

Kotaeteiku Kanaeteiku. Hokuriku Electric Power Co.



The Hokuriku Electric Power Group
Integrated Report

2019

CSR & Financial Report

To the Readers of the Hokuriku Electric Power Group 2019 Integrated Report

Editorial Policy

Since FY 2006, the Hokuriku Electric Power Group has published CSR reports in order to share information on the Group's way of thinking and policies regarding corporate social responsibility, as well as information on Group efforts and activities underway toward those ends.

Starting with FY 2019, we will be combining financial and non-financial information into a single Integrated Report, so that all of our stakeholders can learn about our mid-to-long-term efforts to create value. Through this report, we hope to improve readers' understanding of the Group's efforts and attitude toward value creation, and we hope to further improve two-way communication with everyone involved.

In compiling this report, we have referred to the International Integrated Reporting Framework by the International Integrated Reporting Council (IIRC); the Guidance for Integrated Corporate Disclosure and Company-Investor Dialogues for Collaborative Value Creation by the Ministry of Economy, Trade, and Industry; and the GRI Sustainability Reporting Standards.

- **Publication Date**
August 2019 (Previous edition published July 2018)
* Previous edition published as Annual Report.
- **Scope of Report**
Companies belonging to the Hokuriku Electric Power Group
- **Period Covered by Report**
April 1, 2018 to March 31, 2019
(Portions of the report may also include information from outside this period)
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- **A Note on Forecasts**
All Group plans, strategies, sales estimates, and other information printed in this report involving forecasts of the future are based on information available at the time of writing, and carry a degree of potential risk and uncertainty. As a result, please note that changes to economic conditions, market trends, revisions to related laws and regulations, and other factors may cause the Group's actual results and business environment to differ from as shown in this report.

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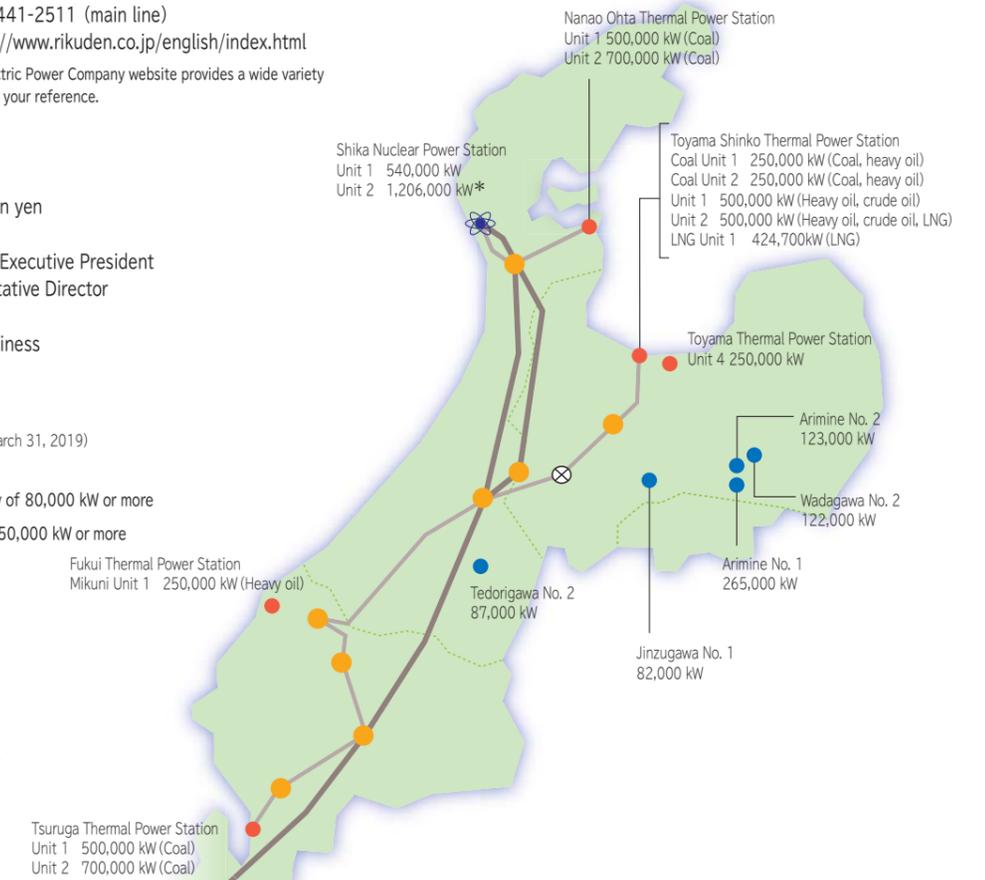
Corporate Profile

- **Trade name :** Hokuriku Electric Power Company
- **Head office location :** 15-1 Ushijima-cho, Toyama-shi, Toyama 930-8686 Japan
Tel : +81-76-441-2511 (main line)
Website: <http://www.rikuden.co.jp/english/index.html>
The Hokuriku Electric Power Company website provides a wide variety of information for your reference.
- **Date of establishment :** May 1, 1951
- **Capital :** 117.641 billion yen
- **Company representative :** Yutaka Kanai, Executive President and Representative Director
- **Main business :** Electricity business

Major Power Supply Facilities (As of March 31, 2019)

- Hydroelectric power station with capacity of 80,000 kW or more
- Thermal power station with capacity of 250,000 kW or more
- ☄ Nuclear power station
- Transmission line (500 kV)
- Transmission line (275 kV)
- Substation
- ⊗ Switching station

* If operated with turbine straightening vane installed.



Overview (As of FY 2018 or March 31, 2019)

Total Assets* ¹	1,573,127 millions of yen (1,508,900 millions of yen)		
Sales* ¹	622,930 millions of yen (575,576 millions of yen)		
Ordinary Income* ¹	6,656 millions of yen (2,447 millions of yen)		
Net Income* ¹ * ²	2,520 millions of yen (2,411 millions of yen)		
Power-generating Facilities	Number of Power Stations	Capacity	
	Hydro power	131	1,929 MW
	Thermal power	6	4,825 MW
	Nuclear power	1	1,746 MW* ³
	New energy	4	4 MW
Total	142	8,504 MW	
Transmission Facilities	Overhead	Underground	
	Total Length of Transmission Lines	3,177 km	149 km
Transformation Facilities	Number of Substations	Capacity	
	203	31,167 MVA	
Distribution Facilities	Overhead	Underground	
	Total Length of Distribution Lines	42,000 km	1,451km
Total Electricity Sales Volume	Retail	Wholesale	
	26,060 GWh	4,331 GWh	
Total	30,392 GWh		

*1 Consolidated figures; figures shown in parentheses are non-consolidated figures. *2 The consolidated figure is profit attributable to owners of parent. *3 Estimation based on the assumption that Shika Unit 2 is operated with turbine straightening vane installed.

The Value Creation Process of the Hokuriku Electric Power Group

We strive to bring about the ideal state of the Hokuriku Electric Power Group in the future, in order to contribute to regional development and enriching people's lifestyles. We engage in our business with a focus on making a sustainable society a reality.

The Value Creation Process

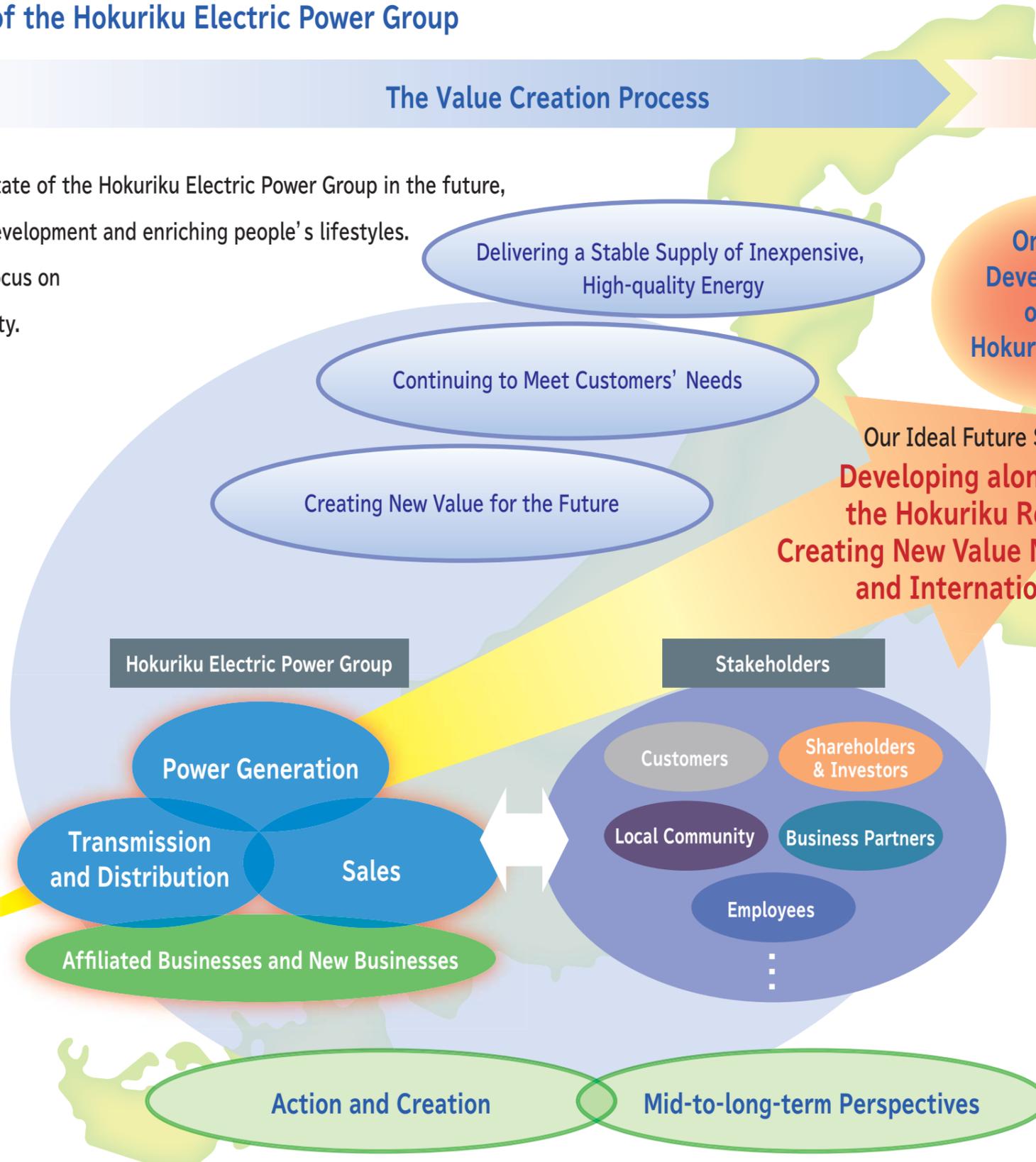
The Value We Create

Human Capital
Staff & Organizational Strength
Total Number of Group Employees: 8,498

Manufactured Capital
Group-owned Facilities
Power Generation Facilities: 142 locations producing 8,504 MW
Total Length of Distribution & Transmission Lines: 46,777 km

Natural Capital
The Abundant Water Sources of the Hokuriku Region
Annual Precipitation in Hokuriku: 2,637 mm*
(Nationwide average: 1,648 mm)

Social and Relationship Capital
The Trust of the Hokuriku Region
67 years since our establishment



First Mid-term Business Plan (FY 2019-2022)

Group Philosophy

Our Ideal Future State:
Developing alongside the Hokuriku Region,
Creating New Value Nationwide
and Internationally

Providing These Types of Value Not Just to Hokuriku, but Other Regions as Well

- Ongoing Development of the Hokuriku Region
- Safety and Peace of Mind
- Enriching Lifestyles

Customers

We help enrich customers' lifestyles by providing a stable supply of inexpensive, high-quality energy and creating new value.

Shareholders & Investors

We work to provide stable power supply operation and increase our operational efficiency to improve our income and expenditures and our cash flow, with the goal of early resumption of dividends. In the mid-to-long term, we aim to expand our comprehensive energy business and create growth businesses, thus ensuring financial health, and allowing us to maximize shareholder return based on stable dividends.

Local Community

Using our home region of Hokuriku as a foundation, we work to bring about sustainable development for the region, as we develop alongside the Hokuriku region. We aim to be a company trusted and chosen by the local community.

Business Partners

Based on our fair and impartial procurement activities, we build long-term relationships of trust with all of our business partners, as we work toward the development of both our company and theirs.

Employees

We work to build safe and comfortable work environments through our safety-first policy and thorough compliance.

(As of March 31, 2019)

*Source: Statistical Observations of Prefectures 2019 by the Statistics Bureau, Ministry of Internal Affairs and Communications (actual values from FY 2017)

We aim to make the Hokuriku Electric Power Group an organization that will serve as your trustworthy and chosen partner, by fulfilling our social mission of ensuring a stable supply of low-cost, high-quality energy.



Yutaka Kanai
Executive President and Representative Director
Hokuriku Electric Power Company

Reflecting upon FY 2018

The September 22 stoppage of Nanao Ohta Thermal Power Station Unit 2 had major effects on supply and demand, as well as income and expenditures, for FY 2018, leading to difficult business conditions. However, due to company-wide efforts to ensure stable supply, the successful early restart of the Nanao Ohta Thermal Power Station Unit 2, the streamlining of our business, and other efforts, we have turned a profit in non-consolidated settlements for the first time in three years.

In addition, on November 21, we began operation of our first LNG-fired power station, the LNG-fired Unit 1 of Toyama Shinko Thermal Power Station. We expect to ensure stable supply as a result of diversified power sources, and reduce our CO₂ emissions, contributing to the realization of a low-carbon society.

The Establishment of the Hokuriku Electric Power Group 2030 Long-term Vision

Today, Japan faces a declining population, and new technologies like the Internet of Things, AI, and electric vehicles continue to change the structures of industries; in the future, technological innovations may destroy existing business models while simultaneously creating new businesses, alongside other changes, such as increasing awareness of a sustainable society. The energy industry also faces various discontinuous changes, such as the full liberalization of the retail electricity market, causing competition to only become fiercer, and environmental regulations related to global climate change — and this trend is expected to accelerate in the future.

In order to turn these striking changes to our business environment into an ongoing opportunity for sustainable business growth, the Group must decide what to aim for in the future, and work to address various issues with a sense of urgency, in order to reform our business structure. To that

end, we have established the Hokuriku Electric Power Group 2030 Long-term Vision, targeting the period from now through FY 2030, and we publicly announced this vision in April 2019.

Based on the Group's philosophy, "building an affluent, lively Hokuriku through power and intelligence," and taking into account the environmental changes to come, we have set an ideal state for the Group's future, developing alongside the Hokuriku region and creating new value nationwide and internationally. This "ideal state" embodies our desire to make our way through the stiff competition that the full liberalization of the retail electricity market has led to, while simultaneously creating new value, thus bringing about Group growth, while also contributing to continued development of the Hokuriku region and the enrichment of people's lifestyles, as well as allowing us to spread our wings and expand beyond Hokuriku. To bring this ideal state to fruition, we are working

based on two main strategies: expanding our comprehensive energy business based in Hokuriku, and cultivating new growth businesses. By operating as a comprehensive energy business company with social responsibility, we aim to bring about lasting growth for the Group, and work to meet the consolidated equity ratio, consolidated ordinary income, and business portfolio target presented as our financial objectives.

In addition, we have established our First Mid-term Business Plan (FY 2019-2022) as a concrete implementation plan serving as a step toward 2030. This is the most important period for making our future ideal state a

reality, and we have positioned it as a period of recovery and taking action. The Group will come together and work steadily to address the various issues confronting us, while working ambitiously in new business domains, in order to build a foundation for future growth.

Even in the midst of great change, we remain dedicated to our mission of ensuring a stable supply of low-cost, high-quality energy, and the Group remains firmly rooted in our home region of Hokuriku, as we work to contribute to regional development while creating new value for the future, in the hopes of significant continued growth as a group. (⇒ P9-12)

Working toward an Early Restart of Shika Nuclear Power Station

In order to continue fulfilling our social mission of ensuring a stable supply of low-cost, high-quality energy, our first aim is to quickly resume operation of Shika Nuclear Power Station. In addition to taking appropriate actions in relation to the resumed review on conformity to the regulatory

requirements concerning the fault lines at the site, we will make every possible effort to gain the understanding of the people in the local communities through careful explanations of safety, while making steady progress on safety improvement work. (⇒ P13-16)

Efforts to Ensure a Stable Supply of Electricity

As a result of the suspended operation of Shika Nuclear Power Station, our hydroelectric and thermal power stations continue to operate at high utilization rates. Amid these circumstances, we make continued efforts to deliver a stable supply of electricity, by reliably operating, maintaining, and managing our power station facilities, systematically replacing aged facilities, stably procuring fuel, and implementing all other necessary measures. (⇒ P17)

In addition, for distribution facilities, we aim to ensure stable supply through planned updates to highly aged equipment and other measures, alongside efforts to handle large-scale introductions of renewable energy, as well as training and equipment to improve our resilience (both tenacity and ability to recover), in order to continue to ensure stable supply as a responsible power company. (⇒ P21-23)

Efforts to Enhance the Competitiveness of Our Comprehensive Energy Business

We are working to build a competitive electric power generation mix that is both low-carbon and economical, through efforts such as the early restart and stable operation of Shika Nuclear Power Station, increased hydroelectric power generation, and expanded wood biomass power generation. (⇒ P18)

In addition, through proactive sales activities based on our comprehensive energy business operations, and efforts such as provision of services based on customers' needs, we will expand sales as much as possible. (⇒ P25-27)

Expanding Business Domains with the Combined Strength of the Group

By making maximal use of our operating resources and new technologies based on outlooks for future environmental changes, we will work to expand our current business domains while creating new ones with the

goal of continuous growth for the Group, aiming to reform our business portfolio while contributing to solving social issues. (⇒ P28-29)

Continuing Our Efforts to Earn the Trust of Our Stakeholders

Ever since Hokuriku Electric Power Company was established in May 1951 with the support of the Hokuriku region, our steadfast commitment to contribute to the development of the region through our electric power business has run deep in our corporate culture.

We aim to be a company trusted and chosen by the local community, as an enterprise rooted in the Hokuriku region, while endeavoring to both

further deepen the culture of safety that we have developed and improve our company-wide quality of operations and services, as well as continually holding two-way discussions with people in the region, and proceeding with efforts focusing on environmental, social, and governance (ESG) factors.

Publishing the Hokuriku Electric Power Group Integrated Report

In order to share Group efforts like these with our stakeholders in an easy-to-understand manner, starting this fiscal year, we have decided to publish integrated reports. In addition to the information previously included in our CSR reports, we have also included information about the

value creation process and a mid-to-long-term perspective, as well as expanded financial information and other changes, with the goal of further improving communication with all of our stakeholders.

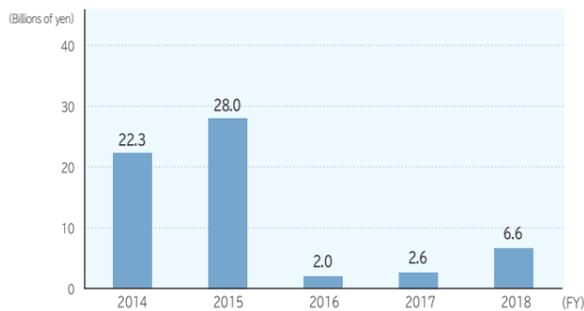
Financial Information

FY 2018 Financial Results (Consolidated)

Sales (operating revenues) amounted to ¥622.9 billion, up ¥26.6 billion from the previous fiscal year, due to an increase in income from sales as a result of rate revisions and an increase in fuel adjustment charges in the electricity business, and other factors.

Ordinary income amounted to ¥6.6 billion, up ¥3.9 billion from the previous fiscal year, as a result of the increase in income from sales and our all-out efforts to streamline our overall costs, in spite of the decreased operation of coal-fired power stations as a result of the unscheduled shutdown of Nanao Ohta Thermal Power Station Unit 2, the decrease in the amount of electricity received from hydropower, and other factors in the electricity business. The result, taking income taxes, etc. into account, is profit attributable to owners of parent of ¥2.5 billion (compared to a loss of ¥0.4 billion the previous fiscal year).

