

Chubu Electric Power Group Initiatives Pursuing Our Management Vision

—Our Value Provision Looking Toward 2050—

March 23, 2021

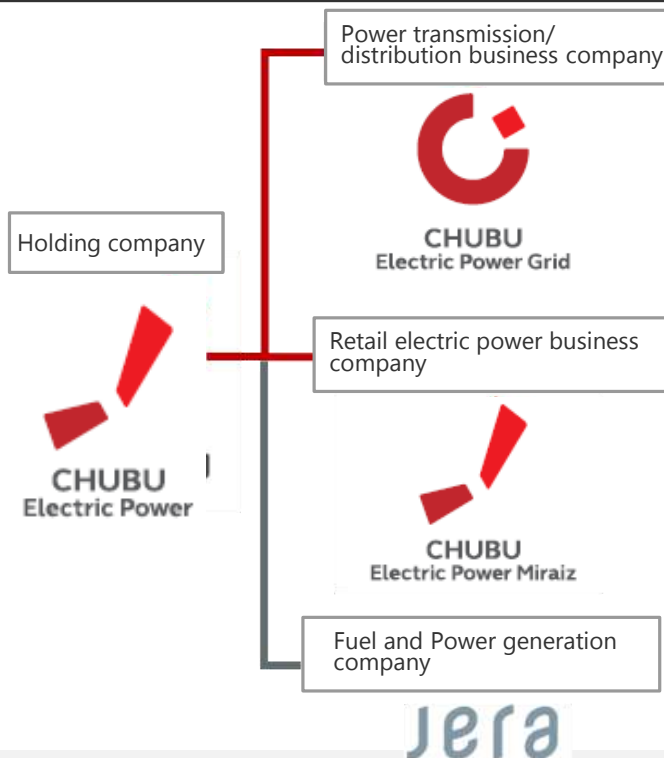
Chubu Electric Power Co., Inc.

Chubu Electric Power Group Initiatives Pursuing Our Management Vision—Our Value Provision Looking toward 2050— Contents



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The social structure is being dramatically reshaped by accelerating initiatives toward digital transformation (DX) and decarbonization as well as by the permeation of new lifestyles such as new living and workstyles accompanying the spread of COVID-19. Particularly noteworthy, amid the setting of national policy goals aimed at achieving carbon neutrality in 2050, the environment surrounding the energy business has reached a major turning point that includes the progression of considerations for the next Basic Energy Plan.

The Chubu Electric Power Group, consisting of Chubu Electric Power, Chubu Electric Power Grid, Chubu Electric Power Miraiz and respective Group companies, will serve their respective markets and customers. Backed by strong collaboration, we will contribute to **the realization of a safe, secure and strong society where people can live comfortably**. To do so, the Group will **provide a Community Support Infrastructure** that packages **safe, inexpensive and stable environmentally conscious energy with services that enrich and enhance people's daily lives**.

At this time, the Company has compiled its specific initiatives for achieving its Management Vision as the **Initiatives for Realizing the Management Vision** and has set the latter half of the 2020s as a target date for attainment. Furthermore, as a responsible energy provider, we have **established the Chubu Electric Power Group's Zero Emissions Challenge 2050 as our new challenge toward realizing a carbon-free society in 2050**. We will step up efforts, beginning with our immediate tasks, toward attaining our long-term goals.

Based on our recognition that the **business activities of the Chubu Electric Power Group are the essence of ESG (Environmental, Social, Governance)**, we will deepen our ESG management and **contribute to solving SDG issues** through the combined efforts of each employee.

We aim to be a corporate group that can win the trust of all stakeholders by adhering to **our unchanging mission of providing a stable supply of energy and delivering new services that contribute to resolving social issues**.

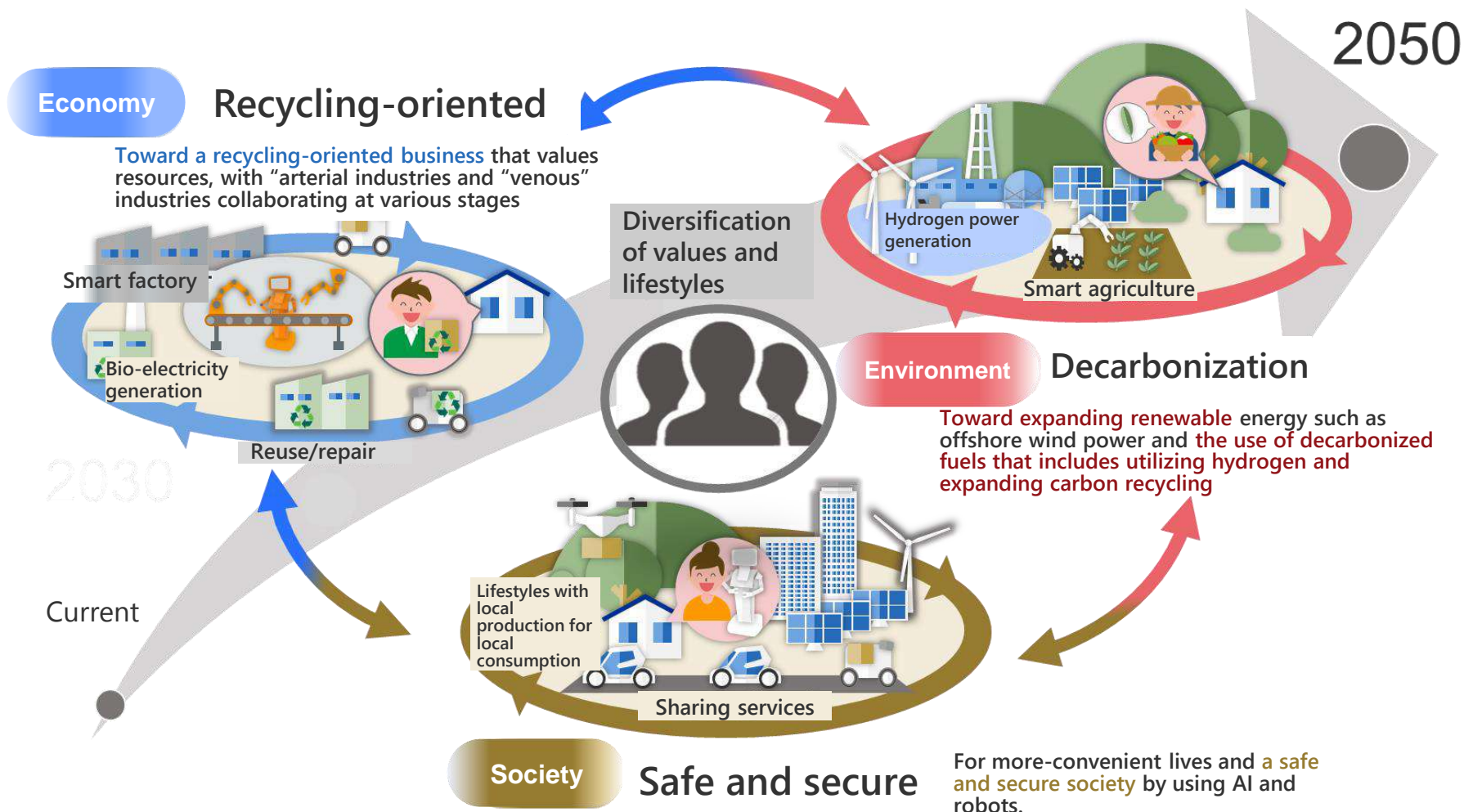
March 2021
President and Director
Chubu Electric Power Co., Inc.



I Toward 2050

Image of Japanese Society in 2050

- We envision that Japanese society in 2050 will take on **the challenge of decarbonization and evolve into a safe, secure and recycling-oriented society** through the sophistication of its social infrastructure.
- The Chubu Electric Power Group will **contribute to a new society through innovations in the energy infrastructure.**



2050 From the Chubu Region to the World

- Taking advantage of the characteristics of the Chubu region, which boasts abundant nature and a **thriving agriculture sector and industries**, we believe it is essential to quickly proceed with the promotion of a **recycling-oriented society and the introduction of self-distributed systems in collaboration with industry, government and academia**.
- The Chubu Electric Power Group will **provide the foundation to support the promotion and introduction of these**, and together with residents of local communities, will **disseminate these initiatives taken in the Chubu region to the rest of Japan and the world**.

Characteristics of the Chubu Region

Balanced industrial structure

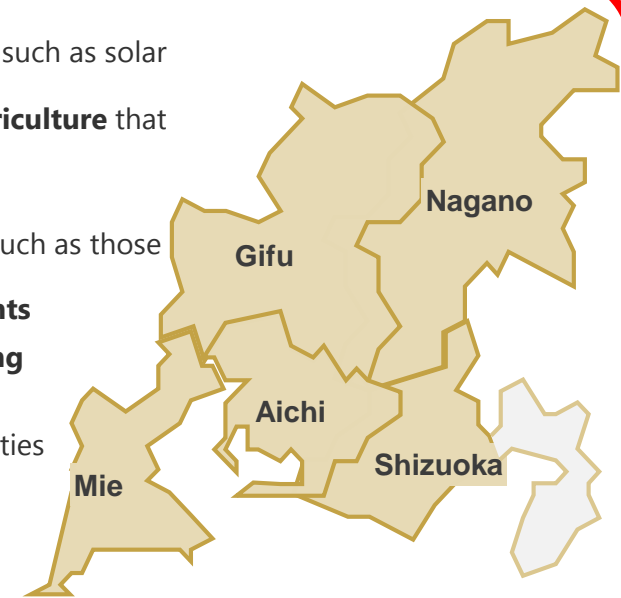
Abundant water resources
Abundant land and nature

Concentrated manufacturing industry and advanced technologies

Proximity to work and residences
Situated in the center of the country with key transportation hubs

Potential

- **Foundation for introducing distributed power sources** such as solar power and hydropower
- **Higher-added value** such as suburban horticultural agriculture that utilizes the region's warm climate
- **Possibility of using agricultural biomass**
- Utilization of a **diverse concentration of supply chains** such as those of components manufacturers
- **Innovation** such as development of fuel cell components
- Besides manufacturers, **there are also numerous recycling companies**
- **Utilize a decentralized regional structure** centered on cities
- Create **convective flows and interchanges of people, goods and information**
- **Strengthen collaboration and functions among universities and promote globalization**
- **Strengthen disaster prevention capabilities (resilience) through collaboration among bases and wide-region supplementation**



Promote the introduction of recycling-oriented and self-distributed systems

Optimization of production, consumption and reuse (recycling-oriented society)

Promote the introduction of recycling-oriented and self-distributed system

Recycled use of resources and energy (decarbonization)

Providing Value to Society and Customers

- The Chubu Electric Power Group will provide a package of **resilient and optimal energy services and data services that enhance convenience and enrich lives. By providing these community support infrastructures**, we will contribute to the realization of a safe, secure, strong and viable society.

