

Business Activities

Chubu Electric Power Miraiz Co., Inc.

Provide various services along with energy



CHUBU
Electric Power Miraiz

Risks

- Intensification of competition with new and other power supply companies
- Sluggish electricity demand due to declining population, slowdown in economic growth, and other factors

Opportunities

- Rising customer needs for a wide variety of services
- Strong social demand for a carbon-free society
- Changes in lifestyles and the social landscape as a result of the new coronavirus (COVID-19) outbreak

Efforts

- Acceleration of energy sales (electricity and gas)
- Provision of new services that will enrich the lives of the customers and solve business issues
- Provision of a triad of services to realize a carbon-free society

Targets

Electrical energy sold (entire Group)	Gas and LNG sold (entire Group)
[FY2020] 117.1 TWh	[FY2020] 1,110 thousand tons
[Second half of the 2020s] 130.0 TWh per year	[Second half of the 2020s] 3,000 thousand tons per year



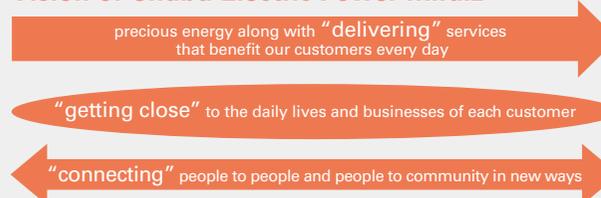
Based on the connections with customers, Chubu Electric Power Miraiz will provide new value that will “enrich the lives of the customers” and “solve business issues.”



Ootani Shinya
President & Director
Chubu Electric Power Miraiz Co., Inc.

The environments surrounding customers and society are radically changing as technologies including AI and IoT advance, and momentum increases towards the realization of a carbon-free society. Based on the connections it has built with customers by delivering electricity and gas, Chubu Electric Power Miraiz will provide new services that will “enrich the lives of the customers” and “solve business issues” while seeing these changes as opportunities. Furthermore, Chubu Electric Power Miraiz will move ahead and work together with its customers to realize a carbon-free society by expanding the installation and use of renewable energy and delivering services such as energy saving services by switching to electricity.

Vision of Chubu Electric Power Miraiz



Realize a “comprehensive service company” that delivers “new value” in people’s daily lives and business



Main Initiatives

Enrich the lives of the customers

For households

Provide life services tailored to each life stage

- Established Chubu Electric Power Miraiz Connect to provide comprehensive lifestyle services while focusing on monitoring the wellbeing of the elderly, supporting childrearing, food, and health



Provide the services that increase the added value of energy sales

- A lineup that packages electricity and gas (Amazon Prime)
- KatEne (household energy), a service for the homes of website members
 - Holding of KatEne (Household Energy) Appreciation Festival



Solve business issues

For businesses

Deepening energy solutions

- Propose energy-saving solutions and integrated development solutions centered on electrification
- Propose demand response lineup utilizing renewable energy (Energy Activation)



Toward the realization of a carbon-free society

Provide services related to decarbonization and low carbon in our triad ("Energy Saving", "Energy Creation", "Energy Activation")

Procurement / sales in the Tokyo metropolitan area

Competitive and flexible energy procurement

Expand sales in the Tokyo metropolitan area, acting mainly through CD Energy Direct



Examples of main initiatives (a triad of services)

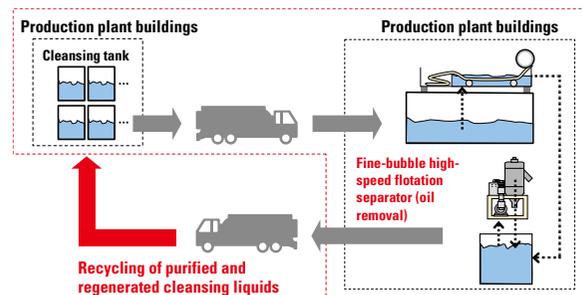
Energy saving

Proposal promoting energy conservation and electrification using solution technology

Solution activity: Won the Energy Conservation Grand Prize FY2020 Double Awards

Case 1 [Toyota Motor Corporation]

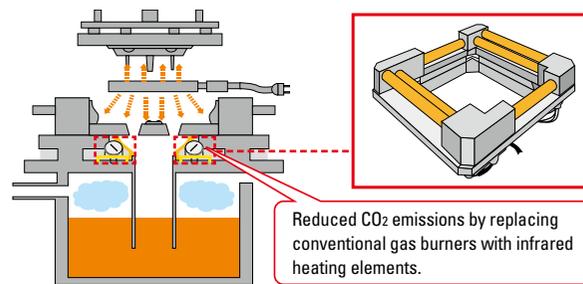
Realizes zero energy consumption in the waste liquids treatment process