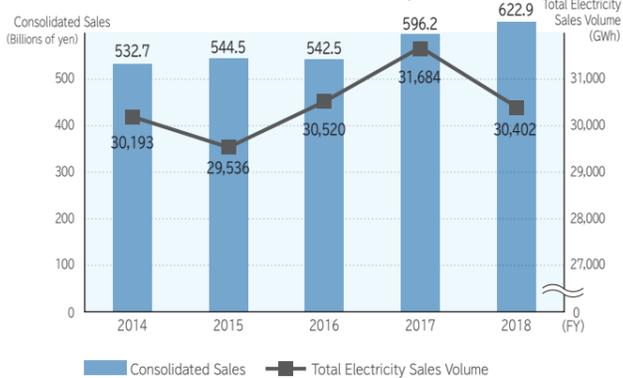
Consolidated Ordinary Income



Consolidated Equity Ratio



Consolidated Sales and Total Electricity Sales



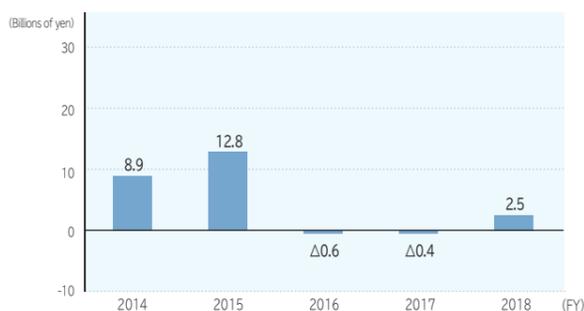
Consolidated Return on Equity (ROE)



Consolidated Return on Assets (ROA)

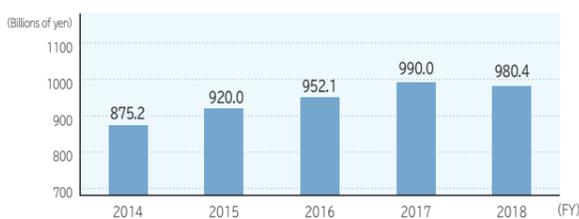


Consolidated Net Income (Loss)



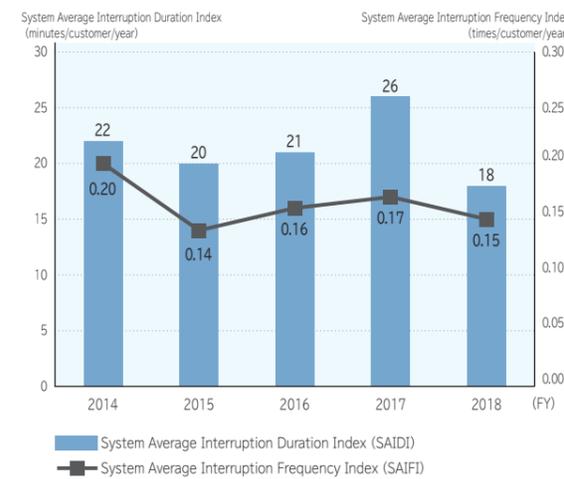
Note: Net income (loss) attributable to owners of parent is shown

Consolidated Outstanding Interest-bearing Debt

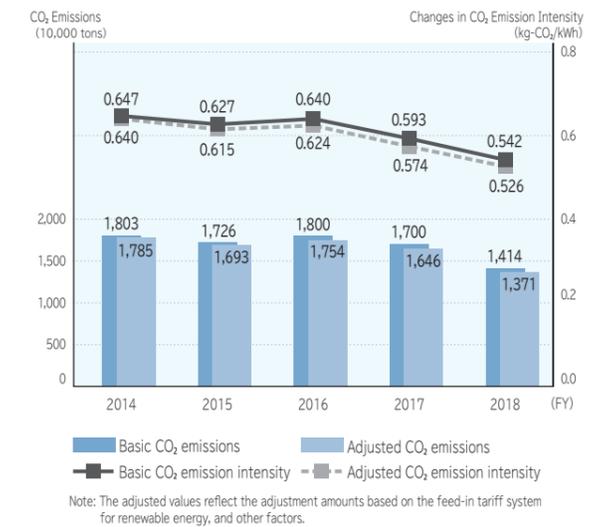


Non-financial Information

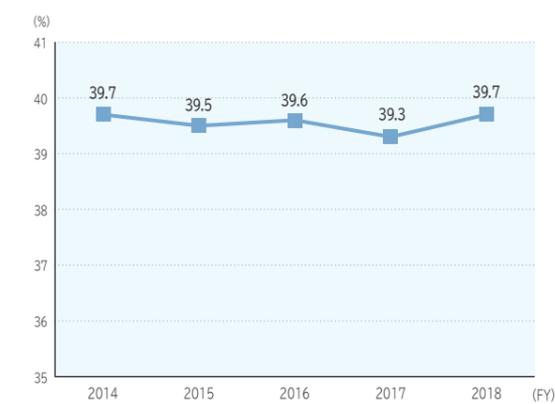
System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI)



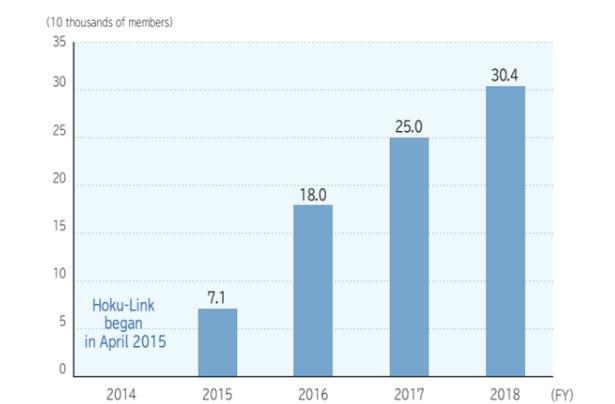
Changes in CO₂ Emission Intensity/CO₂ Emissions



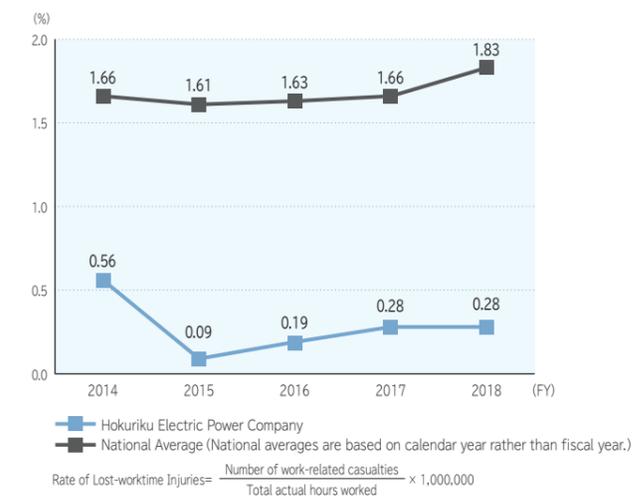
Thermal Efficiency of Thermal Power Stations (Higher Heating Value Basis)



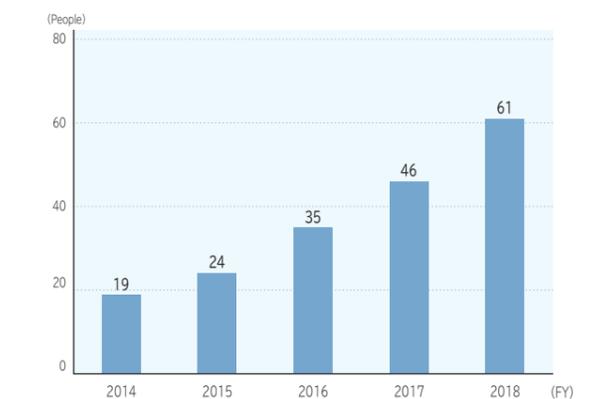
Hoku-Link Membership



Rate of Lost-worktime Injuries



Number of Female Managers

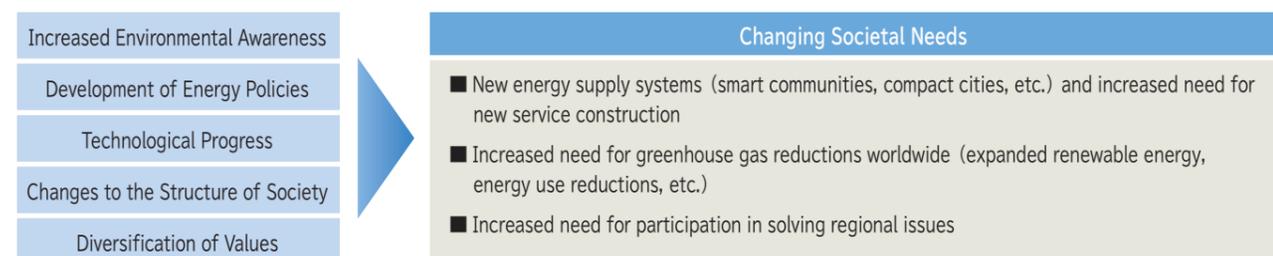


The Hokuriku Electric Power Group 2030 Long-Term Vision (Publicly announced in April 2019)

Today, Japan faces a declining population, and new technologies like the Internet of Things, AI, and electric vehicles continue to change the structures of industries; in the future, technological innovations may destroy existing business models while simultaneously creating new businesses, alongside other changes, such as increasing awareness of a sustainable society. The energy industry also faces various discontinuous changes, such as the full liberalization of the retail electricity market, causing competition to only become fiercer, and environmental regulations related to global climate change — and this trend is expected to accelerate in the future.

In order to turn these striking changes to our business environment into an ongoing opportunity for sustainable business growth, the Group must decide what to aim for in the future, and work to address various issues with a sense of urgency, in order to reform our business structure. To that end, we have established the Hokuriku Electric Power Group 2030 Long-term Vision, targeting the period from now through FY 2030, showing the Group's course of action toward reform.

Expectations for Our Future Business Environment and Societal Needs



The Group's Ideal State in the Future

Based on the Group's philosophy, "building an affluent, lively Hokuriku through power and intelligence," we have set an ideal state for the Group's future, taking into account our future business environment and changing societal needs.

Developing alongside the Hokuriku Region, Creating New Value Nationwide and Internationally

Basic Ideas

- Treat changes to our business environment as business opportunities, create new value, and aim for continuous Group growth.
- Using our home region of Hokuriku as a foundation, contribute to continuous development of the region and the enrichment of people's lifestyles.
- Go about our business with a focus on bringing about a sustainable society, with the goal of spreading our wings and flying high as a group in the future, by offering the new value we have created to markets outside Hokuriku.

Two Main Strategies toward Bringing About Our Ideal State

In addition to expanding the comprehensive energy business we have established, with the Hokuriku region as our foundation, we are also working based on our main strategy of cultivating new growth businesses.

In addition, as a socially responsible energy company, we engage in our work with deliberate consideration given to environmental, social, and governance topics.

The Two Main Strategies of the Hokuriku Electric Power Group



Main Strategy 1 Expanding Our Comprehensive Energy Business Based in Hokuriku

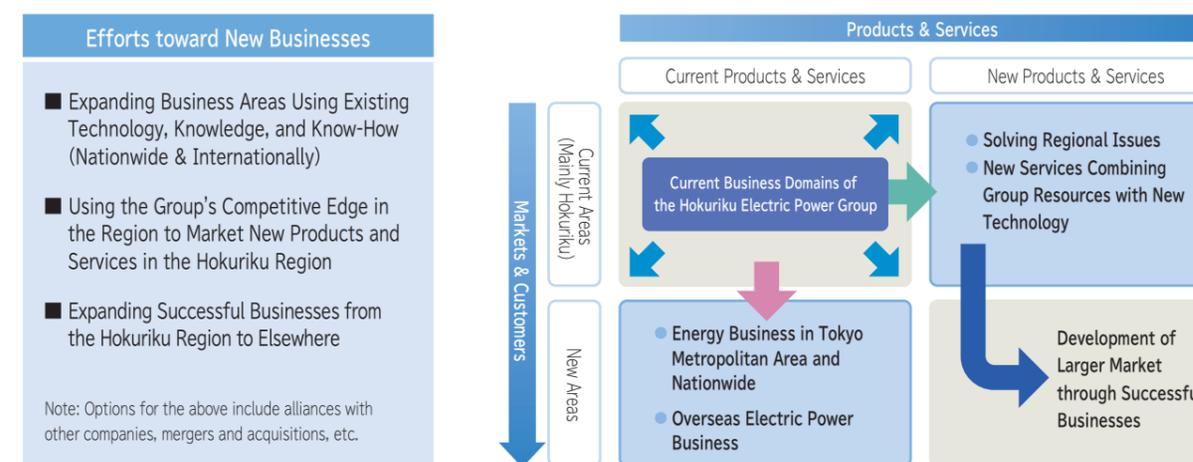
Looking forward to 2030, we strive to improve our competitiveness and expand our business domains, by restructuring our equipment to address changes to our business environment and working on stable operation, creating new value and providing new services, proactively expanding business areas, and more.

Category		Efforts toward 2030	
Power Generation	Nuclear power	<ul style="list-style-type: none"> ■ Safe and stable operation of Shika Nuclear Power Station 	Working toward Cost and Carbon Reductions
	Hydro power & renewables	<ul style="list-style-type: none"> ■ Increase in electricity generated by renewable energy sources 	
	Thermal power	<ul style="list-style-type: none"> ■ Restructuring equipment with an eye on economic performance and environmental affects 	
Sales		<ul style="list-style-type: none"> ■ Positive expansion of integrated energy services and added-value services 	Numerical Targets to Reach by FY 2030: <ul style="list-style-type: none"> ■ Amount of renewable energy power generation: up 2.0 billion kWh/year*1 (renewable energy ratio: 30%) ■ Coal consumption: 10% reduction/year*1 ■ Energy Conservation Act Environmental Index achievements: <ul style="list-style-type: none"> • Overall thermal power generation efficiency: 44.3% • Actual thermal power generation efficiency record/target value: 1.00
Transmission and Distribution		<ul style="list-style-type: none"> ■ Flexibly addressing the social environment and technical innovations <ul style="list-style-type: none"> • Maintaining electric power and service quality • Maintaining some of Japan's lowest-cost transmission charges 	Numerical Targets to Reach by FY 2030: <ul style="list-style-type: none"> ■ Electricity sales: 40.0 billion kWh/year ■ Sophisticated Method Act Environmental Index achievements: <ul style="list-style-type: none"> • Ratio of electricity sold produced from non-fossil sources: 44% ■ Greenhouse gas emission intensity: 0.37 kg-CO₂/kWh*2 ■ Total cumulative LNG contract quantity: 0.2 million tons
Group	Equipment Maintenance and Construction	<ul style="list-style-type: none"> ■ Expanding business areas and providing advanced added-value services 	
	Telecommunications	<ul style="list-style-type: none"> ■ Expanding business domains based on opportunities such as the increased sophistication of social infrastructure 	
	Services & Real Estate	<ul style="list-style-type: none"> ■ Contributing to the Hokuriku region through various fields, and expanding business domains 	

*1 Compared to FY 2018 *2 Target set by the Electric Power Council for a Low Carbon Society (comprising former general electric power suppliers, including the Hokuriku Electric Power Company, and certain new electric power suppliers)

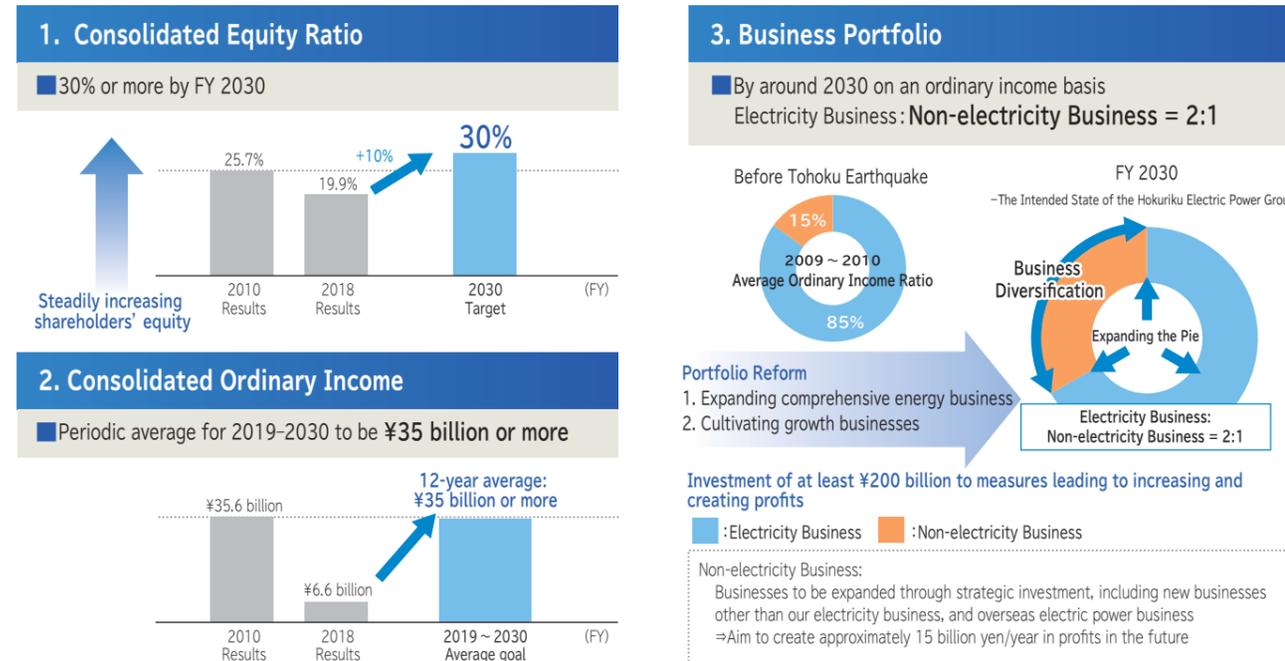
Main Strategy 2 Cultivating New Growth Businesses

Based on the outlook for future environmental changes, we shall make maximal use of the Group's operating resources to create new business domains, with the goal of solving future issues.



Financial Objectives

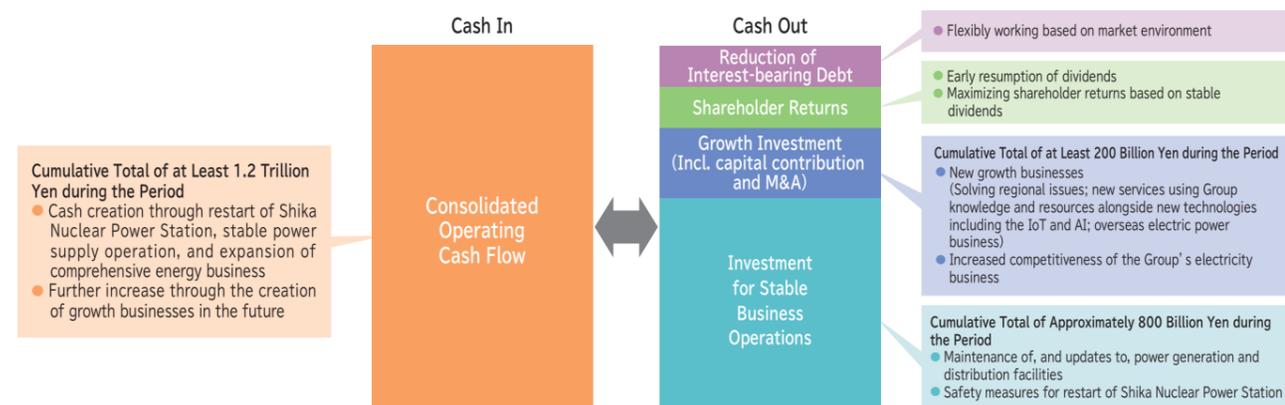
Through the early restart of Shika Nuclear Power Station, expanding our comprehensive energy business, and creating new businesses based on the needs of society, we aim to meet objectives for 1. consolidated equity ratio, 2. consolidated ordinary income, and 3. business portfolio.



Basic Way of Thinking for Investments

Accelerate investments necessary for sustainable growth, based on the premise of continuous investment in equipment necessary for stable supply.

Overview of Mid-to-long-term Cash Flow Distribution: Cumulative Totals for 2019-2030



Basic Ways of Thinking for Shareholder Returns

We work to provide stable power supply operation and increase our operational efficiency to improve our income and expenditures and our cash flow, with the goal of early resumption of dividends. At the same time, in the mid-to-long term, we aim to expand our comprehensive energy business and create growth businesses, thus ensuring financial health, and allowing us to maximize shareholder return based on stable dividends.

Promoting Increased Productivity Groupwide

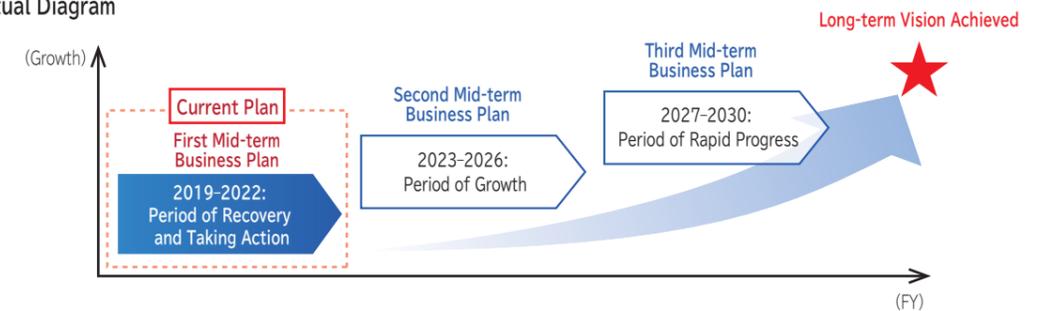
We continuously work to improve productivity and to increase the comprehensive strength of the Group as a whole, with the goal of strategically reassigning at least 10% of our total staff to engage in growth businesses by FY 2030.