Carbon-free society

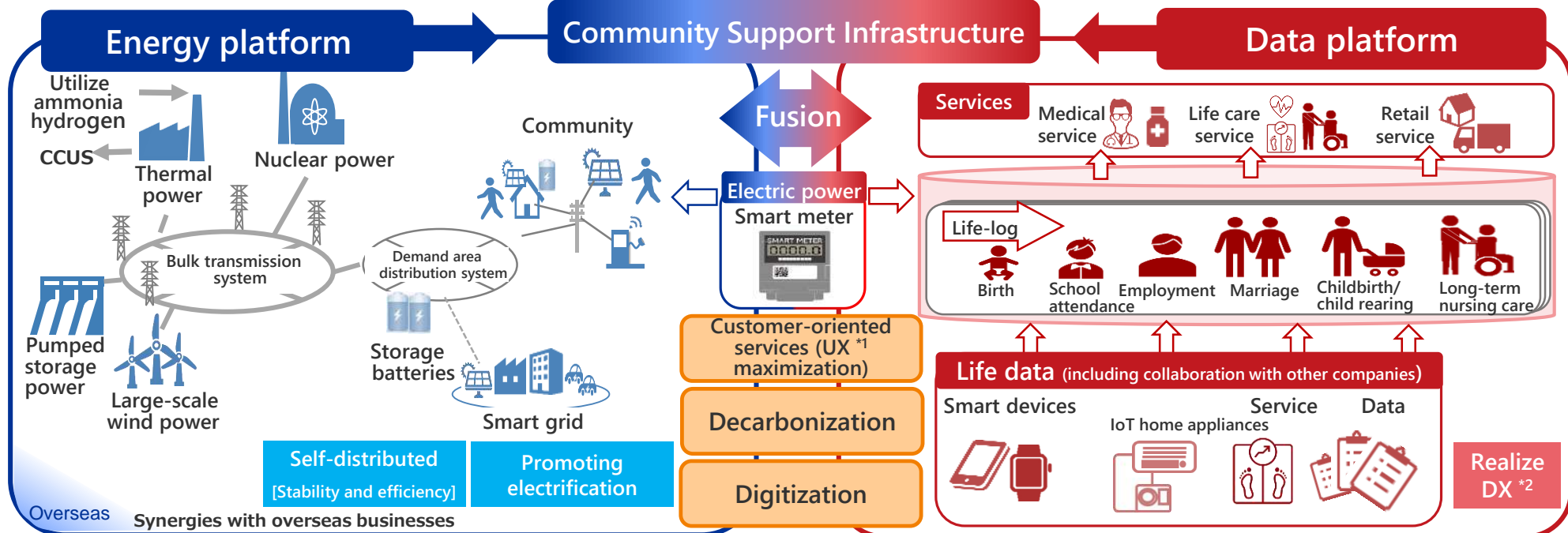
Recycling-oriented society

Safe and secure society

Contribute to the realization of a safe, secure and strong society (SDGs) -Society 5.0-

Provide resilient and optimal energy services

Provide data services that enrich and enhance the convenience of daily lives



Contribute to a Carbon-Free Society (Zero Emissions Challenge 2050)

Together with communities and our customers, we aim to simultaneously achieve “decarbonization” and “safety, stability and efficiency” through the innovation of the energy infrastructure.

2030

We will reduce CO₂ emissions from electricity sold to customers by 50% or more compared with FY2013. In addition, we aim for 100% electrification*^{1,2} of company*³-owned and operated vehicles

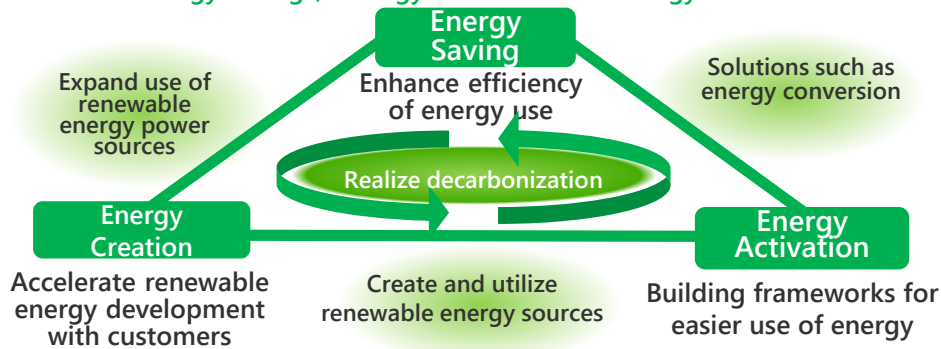
2050

We will take on the challenge of attaining net zero CO₂ emissions for our entire business to contribute to the realization of a carbon-free society.

Electrification and decarbonization with communities and customers

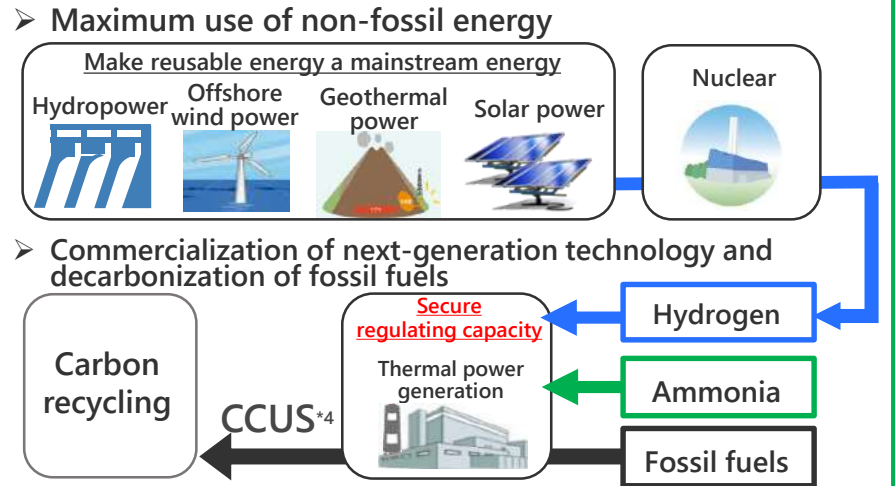
- Promote a balance between “solving issues concerning customers’ enriched lives and their business issues” and “decarbonization” together with communities and customers.

Triad consisting of “energy saving”, “energy creation” and “energy activation”

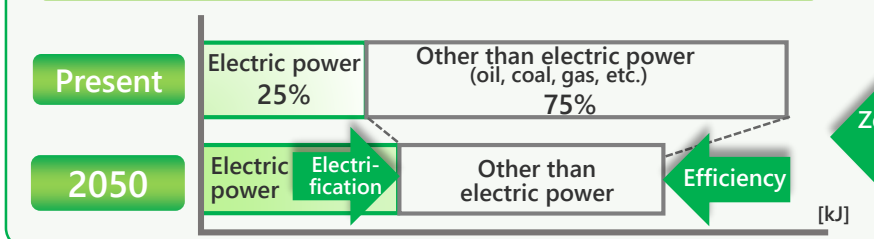


Pursue safety, stability and efficiency through a self-distributed system

Decarbonization of energy provided

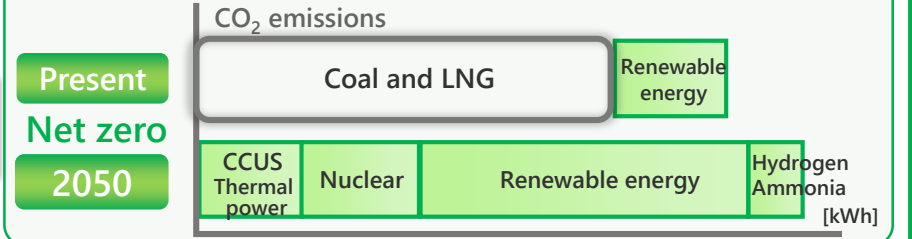


Electrification and enhanced efficiency of energy consumption



Zero emissions electricity

Decarbonization (composition of generated power)



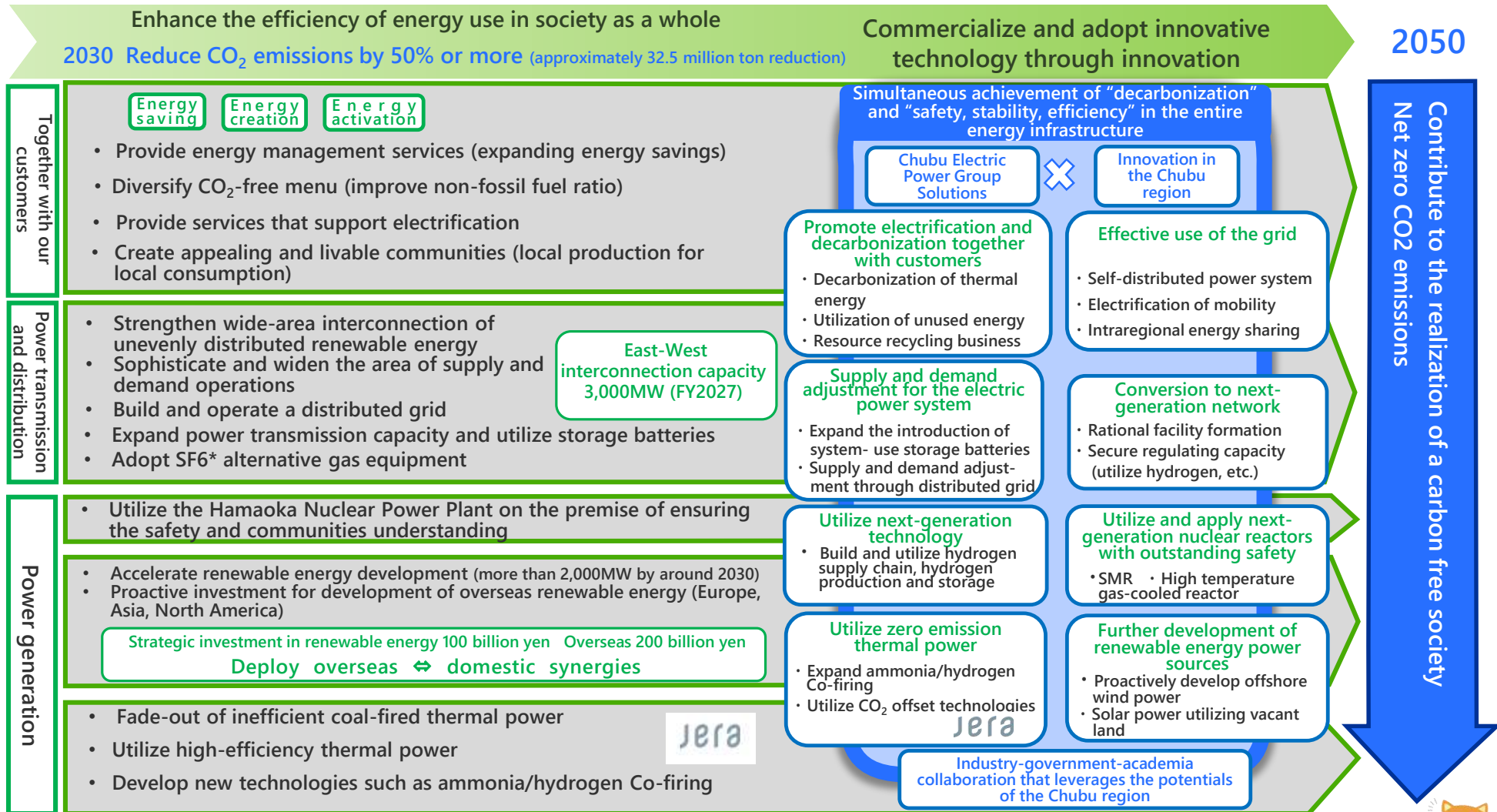
*1 Electric vehicles (EV), plug-in hybrid vehicles (PHV), fuel cell vehicles (FCV), etc.

*2 Excludes special vehicles such as emergency and construction-use vehicles not suitable for electrification

*3 Chubu Electric Power, Chubu Electric Power Grid, Chubu Electric Power Miraiz

*4 Abbreviation of Carbon dioxide Capture, Utilization and Storage technology that separates and recovers carbon dioxide for effective use or storage

Roadmap for Zero Emissions Challenge 2050



* Sulfur hexafluoride A gas used as an insulator such as in substation equipment. Sulfur hexafluoride is designated as a gas subject to global warming prevention and emission controls.

This is a Company initiative based on national policies and the target values may be adjusted in the event the system design is changed in the future. The initiative is also premised on the steady progress of decarbonization technology and economic rationality.