Development and operation of purification and regeneration system for cleansing liquids

Case 2 [Suzuki]

Energy savings during low pressure casting processes



Realized energy savings and reduced heating times by introducing infrared heaters

Energy creation

Services for the generation of renewable energy in households, factories, stores and other locations



Established a company that provides services centered on solar power generation together with Loop (10/2020)

Installed solar power generation facilities on this customer's buildings and deployed a service enabling the customer to use this generated electricity.



ZERO ROOFS

Energy activation

Provision of systems and services facilitating the use of energy

Services for local production for local consumption of renewable energy such as "Shinshu Green Electricity"

The service allows you to support the use of renewable energy in Nagano by choosing a billing plan that includes electric power generated by the hydroelectric power plants operated by the Nagano Prefecture Enterprise Bureau.



Chubu Electric Power Grid Co., Inc.

Providing electric power network services



CHUBU
Electric Power Grid

Risks

- Intensification of natural disasters
- Sluggish electricity demand due to declining population, slowdown in economic growth, and other factors
- Complicated flow of electricity as a result of the mass connection of renewable energy

Opportunities

- Increasing needs for renewable energy to realize a carbon-free society
- Emergence of a new supply model where local production and consumption of electricity will occur with small-scale distributed power supplies
- Advanced technology such as IoT and AI
- Diversifying needs in relation to energy as a result of digitalization

Efforts

- Ensuring stable supply and public safety at a higher level
- Preparation of the environment to accommodate the introduction of renewable energy
- Reasonable facility formation that is matched with changes in demand–supply structure
- Reduction of environmental load throughout business operation
- Reinforcement of business base toward the improvement of management efficiency

Targets

Reliability of supply

- Become a leading company both within Japan and worldwide with regard to providing stable electricity supply (Maintain the lowest level of frequency and duration of power outage per customer)

Wheeling fees

- Realizing Japan's best wheeling price in each voltage class



As an entity that supports the stable supply of energy, we ensure our customers' safety and security and live up to customers' trust and expectations to contribute to the development of regional communities.



Ichikawa Yaoji
President & Director
Chubu Electric Power Grid Co., Inc.

This year Chubu Electric Power Grid developed its vision for 2050, which describes our contribution to the realization of a carbon-free society and the ideal image of community. We will work steadily to realize this vision.

As an entity that supports the stable supply of energy, we prepare for more serious natural disasters, enhance cooperation with local governments, share information with customers and strengthen resilience in collaboration with other general power transmission and distribution business operators. In addition, we appropriately respond to the diverse changes happening in different regions, including changes in the social environment and people's lifestyles as influenced by the low birthrate, the aging population and the COVID-19 pandemic. We are also responding to the increasing complexity of the flow of electricity due to the large-scale introduction of renewable energy. We provide services that deliver safety and security in local communities using the resources we possess to earn their trust and respond to their expectations.

Vision of Chubu Electric Power Grid

Deliver safety and security through the stable supply of electricity

The ideal Energy Platform we are working to create

- Establishment of a high-quality grid that is disaster-resilient and efficiently provides electricity
- Visualization of value and construction of a base for the value exchange related electricity

Our ideal contribution to the realization of future local communities

- Contribution to the achievement of livable local communities that ensure safety and security through services based on both owned and external resources

Main Initiatives

Initiatives for maximizing the use of renewable energy power sources

Bulk Transmission System

Well-Balanced Facilities Formation

The flow of electricity in bulk transmission systems is expected to change significantly owing to the introduction of large-scale power sources in areas suited to renewable energy and to the ceasing and discontinuation of low-efficiency thermal power. For bulk transmission systems that require a long time to construct equipment, we will reduce capital investment and steadily accept renewable energy with an eye toward the future by promoting well-balanced facilities formation.