Hokuriku Electric Power Group First Mid-term Business Plan (FY 2019-2022)

Positioning of Our First Mid-term Business Plan

We have established our First Mid-term Business Plan (FY 2019-2022) as a concrete implementation plan serving as a step toward achieving the Hokuriku Electric Power Group 2030 Long-term Vision. This is the most important period for making our future ideal state a reality, and we have positioned it as a period of recovery and taking action. Based on the four pillars of our business policy, the Group will come together and work steadily to address the various issues confronting us, while working ambitiously in new business domains, in order to build a foundation for future growth.

Conceptual Diagram



Business Policy

Plan Period: FY 2019 to FY 2022 (Four years)

Business Policy

1. Ensuring a Stable Supply of Electricity ▶ P13~17, 21~24

- (1) Persistent efforts toward early restart and safe and stable operation of Shika Nuclear Power Station
- (2) Stable ensuring of availability
- (3) Ensuring electric supply reliability from our transmission and distribution facilities

2. Enhancing the Competitiveness of Our Comprehensive Energy Business ▶ P13~16, 18, 25~27

- (1) Persistent efforts toward early restart and safe and stable operation of Shika Nuclear Power Station
- (2) Building a competitive electric power generation mix that is both low-carbon and economical
- (3) Further strengthening our sales activities in order to be chosen by customers
- (4) Strengthening our financial base, on the precondition that safety is of the highest priority
- (5) Strategically addressing Japan's energy and environmental policies

3. Expanding Business Domains through the Combined Strength of the Group ▶ P28~29

- (1) Expanding existing business domains
- (2) Taking on the challenges of new business domains

4. Deepening Our Corporate Culture ▶ P43~55

- (1) Efforts to earn the trust of the local society
- (2) Deepening our culture of safety and improving the quality of operations and services
- (3) Creation of workplaces full of vitality, where individuals and organizations can reach their maximum potential



Working toward an Early Restart of Shika Nuclear Power Station and the Establishment of an Optimal Generation Mix

Nuclear power generation is an important base load generation resource from the perspective of “S+3Es.” In addition, from the perspective of improving the company’s financial balance, the early restart of Shika Nuclear Power Station is critical. Certain points have been clarified by the review of the faults at the site that is currently underway, and between that and our substantial past survey data, we can provide helpful explanations that will earn the understanding of the Nuclear Regulation Authority. We will continue to take appropriate actions in relation to the reviews on conformity to the regulatory requirements, as well as steadily implementing safety measures, with the goal of an early restart of Shika Nuclear Power Station.

Furthermore, in order to ensure stable supply, we strive to maintain stable operation of the LNG-fired Unit 1 of Toyama Shinko Thermal Power Station, our first LNG-fired power generation facility, which commenced commercial operation last November, as well as making other steady efforts, including efforts to ensure proper maintenance and management of our thermal power stations with continued high utilization rates, and efforts toward a return to the rated output of Nanao Ohta Thermal Power Station Unit 2, which experienced an unscheduled shutdown.

In addition, we are working to develop a competitive electric power generation mix that is both lower-carbon and economical, through efforts to further increase our hydroelectric power generation output, as well as efforts to expand the use of renewable energy sources like biomass.

Evaluation of Activity of Faults at the Site (Review Meeting on June 14, 2019)

At the June 14, 2019 review meeting, we provided an explanation of the current status of and future plans for the survey and study that we are proceeding with regarding three areas: the site’s land area, the site’s coastal area, and the area around the site. At the review meeting, there were comments on our survey plans, such as points to bear in mind regarding data acquisition, and we plan to take these into consideration in continuing surveys and studies.

Current Status of, and Future Plans for, Surveys and Studies

Survey Area	Objective	Survey Details	Survey Scope	Date of Explanation (Planned)
Land Area at the Site	To expand data (Evaluation by Mineral Veins, Overlying Strata Analysis Method*) regarding evaluation of activity of the six evaluation target faults	<ul style="list-style-type: none"> ○ Expansion of data on mineral veins (Exploratory drilling: 60 cores (10 cores × 6 faults), drill core observation) <ul style="list-style-type: none"> ● Each of the six evaluation target faults is currently undergoing exploratory drilling, drill core observation, etc. ○ Reinforcement of the Overlying Strata Analysis Method (Exploratory drilling: 15 cores, drill core observation) <ul style="list-style-type: none"> ● In relation to the evaluation of the activity of faults S-2/S-6 and S-4, exploratory drilling and drill core observation are ongoing, to reinforce the inference that the faults identified through the trenching survey to be used for the evaluation are S-2/S-6 and S-4. 		September 2019
Coastal Area at the Site	To grasp the fracture zone distribution condition on the surface where the intake tunnel, which is an important facility, is located, in order to select the evaluation target fault(s)	<ul style="list-style-type: none"> ○ Examination of fracture zones on the intake tunnel installation surface (Exploratory drilling: 20 cores from the transportation road, 5 cores from the coastal area, drill core observation) <ul style="list-style-type: none"> ● Exploratory drilling is ongoing to examine the existence or non-existence of fracture zones, in addition to the one identified on the intake tunnel installation surface in the existing survey data. ● Exploratory drilling is ongoing to examine whether faults K-1, K-2, K-4, and K-5, which are located above the intake tunnel, extend continuously to deep levels of the intake tunnel. 		November 2019
Area around the Site	To obtain evaluation data regarding crustal deformation in the western coastal area of the Noto Peninsula, in order to discuss seismic uplift at the site	<ul style="list-style-type: none"> ○ Identification of geological structure (Gravity survey and analysis: 556 points) <ul style="list-style-type: none"> ● A geological structure survey has been conducted for the western coastal area of the Noto Peninsula, which includes the Fukura Fault, the Kabuto-iwa Oki Fault, the Goban-jima Oki Fault, and the Togi-gawa Nangan Fault. ● Analysis of the obtained data is ongoing. ○ Expansion of data for the area around the Togigawanangan Fault (Exploratory drilling: 9 cores, drill core observation, reflection survey: approx. 7 km) <ul style="list-style-type: none"> ● Surveys have been conducted to examine the relationship between the terrace surface to be used for the evaluation of activity of the Togi-gawa Nangan Fault, and the location and dip of the fault. ● Analysis of the obtained data is ongoing. 		January 2020

*Evaluation by Mineral Veins: Activity of a fault is evaluated based on the presence of discontinuity of mineral veins crossing the fault. Overlying Strata Analysis Method: Activity of a fault is evaluated based on the displacement and deformation of the strata covering the fault.

Efforts toward Early Restart of Shika Nuclear Power Station

After we filed our application for the review on conformity to the new regulatory requirements regarding Shika Unit 2 with the national government in August 2014, review by the national government has been under way, concerning the faults at the site of Shika Nuclear Power Station. Since last autumn, in order to improve the quality of how we handle reviews, including supplementing the data and other materials to be submitted for the review process, we have not only reinforced the staff at the department in charge, whose tasks include conducting surveys, preparing materials, and checking the data, but also strengthened the check system in place involving our legal and public affairs departments.

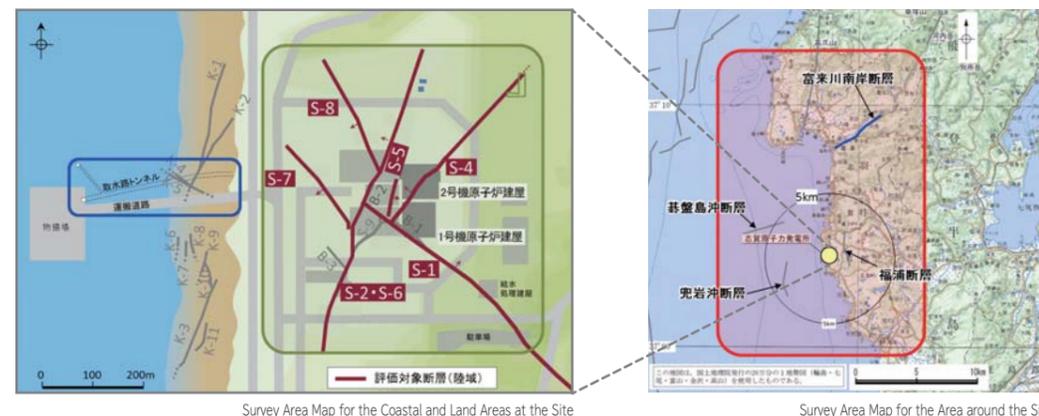
In January 2019, it was decided that we should select six faults in the land area for further review of evaluation of their activity. In June, we provided an explanation of the current status of and future plans for the survey and study that we are proceeding with regarding three areas: the site’s land area, the site’s coastal area, and the area around the site.

We will continue to take appropriate actions in relation to the reviews on conformity to the regulatory requirements, as well as steadily implementing safety measures, with the goal of the restart of Shika Unit 2 as soon as possible.

Appropriate Action for the Early Settlement of the Issue Concerning the Faults at the Shika Nuclear Power Station Site

Progress of Review Meetings to Date

From 2014 Review at Expert Meeting	August 12, 2014 Application for confirmation of conformity to the new regulatory requirements
From 2016 Review on Conformity to the New Regulatory Requirements	<p>April 27, 2016 The final report was submitted by the Expert Meeting to the Nuclear Regulation Authority (Concluding that activity cannot be denied, with the presentation of future challenges* for more reliable evaluation) *Hokuriku Electric Power Company has already supplemented the data to satisfy the future challenges by conducting additional surveys and other work.</p> <p>Review Meetings Concerning the Faults at the Site</p> <ul style="list-style-type: none"> ● As of July 2019, nine review meetings have been held concerning the faults at the site. ● Hokuriku Electric Power Company provided explanations of the sampling of faults at the site and selection of evaluation target faults, the evaluation of the activity of the selected five faults, and the landform and geological features of the area around the site. ● Review continues, following the comments given by the Nuclear Regulation Authority.



Land Area at the Site

Exploratory drilling for purposes including mineral vein data collection



Coastal Area at the Site

Exploratory drilling from the transportation road to examine the fracture zones on the intake tunnel installation surface



Area around the Site

Reflection survey for the Togigawanangan Fault (survey conducted last fiscal year, and currently under analysis)



Area around the Site

Seafloor gravity survey for the identification of geological structure in the western coastal area of the Noto Peninsula (survey conducted last fiscal year, and currently under analysis)



Steady Implementation of Safety Measures

In order to further improve the safety of Shika Nuclear Power Station, we continue to work on various measures, including independent safety measures, taking account of the review statuses and results for other companies and other factors. We steadily continue to implement the safety improvement works, and take appropriate actions in relation to future reviews on conformity to the regulatory requirements, with the goal of an early restart of Shika Nuclear Power Station.

Site Renovations for Transportable Equipment Storage Area

The storage area has been improved in order to provide a place where transportable equipment, such as fire trucks, can be safely stored without being affected by natural disasters like earthquakes and tsunamis, by aircraft crashes (terrorist attacks), or other potential issues.



Installation of Backup Equipment for Residual Heat Removal

New equipment will be installed to prevent the reactor containment vessel from being damaged even under conditions where the existing residual heat removal pump cannot be used.

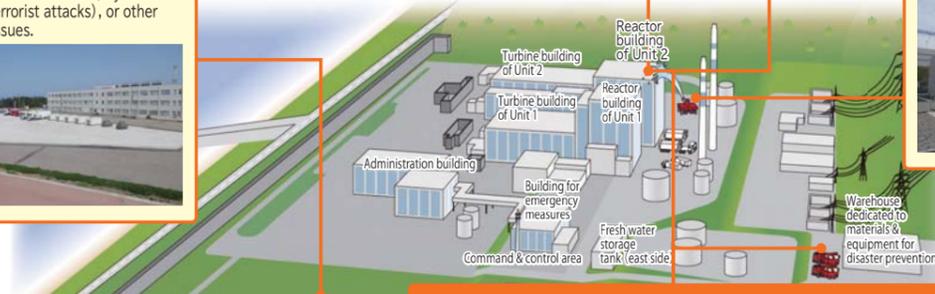
Installation of Backup Equipment for High Pressure Water Injection

New equipment will be installed to enable water injection into the reactor, using a pump driven by steam from the reactor, even in the event of a station blackout.

Installation of Permanent Backup AC Power-Supply Facilities

As precautions for loss of on-premises power supply due to both loss of offsite power and emergency diesel generator failure, permanent backup AC power-supply facilities have been installed to prevent serious damage to reactor cores, etc.





Labels on map: Turbine building of Unit 2, Turbine building of Unit 1, Reactor building of Unit 2, Reactor building of Unit 1, Administration building, Building for emergency measures, Fresh water storage tank (east side), Warehouse dedicated to materials & equipment for disaster prevention, Command & control area.

Installation of Permanent Backup Low-Pressure Pumps, etc.

Installed for both the reactor and primary containment vessel (2 permanent backup low-pressure pumps and 8 transportable backup low-pressure pumps (fire trucks) have been added, to supply water to both the containment spray system and the bottom of the containment vessel).




Fundamental Efforts for the Safe and Stable Operation of Shika Nuclear Power Station

Nuclear Disaster Prevention Training

On November 11, 2018, Ishikawa prefecture, Shika-machi, and other organizations conducted a nuclear disaster prevention training program, including evacuation training for local residents. Our company took part in this training to confirm the division of roles and coordination with the government and the local public authorities, and carried out various skill improvement drills for responding to disasters.

In addition, as part of our efforts to improve safety at Shika Nuclear Power Station and to prepare for unexpected situations including natural disasters such as earthquakes or tsunamis, we continuously conduct training to maintain and improve our ability to respond quickly and accurately, as well as working to reinforce various pieces of equipment, based on our belief that ultimately, it is people who assume the prime responsibility for operating devices and equipment.

● Training Track Record

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	Total
No. of Sessions	259	487	488	467	398	381	399	384	3,263



Operational Training at the Headquarters of Shika Nuclear Power Station (Emergency Response Room)

Notifications when an emergency situation occurs, situation reports of accidents, and confirmations of response measures



Power Supply Training with High-Voltage Power Supply Vehicles

Training in supplying electricity to the emergency response facility, using high-voltage power supply vehicles

Mutual Cooperation for Improved Nuclear Safety

Since August 5, 2016, five electric power companies (Kansai, Chugoku, Shikoku, Kyushu, and Hokuriku) have been mutually cooperating to further strengthen their measures to prevent harm from spreading in the event of a nuclear hazard, as well as to further improve the restoration measures.

Since March 7, 2017, the Tokyo, Chubu, and Hokuriku electric power companies, all of which currently operate boiling water reactors (BWR) — specifically, advanced boiling water reactors (ABWR) — have been cooperating technologically, taking advantage of the fact that all three companies operate the same type of reactors, with the aim of improving operator skills, sharing related knowledge, etc. The three companies also have been mutually cooperating for improved safety, taking advantage of their geographical proximity.

Nuclear Safety Reliability Conference

We have formed the Nuclear Safety Reliability Conference (Chairman: Hiroto Ishida, Chairman of the Public University Corporation, Komatsu University), an organization designed to gather multilateral opinions and comments from external knowledgeable persons on the overall measures related primarily to the operation and management of Shika Nuclear Power Station.

At the sixteenth meeting, held in May of 2019, we explained about the present state of Shika Nuclear Power Station, and hosted a lecture by Akiko Nakamura, a lawyer and a member of the conference, about efforts toward the creation of a safety culture. We also engaged in an exchange of opinions.

We plan to hold these meetings regularly, to consistently hear views and opinions to further improve safety.



16th meeting of the Nuclear Safety Reliability Conference

Measures to Increase Understanding of the Safety of Shika Nuclear Power Station

We work on company-wide efforts, using every opportunity to carefully and thoroughly inform the people in our local communities about the safety of Shika Nuclear Power Station in an easy-to-understand manner, in order to gain their understanding and provide a sense of relief.

FY2018 Results:

- Plant tours of Shika Nuclear Power Station (tours organized for applications and for various organizations): 281
- Briefing sessions for residents' associations, women's groups, labor organizations, etc.: 608
- Visits paid for dialogue activities (local governments, economic organizations, etc.): About 1,100 people in total



On-site Tour

Risk Management for Continued Safety Improvements at Shika Nuclear Power Station

Promotion of Risk Management is Included in Our Quality Policy for Improved Nuclear Safety

Based on the Safety Regulations for Nuclear Facilities, our president has established our Quality Policy for Improved Nuclear Safety. To achieve our aim of having our employees perform their duties with consistent awareness of the existence of risks, the Quality Policy explicitly states ways to strengthen risk management, such as "Understand safety risks and always try to reduce them."

Development of a Structure Based on the Quality Management System

In order to identify risks and continuously discuss and implement measures for improvements, we set up a risk management council in April of 2015, and established a risk management system.

Study of Measures for Improved Safety Using Probabilistic Risk Assessment (PRA)*1

In order to continuously study and implement effective measures, we proactively use PRA, as well as training employees to work on PRA.

● Continuous Improvement of Safety (Conceptual diagram)



*Reports and instructions are performed based on the management review (review by the president) in the quality management system.

Glossary

*1 Probabilistic risk assessment (PRA): A method of indicating the degree of safety, with regard to all possible accidents that can occur in nuclear power plants or other facilities, by degree of risk, which is determined through quantitative evaluation of the probability of occurrence of a given accident, and the significance of the potential damage caused by the accident.

Efforts to Ensure Stable Supply

Stable, Economical Procurement of Fuel

Fuel is an indispensable part of supplying power, and we focus on fuel procurement that is not only stable but also economical. For example, we intend to increase procurement of coal from relatively nearby sources in order to reduce marine transportation costs.

In addition, we are working on optimizing our contracts and operations, in order to deal with the changes in needs due to unscheduled shutdowns of thermal power stations, increased use of renewable energy sources, etc.

Measures to Ensure Supply Capability

Measures to Ensure the Supply Capability of Thermal Power Stations

The operation of Shika Nuclear Power Station has been suspended for a prolonged period, compelling us to operate our thermal power stations at high utilization rates. In order to ensure our supply capability under these circumstances, we take every possible measure to inspect the facilities, including petitioning the national government for deferred regular inspection periods, shortening the inspection periods, and conducting short mid-term inspections, as well as avoiding the peak periods of demand in summer and winter as much as possible for inspection dates.

Stable Operation of the LNG-fired Unit 1 of Toyama Shinko Thermal Power Station

On November 21, 2018, we began operation of our first LNG-fired power station, the LNG-fired Unit 1 of Toyama-Shinko Thermal Power Station. We shall continue to strive toward stable operation, alongside ensuring stable supply through further diversification of generation resources, and contribute to the realization of a low-carbon society through further reductions to our CO₂ emissions.

Capacity	Power Generation Method	Gross Thermal Efficiency	CO ₂ Reductions
424.7 MW	Combined-cycle power generation	Over 59% (lower heating value basis)	Approx. 1.2 million t-CO ₂ /year (following decommissioning of the Coal-Fired Unit 1 of Toyama Shinko Thermal Power Station)

Addressing Turbine Damage to Nanao Ohta Thermal Power Station Unit 2

Due to steam turbine damage, Nanao Ohta Thermal Power Station Unit 2 (rated capacity: 700 MW) was shut down in September 2018, then resumed operation in February 2019 with a maximum capacity of 650 MW. However, since July 9, 2019, the unit has been shut down for inspection following turbine blade damage (as of August 1).

Alongside work toward an early restart, work continues on procurement and production of main turbine parts, with the goal of restoration to full rated capacity in July 2020.

Measures to Ensure the Supply Capability of Hydroelectric Power Stations

In order to ensure the stable operation of hydroelectric power generation for the future, we systematically perform overhauls due to gradual wear and tear on hydraulic turbine generators, and replacements of consumables.

In addition, we continue implementing both "hard" and "soft" preventative maintenance to address risks related to natural disasters, which have been increasing in recent years.

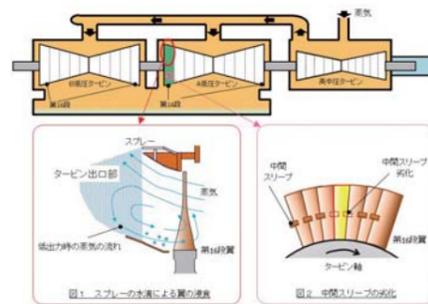
"Hard" Measures	"Soft" Measures
<ul style="list-style-type: none"> Implementation of equipment control (stopping water intake, controlling outflow, etc.) Reliability improvements to equipment and the ground (such as repair and reinforcement work), etc. 	<ul style="list-style-type: none"> Improvements to patrol inspections, and increased sophistication of measurement monitoring and abnormality notifications Risk communication with the community, sharing information with local governments, etc.



Regular inspection of a thermal power station



2018: LNG-fired Unit 1 of Toyama Shinko Thermal Power Station commenced commercial operation



The Cause of the September 2018 Shutdown



Overhaul of Hydraulic Turbine at Arimine No. 1 Power Station

Building a Competitive Electric Power Configuration That Is Low-Carbon and Economical

Wider Use of Renewable Energy

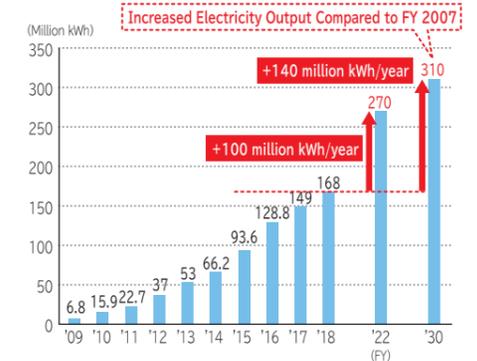
We are aiming to increase our renewable energy production by 2.0 billion kWh/year (compared to FY 2018) by FY 2030, and to that end we are promoting measures such as increasing our hydroelectric power generation and increasing biomass co-combustion ratios at coal-fired power stations.