II Initiatives Pursuing the Chubu Electric Power Group Management Vision

Chubu Electric Power Group Management Vision (Formulated March 2018)

1 Attainment of Our Unchanging Mission

Providing high-quality energy in a safer, more affordable and more stable manner



2 Creation of New Value

Provide new services that respond to changes in the business environment

Vision

"A Total Energy Service Corporate Group that is one step ahead"
and leads the industry in providing customers with services that exceed expectations

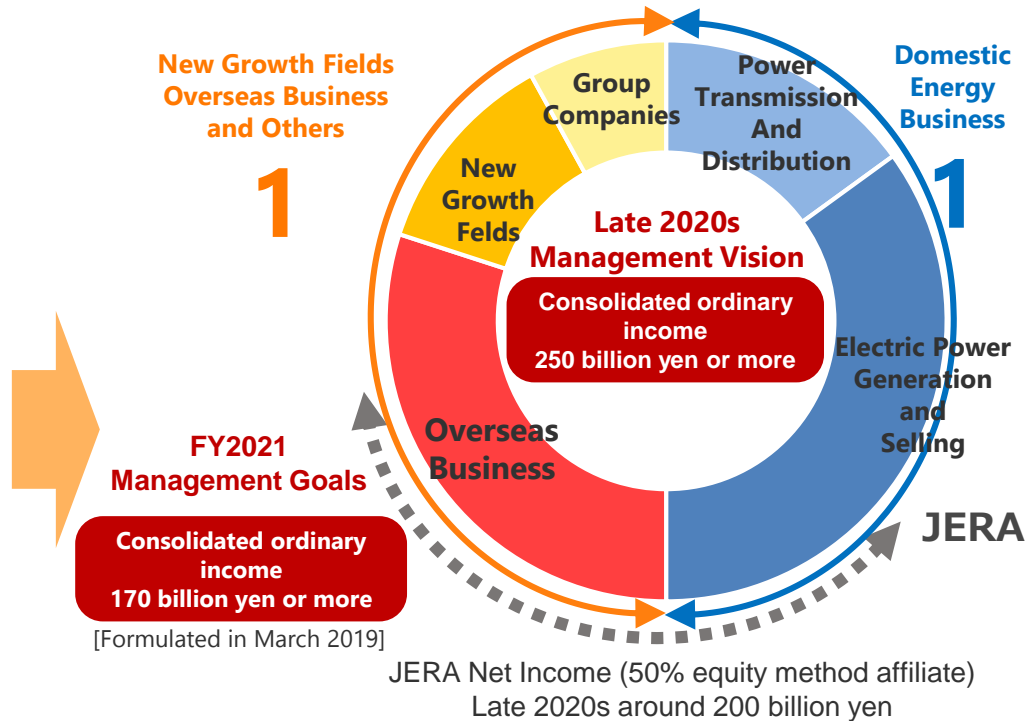
Initiatives

Energy Business

1. Transition to a business model that separates the power transmission and distribution businesses
2. Initiatives for establishing a business model that separates the power transmission and distribution businesses
3. Contributing to the achievement of a low-carbon society

Providing a "new form of community"

1. Services that aim to utilize data to improve the quality of life of individuals
2. Services to the community by connecting and evolving multiple social infrastructures
3. Provide a "new form of community"



Specific Initiatives for Realizing the Management Vision

2050

Contributing to the transition of social and industrial structures toward the sustainable development of society and the realization of Society 5.0

Decarbonized society

Recycling-oriented society

Safe and secure society

Initiatives

Realize Management Vision (attain ordinary income of 250 billion yen)

Contribute to the realization of a safe, secure and strong society where people live comfortably by providing community support infrastructures (contribution to SDGs)

Build energy platform construction

(Realize advanced supply and demand management)

- Facilities formation and operation that responds to supply and demand fluctuations
- Expansion of renewable energy (2,000 MW or more)
- Fade-out of inefficient coal-fired thermal power
- Provide aggregate services
- Utilize Hamaoka Nuclear Power Plant

Solve social issues
Maximize UX



Build data platforms

(Realize convenient and comfortable lives)

- Expand and upgrade services tailored to customer lifestyles
- Provide services centered on energy, healthcare and life data
- Identify customer needs by utilizing data

Expand real estate and overseas businesses

2021

A Foundation that Supports Our Management Vision

Human resources

Assure and improve safety, health and skills to realize the development and utilization of diverse human resources

Finance

Financial strategy

Technology development

Technology development to enhance S + 3E
Productivity improvement through commercialization support

Compliance

Strengthen governance

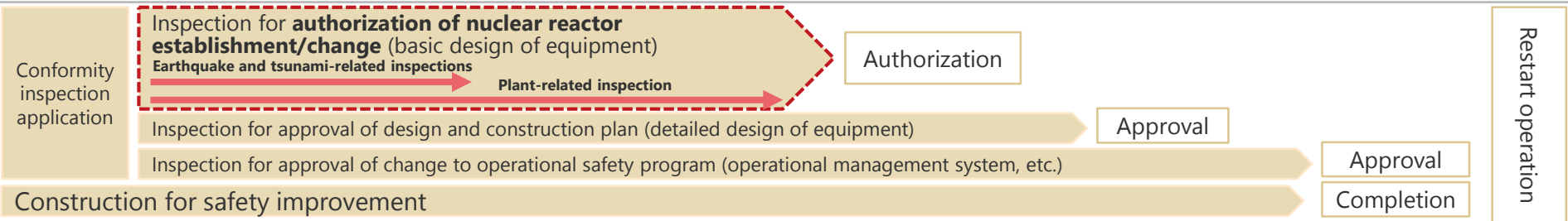
Coexistence with local communities

Regional coexistence through industry-government-academia collaboration

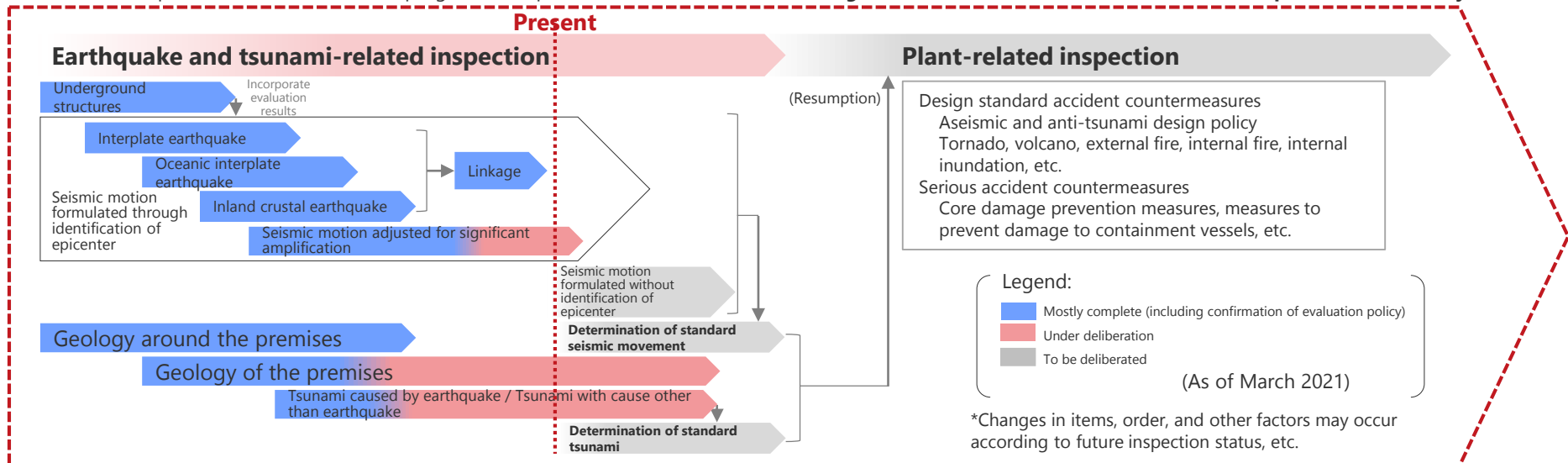
Improve productivity by strengthening the management base

Responding to the Inspection of Our Conformity with New Regulatory Standards by the Nuclear Regulation Authority at the Hamaoka Nuclear Power Plant

- Responding to the Inspection of Our Conformity with New Regulatory Standards by the Nuclear Regulation Authority at the Hamaoka Nuclear Power Plant acting with the firm resolve never to repeat an accident similar to the one that occurred at the Fukushima Daiichi Nuclear Power Station, we are promoting measures to enhance the safety at the Hamaoka Nuclear Power Plant. We are undergoing an inspection of our conformity with new regulatory standards by the Nuclear Regulation Authority.
- We believe that nuclear power generation, a power source that does not emit CO₂ during electric power generation, will play a key role toward achieving the government's target of zero greenhouse gas emissions by 2050.
- In the future, we will continue to autonomously promote initiatives to further raise safety and proceed with preparations for continuing to utilize the Hamaoka Nuclear Power Plant as an important power source and will take our utmost efforts to gain the understanding of these initiatives by society, including the local community.



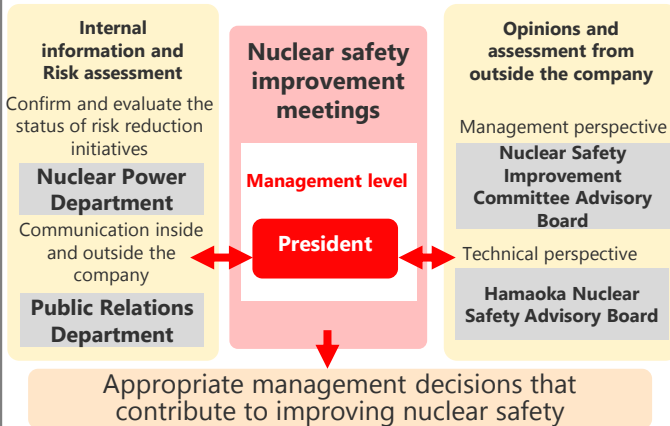
Main inspection items and status of progress of inspection for authorization to change nuclear reactor installation (for further improvement of safety)



Aiming for a Safer and Trustworthy Hamaoka Power Plant

- Management staff, led by the president, takes responsibility and strengthens nuclear power governance, risk management and risk communication.
- To strengthen governance, we are building a framework to ascertain internal and external opinions and evaluations of risks and execute proper management decisions.
- Besides facilities-related measures, we are strengthening risk management such as by bolstering on-site response capabilities for the effective functioning of equipment in emergencies, fortifying cooperation with national and local governments and other power companies in case of emergencies, and making improvements based on third-party reviews.
- We will disseminate information about these safety improvement initiatives through opinion exchanges with community residents and power plant caravans, while strengthening risk communication for listening to local residents, addressing their concerns and doubts.

Strengthen governance



Continual safety improvement at the Hamaoka Nuclear Power Plant

Strengthen risk management



Strengthen on-site response capabilities by increasing and strengthening the emergency response specialist team



Improvements based on third-party reviews



Collaborative drills with Omaezaki Coast Guard Office, Fire Department of Omaezaki city, Kikugawa Police Station, and Omaezaki city



Cooperation with Tokyo Electric Power HD and Hokuriku Electric Power (acceptance of evaluators for comprehensive training)

Strengthen risk communication



Opinion exchange meetings with residents of local communities



Power plant caravans that set up booths at local events and explain the power plant's initiatives

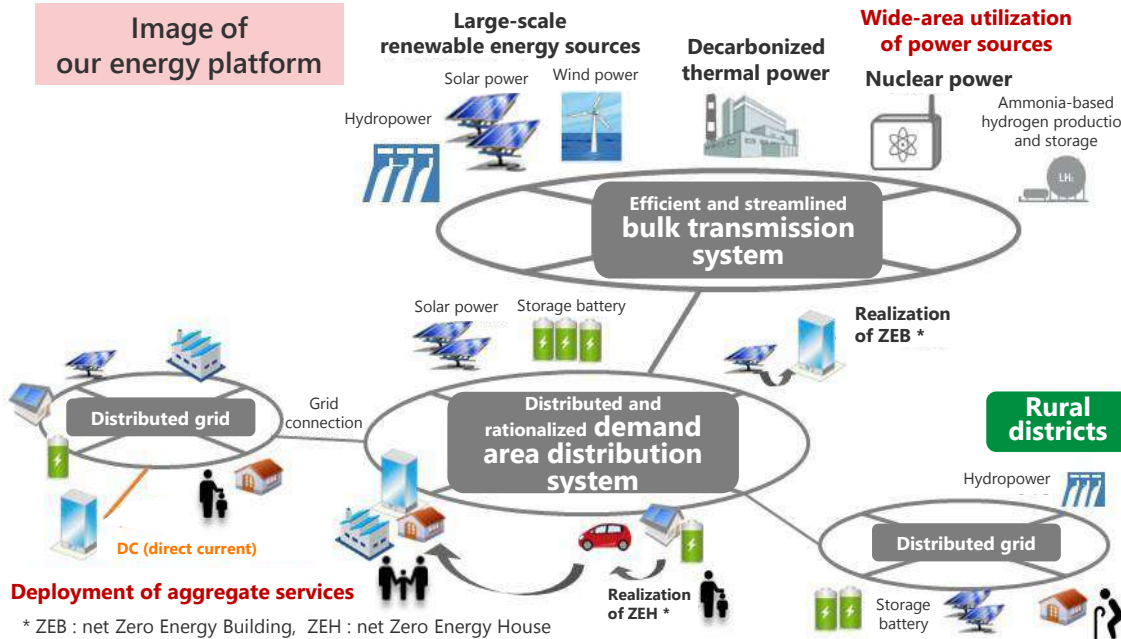
For detailed information, please see [Nuclear Power Hamaoka Nuclear Power Plant](#) on our website.