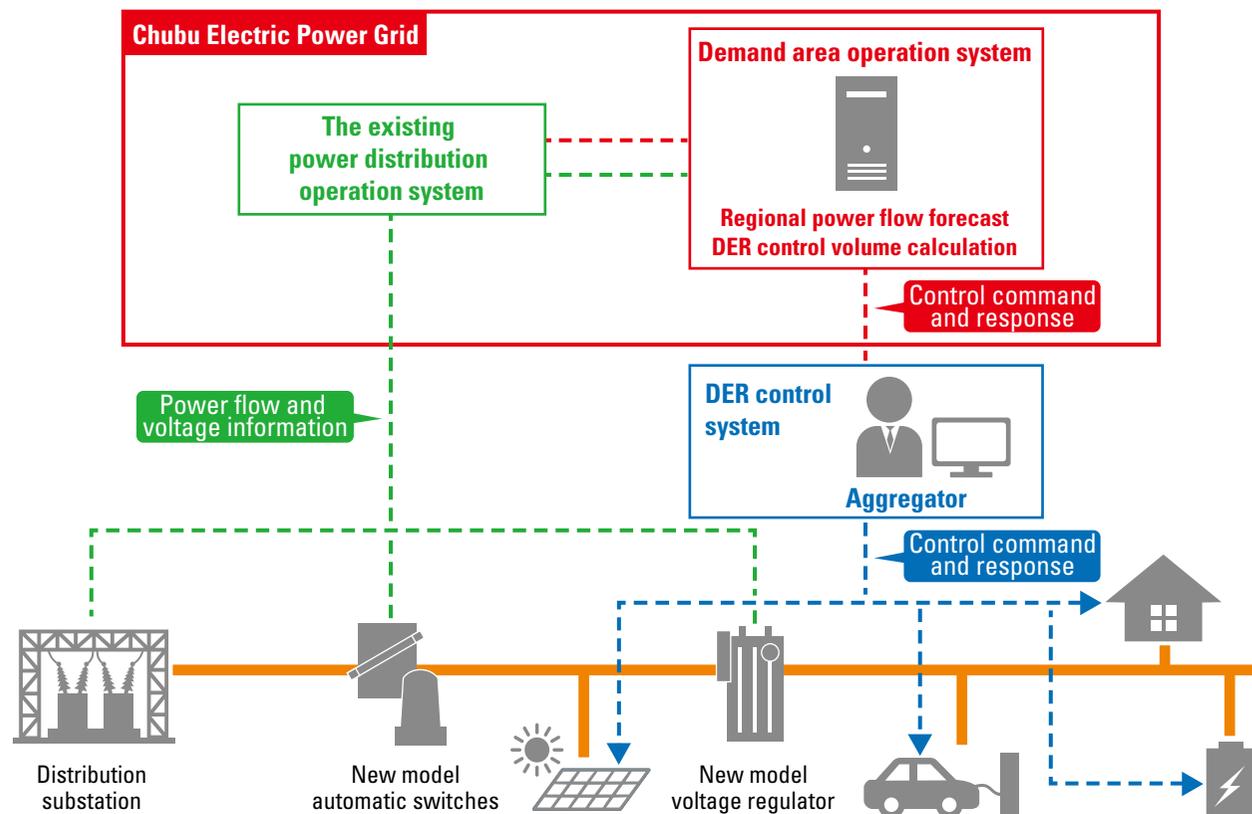
Demand Area Distribution System

Building and operating facilities based on advanced technology

We aim for rational formation and operation of facilities on a region-by-region basis utilizing advanced technology including ICT and IoT and sophisticating demand area distribution systems in responding to the increasing complexity of the flow of electricity arising from the large-scale introduction of renewable energy and the popularization of electric vehicles. Achieving this will enable us to coordinate renewable energy sources quickly and rationally to contribute to the realization of a carbon-free society.

Examples of main initiatives

Consideration for demand area system



Customer cooperation in the adjustment of electric power using distributed energy resources (DER) including solar power generation, storage batteries, and electric vehicles will aid reasonable facility formation and operation. Our goal is to build infrastructure and a system capable of achieving this.

Specifically, we are establishing a customer cooperation framework and connections with a DER control system to work as an aggregator controlling the DER owned by customers, and building a demand area distribution operation system capable of predicting regional power flow using our power flow/voltage information and weather information.