Increased Hydroelectric Power Generation Targets

In order to further reduce carbon emissions from our power generation, we are working on expanding our hydroelectric power generation through the development of new hydroelectric power stations, the renovation of existing facilities, and more.

In establishing the long-term vision, existing targets were reviewed and challenging targets were reset.
 Existing Targets: Compared to FY 2007...
 • FY 2020: Increase by 180 million kWh/year
 • FY 2025: Increase by 270 million kWh/year

Target year	Target for increased power generation (compared with FY2018)
[By FY2022] By FY2030	[Increase by 100 million kWh/year] Increase by 140 million kWh/year



Outline of Shin-Himekawa No. 6 Power Station

Kurobegawa Denryoku, one of the companies in the Hokuriku Electric Power Group, is constructing Shin-Himekawa No. 6 Power Station, a new hydroelectric power station, in Itoigawa City, Niigata, for operation commencing in FY2022.

Output	Electricity generated	Scheduled start of operation	CO ₂ reductions
28,000kW	Approx. 88.4 million kWh / year	April 2022	Approx. 44,000 t-CO ₂ /year*

* Estimated using the FY2017 national average (0.496 kg-CO₂/kWh) published by the Ministry of the Environment



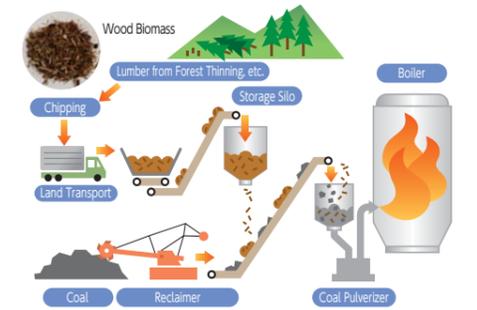
Shin-Himekawa No. 6 Power Station (Rendering)

Increasing Biomass Co-combustion Ratios at Coal-fired Power Stations

We intend to increase wood biomass power generation (increase of 1.5 billion kWh/year, compared to FY 2018, by 2030) by increasing the wood biomass co-combustion ratio at coal-fired power stations.

	FY 2018 Results	Goals to Achieve by FY 2030
Electricity Generated from Biomass	20 million kWh/year	1.5 billion kWh/year
CO ₂ Reductions	Approx. 17,000 t-CO ₂ /year*	Approx. 1 million t-CO ₂ /year*

* Estimated as a result of reductions in coal consumption to generate electricity equivalent to biomass power generated



Biomass Co-combustion Process at Coal-fired Power Stations

Efforts to Lengthen Intervals between and Shorten Periods of Thermal Power Station Regular Inspections

Following the April 2017 revision to the Electricity Business Act, the system for safety management inspections was changed, to allow power companies to extend the intervals between regular inspections to as much as six years by acquiring System S* certification. In FY 2018, we acquired System S certification at all five thermal power stations, and alongside maintaining our equipment security, we are also working to extend the regular inspection intervals. We are also exploring and considering the process of regular inspections from a variety of perspectives, with the aim of shortening their periods.

* A certification under the new safety management inspection system for thermal power stations certified to be equipped with high levels of security maintenance capability

Example Extension to Regular Inspection Intervals (Coal-fired thermal power station)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
(Before) 2-Year Intervals	Statutory Inspection		Statutory Inspection		Statutory Inspection		Statutory Inspection
System S Acquisition 6-Year Intervals	Statutory Inspection			Midterm Inspection			Statutory Inspection

The Need for Nuclear Power

In order to ensure a stable supply of electricity in the future, we consider nuclear power generation to be an essential power source, based on the major premise that safety should come first. The proper energy mix is important for Japan given the country's low energy self-sufficiency rate; additionally, from the perspectives of energy security, economics, and environmental suitability, nuclear power generation is required to continuously play an important role as a base load generation resource.

Energy Self-sufficiency Rate

Japan is poor in natural energy resources, with an energy self-sufficiency rate of only 8%, meaning that Japan relies on imports for almost all energy resources.

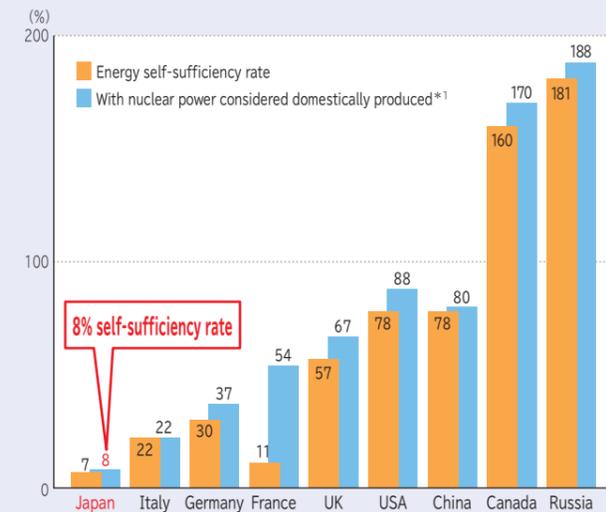
With the increasing global population, especially in emerging countries, energy demand is expected to rise significantly in the future, requiring energy composition that does not rely excessively on fossil fuels.

Changes in the Global Population



Source: UN, World Population Prospects: The 2019 Revision (Figures for 2020 and later are projections.)

Energy Self-sufficiency Rates of Major Countries (2016)



*1 Uranium is a nuclear fuel, which can be used for a long period after import and can be reprocessed and recycled, and is considered a quasi-domestic energy source.

Source: IEA World Energy Balances (2018 Edition)

Power Generation Cost by Sources

The cost of nuclear power generation measures up favorably to other power generation sources, even if additional costs such as accident risk costs are included.

Power Generation Cost by Sources (2014 Model Plants)



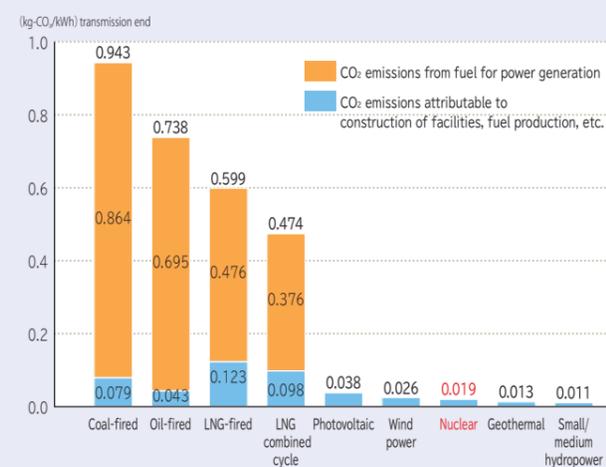
(Figures vary depending on preconditions and other factors.)

Source: Power Generation Cost Verification Working Group (May 2015)

CO₂ Emissions by Sources

Nuclear power does not emit CO₂ when generating electricity, akin to renewable energy sources like photovoltaic and wind power.

CO₂ Emissions per kWh by Sources



Source: Central Research Institute of Electric Power Industry Report (July 2016)

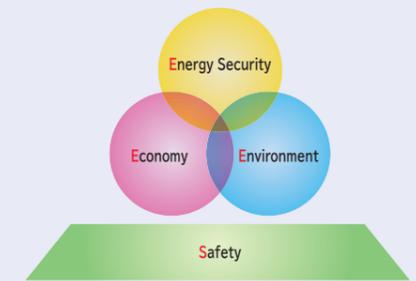
Energy Mix

Electric utilities have a social mission to ensure a stable supply of low-cost, high-quality electricity.

The proper energy mix is of importance for a supply of electricity that supports daily life and industry from the perspective of "S+3Es," to simultaneously achieve energy security, economy, and environmental suitability, while putting the highest priority on safety.

In addition, it is crucial to produce power based on a well-balanced combination of various generation resources that makes effective use of their respective characteristics, including economic efficiency, responsiveness to changes in electricity demand, etc., in order to satisfy ever-changing power demand.

The concept of energy mix (S+3Es)



The policy of Japan's energy mix for FY 2030 was revised in the Fifth Basic Energy Plan, which was approved by the Cabinet in July 2018. While the approximately 20-22% share of nuclear power set for 2030 was unchanged, a policy to proceed with efforts to make renewable energy serve as a main power source was indicated.

	Before Tohoku Earthquake (2010)	Current (2017)	FY2030
Renewable energy	Approx. 9%	Approx. 16%	Approx. 22-24%
Nuclear	Approx. 25%	Approx. 3%	Approx. 20-22%
Coal	Approx. 28%	Approx. 32%	Approx. 26%
LNG	Approx. 29%	Approx. 40%	Approx. 27%
Oil	Approx. 9%	Approx. 9%	Approx. 3%

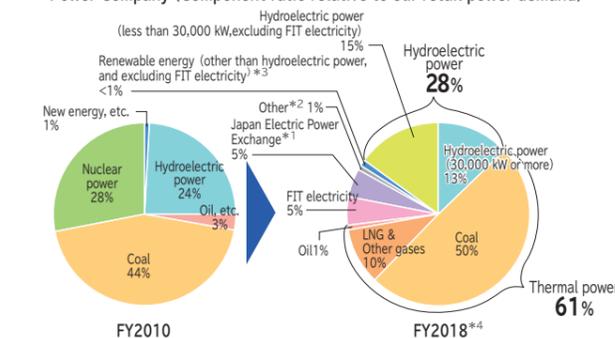
Source: Created based on the data presented at the 28th meeting of the Strategic Policy Committee of the Advisory Committee for Natural Resources and Energy (December 2018) of the Agency for Natural Resources and Energy

Hokuriku Electric Power Company's Generation Mix

Our generation mix is characterized by a higher ratio of hydroelectric power generation, capitalizing on the Hokuriku area's plentiful water resources; this ratio is 28%, the highest among former general electric power suppliers.

After the Great East Japan Earthquake, Shika Nuclear Power Station stopped operation; in its place, thermal power stations have been operating at high utilization rates since then. We steadily continue working toward restarting Shika Nuclear Power Station and the development of renewable energy sources in view of cost-effectiveness as ways to further diversify our generation resources.

Component Ratio of Electricity Generated by Hokuriku Electric Power Company (Component ratio relative to our retail power demand)



* Total figures may not exactly equal values obtained by adding up the individual figures, which are rounded off.

Note 1: "FIT electricity" refers to electricity produced by hydroelectric power, photovoltaics, wind power, etc., and procured under the Feed-in Tariff Program for renewable energy. Part of the cost that we incur to procure this electricity is covered by surcharges collected from all electricity users, including non-customers of our company. CO₂ emissions from this electricity are calculated based on national average CO₂ emissions from all types of electricity, including those from thermal power generation. The total value of FIT electricity in FY 2018 amounted to 5%.

Note 2: We offer some customers the option of 100% hydroelectric power; the percentage figures shown above were calculated based on the total amount of electric power sold (27,271 GWh), taking into account the amount of electricity sold through this option (14 GWh) (FY 2018).

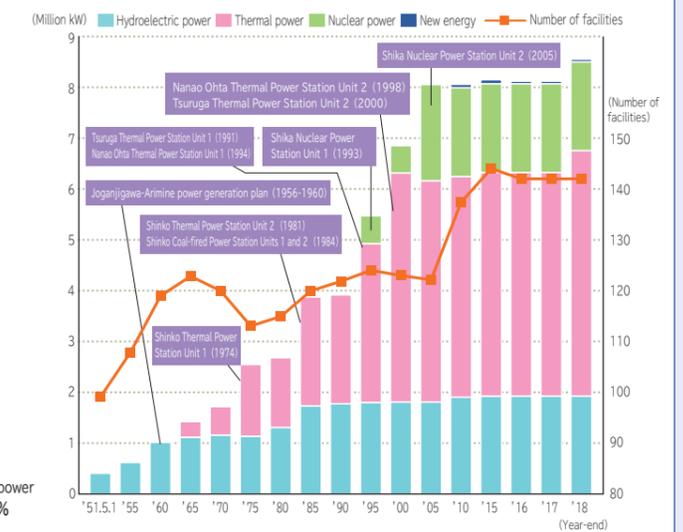
*1 This includes electricity obtained from hydroelectric power, thermal power, nuclear power, the FIT program, and renewable energy.

*2 Electricity procured from other electric utilities, and for which the generation resource is unknown, falls under "Other."

*3 "Renewable energy (other than hydroelectric power, and excluding FIT electricity)" refers to photovoltaics, wind power, and biomass (excluding FIT electricity).

*4 The component ratio in FY 2018 was calculated and published based on the Guidelines Concerning the Management of the Electricity Retail Business (December 2018) established by the Ministry of Economy, Trade and Industry.

Changes in Power Generation Facilities (Number of facilities and approved output capacity)



Working to Ensure Stable Supply as a Responsible Power Transmission and Distribution Company

In April of 2020, we will be splitting off our power transmission and distribution company, but we will continue as always to achieve our mission of providing a stable supply of electric power, through planned replacements of power transmission and distribution equipment, appropriate power supply and demand control, and other efforts.

In recent years, large-scale power outages have become more common due to natural disasters; alongside steady efforts to restore power to customers faster, we also continue to make use of new technologies, such as AI and the Internet of Things, to help make our work more efficient. In addition, we remain committed to fairness, neutrality, and transparency, as we work to continue to earn all customers' trust.

We look forward to continuing to provide a steady supply of electric power as always, while also using the technology and know-how that we have developed over the years in power transmission and distribution to contribute to the further development of the Hokuriku region.



Research toward the Development of Robots for Works on Power Distribution Facilities

We are developing assist arms (robots for works on power distribution facilities) to assist workers, through joint research with universities and manufacturers. We aim to automate distribution equipment works in the future, for improved work efficiency, labor savings, and easing workers' workloads, and to secure workers through improvements to the image of such works.

Conventional Method



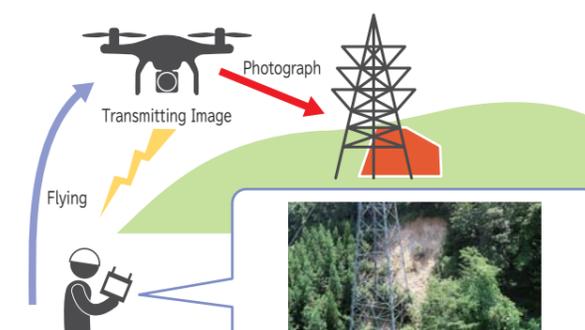
After Introducing Robots



Patrolling Power Transmission and Distribution Equipment with Drones

We are conducting examinations of using drones to do checks of transmission towers and other equipment in mountainous regions that are difficult for people to move through, in order to discover irregularities and issues at early stages.

In the future, we hope to fully automate the patrol work currently done by people, for further labor savings that will reduce the amount of work necessary.

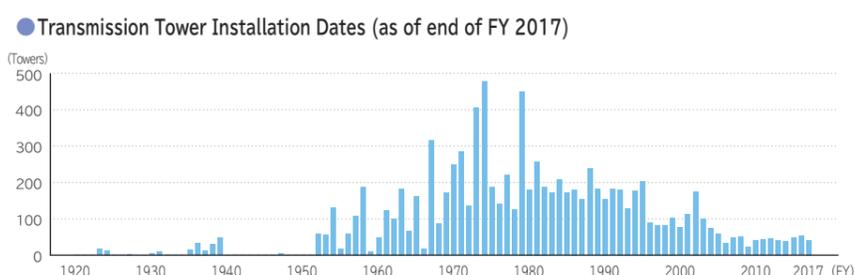


Getting an Understanding of the State of Equipment from the Foothills

Efforts toward Maintaining the Functions of Power Transmission and Distribution Equipment for Stable Supply

Implementation of Measures for Maintaining Electric Supply Reliability and Functions of Power Transmission and Distribution Equipment

We properly conduct maintenance, management, and operation work on our power transmission and distribution equipment. Additionally, because replacement work for the facilities and equipment installed in the high-growth period of the Japanese economy will eventually reach a peak, we work to even out our long-term replacement plans, secure our work execution capability, and streamline our processes, for maintenance of equipment functions.



Efforts by the E League Hokuriku, a Group of Power Transmission and Distribution Equipment Works Companies

In July of 2015, we established a corporate group called E League Hokuriku with companies that carry out transmission and distribution equipment works for our company, and efforts continue to secure and develop human resources for transmission and distribution equipment works, as well as to improve the public image of the industry.

Main Approaches

- We produced a brochure, video, and other materials to promote the transmission and distribution equipment works industry, targeting job-seeking students, their parents, and career advisers at schools. These publicity materials provide information on the sense of mission to contribute to society, the worthwhileness of personal growth as expert technicians, and the stability of the work, and are used for recruiting activities, internship orientation, opinion exchanges with high school students, and other opportunities.
- In March of 2018, we established the So-High (E League Hokuriku) website for further awareness-building and improvements to our public image.



Left: Poster, Right: Brochure



"So-High" Special Website

Streamlining of Equipment Maintenance and Management Work (Inspection Record Photography Work)

We have developed a power line inspection application that uses augmented reality (AR) technology to replace the chalkboards, rulers, and cameras conventionally used for inspection record photography with AR markers and smartphones. As a result, we have improved worker safety and streamlined the work involved, including producing written reports.

Conventional Method



Conventional Photography Process

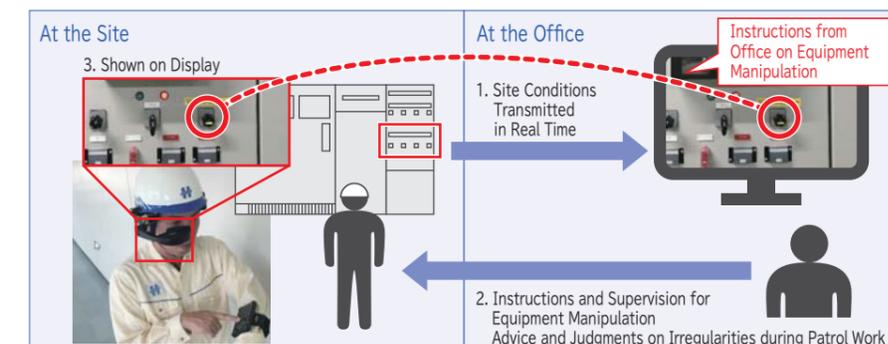
New App Method



Improved Photography Process (Image shown on smartphone screen)

Labor Savings for Substation Control and Patrol Work through Use of Wearable Devices

By introducing wearable devices, we have enabled real-time transmission of information about the current state of a site to the office, allowing for the office to provide instructions and supervision for manipulation of equipment, as well as advice and judgments on irregularities during patrol work, resulting in a reduced need to dispatch people to sites.



Example of Remote Assistance with a Wearable Camera and Monitor

Efforts for Improving Disaster Response

Helping Other Electric Power Companies with Disaster Support (Hokkaido, Chubu, Kansai, Chugoku)

In FY 2018, we were the only electric power company in Japan to provide four other electric power companies with disaster support. When large-scale disasters like typhoons and earthquakes strike various parts of Japan, we rapidly dispatch high-voltage power generation vehicles, patrol personnel, and more to the electric power companies affected, with the goal of ending power outages as quickly as possible. We will continue to engage in joint training and other efforts with other companies, in order to provide even better disaster response in the future.

Disaster Support for Other Electric Power Companies during FY 2018

Chugoku Electric Power (Severe rain: July 2018)



Temporary electricity service with high-voltage power generation vehicles

Kansai Electric Power (Typhoon Jebi: September 2018)



Disposal of fallen trees, removal of damaged equipment, and utility pole construction

Chubu Electric Power (Typhoon Jebi: September 2018)



Disposal of fallen trees and removal of damaged equipment

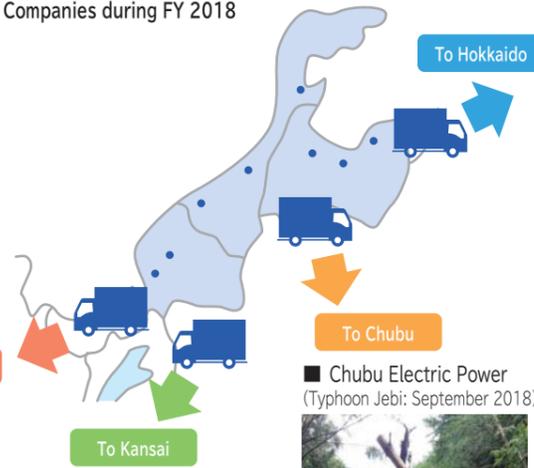
Hokkaido Electric Power (Hokkaido Eastern Iburi Earthquake: September 2018)



Travel by ferry (Niigata Port to Tomakomai East Port)



Discussions between support staff and Chubu Electric Power



Training for Large-Scale Disaster Response

In order to be able to smoothly perform every step from initial response to cooperation with the back-office operation team in the event of a large-scale disaster, we hold various types of training each year.