Providing Resilient and Optimal Energy Services

Our Envisioned Energy Platform

- By expanding the introduction of renewable energy, we will develop a next-generation power transmission and distribution grid that achieves both wide-area utilization of power sources and the advance of local production for local consumption as we strive to improve stable supplies and resilience even amid shifts in the flow of electricity.
- We will utilize distributed energy resources (DER) such as power sources that connect storage batteries, EVs and solar power generation to deploy aggregate services.

Image of our energy platform

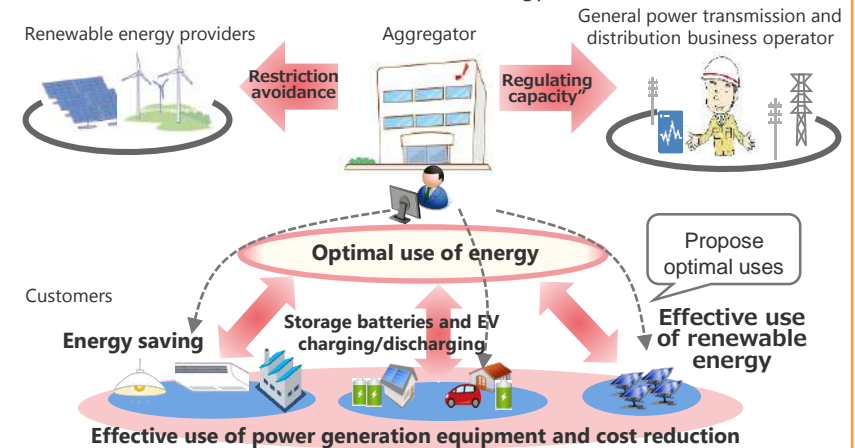


Deployment of aggregate services

* ZEB : net Zero Energy Building, ZEH : net Zero Energy House

Deployment of aggregate services

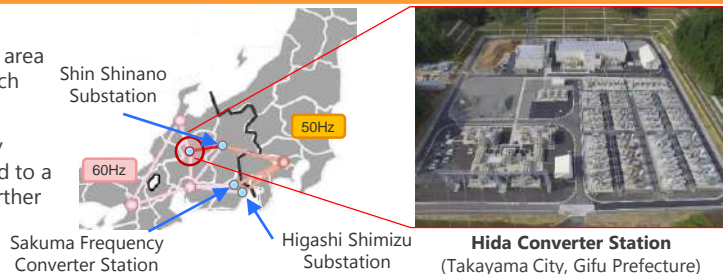
We will make proposals for the effective utilization of customers' power generation facilities and for energy-saving initiatives that will reduce their energy costs. We will also deploy services that utilize accumulated surplus power and provide supply and demand regulation and services that enable customers to avoid restraints on renewable energy.



Strengthen wide-area interconnection

Hida Converter Station (900 MW) connecting a 50Hz area and a 60Hz area scheduled to start operation in March 2021

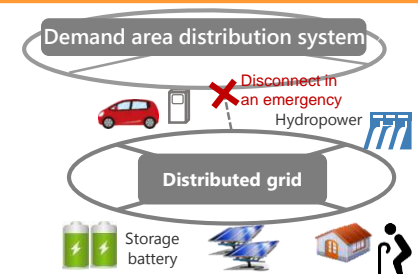
The interchangeable power capacity between these areas to be expanded to a total of **2,100 MW**. Plans call for further expansion in the future to a total of **3,000 MW**



Resilience improvement

Consider building an emergency microgrid utilizing DER such as local storage batteries, solar power generation and EVs.

Aim to **improve resilience** such as in times of disaster.



Toward Strengthening Resilience

Disaster Response with the Group Working in Unison

➤ Taking into consideration recent natural disasters, we are working to strengthen resilience to improve our response to large-scale disasters. We will work to share information with society and customers and strengthen our facilities restoration system as the Chubu Electric Power Group works in unison to implement disaster response.

“Dissemination of information via app” to enable customers to obtain and use information

Chat posts on the power outage information app



Post



Post from customer about fallen tree site (electric power line contact)

Real-time grasp of on-site conditions



Accurate instructions



Quick responses to customers



Initiatives for the quick restoration of facilities

Assuming damage to substations caused by large-scale disasters, we implement **installation training** encompassing group companies for quick recovery using **self-driving mobile substations**.



Installation work for connection cables



Work for connecting cables to mobile substation

Cooperation with local governments

Strengthening mutual cooperation in times of emergency



Trees that could cause damage by falling are **cut down in advance** in cooperation with local governments.

↓ Before cutting down



↓ After cutting down

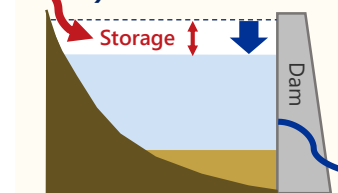


Use of hydroelectric dams for flood control

When flood damage is anticipated, we will consider and implement initiatives to increase storage in the event of a flood through **pre-discharge** in cooperation with national and local governments, and other water users.

3) Storage during flooding

2) Lower water level



- 1) Pre-discharge before flooding to lower dam water level
- 2) Lower water level
- 3) Increased storage during flooding

Reduce downstream flood damage

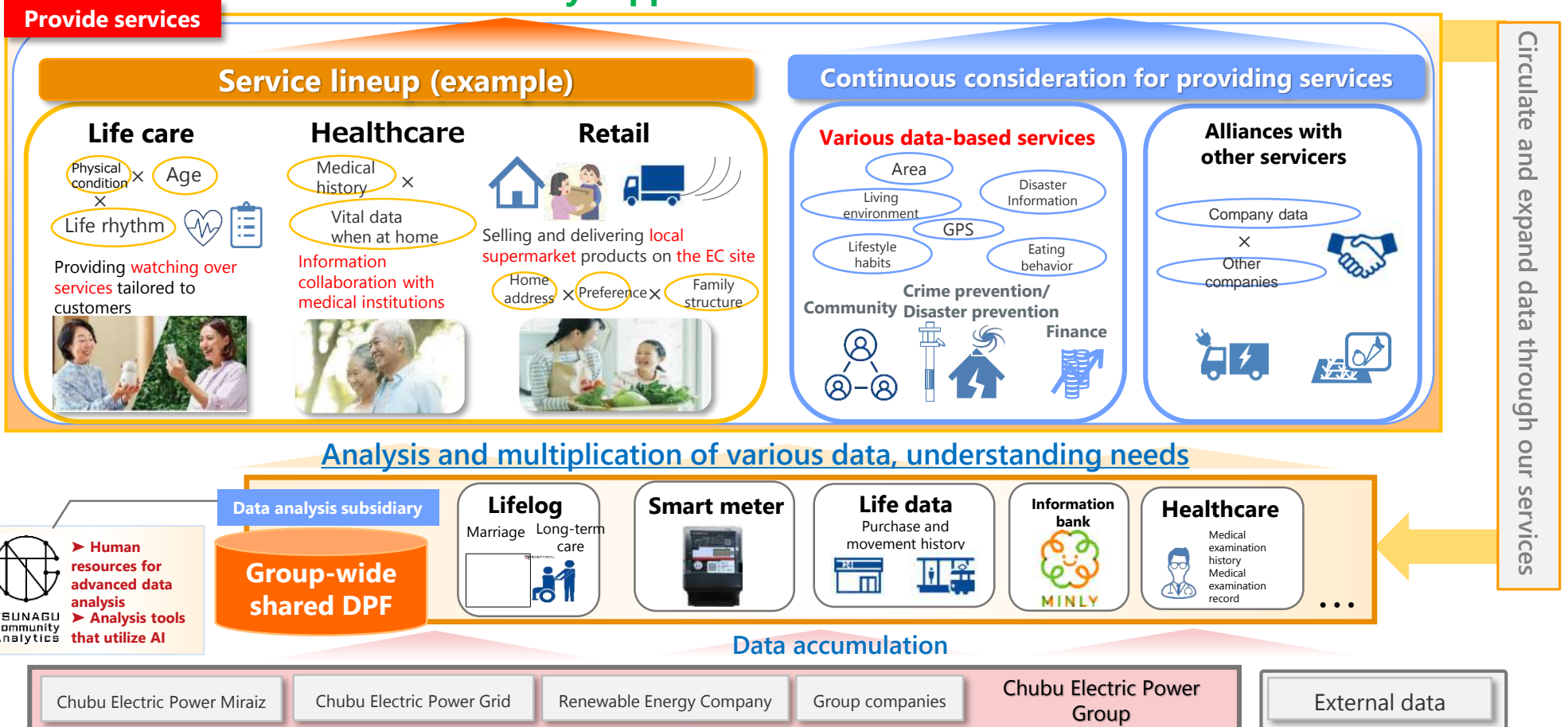
1) Pre-discharge



Providing Services That Enrich Society and the Lives of Customers Utilizing Data Platforms

- We will provide a variety of services by building and expanding a **data platform (DPF)**.
- Upon ensuring security, utilizing data such as on energy, which is our strength, we will provide services closely attuned to the needs of each customer as well as provide a community **support infrastructure and maximize UX**.

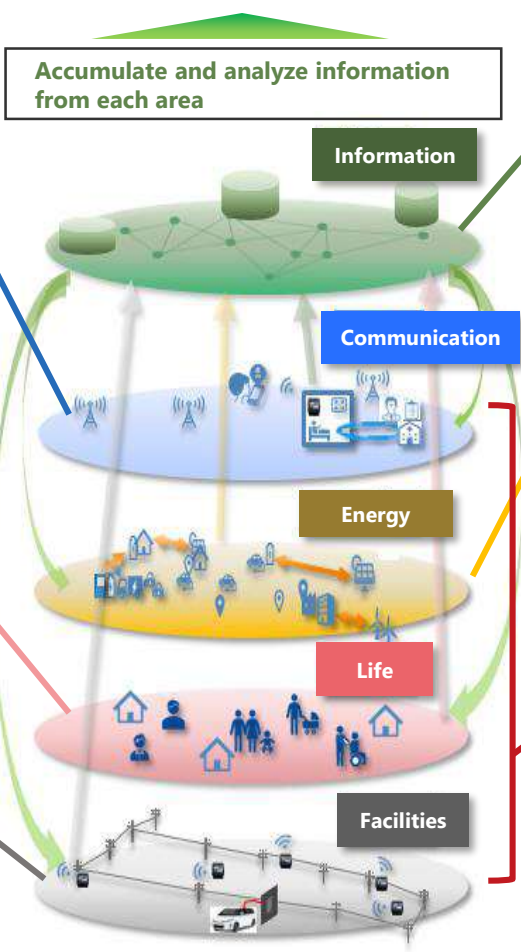
Deliver optimal services to each and every customer Provide a community support infrastructure that solves social issues



Providing a Community Support Infrastructure Creating New Value through Energy and Data

➤ We will offer services that **utilize data and energy** and provide a **community support infrastructure** that reinforces the local community.

Service creation



Connected Home Healthcare

- Invested in MeDaCa and converted this company into a consolidated subsidiary (9/2020)

Accelerate the building of **communication platforms** between patients and medical institutions and the development and provision of services such as **online healthcare**



- Commenced telemedicine with Keio University Hospital (12/2020)

- Provide watching over service (Nekoriko)

Began providing care assistants to persons living alone (4/2020)



Began accepting appointments for monitoring robot BOCCO emo (2/2021)



Information Bank / Data Platform

- Community-oriented information banking service "MINLY"

➤ Promotion of information bank certification service in Toyota City, Aichi Prefecture



- TSUNAGU Community Analytics (Data analysis company) established (2/2021)

➤ Advanced analysis of data on communities and lifestyles and the promotion of value creation



Energy Management

- Fleet EV Initiative

➤ EV truck optimal operations demonstration with Meitetsu Transportation Co., Ltd. and Esline (4/2020)

➤ EV Bus operation demonstration with Iida City and Shinnan Koutsu Corporation (1/2021)



Community

- Kizuna Net* (Over 1.3 million members)

* A contact network service that delivers local community information such as contacts from schools and disaster prevention information by e-mail.