Renewable Energy Company

Development and popularization of renewable energy and power generation business based on renewable energy sources



Risks	Opportunities
<ul style="list-style-type: none"> • Competition with other power producers • Intensification of natural disasters 	<ul style="list-style-type: none"> • Rising social interest toward the realization of carbon-free society • The national government's Green Growth Strategy Through Achieving Carbon Neutrality in 2050 • Expansion of business opportunities by establishing new exchange markets

Efforts	
Accelerated development of renewable energy power sources <ul style="list-style-type: none"> • Medium term: New establishment of hydroelectric power, biomass, land-based windpower, and solar power stations • Long term: Development of offshore wind power and geothermal technologies 	Continued effective utilization and proper facility management of existing power sources <ul style="list-style-type: none"> • Increase the power generation output • Facility-related safety measures for power sources stations involving public disaster risk

Targets
Ensuring the development of new power sources (Operations commenced) <ul style="list-style-type: none"> • FY2021: Ichishiro Hydroelectric Power Station (Shizuoka), Kurokawadaira Hydroelectric Power Station (Nagano), Yonago Biomass Power Station (Tottori) • FY2022: Seinaiji Hydroelectric Power Station (Nagano), Godo Biomass (Gifu), Akita Port Offshore Wind Power Station and Noshiro Port Offshore Wind Power Station (Akita), Atsumi Wind Power Station (Aichi) • FY2023: Aichi Gamagori Biomass Power Station (Aichi), Omaezaki Port Biomass Power Station (Shizuoka), Kamisu Biomass Power Station (Ibaraki), Minokamo Biomass (Gifu) • FY2024: Abekawa Hydroelectric Power Station (Shizuoka), Yatsushiro biomass (Kumamoto) • FY2025: Uchigatani Hydroelectric Power Station (Gifu)
Expansion of renewable energy (Development) <ul style="list-style-type: none"> • 2,000 MW or more of development by around 2030



We contribute to increasing the energy self-sufficiency rate and the realization of a carbon-free society through the accelerated development of renewable energy power sources and the effective utilization of existing power sources.



Suzuki Hideya

President
Renewable Energy Company

The Renewable Energy Company has clarified its functions and authorities to accelerate decision-making and placed the new Project Promotion Department in charge of the development, operation, and administration of wind, solar, biomass, and geothermal power sources to continue accelerating the use of new power sources.

In the development of new power sources, to achieve the target of “development of 2,000 MW or more around 2030,” we began to operate the Yokkaichi Biomass Power Station. In addition, we decided to go forward with four development projects in FY2020 including the Godo Biomass and Yatsushiro biomass facilities. We work to achieve goals by seeking out sites both within and outside of the area by leveraging the advanced technological skills held by the Group, and commercializing competitive development projects with all of our domestic and foreign partners.

We are contributing to the realization of a carbon-free society through our continual increase of our power generation output to ensure the maximum utilization of existing power facilities' capacities.

Renewable Energy Company's Mission and Vision

Mission

- Work in unison as a group in developing 2,000 MW or more by around 2030
- Contribute to improving the non-fossil fuel ratio and making renewable energy sources the mainstay of energy sources
- Realize stable and inexpensive power generation

Initiatives

- Steady development and promotion of renewable energy projects
- All measures such as strategic investment
- Maximize the use of existing facilities



Main Initiatives

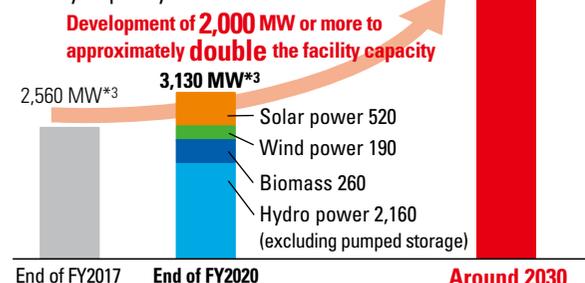
Power source development to reach 2,000 MW

- With regard to renewable energy, the whole Group is working together with the goal of developing 2,000 MW or more by around 2030.
- At present, the output based on equity ownership*1 of the entire Group is approximately 570MW, which is about 29% progress*2 versus the target.
- We will actively pursue the development and expansion of ownership of solar power in the short term, hydro power, biomass, on-land wind power in the medium term and offshore wind power and geothermal power in the long term, not only in supply areas but also throughout the whole country. In this way, we will aim to improve energy self-sufficiency in Japan and achieve a carbon-free society.

*1 Includes projects for which a decision on development has already been made but operations have not started.