Joint training within the company based on a hypothetical large-scale disaster



Collaborative training with the Self-Defense Forces

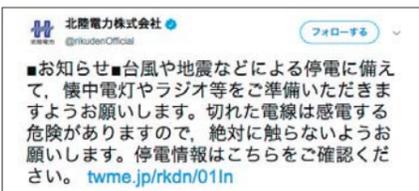
Improving Equipment for Disaster Response

We continue to work to improve our resilience through upgrading and supplementing equipment.

- Introduction of high-capacity power generation vehicles
- Increased number of high-voltage power generation vehicles

Sharing Information through Social Media and Other Means

We use our official Twitter and Facebook accounts to provide information about preparations for power outages and helpful notes about power outages, as well as using the power outage information pages on our official website to provide information about affected areas and expected end times for power outages.



Example post

Efforts to Reduce Procurement-Related Costs

Design Unification & Joint Procurement

In order to continue to maintain our transmission charges, which are some of Japan's lowest, we are working to reduce costs through design unification among general power transmission and distribution companies, and optimized procurement including joint procurement, in addition to existing efforts.

Existing Efforts

- Revising designs and methods of construction, diversifying procurement measures, increasing the ratio of competitive bids for order placement, etc.

New Efforts

Hypothetical Roadmap	2018	2019	2020	2021	2022
Design Unification (Technical-related Departments)	Overhead Power Lines (ACSR/AC) Standardizing ACSR aluminum electrical wires to ACSR/AC Gas Circuit Breakers (66 kV/77 kV) Standardizing different companies' different designs for 66 kV and 77 kV GCBs Underground Cables (6 kV CVT) Standardizing different companies' different designs for 6 kV CVT cables		Overhead Power Lines (ACSR/AC)		
			Gas Circuit Breakers (66 kV/77 kV)		
			Underground Cables (6 kV CVT)		
Procurement Improvements (Purchasing-related Departments)		Overhead Power Lines (ACSR/AC) Gas Circuit Breakers (66 kV/77 kV) Underground Cables (6 kV CVT) Consideration and implementation of joint procurement, bulk orders, collection of proposals for cost-cutting measures, etc.	Streamlining by Repeating the PDCA Cycle		
			PDCA	PDCA	

Corporate Logo, Wordmark, and Corporate Message for the Hokuriku Electric Power Transmission & Distribution Company

The corporate logo, wordmark, and corporate message for the Hokuriku Electric Power Transmission & Distribution Company, the general power transmission and distribution company that will succeed the Hokuriku Electric Power Company in April of 2020, have been decided.

The corporate logo, wordmark, and corporate message were developed based on the results of workshops and questionnaires targeting employees involved in power transmission and distribution operations, in order to reflect their hopes for the new company.

- The corporate logo features an "H" motif, representing the company's roots in the Hokuriku region, with blue serving as the corporate color of the Hokuriku Electric Power Company and indicating its identity as a Group company, while the red represents the company's passionate efforts into the future. The H is made up of connecting stars, which serve as a symbol of each and every individual shining brightly, together.
- The corporate message represents the company's resolution to open the way to the future, taking on challenges for the benefit of Hokuriku, in order to continue bringing the blessings of electric power to every corner of the region, bearing in mind our mission of protecting the lifelines that support society and people's lives, and providing a stable supply of electricity.

Corporate Logo and Wordmark

Corporate Message



未来へ、めぐらせる。

Usage Examples (Company vehicle, signage)



Responding to Customer Needs by Offering Diverse Services

Since the full liberalization of the electricity market, competition has become fiercer than ever within the energy industry. Given these circumstances, we have worked as a group to understand users' diverse apparent needs and non-apparent needs, with the belief that offering new services is vital for being chosen by customers.

More specifically, we have proactively worked to strengthen ties with partner companies and Group companies, upgrade the Hoku-Link membership service, offer combined value sets with gas and telecommunications companies, and provide energy consultations and LNG sales, as well as building, owning, and maintaining service for equipment such as air conditioners, which help reduce customer costs. In addition, we have expanded our sales channels in the Tokyo metropolitan area, with the goal of further customer acquisition.

In addition, we expect that future energy business and lifestyles will also be significantly influenced by increased adoption of photovoltaic power, electric vehicles, and storage cells, as well as the progress of new technologies, such as the Internet of Things, and increased environmental awareness. We at the Group have engaged in developing energy management methods and are continuing to engage in buying electricity beyond the end of the FIT buyback period (post-FIT electricity); we remain committed to not only providing convenience and comfort to our customers, but also offering services that contribute to the region and surrounding environment.



Efforts to Be Chosen by Customers

Approaches in the Residential Sector

■ Upgrading the Hoku-Link Membership Service

Hoku-Link membership exceeded 300,000 users in February 2019 (currently about 314,000 as of the end of June, 2019), and is increasing steadily. The services provided include Hoku-Link Points, which can be redeemed for products, points, etc. at local businesses in the region; the "Go Out and Save Electricity" program, which is a demand response service and offers coupons for facilities (stores, restaurants, leisure facilities, etc.) operated by cooperating companies/organizations, that can be used when electric power demand increases in summer and winter to encourage users to go out and refrain from using electricity at home; and more. These services are used by many customers.

Since October, 2018, we have also offered other new services: Denki de Point Plus grants customers Hoku-Link Points based on their monthly electric power payments, while our new notification service for electricity usage amounts can help customers use electricity more efficiently.

We will continue striving to establish tie-ups with local businesses and offer even better services, based on our customers' needs.



■ Provision of Higher Value-Added Services through Tie-Ups with Partner Companies

Through tie-ups with other companies, including local gas companies, cable TV companies, telecommunication companies, and three major cellphone carriers, we work to offer appealing services by combining their strengths and brand value.

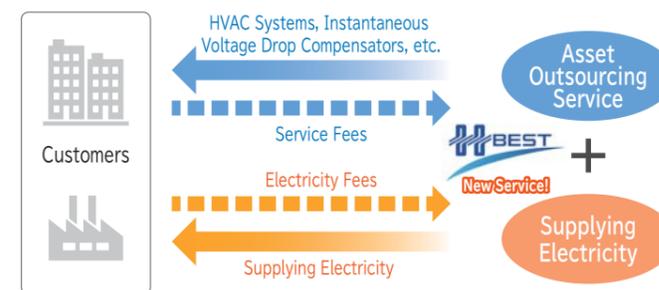
For the Corporate Sector

■ Improvements to Energy Solution Services

We aim to build more solid relationships with customers. We provide optimized energy-saving measures based on actual energy usage (not only electricity, but also gas and oil).

Our subsidiary company, Hokuriku Electric Power Biz Energy Solution Co., Ltd (Hokuden BEST, launched in March of 2017), mainly provides asset outsourcing services for energy-related facilities, such as HVAC systems and boilers. Last year, this company acquired contracts with two municipalities, Toyama City and Tsubata Town, for HVAC systems at about 100 elementary and junior high schools in these two municipalities. In addition, last year, to develop more attractive services, Hokuden BEST become a retail electricity provider. The specifics of what the company will offer are currently under consideration.

● Asset Outsourcing Services and Supplying Electricity

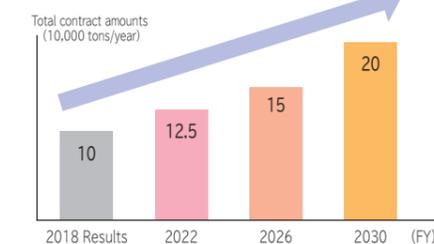


■ Expanding Sales of LNG

Since 2001, we have sold LNG through Hokuriku Lnes Co., Ltd, one of our subsidiary companies. In June of 2018, we began shipment of LNG via tanker trucks from Toyama-Shinko Thermal Power Station, the first LNG receiving terminal in the Hokuriku region, to our customers. As of March of 2019, we have established a total of 100,000 t worth of sales contracts.

We will continue to work to meet customers' needs, both from environmental and economical standpoints, in an effort to further increase sales.

● Sales Targets for LNG



Approaches Beyond the Hokuriku Area

■ Electricity Sales in the Tokyo Metropolitan Area

In order to broaden our sales channels, we have been cooperating with real estate companies, photovoltaic system retailers, and LED retailers. We also have package deals that include LP gas, internet access, etc. We aim to acquire more customers by improving our services.

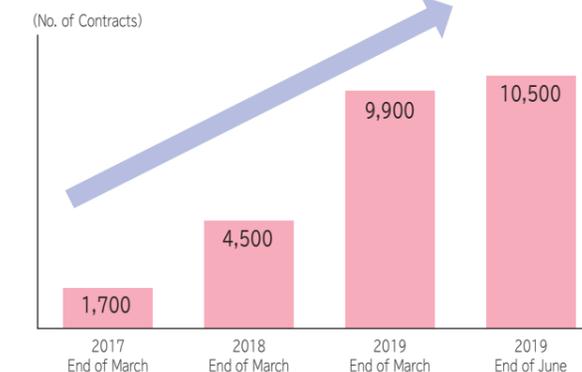
工場、事務所、マンション、病院などの電気契約のご担当者様へ
電気料金削減のご提案です。

北陸の電気を首都圏で。

北陸電力 3つのポイント

- 安心と信頼の実績!
- お手続きはとっても簡単!
- 切り替えると断然お得!

● Cumulative Contracts in the Tokyo Metropolitan Area (Residential Lighting and Low-voltage Power)



Efforts toward Realizing Regional Energy Management

Developing Energy Management Methods

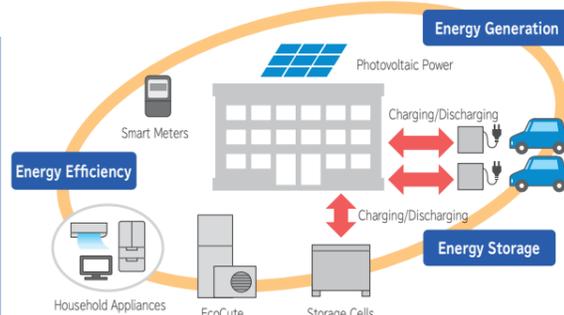
With the adoption of photovoltaic power, electric vehicles, and storage cells, as well as the progress of the Internet of Things, we can connect various types of items to the internet, which we expect to lead to expanded remote supervision and control in the future.

At the Hokuriku Electric Power Company, we engage in developing energy management methods with the goal of allowing customers to use electricity optimally without having to think about it. We also collaborate with other companies to engage in virtual power plant (VPP) construction verification projects, subsidized by the Ministry of Economy, Trade, and Industry. We plan to apply the knowledge and know-how we have acquired through these projects to future services, as well as proactive efforts toward realizing and developing future regional energy management solutions.

Details of Our Energy Management Verification Tests

(Starting in January of 2019)

- Household Energy Optimization (Remote control of each resource)
- Addressing Power Outages due to Disasters, etc. (Power feeding from each resource)
- Consideration of Measures to Deal with Introduction of Electric Vehicles (Minimization of contract demand rise as a result of introduction)



Schematic Illustration of Energy Management

Participation in the Kansai VPP Project

(May 30, 2019 through February 16, 2020)

The Hokuriku Electric Power Company participates in the consortium for VPP construction verification projects*1 managed by Kansai Electric Power; we serve as a resource aggregator.*2

*1 "VPP projects" refer to the use of advanced energy management techniques for remote/integrated control of energy resources at factories, houses, etc. (storage cells, electric power generators, electric vehicles, demand response, etc.) to provide functionality as though constituting a single power station.

*2 A company that has established a contract with users regarding VPP services, and which controls VPP resources.

Efforts to Expand Adoption of Renewable Energy

Post-FIT-electricity Buyback (Addressing the end of the Feed-in Tariff Program for Renewable Energy)

As part of our efforts to reduce carbon emissions from power generation, we will continue to buy back electricity generated by customers' renewable power generation equipment, even after the end of the buyback period*1 for the Feed-in Tariff Program for Renewable Energy (FIT). *2

We have established various buyback plans to meet customers' needs, with such buybacks starting in November of 2019.

Summary of Buyback Plans

Buyback Plans	Summary
Annual Fixed Amount Plan	<ul style="list-style-type: none"> • A single annual fixed payment for electricity buyback
Electricity Deposit Plan	<ul style="list-style-type: none"> • Surplus power generated by customers is kept on deposit by the Hokuriku Electric Power Company, and used to offset an equivalent amount of electricity used by those customers at another time • Amounts paid to customers are determined based on actual usage each month
Fixed Unit Price Plan	<ul style="list-style-type: none"> • Buyback payments are based on surplus power generated each month

*1 Starting in November of 2019, the buyback periods for excess power generated by photovoltaic power equipment based on the Excess Electricity Purchasing Scheme for Photovoltaic Power will end.

*2 A mandatory system under which electric power companies buy back electric power generated through renewable energy sources (such as photovoltaic power equipment) for a fixed period, at a price set by the national government.

Environmental Value Offer Service

Based on the increased need for the environmental value that renewable energy possesses, we plan to provide new services to offer electricity in combination with this environmental value, by making use of renewable energy secured through efforts such as post-FIT electricity buyback.



Aiming to Expand Existing Business Domains and Create New Ones

In order to increase ordinary income and establish a business portfolio with a 2:1 ratio of electricity business to non-electricity business, one of the financial objectives laid out in our long-term vision, we believe that it is crucial to cultivate new business domains through maximum utilization of our operating resources and new technology, based on our predictions of future environmental changes.

To that end, we have placed a high priority on our efforts to use the technologies and knowledge that we have developed to date, in order to solve issues faced by the Hokuriku region, develop new services that combine Group resources with new technology, expand our electricity business overseas, and more.

The Hokuriku Electric Power Group continues to work as a whole toward sustainable growth, through efforts to expand existing business domains and create new ones, thus steadily earning profits.



Cultivating Human Resources with an Eye on New Business Domains

By taking advantage of worker loans through alliances with companies in different industries, mid-career recruiting, training sessions both within and outside the company to improve business planning abilities, and other initiatives, we are working to cultivate and secure a workforce of diverse, creative human resources.

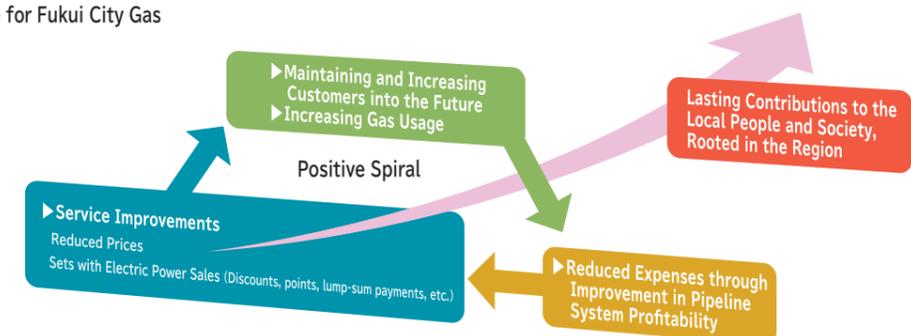
Cultivating New Growth Businesses

Solving Regional Issues

Work with Fukui City Municipal Gas

The successor company to Fukui City's municipal gas business, Fukui City Gas Co., Ltd., was established in December of 2018, and we have established a business transfer agreement with Fukui City to handle this business. Work is underway to begin business in April of 2020.

Intended Course for Fukui City Gas



New Services Combining Group Resources with New Technology

■ New Services Using Data Transmission System for Smart Meters

We have held verification tests for remote gas meter reading and parking space reservation management services, with the goal of making these services available by the end of FY 2020. We are also engaging in verification tests to launch shared electricity, gas, and water meter reading services in the future.

(1) Remote Gas Meter Reading and Parking Space Reservation Management Service Verification Tests

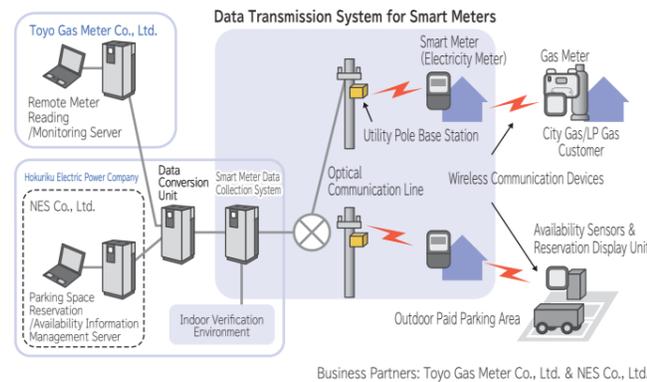
Verification Period: Sep. of 2018 to Mar. of 2019 (Completed)

Details of Verification:

- Linkage between utility meters and host system
- Radio propagation between utility meters and smart meters for electric power
- Remote meter reading and remote control for gas supply
- Notifications of problems occurring, and space availability, at outdoor paid parking areas

Verification Results:

- We have confirmed that no technical problems were found in using the data transmission system for smart meters.

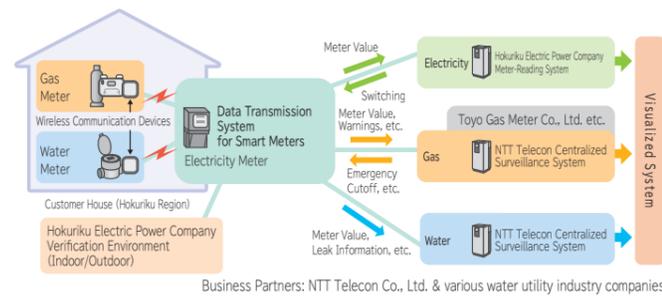


(2) Verification Tests of Shared Electricity, Gas, and Water Meter Reading Services

Verification Period: Dec. of 2018 to Oct. of 2019 (Ongoing)

Details of Verification:

- Linkage between electricity, gas, and water meters and host system
- Radio propagation between water meters and smart meters for electric power
- Study on operations for provision of remote meter reading service for gas and water



■ Collaboration with Venture Companies

We are actively adopting new knowledge through venture company investments, etc., with the goal of expanding our business domains.

Investments in ENECHANGE Ltd.

In September of 2018, we invested in ENECHANGE Ltd. By taking advantage of the knowledge of the company, which works in the business domain of energy utilizing AI and other advanced technologies, we aim to develop new products and services to benefit customers and society.

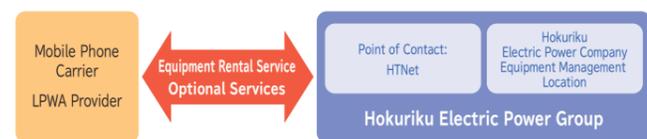
Overseas Electric Power Business

We plan to use the Group's electric power business knowledge for overseas business expansion, to increase profits.

Expanding Business Domains through Group Companies

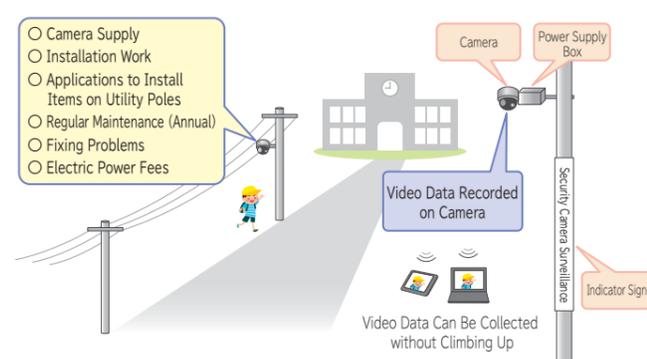
Hokuriku Telecommunication Network Co., Inc. — Site Rental Services for IoT Base Station Equipment Installation

HTNet serves as a one-stop shop for renting equipment from the Hokuriku Electric Power Company, as well as offering optional services such as offering telecommunications lines or handling installation work, in order to meet businesses' needs.



Hokuden Techno Service — Installation of Security Cameras on Utility Poles

Hokuriku Techno Service offers one-stop service for installation of security cameras on utility poles, including supplying the cameras, handling regular maintenance, and more. These cameras can assist in deterring crime, with the goal of helping to provide security to the people and society of the target region.