Infrastructure

- e-Mobility Power

➤ Taking over the electric vehicle charging service business from Nippon Charge Service, LLC (scheduled for 4/2021)



- Automated meter reading/Mimamori-po*

➤ Concluded basic agreement on automated meter reading (multiple business operators)

➤ Cumulative Mimamori-pole installations exceeds 1,000 (1/2021)



Community Development

- Convert ES-CON JAPAN Ltd. into a consolidated subsidiary (scheduled for 4/2021)

➤ Promote community development with the entire Chubu Electric Power Group and provide a "new form of community"

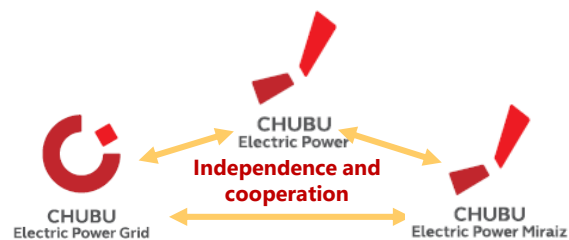


A Foundation That Supports Growth

Compliance, Safety and Health, and Coexistence with Local Communities

Compliance

Chubu Electric Power, Chubu Electric Power Grid and Chubu Electric Power Miraiz have each set up a Compliance Committee **chaired by their respective presidents**. Additionally, we are working to **promote compliance** for the entire Group under the Chubu Electric Power Group Compliance Committee, which is **composed of the top management of Group companies**.



Safety and Health

Under the Chubu Electric Power Group Basic Safety and Health Policy, we are progressing with **the establishment of an environment where officers, employees and partners who work together can live safe and healthy lives both in their official roles and their private lives**. At the same time, by undertaking activities related to these efforts, we are nurturing a **corporate culture that values people**.



Safety training for top management



Selected as Health and Productivity Management Organization 2021

Coexistence with Local Communities

We will **grow together with members of local communities** by valuing partnerships with the local community and striving for activities involving coexistence with the community through industry-academia collaboration as well as by assuring safety and security and promoting education for the next generation.

Industry-academia collaboration activities



Agreement with Meijo University



Collaboration with Mie University

Assuring community safety and security



Public advertising using utility poles

Next-generation education



On-demand classes

New Workstyles



Meeting with teleworkers

Establish and upgrade systems and infrastructure toward **realizing new workstyles** that allow employees to flexibly combine a variety of workstyles and to work in an environment that is best suited to them.

Introduced in FY2021

- Review of work systems that included eliminating core time within flextime work and **an expansion of telecommuting**
- Implementation of "1-on-1 meetings" aimed at **enhancing communication in remote work environments**
- Realize paperless operations by introducing an electronic approval system

Diverse Human Resources Playing Active Roles



Career advancement training for employees returning to work after childcare leave with the participation of their partners

Support diverse human resources playing active roles by calling for the promotion of diversity **in the Chubu Electric Power Group's Basic Human Rights Policy**.

Targets (FY2025)

- Number of female managers:
More than triple from FY2014
- Male employee childcare leave rate:
Leave-taking rate of 30% or more

Deepening ESG Management and Contributing to the SDGs

- We will contribute to **the realization of a safe, secure, strong and livable society by providing a community support infrastructure.**
- We will **contribute to solving SDGs issues by achieving sustainable growth together with all stakeholders.**

Realize Sustainable Growth and Enhance Corporate Value

Involvement with stakeholders

Customers

We are committed to providing our customers with safe, convenient and affordable energy services, as well as other services of value that meet their needs.

Shareholders and Investors

We are striving to maintain and increase profits and ensure stable return of profits for our shareholders and investors through efficient management and effective investment.

Local Communities

We are determined to conserve the global environment and contribute to sustainable local development in partnership with local communities.

Business Partners

We promise to deal fairly with our suppliers as equal business partners toward mutual growth and development.

Employees

We respect individuals and are endeavoring to create a vibrant and motivating workplace that is safe and healthy.

Important ESG issues

Realize a carbon-free society

- E**
- Increase the safety of nuclear power and promote its use
 - Construction and operation of efficient power transmission and distribution facilities (reduction of power transmission and distribution loss, promotion of local production for local consumption)
 - Develop renewable energy power sources
 - Develop and introduce carbon-free technology
 - Electrification promoted together with society and customers
 - Practice environmental management
 - Realize a recycling-oriented society

Main SDG contribute d to



Resolution of social issues / Utilization of human resources / Safety and health

- S**
- Promote community support infrastructure
 - Communication with the community
 - Maximize customer experiences (UX)
 - Securing labor safety
 - Promote health management
 - Secure and train highly specialized human resources
 - Diversification of human resources
 - Firmly establish new workstyles

Main SDG contribute d to



Strengthen corporate governance / Business continuity

- G**
- Ensure area supply capacity and electric power quality (ancillary services)
 - Strengthen large-scale disaster preparedness
 - Information and cyber security measures
 - Thorough compliance and anti-corruption
 - Governance and risk management
 - Timely and appropriate disclosure of information

Main SDG contribute d to



<Investment>

Necessary investment in electric power safety and stable supply

- We will quickly and steadily implement measures to further increase safety at our facilities, including the Hamaoka Nuclear Power Plant.
- We will also keep steadily investing in equipment needed for stable supply while continuing to streamline.
- When making investments, we will thoroughly ensure efficiency.

Strategic investment in growth fields

- In order to make sustainable growth a certainty into the future, we will conduct appropriate risk management and, on that basis, engage in strategic investment for business growth and development.

Strategic investment amount

**[5-year total from fiscal 2019 to fiscal 2023] 400 billion yen or more
(Overseas business: About 200 billion yen; renewable energy, new growth, etc.: Approx. 100 billion yen, respectively)**

In making investments, we will consider financial stability (maintain the current level of our capital adequacy ratio).

<Capital Policy>

Efficiency indicator (ROE)

- We envision a 7% or higher ROE level when we achieve the fiscal 2021 business goal.
- For the medium- to long-term ROE level, we will aim for a level that exceeds the cost of capital while closely monitoring the necessary shareholders' equity ratio and other such factors.

Shareholder return policy

- Chubu Electric Power will continue to invest in plants and equipment for a safe and stable supply of electricity as well as in growth sectors to maintain sustainable growth and increase our corporate value.
- Providing strong shareholder returns is an important mission for our Group. We will **continue to pursue stable dividends**, as well as consider our profit growth. **Our target consolidated payout ratio is over 30%**.

III

Initiatives in Each Business Area



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

- Based on **the connections** it has built with customers by delivering electricity and gas, Chubu Electric Power Miraiz will provide new value that will **“enrich the lives of the customers”** and **“solve business issues.”**
- 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

precious energy along with **“delivering”** services that benefit our customers every day

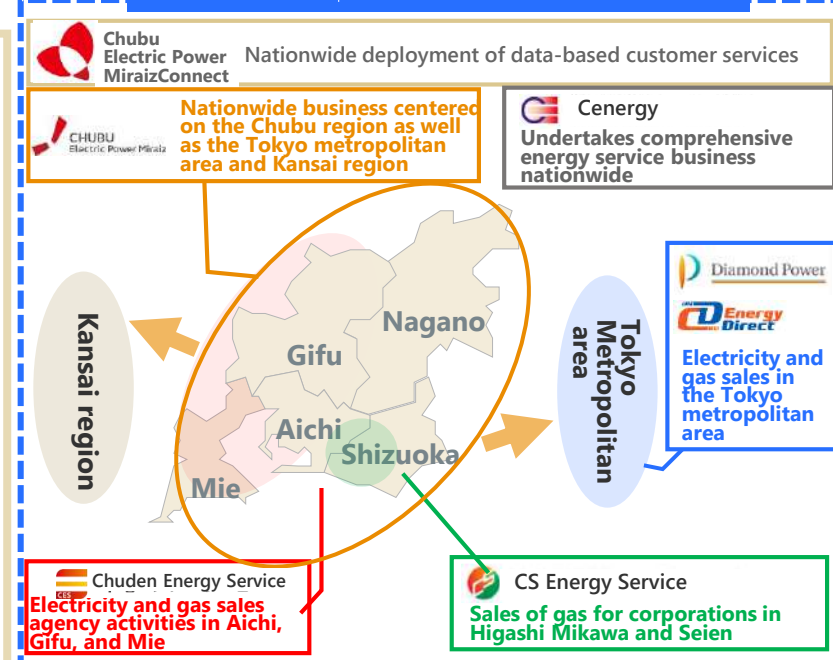
“getting close” to the daily lives and businesses of each customer

“connecting” people to people and people to community in new ways

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



Miraiz Group’s main business structure



Provide services that continue to be chosen by customers

- To continue being selected by customers amid ongoing major changes in society and a competitive environment, we will provide **stable and inexpensive energy** while offering **customer-first** services based on our vision of “delivering, getting close, and connecting”

Main Initiatives

“Enrich the lives of the customers” and “Solve business issues.”

For households

- Provide life services tailored to each life stage
 - Established **Chubu Electric Power Miraiz Connect**, a joint venture with Mitsubishi Corporation
- Strengthened our lineup that packages electricity and gas
 - “for AP Plan” that comes with **Amazon Prime** when entering into a contract



For businesses

- ➔ ○ Deepening energy solutions
 - Propose DR lineup utilizing renewable energy (energy usage)
 - Propose **energy-saving solutions** and **integrated development solutions** centered on electrification



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)

Others

- Competitive and flexible energy procurement
- Expand sales in the Tokyo metropolitan area, acting mainly through CD Energy Direct*



Expand sales of electric power and gas business

<Sales of electric power>

119.5 billion kWh

Fiscal 2020
(Estimated results)



130 billion kWh

Management Vision
(Second half of 2020s)

<Sales of gas and LNG>

1.11 million t

Fiscal 2020
(Estimated results)



3 million t

Management Vision
(Second half of 2020s)

Toward Realizing Our Customer First Philosophy

Business quality improvement measures

- Establishment of Customer First Promotion Office
We set up **the Customer First Promotion Office** as an organization under the direct control of the president with the aim of putting into **practice and spreading our customer first philosophy**.
- Business improvements that reflect customer opinions
We **value customer feedback** from call centers and websites and regularly convene VOC (voice of customer) debriefing meetings for the purpose of **improving our business operations**.

Holding of KatEne (Household Energy) Appreciation Festival

On the occasion of **the 70th anniversary of Chubu Electric Power and the 1st anniversary of Millaiz**, we will hold **the KatEne (Household Energy) Appreciation Festival** and **present luxurious prizes to 5,000 customers** that embody our everyday feelings of gratitude. (3/1 2021 ~ /5/20 2021)



Triad Initiatives to Realize a Carbon-free Society

Providing “energy saving”, “energy creation” and “energy activation”

➤ We will propose carbon-free and low carbon-related services as a triad of “energy saving,” “energy creation,” and “energy Activation” as we contribute to the realization of a carbon-free society together with customers. * For details, refer to Zero Emissions Challenge 2050.

カテエネ

Help customers save energy

First, electricity and gas contracts are visualized!

見える化!

Customers receive an energy-saving assistance e-mail when they exceed the established target usage volume.

(i.e.) Customers are contacted when usage reaches 90% of the same month of the previous year!!