*2 Progress from the end of FY 2017 to June 30, 2021

Facility capacity



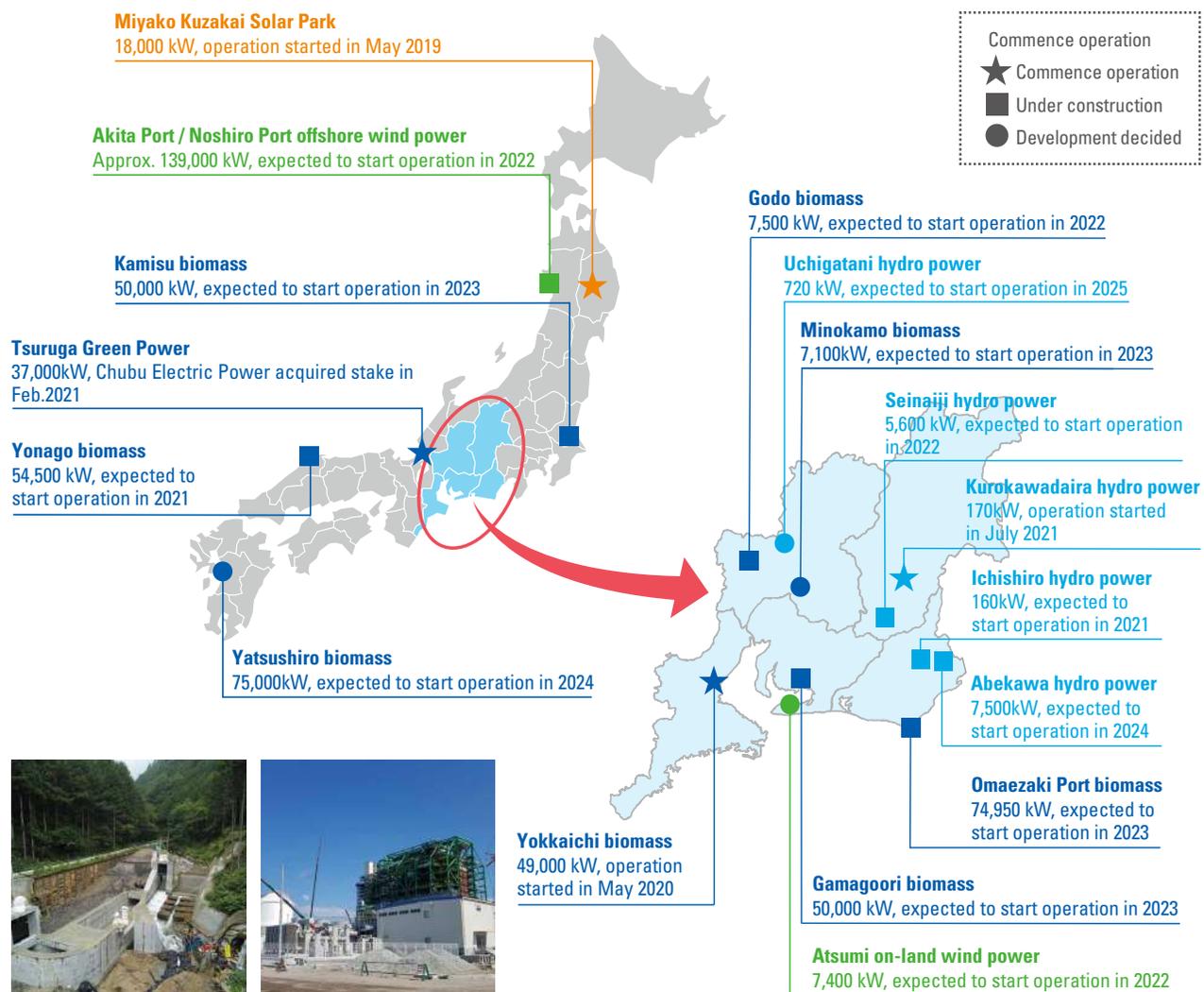
*3 Facility capacity including group companies

Maximize the Value of Management Resources

We own 191 hydroelectric power plants (excluding pumping water) in the Chubu region (As of March 31, 2021). We strives to increase power generation capacity by reviewing the optimum power generating facilities in accordance with river flow conditions at the time of facility renovation, reducing the time period for suspending power generation during inspection and construction work, and raising the operating water level of the dam.

Examples of main initiatives

Main recent development sites



Seinaiji hydro power (current status)



Yonago biomass (current status)

(As of August 31, 2021)

JERA Co., Inc.

