear, thermal, and renewable energy.

Overview of next-generation power systems



Glossary

Biomass
Maintanace flow power generation
Shin Ene top 100 best applications of the New Energy
Binary power station
Renewable energy
Mega Solar