Help customers realize decarbonization and low carbonization by converting energy sources (encourage shift to electricity and a shift away from oil and coal toward gas and LNG and utilize new energy such as hydrogen)

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

Case 1 [Toyota Motor Corporation]
Development and operation of purification and regeneration system for cleansing liquids

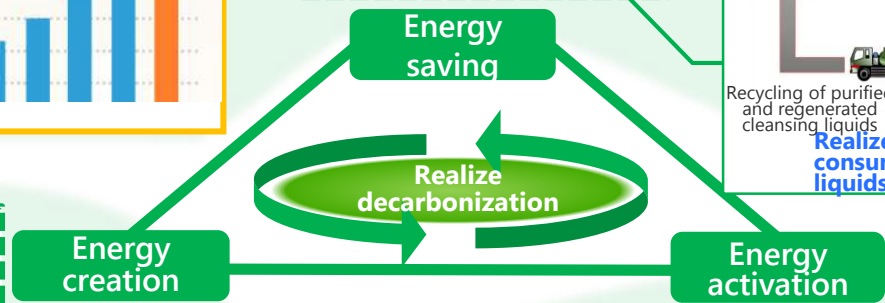
Production plant buildings → Waste liquid storage buildings → Fine-bubble high-speed flotation separator (oil removal) → Recycling of purified and regenerated cleansing liquids

Realizes zero energy consumption in the waste liquids treatment process

Case 2 [Suzuki]
Energy savings during low-pressure casting processes

Realized energy savings and reduced heating times by introducing infrared heaters

Further increase facilities for renewable energy power sources by encouraging customers to use renewable energy.



Utilize customer facilities (DR resources) and provide services for local production for local consumption of renewable energy.

中電 Loop Solar

○ 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

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

This selection of electricity rates for locally produced electricity derived from electricity produced at hydropower stations operated by the Nagano Prefecture Business supports the expansion of renewable energy in Nagano Prefecture.!

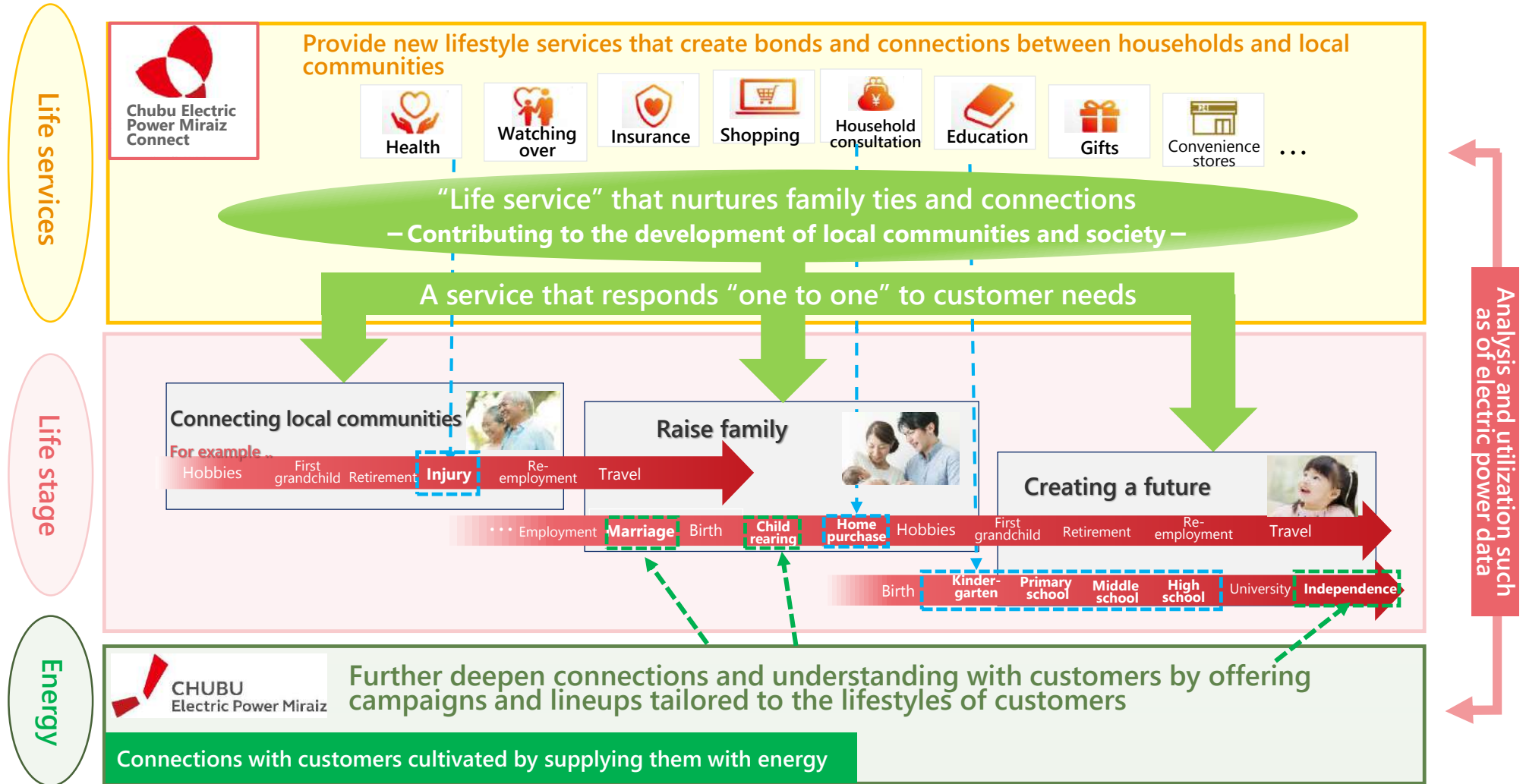
○ **TOYOTA GREEN CHARGE**

Provide support service for the introduction of EVs to corporate customers in collaboration with Toyota Motor Corporation.

Initiatives for Providing New Value

Provide life services that create "bonds" and "connections"

➤ **Chubu Electric Power Miraiz Connect** (scheduled to be established in April 2021) will utilize data to provide services that raise convenience and productivity and **create new customer experiences**.





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

- **The importance of providing stable supplies of energy** will increase due to the frequent occurrence and intensification of natural disasters. In parallel, a variety of changes have gained momentum depending on the characteristics of each region. These include declining birthrates and an aging population and depopulation; **changes in the social environment and lifestyles** due to the spread of COVID-19; and the increased **complexity of flows of electricity** due to the mass introduction of renewable energy and the spread of electric vehicles (EVs).
- As **an entity that supports the stable supply of energy**, besides disseminating information to customers in cooperation with local governments, we also work to **strengthen resilience** in collaboration with other general power transmission and distribution business operators. Moreover, all employees will work in tandem in continually taking on challenges to ensure we become **an entity that supports the Chubu area community** by responding to changes that differ by region and by responding to the needs of customers and local communities.

Vision of Chubu Electric Power Grid

-As an entity that supports stable supplies-

Community issues and needs

Revitalizing the community

Environmental measures (decarbonization)

Disaster prevention measures

Digitization

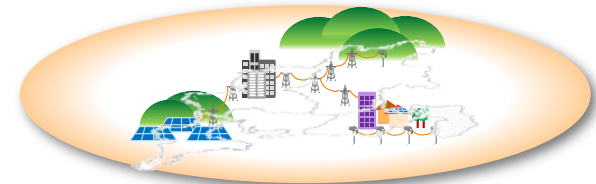
Depending on the regions

Measures tailored to the various characteristics of each community

Rational facilities formation and operation in accordance with the characteristics and future vision of each community

Strengthen resilience in collaboration with local governments and customers

Business efficiency enhancement and sophistication using drones, AI and other tools



Support the development of local communities and society to earn their "trust" and respond to their "expectations."



Initiatives for Maximizing the Use of Renewable Energy Power

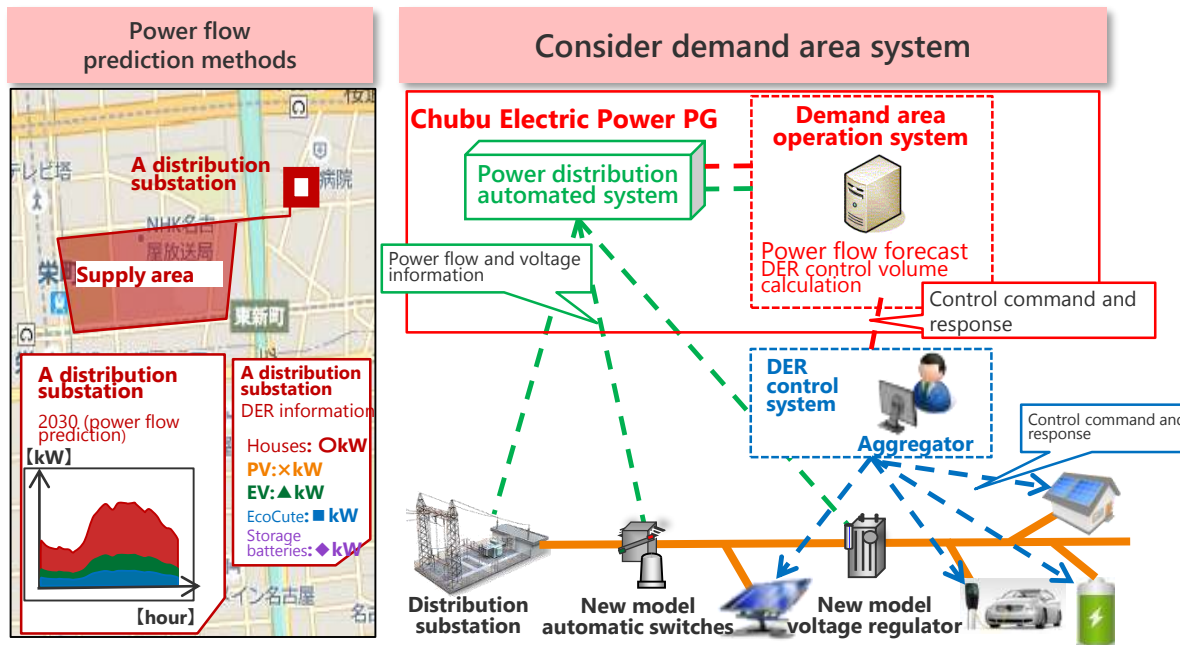
Sources Build and Operate Facilities That Utilize Distributed Energy Resources (Demand Area Distribution System)

- Utilizing **distributed energy resources (DER)** including renewable energy power sources, storage batteries, EVs and others as **supply and demand regulation**, we aim for rational formation and operation of facilities on a **region-by-region basis**. While **streamlining facilities equipment** and **reducing response costs**, we will contribute to the realization of a carbon-free society by **improving operating rates such as avoiding restraints on renewable energy power sources**.

<Demand area distribution system> Efficient facilities building and operation by utilizing DER

Rational facility formation and operation on a region-by-region basis

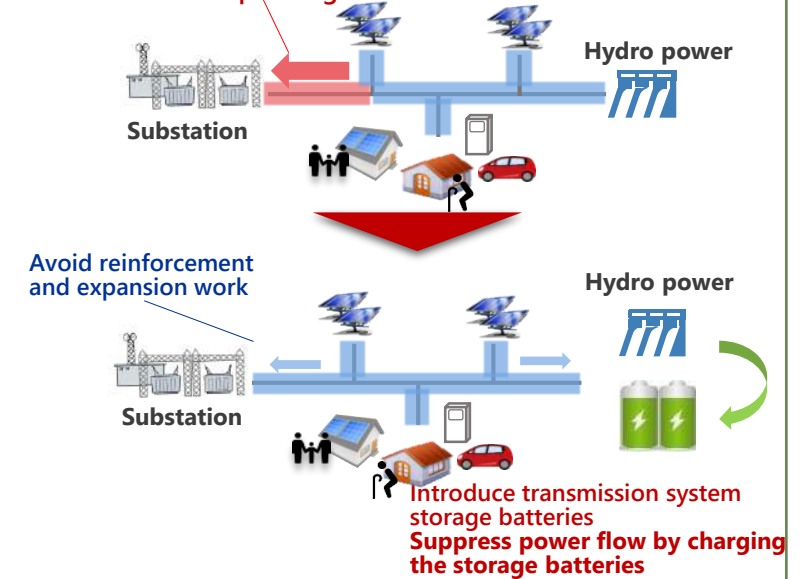
We aim at **rational facility formation and operation utilizing DER** such as EVs and storage batteries and will **consider power flow prediction methods for each region (power distribution lines) and the systems essential for operation**



Consider utilizing transmission system storage batteries

Plan to utilize transmission system storage batteries for partial replacement of distribution line countermeasure construction

Distribution line reinforcement and expansion work required due to an increase in solar power generation