(Affiliate accounted for under the equity method)

From upstream fuel business and procurement through power generation and wholesaling of electricity and gas



Risks	Opportunities
<ul style="list-style-type: none"> Escalating climate change Decarbonization Increasing electric power and gas sales competition Grid destabilizes (Renewable energy expansion) 	<ul style="list-style-type: none"> Energy demand growth in Asia Shift to gas Renewable energy innovation Increasing electric power and gas sales competition Creation of markets and introduction of systems Digitization accelerates Actions to achieve thermal power with zero CO₂ emissions

Efforts
<ul style="list-style-type: none"> Strengthen domestic power source portfolio through replacement (LNG thermal power generation) Gas-to-Power (LNG sales channel expansion) Flexible Supply Source (LNG assurance) Trading business scope/opportunity expansion Introduce JERA-way O&M to all own thermal power plants and achieve enhanced agility and operational efficiency Large-scale renewable energy (Offshore wind power)

Goals in 2025
<p>Consolidated Net Profit JPY200 billion Credit Rating of A-grade or higher</p> <ul style="list-style-type: none"> Develop domestic replacement: 7-9GW (5 to 7 sites) Win Gas to Power project LNG fleet: Around 25 vessels Equity output of renewable energy: 5GW LNG transaction volume: Around 35 MTPA Operation/maintenance of power plants: Equivalent to 80GW globally Reduce O&M cost by 20% (vs. current TEPCO/Chubu) Shorten the time needed for regular inspection: -50%

<p>Integration Synergy Effect</p> <p>JPY 100 billion/Year within 5 years from integration</p>	<p>Synergy in FY2020</p> <p>Approx. 45 billion yen</p>
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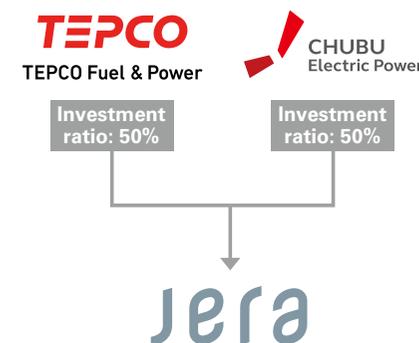


Creating a global business entity and enhancing competitiveness with the aim of achieving a balance between a stable, economical energy supply and improved corporate value.

JERA ensures the optimal operation of the fuel and thermal power supply chain it owns, ranging from upstream fuel businesses (the development of gas fields and other businesses) to fuel transportation and storage (fuel terminal operation) to power generation and wholesaling and the effective use of its scale advantages for the efficient operation of the thermal power generation business.

To achieve its mission, "To provide cutting edge solutions to the world's energy issues," and its vision of becoming a, "Global leader in LNG and renewables, sparking the transition to a clean energy economy," JERA is engaged in many businesses including the Taiwan offshore wind power station business and the Bangla gas-fired power business.

Since publishing JERA Zero Emission 2050 in October 2020, JERA has been working to practically eliminate CO₂ emissions stemming from its domestic and international businesses by 2050.



Taking Energy into a New Era.

<p>Mission</p> <p>To provide cutting edge solutions to the world's energy issues</p>
<p>Vision</p> <p>Global leader in LNG and renewables, sparking the transition to a clean energy economy</p>

Toward the realization of JERA Zero CO₂ Emissions 2050

JERA Zero CO₂ Emissions 2050 challenges us to achieve effectively zero CO₂ emissions from our domestic and international businesses by 2050, and we have adopted a three-pronged approach toward achieving this goal.

1 Complementarity between renewable energy and zero CO₂ emission thermal power generation

JERA will achieve Zero CO₂ emissions through a combination of renewable energy and zero CO₂ emission thermal power generation. The adoption of renewable energy is supported by thermal power generation capable of generating electricity regardless of natural conditions. JERA will promote the adoption of greener fuels and pursue thermal power that does not emit CO₂ during power generation.