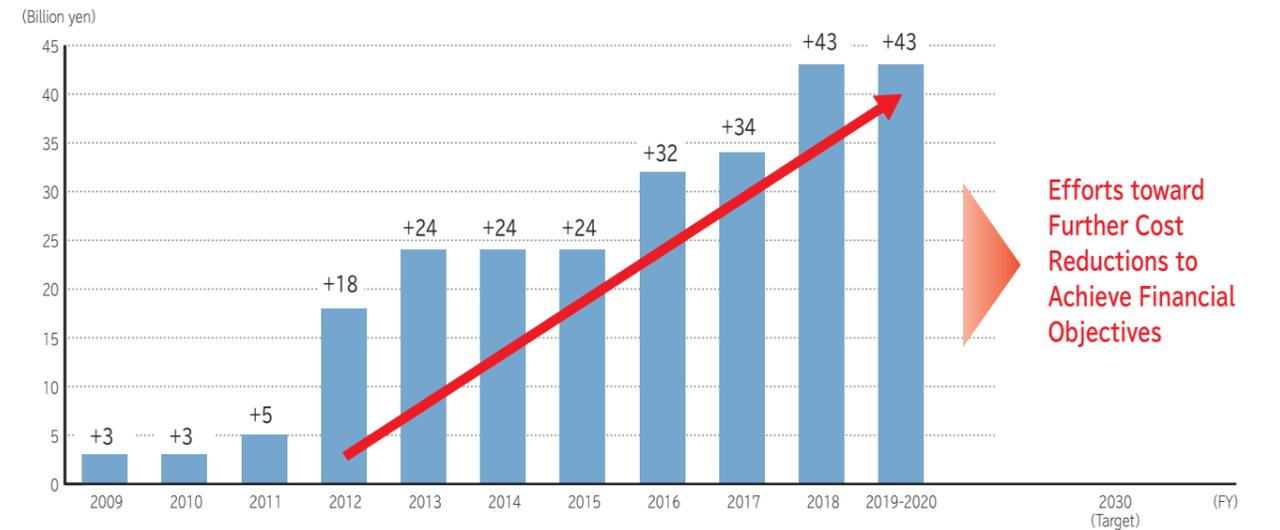
Appropriate Response to Electricity System Reform

In order to deal with the harsh business environment after the Great East Japan Earthquake in 2011, including the increase in fuel costs as a result of the suspended operations of Shika Nuclear Power Station, we have been working to streamline our operations.

Previously, we set a target of reducing costs by an average of 43 billion yen/year for the three years from FY 2018 through FY 2020, and we achieved our target of 43 billion yen/year cost reductions in FY 2018.

We will continue striving to further reduce costs on a no-holds-barred basis, as well as other efforts.

Improved Efficiency after the Great East Japan Earthquake (The streamlined amounts shown are comparisons based on the prices revised in 2008.)



Managerial Efficiency Improvements in FY2018

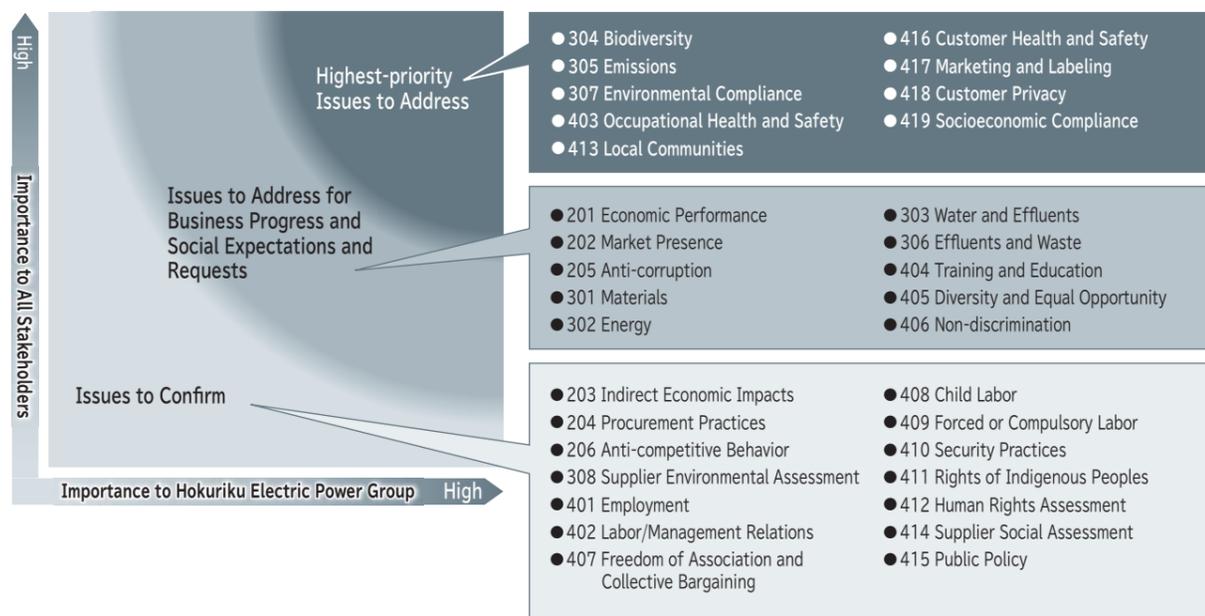
Category	Main Details	Streamlined Amount
Reductions in personnel-related costs	<ul style="list-style-type: none"> ● Lowered annual salary levels for both directors and employees ● Revisions to benefit programs, including the closure of the company's resort facilities, lowering of the subsidy rate for stock ownership, and raises in rents for company dormitories and apartments ● Improvements in labor productivity through the integration of operations and other efforts 	¥9 billion
Streamlining related to supply and demand costs	<ul style="list-style-type: none"> ● Fuel cost reductions by shortening the periodic inspection duration at coal-fired power stations (through process changes, etc.) ● Utilization of economical power sources (increased electricity generated by hydropower and LNG-fired thermal power) ● Expansion of sales to the Japan Electric Power Exchange, with utilization of excess supply capability ● Reduction in fuel costs through extended use of low-cost coal sourced from nearby countries 	¥16 billion
Reductions in repair and other equipment-related costs	<ul style="list-style-type: none"> ● Further reconsideration of the timings of equipment inspection and repair, taking into account the impact on stable supply and work execution capability ● 7% reduction of acquisition costs through various procurement measures, including competitive bidding and joint procurement, and changes to work process specifications 	¥10 billion
Other cost reductions	<ul style="list-style-type: none"> ● Reduction of overall miscellaneous costs by selecting only effective measures and actions to be taken ● 7% reduction of acquisition costs through various procurement measures, including competitive bidding and joint procurement ● Discontinuance of the Elf Plaza public relations facilities 	¥8 billion
Total		¥43 billion*

Note: In FY 2018, in order to limit negative effects to our financial balance due to the shutdown of Nanao Ohta Thermal Power Station Unit 2, we expanded beyond our base cost reduction of 43 billion yen, with an additional 4 billion yen as an emergency measure to bring about an improvement to our financial balance.

In order to bring about a sustainable society, we have established a number of important issues for the Group to address, based on discussions with various stakeholders. The Group works as a whole to address these important issues.

Organizing Important Issues

We have organized these issues based on the standard disclosure items in the GRI Sustainability Reporting Standards.



Hokuriku Electric Power Group CSR

At the Hokuriku Electric Power Group, we practice CSR management by reflecting our CSR philosophy and guidelines for action in our business policy and plans. In addition, through the Group CSR Promotion Committee and other functions, we try to demonstrate positive examples to other parts of the Group, in addition to sharing information, as we work to promote CSR as a group.

Hokuriku Electric Power Group First Mid-term Business Policy

- 1.Ensuring a Stable Supply of Electricity
- 2.Enhancing Competitiveness of Comprehensive Energy Business
- 3.Expanding Business Domains with the Combined Strength of the Group
- 4.Deepening Our Corporate Culture

Specified Important Issues in ESG Fields



Important Issues in ESG Fields for FY 2019

Specified Important Issue	Action Policy	Main Efforts
E Active Efforts toward Environmental Conservation ▶P33~42	We prioritize kindness toward the environment and work toward environmental conservation, with the goal of building a recycling-oriented society.	
S Providing Low-cost, High-quality Products and Services ▶P25~27	We place top priority on safety, in order to earn the trust of our customers and all others; alongside our utmost efforts to ensure stable supply, we also offer products and services to bring satisfaction to our customers.	
S Coexisting with the Local Community ▶P43~46	As a company rooted in the Hokuriku region, we aim to coexist and share prosperity with the region through our business activities.	
S Establishing a Pleasant Work Environment with Respect for Human Rights ▶P47~48	Alongside our efforts to ensure safe and comfortable work environments, we also respect employees' individual characters, building workplaces where employees can engage in meaningful work that allows them to demonstrate and improve their skills.	
G Corporate Governance ▶P49~50	In order to engage in efficient, fair, and transparent business activities, based on thorough prioritizing of safety, and observance of laws and ordinances and business ethics, we work to maintain and improve a structure to ensure the propriety of our operations.	
G Promoting Transparent Business Activities ▶P54	In order to receive proper understanding and trust from our shareholders and investors, we provide timely and appropriate disclosure of corporate information.	
G Promoting Fair Transactions ▶P54	Based on our recognition that suppliers are important partners for our business, we engage in fair transactions on equal terms based on contracts.	
G Building a Culture of Safety ▶P55	We place the highest priority on safety in conducting all of our business activities.	
G Thorough Compliance ▶P55	We work toward thorough compliance, including honest behavior, in addition to strict compliance with laws, regulations, and rules both within and outside the company.	

Hokuriku Electric Power 21st Century Environmental Charter

The Hokuriku Electric Power 21st Century Environmental Charter (enacted in 2001) serves as our fundamental environmental conservation policy, and each year, we establish the Hokuriku Electric Power Group Environmental Management Plan as a concrete plan of action, bringing all Group companies together with the goal of engaging in business activities in harmony with the environment.

Hokuriku Electric Power 21st Century Environmental Charter

Guiding Principle

As a comprehensive knowledge-based energy business, prioritize kindness toward the environment and work toward environmental conservation, with the goal of building a recycling-oriented society.

Declaration of Conduct

We work toward compatibility of both stable energy supply and improved operational efficiency alongside the realization of a comfortable society, and promote business activities appropriate for the 21st century, the century of the environment, as each of our employees renews their awareness.

I. Promotion of Measures to Halt Global Climate Change
We promote nuclear power and increased energy use efficiency, as well as promote energy savings and adoption of new energy sources, in our efforts to halt global climate change.

II. Promotion of Environmental Conservation Measures
We engage in thorough management of chemical substances to prevent air and water pollution in our business activities, in order to reduce environmental burden and exist in harmony with the environment.

III. Promotion of Business Activities to Build a Recycling-oriented Society
We work to reduce waste, promote recycling, and make thorough effective use of resources, with the goal of realizing a recycling-oriented society.

IV. Implementation of Environmental Conservation Activities Together with Customers
We work to deepen communication with customers regarding the environment, and actively engage in environmental conservation activities with regional society.

V. Thorough Environmental Management
In addition to striving to increase employees' environmental conservation awareness and establish our environmental management system, we also actively work on environmental conservation Group-wide.

Environmental Management Plan (See P38)

Support for the TCFD Recommendations

As a socially responsible energy company, we engage in our work with deliberate consideration given to environmental, social, and governance topics.

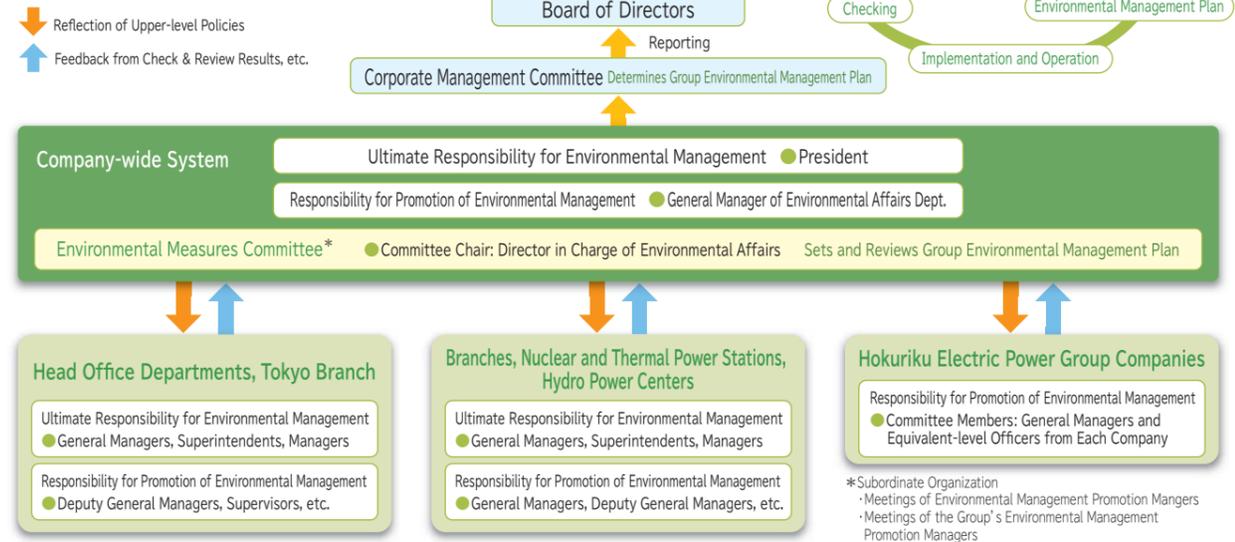
This year, on May 27, we elected to support the aims of the TCFD*1 recommendations on analyzing climate-related risks and opportunities to business activities, and promoting information disclosure.

Going forward, we will work to appropriately handle the risks and opportunities to our business brought about by climate change, through efforts such as actively reducing carbon emissions from power generation, alongside promotion of information disclosure as seen in the table to the right, in order to contribute to sustainable development of society.

	Status of Efforts	See Also:
Governance	We have built an environmental management system, and annually set an environmental management plan, which is reported to the board of directors	Environmental management system shown below
Strategy	We will perform both scenario analysis and risk management	—
Risk Management	We establish metrics and targets for factors connected to climate change, such as amount of electricity generated by renewable energy sources, for active efforts toward carbon reductions	Benchmark indices of the Act on the Rational Use of Energy Electricity generated by renewable energy sources CO ₂ emission intensity Target: P10; Results: P40
Metrics and Targets		

Environmental Management System

We have established an Environmental Measures Committee — with our company president taking ultimate responsibility for environmental management, and our director in charge of environmental affairs serving as the chairperson — which annually draws up a Hokuriku Electric Power Group Environmental Management Plan. The Group works as a whole on environmental conservation efforts, using the PDCA Cycle*2 to achieve our goals.

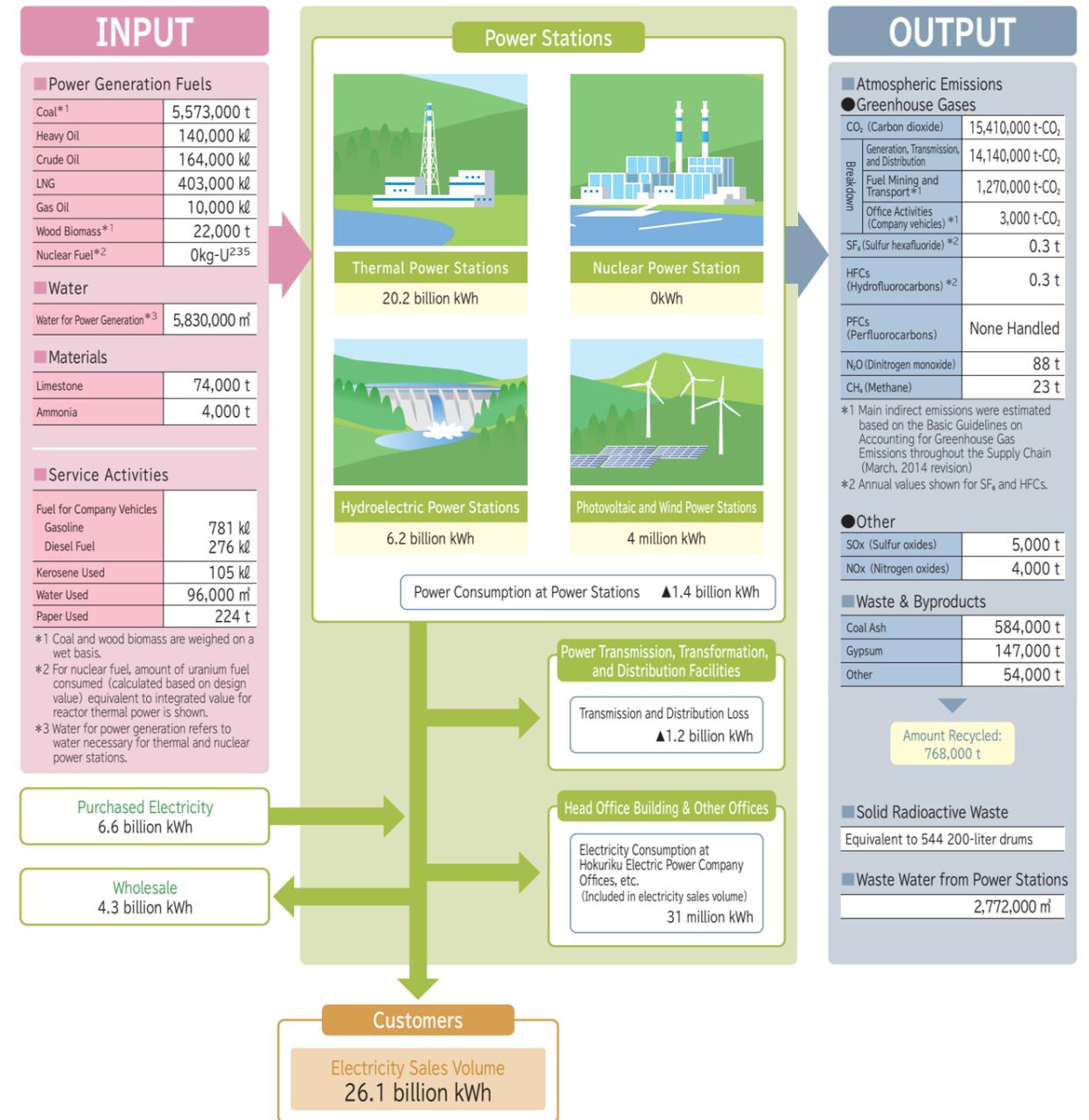


Glossary *1 TCFD: The Task Force on Climate-related Financial Disclosures. Established in December of 2015 by the Financial Stability Board (FSB). In June of 2017, the TCFD released voluntary recommendations. They encourage companies to disclose climate-related risks and opportunities necessary for investors to make investment decisions. *2 PDCA Cycle: Short for "plan, do, check, act," repeated as a continuous cycle.

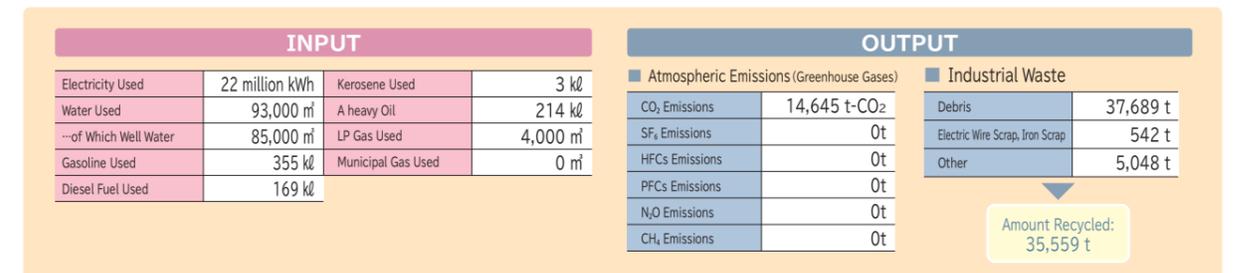
Material Balance

We work to quantitatively grasp the material and energy flow that accompanies our business activities, in order to make effective use of limited resources and minimize environmental burden.

Hokuriku Electric Power Company (FY 2018)



Hokuriku Electric Power Group Companies* (2018) *Collected data available for fifteen Group companies, excluding the Hokuriku Electric Power Company



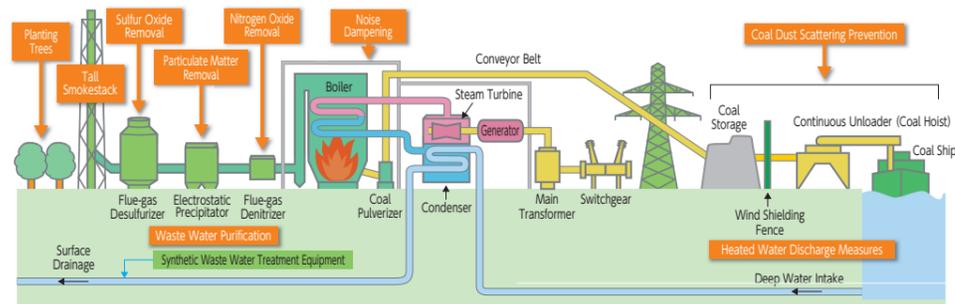
Environmental Conservation Efforts to Bring About a Recycling-Oriented Society

Working to Build a Recycling-Oriented Society with Reduced Environmental Impact

Environmental Conservation Measures at Power Stations

We actively engage in environmental conservation efforts at and around our power stations, including atmospheric, water, and noise measures.

Example Environmental Conservation Measures (Coal-fired power station)



Active Promotion of the Three Rs

We work to reduce the production of waste materials, and to reuse and recycle them.

Improvements in Proportion of Industrial Waste Recycled

In FY2018, the Hokuriku Electric Power Group produced 827,000 tons of industrial waste, but through effective use efforts, 97.1% of that waste was recycled.

Effective Use of Coal Ash

Coal ash (fly ash, clinker ash) is used effectively mainly as a raw material for cement (clay substitution). We also promote its effective use in concrete (fly ash) and ground surface layer material (clinker ash).