Realized more stable supplies by achieving a balance between reducing investments for power distribution facilities and accepting even more renewable energy

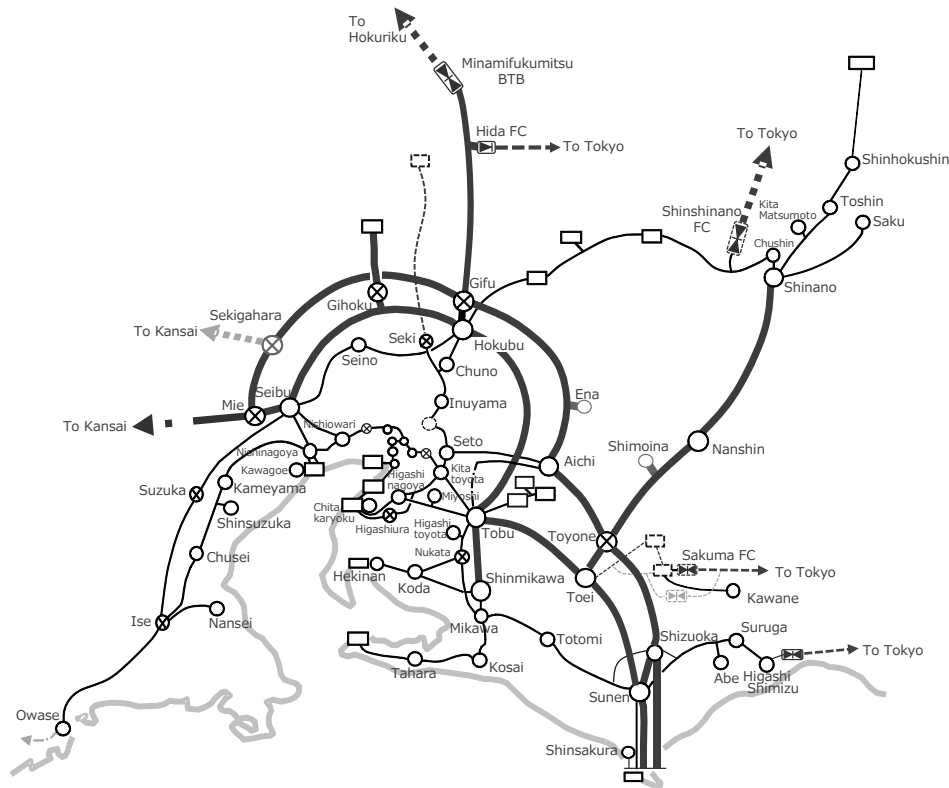
Initiatives for Maximizing the Use of Renewable Energy Power Sources

Well-Balanced Facilities Formation (Bulk Transmission System)

➤ **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**.

◀Bulk transmission system▶ Well-balanced facilities formation

Electricity flows will change due to the development of large-scale renewable energy power sources and the discontinuation of low-efficiency thermal power



Upon forecasting the future flow of electricity, we will **implement well-balanced facilities formation categorized into three directions: reinforcement and expansion, reduction and maintenance**. We will **adopt non-farm type connections and contribute to the expansion of renewable energy connection capacity**.

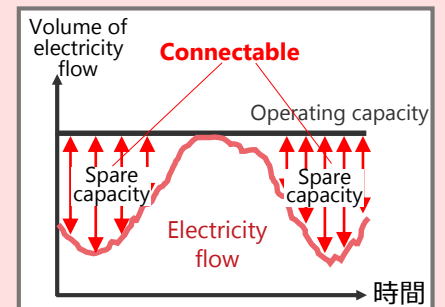
Facilities formation that classifies directions

In anticipation of changes in electricity flow in the future, we classified each system into the following **three categories** and will prepare future capital investment plans accordingly.

- Systems that need **reinforcement and expansion**
- Systems to **be reduced** in scale
- Systems to **be maintained** in scale

Adopting non-farm transmission system type connection

Connection method that allows use of power transmission lines **only when there is spare capacity**



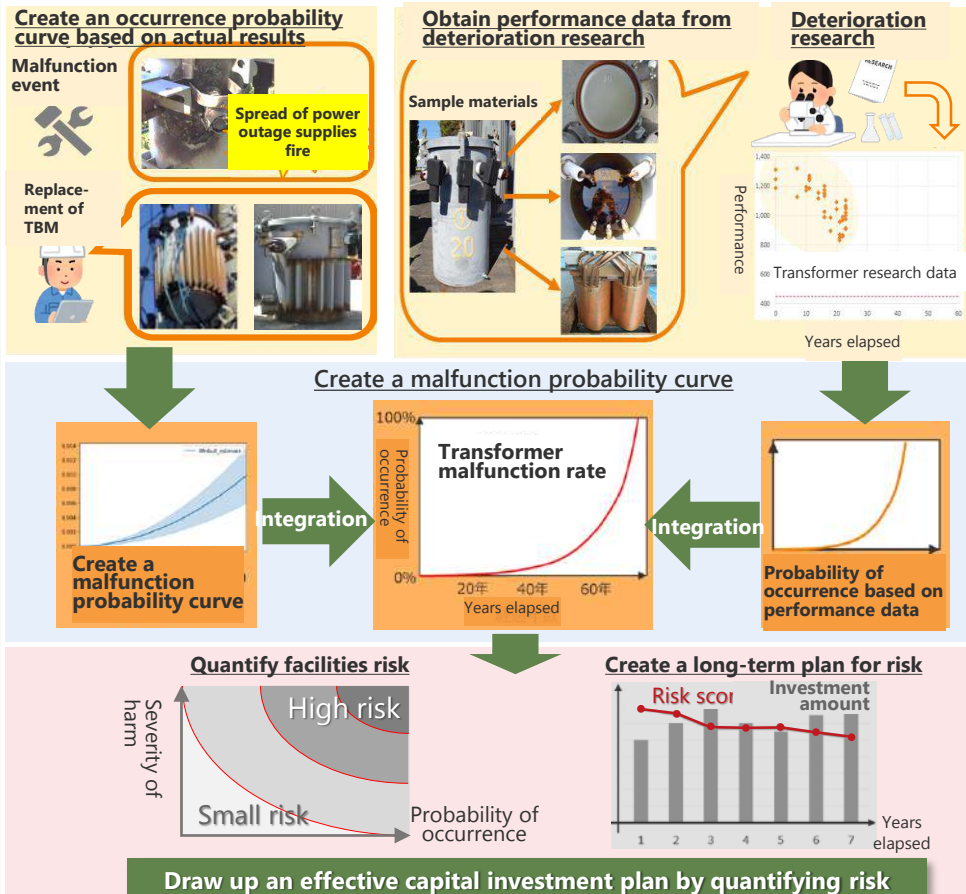
Contribute to the realization of a carbon-free society by expanding the introduction of renewable energy. Balance the introduction of renewable energy and the reduction of capital investments.

Data Utilization and DX

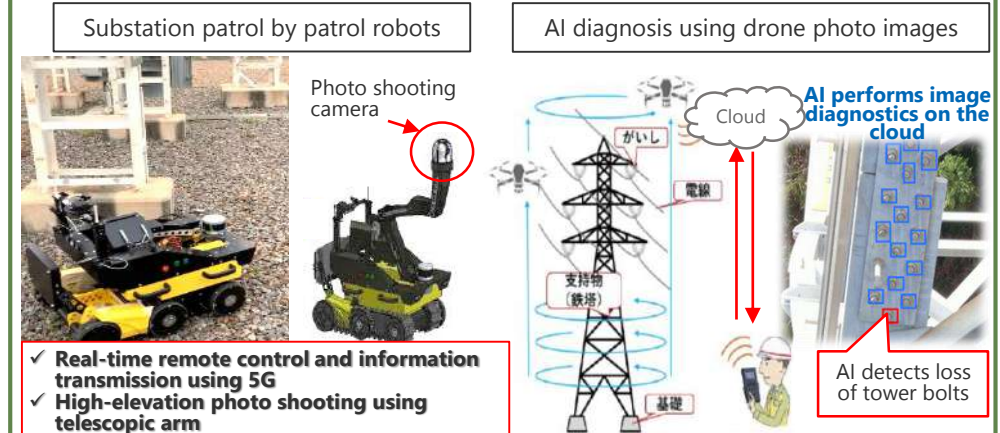
Sophistication of Facilities Maintenance Work

- We introduced an **asset management system** that visualizes facilities risk and upon quantifying risks we formulate effective capital investment plans over the long term and strive to **enhance the sophistication of maintenance operations**.
- We **actively introduce digital technologies such as robots, AI, and IoT** to promote sophistication and greater efficiency. At the same time, we are considering **transitioning to CBM*1** to replace the conventional TBM*1 by constantly ascertaining information on facilities using sensors.

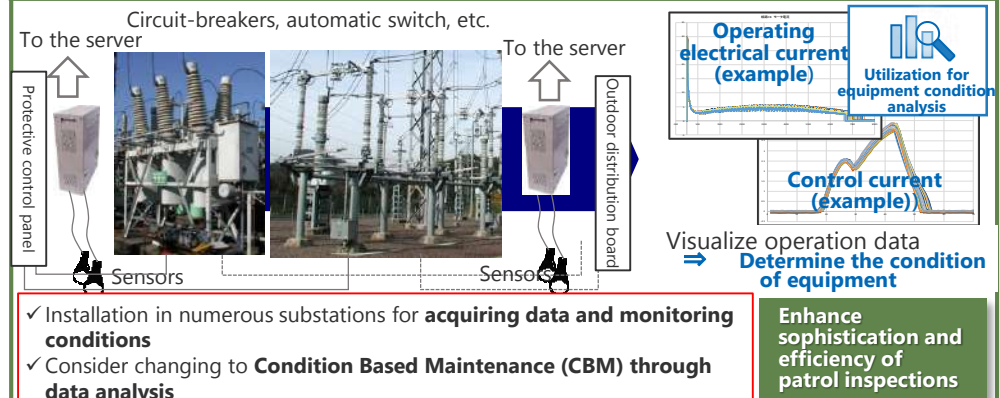
Introduce asset management system



Utilization of 5G x robot and drone x AI



Consider changing to Condition Based Maintenance (CBM) by remote sensing





Suzuki Hideya
President
Renewable Energy Company

- Toward **the realization of a carbon-free society**, we will work in unison based on its **dual imperatives of accelerated development of new power sources and the effective use of existing power sources**.
- Toward becoming a **“leading company in the renewable energy business,”** we will work to achieve **both “expansion of renewable energy” and “business growth”** by not only developing the Chubu Electric Power Group itself, but also by commercializing a competitive development plan **with all partners** in Japan and overseas according to the need.