2 Establishment of roadmaps suitable for each country and region

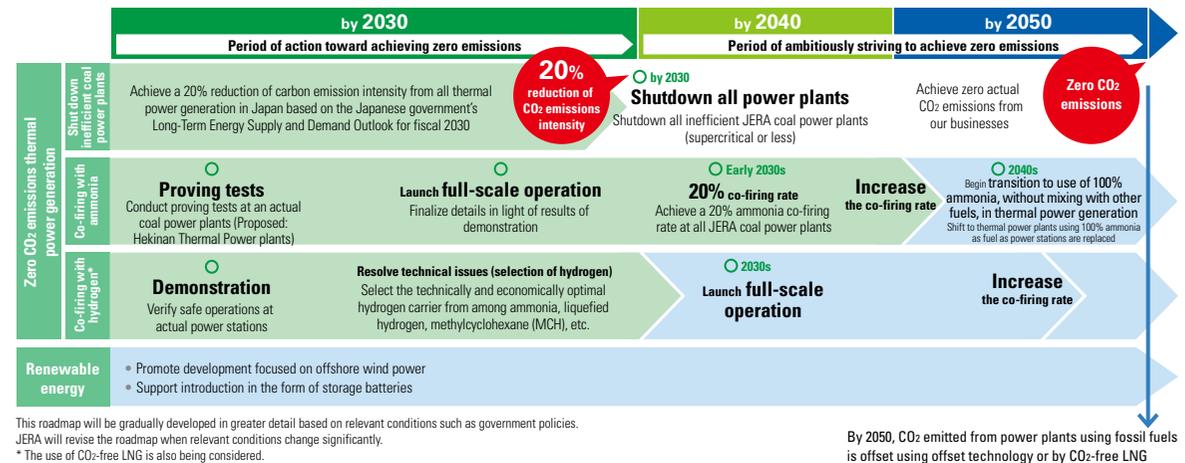
Zero CO₂ emissions will be achieved by establishing roadmaps that show optimal solutions for each country and region. Since the energy situation is different for each country and region—such as the presence of regional transmission lines or pipelines and the types of renewable energy that could be adopted—JERA will work with stakeholders on a country and regional basis to establish roadmaps. We have developed a roadmap for our business in Japan and will extend this approach to other countries and regions.

3 Smart transition

Zero CO₂ emissions will be achieved through a combination of technologies that are available and reliable at the time adoption decisions are made, lowering technical risk and smoothing the transition to a green society.

* "JERA Zero CO₂ Emissions 2050" is premised on steady advances in decarbonization technology, economic rationality, and consistency with government policy. JERA is developing its own decarbonization technologies and taking the initiative to ensure economic rationality.

JERA Zero CO₂ Emissions 2050 Roadmap for its Business in Japan



JERA Environmental Target 2030 for its Business in Japan

JERA is actively working to reduce CO₂ emissions. In its domestic operations, JERA will achieve the following by **FY2030**:

- **Shut down all inefficient (supercritical or less) coal power plants** and conduct **demonstration tests of mixed combustion with ammonia** at high-efficiency (ultra-supercritical) coal power plants.
- Promote the development of renewable energy centered on offshore wind power projects and work to further improve the efficiency of LNG thermal power generation.
- Reduce carbon emission intensity of thermal power plants by 20% based on the long-term energy supply-demand outlook for FY 2030 as set by the government.

TOPICS

Start of the ammonia co-firing demonstration project

The New Energy and Industrial Technology Development Organization (NEDO) decided to subsidize JERA's demonstration project with the goal of assessing the heat absorption characteristics of boilers and the environmental load characteristics of exhaust gases and other emissions for the establishment of carbon-ammonia co-firing technology. The plan is to co-fire Unit 4 (power generation output: 1 GW) at Hekinan Thermal Power Station in FY2024 using 20% ammonia. It will be the first demonstration project in the world co-firing such a large amount of ammonia in a large-scale commercial coal-fired power plant.

Practice of Environmental Management

The Chubu Electric Power Group will practice appropriate environmental management, and each and every one of our employees shall exercise discipline and act in an environmentally conscious manner. We will contribute to the sustainable development of society through implementation of initiatives in all aspects of energy value chain aiming to achieve a carbon-free and recycling-oriented society that is in harmony with nature.

To accelerate these initiatives, we revised the Chubu Electric Power Group Basic Environmental Policy in March 2021.

**Chubu Electric Power Group
Basic Environmental Policy (Extract)**

 <p>Realization of a carbon-free society</p> <p>We Will Aim to Realize a Carbon-Free Society</p> <p><small>* For contributions to the realization of a carbon-free society, see page 19.</small></p>	 <p>Coexistence with nature</p> <p>We Will Strive to Coexist with Nature</p> <ul style="list-style-type: none"> To protect our rich natural environment, we will take into account ecosystem biodiversity and water resources sustainability as we conduct our business activities.
 <p>Realization of a recycling- oriented society</p> <p>We Will Aim to Create a Recycling Society</p> <ul style="list-style-type: none"> We will work to reduce our consumption of resources and strive to minimize disposal volume by reducing waste as well as reusing and recycling resources. 	 <p>Increased environmental awareness</p> <p>We Will Endeavor to Raise Environmental Awareness</p> <ul style="list-style-type: none"> We will enhance communication about the environment and energy with members of the community. We will train personnel so that they take the initiative to act in an environmentally-conscious manner and contribute to society. <p><small>* For initiatives increasing environmental awareness, see page 50. *Coexistence with Local Communities.*</small></p>



Chubu Electric Power Group Basic Environmental Policy



Environmental Initiatives of Chubu Electric Power Group (Japanese version only)

Biodiversity-conscious business activities

We carry out biodiversity-conscious business activities. For example, our ecosystem-friendly operations at construction sites and green area development at the power plants in harmony with local communities.