With the aim of popularizing the use of coal ash, we work to establish a supply system and improve quality, as well as conducting public relations activities.



Erosion control dam

Management of Chemical Substances

We work to properly manage chemical substances such as PCBs.

Promotion of PCB Waste Treatment

Based on the PCB Special Measures Law*1 and other applicable laws and regulations, we work to ensure safe and proper treatment of our PCBs.

We have commissioned the Hokkaido PCB Waste Treatment Facility of the Japan Environmental Storage and Safety Corporation (JESCO) to treat our high-concentration PCB waste. In addition, since FY 2015, our large electrical transformers, which contain very small amounts of PCBs, have been processed by Hokuden Techno Service, a Group Company, using the heated-oil circulation washing process.

Furthermore, because detoxification treatment for all pole transformers was completed in November of 2016, the transformer recycling center's facilities, which had been used for this treatment, were removed by November of 2018.

Proper Management of Specified Chemical Substances

We work to promote proper management of specified chemical substances, based on the PRTR Law.*2 At our thermal power stations, we use alternative paints with low specified chemical substance contents, among other efforts to minimize emissions into the environment.

The Three Rs at Group Companies

Recycling Confidential Documents

Japan Ecology and Security Service Company (JESSCO), with its comprehensive security system and equipment, offers various services, including recycling of confidential documents, custody of records, and sales of recycled paper products. At their security center, they process the confidential documents they have received from customers using a crusher, and send the crushed documents to papermaking companies as a production material to be recycled into toilet paper, copy paper, or other paper products, which are then provided to consumers, thus developing a regional recycling system. In FY 2018, the company recycled about 1,803 tons of paper.



On-site recycling at a factory

Efforts toward Environmental Conservation with Consideration for Biodiversity

Working to Bring About Sustainable Business Activities with Proper Concern for Living Things and the Blessings of Nature

Environmental Assessments

We perform environmental assessments and other checks in advancing our business plans, as part of our consideration for environmental conservation.

Environmental Assessment Efforts at Nanao Ohta Thermal Power Station Coal Ash Disposal Site

As part of our project to build a coal ash disposal site for Nanao Ohta Thermal Power Station, we performed an environmental impact assessment based on the Ordinance to Protect and Preserve the Environment of Ishikawa.

The public inspection of the Final Environmental Impact Statement, the final procedure for the environmental impact assessment, was completed in August of 2018, bringing the roughly three-year-long environmental assessment process to a close.



Conducting a survey of birds

Promoting Environmental Conservation Activities

We work alongside our employees and their families on efforts to take part in volunteering activities for forest conservation, beach cleanups, and more.

"Appreciating the Blessings of Water, and Repaying the Favor to Forests"

Since FY2008, the Hokuriku Electric Power Group has expanded

forest conservation activities in five areas (Toyama, Uozu, Kaga, Noto, and Fukui) of the three prefectures of the Hokuriku region, as "activities aimed at coexisting with the Hokuriku region." Including FY2018, a total of 8,300 people (including participants of activities hosted by other organizations) have taken part in planting approx. 4,420 trees and clearing underbrush, showing appreciation to the forests for watershed cultivation,* absorbing CO₂, and everything else they do for us.



Forest conservation activities around Toyama

Cleanup Activities near Our Offices, at Beaches, and Other Locations

The Group continuously engages in activities to clean the areas near our offices, beaches, and more, with the goals of contributing to the region and lifting employees' environmental awareness.

In August of 2018, about 120 employees and family members participated in a Beautiful Toyama Bay Club cleanup event.



Beach cleanup with the Beautiful Toyama Bay Club

Glossary

*Watershed cultivation: A characteristic of forests wherein trees, fallen leaves, and forest soil all serve to cause precipitation to effectively permeate into the ground; through long-term retention and downward flow, this helps prevent flooding and evens out water supply in rivers to prevent droughts.

Efforts to Make Environmental Communication Dynamic and Lift Environmental Awareness

Actively Advancing Activities to Lift Environmental Awareness to Deepen Proper Understanding of Energy and Environmental Issues

Raising Environmental Awareness in the Company

We promote an environmental campaign, with a slogan of "Chikyu-Ni E-COTO (Do Good for the Earth)," through internal publicity, proactively introducing topics related to energy and the environment. In FY 2018, we provided a series of explanations on various goals, in order to help deepen understanding of SDGs (sustainable development goals).



Sharing Information at Events Such as Environmental Exhibitions

We exhibit at environmental exhibitions organized by local governments or environmental groups, presenting the environmental efforts of the Hokuriku Electric Power Group. Since FY 2016, we have also had exhibits at environmental exhibitions held at shopping centers, to publicize Hokuriku Electric Power's environmental conservation efforts, including energy saving activities, local eco activities, and forest conservation activities.



Environmental PR and workshop at the Apita Eco Expo

Environmental Dialogues between the Hokuriku Electric Power Company and Group Companies

In order to lift environmental awareness and raise the level of

environmental activities throughout the Group as a whole, we hold two-way opinion exchanges with other Group companies, sharing information about environmental risk management improvements and positive examples.



Environmental dialogue

Improved Environmental Education for Employees

To ensure employees understand and implement our environmental management, we hold environmental education for employees of both the Hokuriku Electric Power Company and the Group, as well as group training sessions for new employees and newly appointed managerial staff.

In FY 2018, we used a teleconference system to provide specialized education for employees involved in environmental affairs, in order to enable more employees to acquire this specialized knowledge.

Recommending the Eco Test

As global environmental awareness increases, so too has the need for employees with broad environmental knowledge. We recommend that employees take the Eco Test (Certification Test for Environmental Specialists); to date, about 1,300 of our employees have taken the Eco Test. Over 20% of our employees have earned Eco Test certification.

Glossary

*1 PCB Special Measures Law: An abbreviated name for the Law concerning Special Measures for Promotion of Proper Treatment of PCB Waste. Polychlorinated biphenyl compounds (PCBs) resist breaking down when heated and have excellent electrical insulation properties, leading them to have been widely used, but after PCBs were found to be harmful to humans after 1968's Yusho disease outbreak, their production was halted in 1972.

*2 PRTR Law: An abbreviated name for the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Law concerning Pollutant Release and Transfer Register/PRTR). The law stipulates the mechanisms by which businesses must track, collect, and publicize data regarding the amounts of harmful chemical substances they produce that are discharged into the environment in their course of their business activities.

FY 2018 Hokuriku Electric Power Group Environmental Management Plan Results and Evaluations

Promoting Further Efforts in FY 2019 Based on Results and Evaluations from the FY 2018 Plan

Category		FY 2018 Goals	FY 2018 Results	Evaluation		
Efforts to Bring About a Low-carbon Society	Addressing Environmental Measures Related to Greenhouse Gas Reductions	Steady promotion of efforts based on the Plan for Global Warming Countermeasures, etc.	<ul style="list-style-type: none"> Proper involvement with the Electric Power Council for a Low Carbon Society Examination of actions toward CO₂ emissions goals (for electric power generation as a whole) based on Japan's energy mix for FY 2030 	<ul style="list-style-type: none"> Steady implementation of individual company action plans Appropriate response to national environmental policy trends (e.g. presenting opinions at meetings with major power utilities) 		
	Reducing CO ₂ Emissions in Supplying Electricity	Safe and Stable Operation of Shika Nuclear Power Station	Promotion of ceaseless efforts toward the early restart of Shika Nuclear Power Station	Implementation of ceaseless efforts toward the early restart of Shika Nuclear Power Station	<ul style="list-style-type: none"> Appropriate response to the evaluation of conformity to new regulatory requirements and national government review Consideration and implementation of additional construction 	
		Steady Implementation of LNG-fired Power Station Construction Plans	Steady implementation of construction work, and safe and stable operation	<ul style="list-style-type: none"> Steady implementation of construction work Safe and stable operation after start of commercial operation 	<ul style="list-style-type: none"> Steady implementation of construction work and test run Safe and stable operation after start of commercial operation (November) Steady implementation of environmental monitoring during construction Submission of quarterly noise and vibration measurement results to Toyama Prefecture and Imizu City 	
		Wider Use and Stable Operation of Renewable Energy	Hydroelectric Power Generation	Increase in annual power generation: by 400 MWh (Cumulative total: 153.0 million kWh increase, compared to FY 2007)	Increase in annual power generation: by 19,030 MWh (Cumulative total: 168.0 million kWh increase, compared to FY 2007)	<ul style="list-style-type: none"> Capacity increased at six locations through repair of existing equipment and new purchases from local governments, etc.
			Wind Power Generation	Stable operation	Steady implementation of stable operation	<ul style="list-style-type: none"> Implementation of measures to increase capacity utilization
			Wood Biomass	Continuing co-combustion at Tsuruga and Nanao Ohta Thermal Power Stations	Continuing co-combustion at Tsuruga and Nanao Ohta Thermal Power Stations	<ul style="list-style-type: none"> Continuous implementation of co-combustion at Tsuruga and Nanao Ohta Thermal Power Station Unit 2
	Reducing Power Loss	Promoting measures to reduce power loss	Promoting measures to reduce power loss	<ul style="list-style-type: none"> Employment of new-model overhead amorphous transformers 		
	Reducing CO ₂ Emissions in Using Electricity	Promotion of Activities to Encourage Customers to Conserve Energy	Making suggestions for Energy-efficient and Comfortable Lifestyles at Home	Adoption of 22,000 more EcoCute units per year Offering helpful information to customers about energy savings, etc.	Adoption of 21,000 more EcoCute units per year Offering helpful information to customers about energy savings.	<ul style="list-style-type: none"> Providing information on energy savings, comfortable lifestyles, etc., through consultation services or via email, in order to address customer needs
		Making Suggestions to Improve Energy Use Efficiency in Buildings and Factories	Making Suggestions to Improve Energy Use Efficiency in Buildings and Factories	1,200 energy-saving consulting suggestions per year	1,300 energy-saving consulting suggestions per year	<ul style="list-style-type: none"> Improvement of total energy services that include not just electricity but also heating, to meet customers' diverse needs
			Installation and Effective Use of Smart Meters	Suggestions for optimal and energy-efficient rate plans based on effective use of smart meters	Making active suggestions for optimal and energy-efficient rate plans based on effective use of smart meters	<ul style="list-style-type: none"> Actively encouraging energy-efficient rate plans through our website for members
Reducing Our Electricity Use		Promotion of adoption of energy-saving machinery when installing or replacing equipment	Implementation of adoption of energy-saving machinery when installing or replacing equipment	<ul style="list-style-type: none"> Promotion of energy savings by replacing air conditioners or upgrading to LED lighting at each facility, based on energy management standards Reduction of office lighting, strict setting of air conditioner/heater temperatures, and strictly ensuring unneeded lights are turned off 		
Promotion of Effective Use and Steady Adoption of Electric Vehicles (including plug-in hybrids)		Promotion of replacement of gasoline vehicles with electric vehicles, and effective use thereof, at the end of gasoline vehicle leases	Promotion of replacement of gasoline vehicles with electric vehicles, and effective use thereof, at the end of gasoline vehicle leases	<ul style="list-style-type: none"> Reduction of CO₂ emissions through eco-friendly driving, including active use of electric vehicles, idling reduction, etc. 		
Improvements in Proportion of Industrial Waste Recycled Based on Promotion of the Three Rs		Over 95% of industrial waste recycled	Over 97.9% of industrial waste recycled	<ul style="list-style-type: none"> Efforts continued for extended use of fly ash concrete in public works, as well as for promotion of the effective use of coal ash 		
Thorough Management of PCBs and Promotion of Planned Processing as a Group	High PCB Content	Promotion of steady processing (86% processing progress rate)	86% processing progress rate	<ul style="list-style-type: none"> Promotion of processing at the Hokkaido PCB Waste Treatment Facility of the Japan Environmental Storage and Safety Corporation (JESCO) 		
	Low PCB Content	Promotion of steady processing	Implementation of steady processing	<ul style="list-style-type: none"> Promotion of washing and other treatments of large electrical transformers 		
Steady Implementation of Nanao Ohta Thermal Power Station Coal Ash Disposal Site Assessment Procedures, etc.	Steady implementation of environmental assessments, etc.	Steady implementation of environmental assessments, etc.	<ul style="list-style-type: none"> Completion of procedures for environmental impact statement for Nanao Ohta coal ash disposal site (August) Implementation of environmental monitoring at construction of Toyama Shinko LNG-fired Thermal Power Station 			
Efforts to Share Information and Lift Awareness Regarding Environmental Conservation Activities	Engagement in Forest Conservation Activities, etc.	Continuation of activities and active participation by the Group as a whole	Continuation of activities and active participation by the Group as a whole	<ul style="list-style-type: none"> Participation by 420 individuals in "Appreciating the Blessings of Water and Repaying the Favor to Forests" forest conservation activities, planting trees and trimming underbrush in five areas across the three prefectures of the Hokuriku region Active participation by 338 individuals in forest conservation activities, etc. held by groups and regions other than the Hokuriku Electric Power Company 		
	Lifting Environmental Awareness and Strengthening Environmental PR	Environmental dialogues with other Group companies	Environmental dialogues with other Group companies	<ul style="list-style-type: none"> Implementation of dialogues with other Group companies on the theme of the environment, to exchange opinions and information 		
		Improving sharing of environmental information within the company Recommendation to acquire Eco Test certification	Improving sharing of environmental information within the company Recommendation to acquire Eco Test certification	<ul style="list-style-type: none"> Implementation of training for employees involved in environmental affairs, new employees, newly appointed managerial staff, individuals responsible for promoting environmental management, etc. Recommendation of taking the Eco Test, with 142 having taken the test 		
	Increasing the Group's environmental activities' visibility to other companies	Increasing the Group's environmental activities' visibility to other companies	Increasing the Group's environmental activities' visibility to other companies	<ul style="list-style-type: none"> Wearing unified scrimmage vests during environmental conservation activities Implementation of visit lessons and tours to foster understanding of energy and environmental issues among younger generations Sharing information via environmental events, our website, Facebook, etc. 		

FY 2019 Hokuriku Electric Power Group Environmental Management Plan

Category		FY 2019 Goals (Goals for later years)		
Efforts to Bring About a Low-carbon Society	Addressing Energy and Environmental Measures Related to Reducing Greenhouse Gases	Building a competitive electric power generation mix based on national energy and environmental measures		
	Reducing CO ₂ Emissions in Supplying Electricity	Safe and Stable Operation of Shika Nuclear Power Station	Ceaseless efforts toward the early restart of Shika Nuclear Power Station (safe and stable operation)	
		Wider Use and Stable Operation of Renewable Energy	Hydroelectric Power Generation	Increase in power generation by 9 million kWh/year, compared to FY 2018 (Increase by 100 million kWh/year by FY 2022, compared to FY 2018) (Increase by 140 million kWh/year by FY 2030, compared to FY 2018)
			Wind Power Generation	Stable operation
			Wood Biomass	Continuing co-combustion at Tsuruga and Nanao Ohta Thermal Power Stations
		Safe and Stable Operation of LNG-fired Thermal Power Station	Safe and stable operation	
	Reducing Power Loss	Promoting measures to reduce power loss		
	Reducing CO ₂ Emissions in Using Electricity	Promotion of Activities to Encourage Customers to Conserve Energy	Adoption of 20,000 more EcoCute units per year Offering helpful information to customers about energy savings, etc.	
		Making Suggestions to Improve Energy Use Efficiency in Buildings and Factories	Making Suggestions to Improve Energy Use Efficiency in Buildings and Factories	1,200 energy-saving consulting suggestions per year
			Effective Use of Smart Meters	Suggestions for optimal and energy-efficient rate plans based on effective use of smart meters
Reducing Our Electricity Use		Promotion of adoption of energy-saving machinery when installing or replacing equipment		
Promotion of Effective Use and Steady Adoption of Electric Vehicles (including plug-in hybrids)		Promotion of replacement of gasoline vehicles with electric vehicles, and effective use thereof, at the end of gasoline vehicle leases Verification tests related to energy management using electric vehicles, etc.		
Improvements in Proportion of Industrial Waste Recycled Based on Promotion of the Three Rs		Over 95% of industrial waste recycled		
Thorough Management of PCBs and Promotion of Planned Processing as a Group	High PCB Content	Promotion of steady processing (90% processing progress rate) (100% processing progress rate by end of FY 2021)		
	Low PCB Content	Promotion of steady processing (100% processing progress rate by end of FY 2025)		
Implementation of Environmental Conservation Measures, etc. Following Construction of the New Nanao Ohta Thermal Power Station Coal Ash Disposal Site	Steady implementation of follow-up survey, environmental conservation measures, and other procedures during construction (Construction complete with flawless implementation of environmental conservation measures, etc.)			
Efforts to Share Information and Lift Awareness Regarding Environmental Conservation Activities	Promotion of Environmental Conservation Activities Such as "Repaying the Favor to Forests" Forest Conservation Activities	Active participation Group-wide in broad environmental conservation activities		
	Lifting Environmental Awareness and Strengthening Environmental PR	Environmental dialogues with other Group companies Improving sharing of environmental information within and outside the company Recommendation to acquire Eco Test certification		

Environmental Accounting

Quantitatively Understanding and Evaluating Costs and Benefits Regarding Environmental Conservation

Our calculations were based on the *Environmental Accounting Guidelines 2005* issued by the Ministry of the Environment. Results are shown below. Totals Shown for Hokuriku Electric Power Company
Period: Apr. 1, 2018 to Mar. 31, 2019

Totaled Results of Environmental Conservation Costs

In FY 2018, investments totaled ¥4.3 billion, and expenses totaled ¥17.3 billion. Compared with last fiscal year, global environmental conservation and pollution prevention investments decreased, and resource circulation (disposal of industrial waste) expenses decreased.

Environmental Conservation Costs

(Unit: Billion yen)

Category	Main Efforts	Investments		Expenses	
		FY 2018	FY 2017	FY 2018	FY 2017
Pollution Prevention	Prevention of Air Pollution, Water Pollution, and Noise/Vibration Pollution	1.12	2.22	6.34	7.14
Global Environmental Conservation	Prevention of Global Warming, and Energy Conservation Measures	2.09	4.60	1.44	1.43
Resource Circulation	Disposal and Recycling of Industrial Waste Disposal and Recycling of Municipal Waste Disposal of Low-level Radioactive Waste	0.34	0.53	7.71	9.00
Administration	Implementation and Maintenance of Environmental Management System Disclosure of Environmental Information, and Environmental Advertising Monitoring of Environmental Impact, and Environmental Training	0.01	-	1.36	1.61
R&D	Research & Development to Reduce Environmental Burden, etc.	-	-	0.00	0.01
Social Activities	Nature Conservation, Planting of Greenery, Landscape Preservation and Other Environmental Improvement Measures (Work to remove utility poles for distribution lines, etc.) Support and Provision of Information for Global Environmental Activities	0.73	0.72	0.26	0.28
Environmental Remediation	Damage Payments, etc. for Environmental Conservation	-	-	0.23	0.30
Total		4.30	8.07	17.34	19.77

*Nuclear power generation and hydroelectric power generation both contribute significantly to controlling CO₂ emissions; however, because they are also key energy sources from the perspectives of energy security, economics, etc., making it impractical to estimate their additional costs with regard to environmental conservation, they have not been counted here.

*Expenses do not include depreciation expenses, nor buyback costs for renewable energy through the Feed-in Tariff Program.

Environmental Conservation Benefits

Category		FY 2018	FY 2017
SOx	Standard Unit *1	0.26 g/kWh	0.31 g/kWh
	Amount of Emissions	5,284 t	7,032 t
NOx	Standard Unit *1	0.20 g/kWh	0.27 g/kWh
	Amount of Emissions	4,096 t	6,159 t
CO ₂	Standard Unit*2 (Upper value: Basic CO ₂ emission standard unit Lower value: Adjusted CO ₂ emission standard unit)	0.542 kg-CO ₂ /kWh 0.526 kg-CO ₂ /kWh	0.593 kg-CO ₂ /kWh 0.574 kg-CO ₂ /kWh
	Amount of Emissions	14,140,000 t	17,000,000 t
SF ₆	Gas Recovery Ratio	99%	99%
Industrial Waste, etc.	Recycling Rate	97.9%	94.8%
	Effective Use Amount	768,000 t	869,000 t
Solid Radioactive Waste (200-liter drum equivalent)	Amount Produced	544 drums' worth	984 drums' worth
Increased Amount of Buried Distribution Lines	Single Fiscal Year	2.5 km	3.2 km
	To Date	205 km	202 km

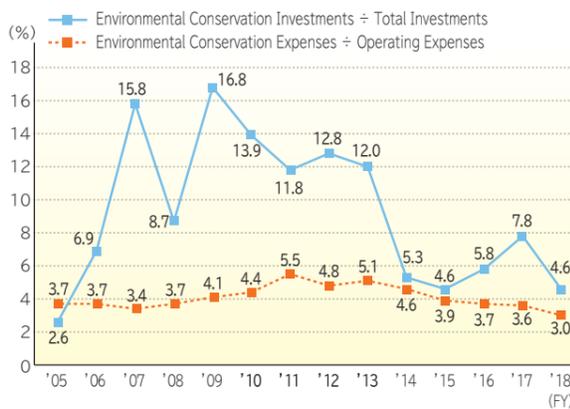
*1 For power generated at thermal power stations
*2 For electricity sales

Economic Benefits

Category	Resulting Amount	
	FY 2018	FY 2017
Sales of Recycled Products, etc.	¥490 million	¥470 million
Reduction in Fuel Costs as a Result of Increased Efficiency of Thermal Power Stations and Reduced Transmission and Distribution Losses*	¥5,970 million	¥4,280 million

*Calculated using FY 1990 as the baseline

Proportion of Environmental Conservation Costs as Portion of Total Costs over Time



*Renewable energy buyback costs from the Feed-in Tariff Program are not included for FY 2012 and later.