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

Steady development and promotion of renewable energy projects

Maximize the use of existing facilities

Business growth ↑

Vision

A leading company in the renewable energy business

- ❑ 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 make renewable energy sources the mainstay of energy sources
- ❑ Realize stable and inexpensive power generation
- ❑ Steady development and promotion of renewable energy projects
- ❑ Take all measures such as making strategic investments
- ❑ Maximize the use of existing facilities

Realization of a carbon-free society →

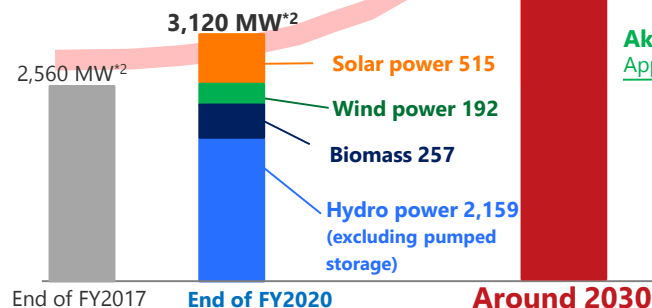
Power Development toward 2,000 MW

- 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 of the entire Group is approximately 560MW**, which is about 28% progress*1 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 Progress from the end of FY 2017 to March 31, 2021

Facility capacity

Development of 2,000 MW or more to approximately double the facility capacity



*2 Facility capacity including group companies

Main recent development sites

Miyako Kuzakai Solar Park
18,000 kW, operation started in May 2019

Akita Port / Noshiro Port offshore wind power
Approx. 139,000 kW, expected to start operation in 2022

Kamisu biomass
50,000 kW, expected to start operation in 2023

Tsuruga Green Power
37,000kW, Chubu Electric Power acquired stake in Feb.2021

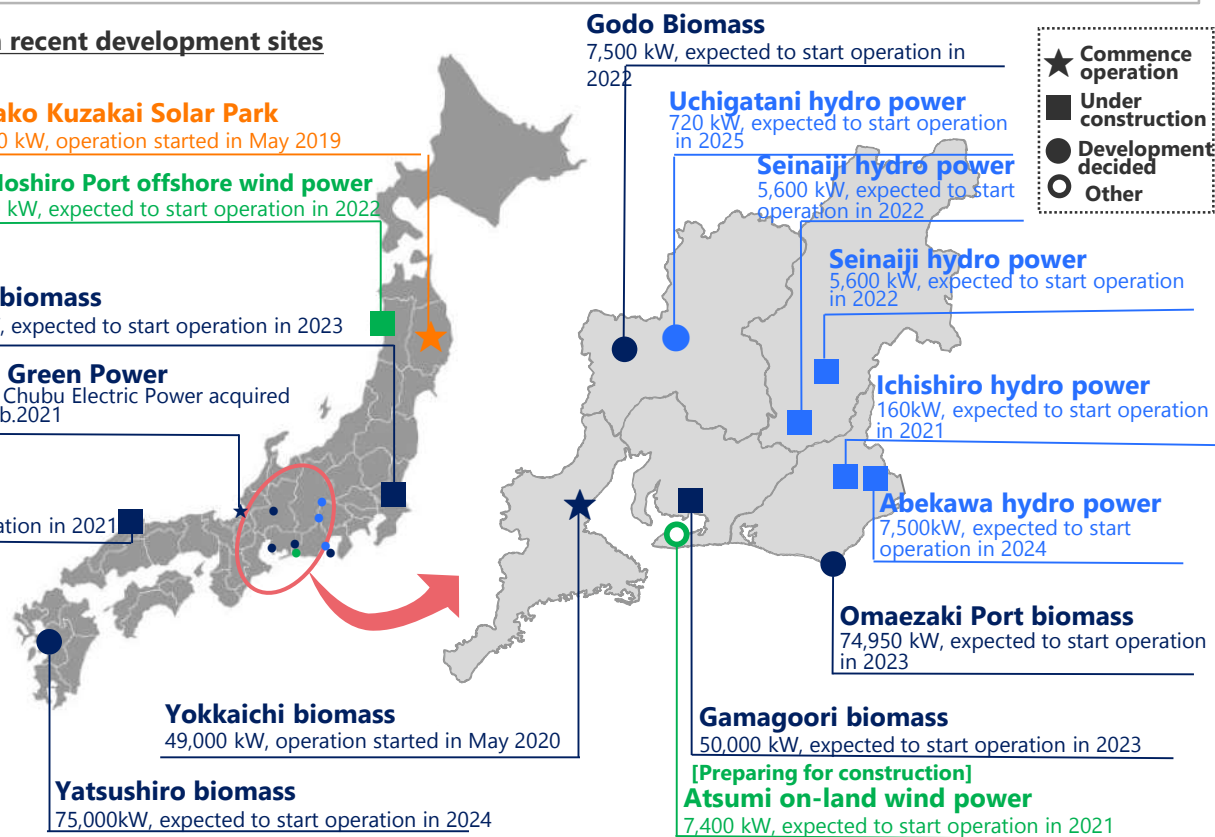
Yonago biomass
54,500 kW, expected to start operation in 2021



Seinaiji hydro power (current status)



Yonago biomass (current status)



- ★ Commence operation
- Under construction
- Development decided
- Other

Maximize the Value of Management Resources

➤ We own **191 hydroelectric power plants (excluding pumping water) with a capacity of 2,140 MW in the Chubu region.** 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.**

1. Evaluation for optimal power generation facilities

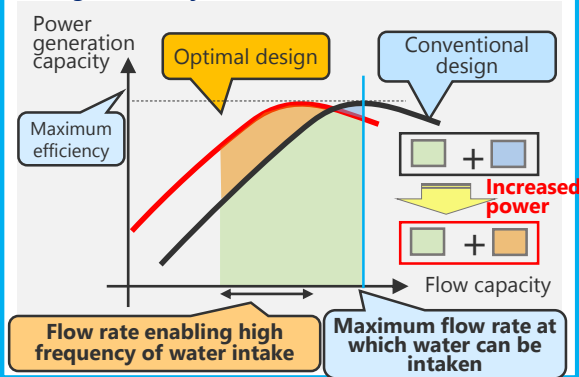
【Previous】

Design for maximum efficiency with maximum flow rate at which water can be intaken

【Issues】 Power generation frequency at maximum flow rate: low

【After improvement】

Design for maximum efficiency at high-frequency flow rate at which water can be intaken throughout the year



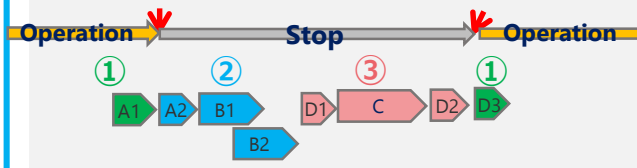
2. Reduce the power generation suspension period

For inspections and work accompanying a generator shutdown, incorporate **the Toyota Production System (TPS)** and strive to **reduce the power generation shutdown period.**

【Previous】



【After improvement】



1. Perform work that can be done even during operation
2. Subdivide processes and simultaneously undertake multiple operations
3. Subdivide work and optimize the process to reduce work loss

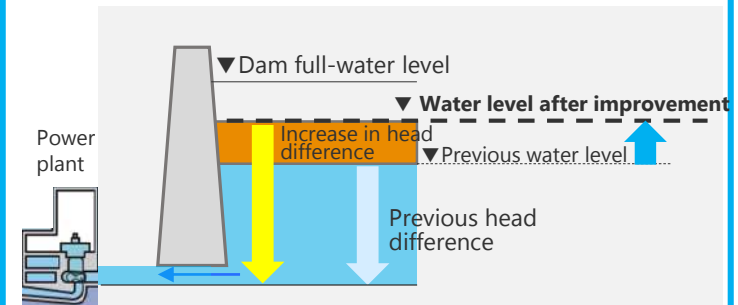
3. Raise dam operating water level

【Previous】

In preparation for an increase in inflow due to rainfall, dams operated with a low water level to enable a quick response even if the dam water level rises sharply.

【After improvement】

Prepared for an increase in inflow using sophisticated rainfall forecasts and improved output by operating the dam at a high water level.



Increase in generated power
(compared with FY2012)

FY2019 (actual results)
Approx. 180 million kWh increase
(equivalent to approximately 58,000 households)

During the next 5 years

FY2024
Approximately 240 million kWh increase
(Equivalent to about 77,000 households)



- JERA is a joint venture between we and TEPCO Fuel & Power, Incorporated. With a sequential value chain from upstream fuel and procurement through to wholesale electricity and gas sales, JERA is an energy company **with a power generation capacity that accounts for half of the thermal power generation capacity in Japan** and has one of **the largest physical fuel transaction volumes in the world**.
- In keeping with our Vision of becoming a global leader in LNG and renewables, sparking the transition to a clean energy economy, we will contribute to providing **a stable supply of internationally competitive clean energy** and **increase the corporate value of the Chubu Electric Power Group** based on the dual pillars of utilizing high-efficiency thermal power and expanding the renewable energy business.

World's largest-class LNG handling capacity

LNG handling capacity (annual)
Approx. **36 million** tons^{*1}

World's largest class

LNG tank capacity in Japan
Approx. **6.65 million** kl^{*2}

Equivalent to about 30% of LNG tank capacity in Japan

*1 Results for FY2019 *2 Including jointly operated terminals *3 Including jointly operated terminals *4 Results for FY2019 (Japan)

Japan's largest-class power generation capacity and power generation output

Power generation capacity
Approx. **70** GW^{*3}

Largest in Japan

Power generation output (annual)
Approx. **265 billion** kWh^{*4}

Equivalent to about 30% of domestic power generation

Take on the challenge of realizing more efficient thermal power generation and zero emissions



Hitachinaka Joint Thermal Power Station from JERA HP

Utilize high efficiency thermal power

✓ Commenced commercial operation of Hitachinaka Joint Thermal Power Station Unit 1 that utilizes the ultra-supercritical pressure steam power generation method (1/2021).

Sophistication of power plant operation

✓ Formulated the Digital Power Plant vision that pursues advanced O&M* using digital technologies such as AI and IoT.
* O&M : Operation & Maintenance

Building an ammonia and hydrogen fuel supply chain

✓ Concluded a memorandum of understanding for collaboration in the field of decarbonization with Petroliam Nasional Berhad, Malaysia's state-owned oil and natural gas company. (2/2021)

Ammonia mixed-combustion in thermal power generation facilities

✓ Participation in NEDO consigned work (3/2020)
✓ Carry out technical examinations and economic feasibility examinations needed for verification tests for using ammonia directly as fuel at existing thermal power plants.

Large-scale renewable energy business expansion

Renewable energy output based on equity ownership (FY2025 target):

Approx. **5** GW



Formosa 1 Offshore wind power

(from JERA HP)

Participation in Taiwan offshore wind power station business

✓ Participating in one of the world's largest-scale projects as the largest investor

Name of business	Output (kW)	JERA's interests
Formosa 1	128,000	32.5%
Formosa 2	376,000	49.0%
Formosa 3	2.004 Million One of the world's largest	43.75%

Established company for the development of floating offshore wind power station business

✓ Basic agreement with IDEOL SA (France) for the establishment of a company to undertake the floating offshore wind power station business (6/2020)

Synergies through integration

100 billion yen or more annually

(within 5 years following integration)

Profit level: Net income of about 200 billion yen in FY2025

Provide a stable supply of clean energy that is internationally competitive and enhance the corporate value of the Chubu Electric Power Group.

Overseas Businesses

Active Development of Business

- We will develop our business overseas, targeting four businesses consisting of power transmission, distribution, renewable energy power generation and retail electricity (new service), and contribute to the acquisition of **new revenue sources** and **the deepening of ESG management**.
- We will position Eneco as a **platform in the European electric power business** to expand growth areas such as renewable energy, retail and new services.

Overseas businesses

- **Technology and know-how** in cutting-edge fields
- **Business that supports local communities**
- Promotion of **carbon-free business**



German Submarine Power Transmission Business for offshore wind power plants



Domestic businesses

- **Technological capabilities** cultivated in the domestic electric power business
- **Customer base** and **relationships of trust** with local stakeholders
- **Wide-ranging business deployment** in community support infrastructure.

Eneco

Mission

"Everyone's sustainable energy"

Outline

- Leading Dutch **green energy company** representative of Europe
- Supply **green power** to **approx. 6 million customers**
- Acquired **all shares of Eneco** through joint investment with Mitsubishi Corporation (**the Company's equity ratio is 20%**) (March 2020)
- Actively promote business, such as concluding **large-scale supply and demand contracts** for electric power derived from renewable energy power sources.

Portfolio

Renewable energy power capacity

- Approx. **4,400 MW** (Eneco equity capacity + contracted capacity with other companies)

Electricity/gas trading, electricity/gas retail

- Electric power handling capacity of approx. **30 billion kWh**
- Gas handling capacity of approx. **50 billion kWh***
- Approx. **6 million customers**



Using this as a platform for our European strategy, we will mutually expand our business and raise profitability while creating synergies with our domestic business.

* Electric power energy conversion

Current main investment projects and consulting projects

[UK]
Transmission Business

[Netherlands]
Renewable Energy, Electricity Retail and New Services Business

[Germany]
Submarine Power Transmission Business

[Myanmar]
Power Distribution Improvement Project

[Uganda]
Capacity Development Project for Improvement of Protection of Transmission Systems

[Philippines]
Power Distribution and Electricity Retail Businesses

[Mozambique]
Project for Improvement of Energy Loss Reduction on Distribution Network

[Singapore]
Project Investments, Incubation and Human Resource Development

[Sri Lanka]
Project for Capacity Development on the Power Sector Master Plan Implementation Program

Contributing to SDGs achievement: Contributing to emerging countries and an expansion of business opportunities through consulting business such as in Africa