- Development of technology for the protection of endangered species: We have worked to understand the biology and physiology of endangered species to protect the endangered species peculiar to the regions we operate within and that have been confirmed to live on the lands that we own and in the areas surrounding electric facilities. We have established technologies to enable *Viola thibaudieri*, *Yuania flava* K.Inoue & T.Yukawa, and, more recently, *Aconitum kiyomiense* Kadota to thrive.



Aconitum kiyomiense Kadota

Business activities in consideration of water resources sustainability

Water resources are essential to our business activities. We work to ensure proper consideration of water resources sustainability in our business activities.

- Forest preservation activities including the protection of watershed forests: We are engaged in activities to preserve Uchigatani Forest and other forests.
 - The appropriate use of water in dam operations: We work to ensure the cleanness of the running water in rivers and steams to ensure the conservation of riverine environments, for instance, we control water turbulence in our generation of hydroelectric power and manage flow discharge.
 - Proposals enabling customers to conserve resources: We developed RaFloM-HE*, an ultrafast fine-bubble flotation separator capable of reducing water consumption and discharge. We are promoting our customers' introduction of RaFloM-HE, particularly our industrial customers. (The device also reduces CO₂ emissions and waste.)
- *The device uses fine bubbles (as small as 0.1 to 0.01 mm in diameter) to purify waste fluids used when washing automobile components.
- Water conservation in offices and increased employee awareness of water conservation: We are engaged in water-conserving initiatives using hygiene equipment (e.g., water-conserving toilets and taps with a human-presence sensor) and disclose the amount of water used per employee.

Business activities for the realization of a recycling-oriented society

We work to minimize the waste we dispose by reducing the resources we consume, reducing waste, and promoting the reuse and recycling of resources.

- Recycling rate of industrial and other waste: We have worked to recycle more industrial waste, recycling 95% or more of the waste we create. Recycling rate: 97.2% (FY2020)
- Effective use of waste: Chuden Wing Co., Ltd. developed Mokudama, an original, environmentally friendly ball-like plant pot made from fine driftwood chips collected at Yasuoka Dam, Eco-Cement, and coal ash from JERA's Hekinan Thermal Power Station. Chuden Wing employees with intellectually disabilities carefully and energetically make the Mokudama by hand.
- The green procurement rate of consumable office supplies: We worked to increase our green procurement of consumable office supplies. Green procurement rate: 99.1% (FY2020)



Mokudama

Coexistence with Local Communities

Social contribution activities

In accordance with the Basic Corporate Citizenship Policy we are engaged in many different activities focusing on four fields: Ensuring safety and security in local communities, environmental preservation, education of the next generation, and cultural and sport activities.

Education of the next generation

● Holding On-demand classes

We hold On-demand classes as part of our support for the education of children that will lead the next generation. Our employees and the staff of The Electricity Museum visit elementary and junior high schools to teach about the mechanisms that generate power and the importance of energy and environmental preservation through experiments and quizzes. We have produced videos that can be used for school classes and home learning. They are available on our website.



● Enabling workplace experiences and facility visits

Learn about roles and tasks in our business offices, power plants, and substations by visiting them.

● Operation of the Electricity Museum

The museum is a plaza for enjoyably learning about science and electricity. It is a base for the sharing of information about science, electricity, energy, and the environment.



Industry-academia collaboration activities

Our group, as a whole, promotes ESG management which is an ongoing part of the improvement of corporate value. We are proactively engaged in industry-academia collaboration to build and maintain relationships of trust with community members and to enable the sustainable development of local communities in the Chubu Region where our business is based.

Major universities with comprehensive agreements for industry-academia collaboration

- Mie University (September 2005)
- Meijo University (March 2020)
- Gifu University (March 2021)

Major universities cooperating in research/ we lecture at

- | | |
|---------------------------------|---|
| ● Aichi University of Education | ● Toyohashi University of Technology |
| ● Keio University | ● Nagoya University |
| ● University of Shizuoka | ● Hamamatsu University School of Medicine |
| ● Shizuoka Sangyo University | ● Fujita Health University |
| ● Shizuoka University | ● Mie University |