Glossary

Environmental Accounting: An accounting method that aims, as much as possible, to quantitatively calculate and understand the costs paid toward environmental conservation in a company or other organization's business activities, and the benefits incurred through said activities.

Bringing About a Low-Carbon Society

Working to Reduce Carbon Emissions from Power Generation through Promotion of Renewable Energy Sources and Improved Comprehensive Energy Efficiency.

CO₂ Emission Intensity Controls

Changes in CO₂ Emission Intensity/CO₂ Emissions

Note: Unless otherwise indicated, all data shown regards the Hokuriku Electric Power Company on a non-consolidated basis.



*The adjusted values reflect the results of CO₂ credit trading (until FY 2012), adjustment amounts based on the feed-in tariff system for renewable energy (from FY 2012), and other factors. Note: Customers using electricity supplied by Hokuriku Electric Power Company are to use the basic CO₂ emission intensity to calculate the volume of greenhouse gas emission, and the adjusted CO₂ emission intensity to calculate the adjusted volume of greenhouse gas emission, when submitting reports to the national government according to the Act on Promotion of Global Warming Countermeasures.

Promotion of Renewable Energy

Photovoltaic and Wind Power Generation Facilities Belonging to the Hokuriku Electric Power Group

For Utility Generation

Power Generation Method	Prefecture	Name of Power Station	Installed Capacity	Comments
Photovoltaic	Toyama	Toyama Photovoltaic Power Station	1,000kW	Operation began in April, 2011
		Kairyu Photovoltaic Power Station	2,999kW	Operation began in April, 2014
		Other	2,320kW	
	Ishikawa	Shika Photovoltaic Power Station	1,000kW	Operation began in March, 2011
		Suzu Photovoltaic Power Station	1,000kW	Operation began in October, 2012
Wind Power	Fukui	Mikuni Photovoltaic Power Station	1,000kW	Operation began in September, 2012
	Ishikawa	Fukura Wind Power Station	21,600kW	All 9 turbines began operation in FY 2010
		Fukui	Mikuni Wind Power Station	8,000kW
Total			38,919kW	

Others for business use

Power Generation Method	Prefecture	No. of Facilities	Installed Capacity
Photovoltaic	Toyama	11 Sites	72kW
	Ishikawa	11 Sites	85kW
	Fukui	3 Sites	41kW
Total		25 Sites	198kW

Note: Due to rounding, total figures may not exactly equal the sums of the individual figures.

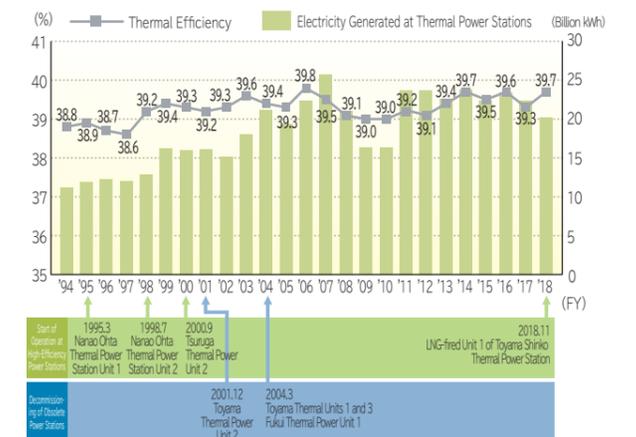
Increased Capacity of Hydroelectric Power Stations Due to Equipment Improvements, etc. (Not including newly constructed equipment)



Improvements in Comprehensive Energy Use Efficiency

Thermal Efficiency Improvements at Thermal Power Stations

Thermal Efficiency of Thermal Power Stations over Time (Higher Heating Value Basis)



*Thermal efficiency is calculated based on a higher heating value basis with regular reports submitted to the national government (monthly reports of electricity generated and received), and figures include biomass co-combustion. Values calculated based on a lower heating value basis would be higher by several percent. *FY 2018 Energy Conservation Act Benchmark (Index B): 39.8%

Index B = (actual coal-fired power generation efficiency × ratio of coal-fired power generation to total thermal power generation) + (actual LNG-fired power generation efficiency × ratio of LNG-fired power generation to total thermal power generation) + (actual oil-fired power generation efficiency × ratio of oil-fired power generation to total thermal power generation)

Controls on Transmission and Distribution Loss Rate

Transmission and Distribution Loss Rate over Time



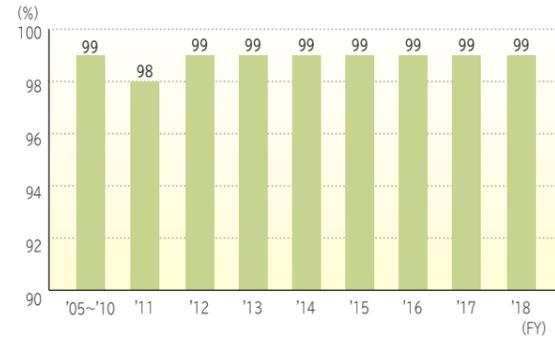
Emissions of Non-CO₂ Greenhouse Gases

Note: Unless otherwise indicated, all data shown regards the Hokuriku Electric Power Company on a non-consolidated basis.

Fluorocarbon Consumption over Time



SF₆ Gas Recovery Ratio during Inspection and Disposal over Time



Other Greenhouse Gases

PFCs (Perfluorocarbons)	We do not handle PFCs.
N ₂ O (Dinitrogen monoxide)	To the fullest extent possible, we work to control N ₂ O emissions caused by combustion of fuel at our thermal power stations, through improvements to thermal power generation efficiency and other measures. In FY 2018, the company's emissions were about 88 tons.
CH ₄ (Methane)	CH ₄ emissions caused by co-combustion of wood biomass at our coal-fired power stations are minimal compared to the amount of CO ₂ emissions reduced. In FY 2018, the company's emissions were about 23 tons.

Promotion of Energy Conservation

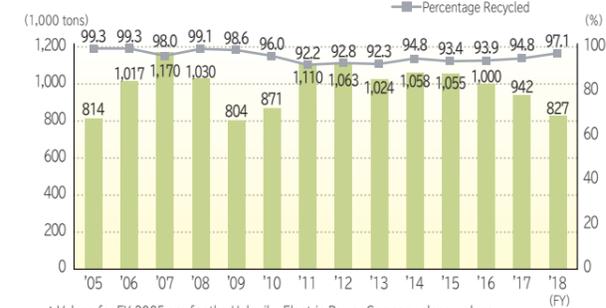
Amount of Electricity Use at Offices over Time



*Values shown use FY 2004 (first year of Group-wide efforts) as the 100% baseline.

Active Promotion of the Three Rs

Production and Proportion Recycled of Industrial Waste and Byproducts over Time



*Values for FY 2005 are for the Hokuriku Electric Power Company alone; values for FY 2006 and later are for the Hokuriku Electric Power Group.

Breakdown of Production and Proportion Recycled of Industrial Waste and Byproducts

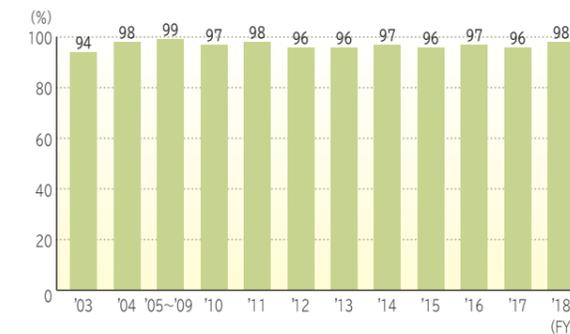
Item	Amount Produced (t)	Amount Recycled (t)	Percentage Recycled (%)	Main Use
Coal Ash	583,788	579,026	99.2	Raw material for cement
Gypsum	146,520	146,520	100.0	Raw material for cement
Heavy/Crude Oil Ash	959	937	97.8	Raw material for cement
Electric Wire Scrap, Iron Scrap	15,565	15,286	98.2	Metal stock
Waste Plastics	1,191	455	38.2	Plastic products
Decommissioned Concrete Poles	4,991	3,686	73.8	Roadbed material
Insulator Scrap	267	50	18.7	Land reclamation material, aggregate
Sludge	13,241	5,993	45.3	Raw material for cement
Construction & Demolition Waste	55,658	47,869	86.0	Land reclamation material, aggregate
Other	5,003	3,415	68.3	-
Total	827,183	803,238	97.1	-

*Values for the Hokuriku Electric Power Group for FY 2018

Office Waste Collected and Recycled by the Hokuriku Electric Power Company

Item Collected	FY2014	FY2015	FY2016	FY2017	FY2018
Worker Uniforms	1,970 kg	1,362 kg	1,696 kg	1,545 kg	1,914 kg
Used Helmets	300	304	176	234	328
Used Safety Shoes	660 pairs	1,057 pairs	822 pairs	823 pairs	978 pairs
Used Safety Harnesses	70	63	99	57	64
Used Fluorescent Lamps	4.8 t	2.9 t	2.3 t	4.3 t	3.8 t
Used Batteries	1.6 t	1.7 t	0.8 t	1.3 t	1.6 t

Green Purchasing Coverage* over Time



*Green Purchasing Coverage: Proportion of products purchased that meet the relevant guidelines.

Management of Chemical Substances

Emissions and Transfers of Chemical Substances with Notifications Filed According to the PRTR Law*

(Unit: tons)

Substance	No. of Facilities Submitting Notifications	Main Uses	FY2018		
			Amount Handled	Amount of Emissions	Amount Transferred
Toluene	3	Power generation fuels, paints	5.7	5.7	0.0
Methylnaphthalene	4	Power generation fuels, on-site boiler fuels	98.3	0.5	0.0
Asbestos	4	Machinery removal	10.2	0.0	10.2

*PRTR Law: An abbreviated name for the Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (Law concerning Pollutant Release and Transfer Register/PRTR). The law stipulates the mechanisms by which businesses must track, collect, and publicize data regarding the amounts of harmful chemical substances they produce that are discharged into the environment in their course of their business activities.

Construction Work on LNG-fired Unit 1 of Toyama Shinko Thermal Power Station

Results of Environmental Monitoring

Period: April 1 to November 21, 2018

(1) Atmospheric Environment & Water Quality

Item Monitored	Unit	Control Value	Environmental Monitoring Result*1
Atmospheric Environment	Construction-related Vehicles, etc. in Operation	Vehicles/Day	376
	Noise Level at Site Border	dB	75
	Vibration Level at Site Border	dB	51
Water Quality	Land	Amount of Suspended Solids *2 (Turbidity) mg/L	Maximum: 120 Daily Avg.: 100
	Sea		Maximum: 14 Daily Avg.*3: 13
			+2*4
			-*5

*1 Maximum values for the fiscal year are shown for environmental monitoring results.
*2 Monitoring results shown are calculated by converting turbidity into amount of suspended solids, based on the correlation between the two.
*3 Largest amount among daily averages determined for each piece of waste water treatment equipment.
*4 Amount of increased turbidity due to dredging work.
*5 No dredging work was performed during this period (work was completed in September, 2015).

(2) Industrial Waste

(Unit: tons)

Category	Amount generated	Amount Effectively Used	Amount Disposed Of
Sludge	109	0	109
Oil Waste	5	5	1
Waste Plastics	80	16	64
Paper Waste	6	0	6
Wood Waste	155	93	61
Metal Scrap	6	0	6
Glass, Concrete, and Ceramic Waste	50	0	50
Debris	8,314	8,239	75
Asbestos Waste, etc.	0	0	0
Total	8,725	8,353	372

Note: Due to rounding, total figures may not exactly equal the sums of the individual figures.

Building a Recycling-oriented Society

Recycling Coal Ash

Coal Ash Production and Proportion Recycled over Time



Uses of Recycled Coal Ash (FY 2018)

Uses	Proportion (%)
Cement Raw Material (Clay substitution)	44.1
Cement (Other than clay substitution)	28.1
Land Reclamation Material*	3.2
Recycled Base Course Material	6.5
Architecture	10.2
Soil Stabilization Material (Drainage material for grounds, rice fields, etc.)	2.4
Civil Engineering	2.3
Other	0.03

*On Nov. 22, 2004, the Ministry of Economy, Trade, and Industry issued an interpretation that "coal ash provided by business operators belonging to the electricity industry, for public water body reclamation (including reclamation works for final waste disposal sites) undertaken based on the port and harbor plans of major and minor ports according to the Port and Harbor Act, shall fall under the category of land reclamation material." Following this interpretation, coal ash disposed of by landfill at Toyama Shinko Thermal Power Station and Nanao Ohta Thermal Power Station has been deemed as being effectively used as land reclamation material since FY 2005.

Being a Part of the Community

Emergency Help Car for Kids

The Group engages in Emergency Help Car for Kids activities, placing stickers on company cars to show that if children need help, they can provide temporary protection or contact related organizations. Roughly 1,400 company vehicles across eight Group companies participate in these efforts.

Since April of 2019, we have also participated in efforts to help prevent crime and ensure the safety of children in our daily lives, alongside whatever else we are doing.



Emergency Help Car for Kids

Promoting and Supporting Regional Sports

The Hokuriku Electric Power Company's handball club, the Blue Thunder, offers handball lessons, and we also hold joint soccer lessons in association with the pro soccer club Kataller Toyama, as our way of helping the children of the area grow up healthy.

We also hold tournaments for these sports and others: in FY 2018, a total of about 17,000 children participated in lessons and tournaments that we held.

In addition, the elementary school boys' team of our handball club, the Hokuriku Electric Power Junior Blue Rockets, won the crown of victory for the third straight year at the 8th Japan Handball League Junior League. This was the fifth time the team won the championship.

We look forward to continuing to promote sports in the Hokuriku region.



Hokuriku Electric Power Junior Blue Rockets

Working toward Removing Electric Poles

We take part in the Promotion Council for the Removal of Utility Poles, a council made up of the Ministry of Land, Infrastructure, Transport and Tourism; local government bodies; and other organizations, to promote work to remove electric poles, with the aim of facilitating safer and more convenient traffic flow, improving urban scenery, revitalizing regions, and more.

With the help and cooperation of those involved, since 1986, we have implemented approximately 205 km worth of electric pole removal in areas such as commercial districts and historic districts requiring townscape conservation.



Wakura Onsen Area (Wakura-machi, Nanao City)

Industry-Academia-Government Cooperation

Our Engineering Research & Development Center works in cooperation with several universities to research electric power system stability, lightning countermeasures for electric power facilities, and more, for a stable supply of electricity.

We have also provided coordinators and lecturers for the University of Toyama's Courses for Next-Generation Super Engineers, in order to develop future leaders based on the Hokuriku region's advanced technology, and strengthen the cooperation between industry, academia, and government.

Joint Research Projects with Universities during FY 2018

University	Joint Research Title
Kanazawa University	Development and Application Study of Sensors for Human Behavior in a House Using Magnetostrictive Vibration Power Generator
University of Fukui	Research on Methods for Combining New Detection Function for Isolated Operation with Dynamic Voltage Support Function in Photovoltaic Power Generation
Kanazawa Institute of Technology	Research on Application of EV Batteries for Customer Energy Management
The University of Tokyo	Development of Photovoltaic Power Generation Control Methods with Multiple Functions to Contribute to Stable Operation of Electric Power Systems
Tokyo Institute of Technology	Research on Effects of Different Grid Connection Types for Wind Power Generation on Electric Power System Stability
Shizuoka University	Improvement of a Pole-Mounted Transformer Model Used in Calculation Methods for Estimating Lightning Outage Rates on Power Distribution Lines
Waseda University	Estimation of Impact on Distribution Line Voltage Due to Spread of Electric Vehicles
Doshisha University	Evaluations of Heterogeneity Effects on Discharge Energy Capacities of Zinc-Oxide Elements of a Transmission Line Arrester

Research Support for the Electrical Engineering Field Provided to the University of Toyama

We and the University of Toyama have held a joint research course in order to cultivate talent in power system engineering at the university.

Through this course, we have worked on research issues related to electric power system engineering.

We have also held research communication meetings with teaching staffs, students, and our engineers, and technical tours of electric power facilities, in order to provide opportunities for students to experience the appeal of working in electric power.



Technical Tour of Fuse River Irrigation Canal Hydroelectric Power Station

Support for Educational Activities

Visit lesson

In order to help students at junior high schools and high schools, who will lead the next generation, become familiar with energy and global environmental problems, we dispatch members of our staff to provide visit lessons at schools and hold tours of power stations and other facilities.

In FY 2018, we held 130 visit lessons and 47 tours, with a total of 6,435 participants.



Visit lesson (Koshi Junior High School)

Operational Support for the Hokuriku Electric Power Company Educational Advancement Foundation

Since its establishment in 1981, the Hokuriku Electric Power Company Educational Advancement Foundation has donated educational equipment to high schools in the three prefectures of the Hokuriku region, as well as part of Gifu Prefecture. In addition, in order to help provide the next generation with a way to decide on dreams and goals for the future as high school students, we have held Genki Sosei Juku ("Enthusiasm Creation School") events since FY 2005, where we invite people from the Hokuriku region who work in various fields to give talks and share their personal experiences. In FY 2018, we held such events at eight schools, and they were well received.



Genki Sosei Juku at Keishin High School

Wonder Laboratory: Hokuriku Electric Power Company Energy Science Museum

Wonder Laboratory, our energy science museum, helps encourage children to develop scientific ways of thinking and an interest in energy and electricity, through fun displays, experiment workshops, and more.

Internships

In order to help students develop their attitudes toward work, and to encourage a better understanding of the Group's work, we hold internships.* During FY 2018, the Group had many interns, spanning an age range from university undergraduate and graduate students to high school students.

Glossary

*Internship: An opportunity for students to work at a business or organization related to their field of study or career path, to develop work experience.

Communication Activities

Support for Women's Groups

At the Toyama Women's Group for Thinking about the Environment and Energy, and the Ishikawa Ene Groups (in Noto, Kanazawa, and Kaga), members take part in facility tours, lectures, study sessions, and other activities as part of efforts to think about energy and environmental problems from a women's perspective.

In addition to offering assistance to these groups, we work to reflect members' opinions and requests in our business activities.

Alice-Kan Shika Energy Museum

Alice-Kan Shika Energy Museum serves as a PR facility for nuclear power, featuring easy-to-understand explanations of how nuclear power works, the need for nuclear power, the safety measures at Shika Nuclear Power Station, and more.

The facility also serves as a venue for regional exchange, events to cultivate an interest in science among children, science lessons for local elementary school students, and more.



Science show at Alice-Kan Shika Energy Museum

Fleuri Musée de la Fleur

Fleuri Musée de la Fleur, adjacent to Shika Nuclear Power Station, is a Shika Town facility run as a national model project with the goal of establishing a power station coexisting with the community.

Since April of 2014, the Hokuriku Electric Power Company has managed and operated this facility, as designated by Shika Town.

Visitors can enjoy greenhouse and garden scenery full of seasonal flowers, or relax and unwind at the café. Fleuri also offers craft lessons and hands-on planting events as a part of our efforts to coexist with the community.



Planting activities for nursery school children

Information Disclosure on Nuclear Power

Information Disclosure to the National Government and Local Governments

In the event of an accident, equipment trouble, or other issue at Shika Nuclear Power Station, we submit reports to the national government in compliance with laws and ordinances, as well as to Ishikawa Prefecture, Shika Town, and other related local governments, based on safety agreements, etc.

Even for events that do not fall under any law, ordinance, or safety agreement, we contact Ishikawa Prefecture, Shika Town, and other related local government authorities, and make public disclosures based on memoranda established with these bodies.

■ Contact Standards (overview) and Results for Ishikawa Prefecture and Shika Town

Contact Category	Details	FY 2018 Results
I	A Items Corresponding to Safety Agreement Article 9 (Contact in the event of abnormalities) ● Incidents Required to Be Reported to National Government Based on Laws and Ordinances	0 instances
	B Items Not Corresponding to Safety Agreement Article 9 Requiring Urgent Contact ● Cases When a Nuclear Reactor Is Halted Due to Effects of Lightning Strike, etc. to Transmission Lines (External factors) ● Cases When a Considerable Earthquake Is Observed in the Region near the Power Station, etc.	0 instances
II	Items of Lower Urgency than Category I, but Still Requiring Rapid Contact ● Cases When Power Generation Output Declines ● Cases When There Is Minor Trouble with Main Equipment, etc. during Nuclear Reactor Operation ● Cases When There Is a Leak of Radioactive Material within the Radiation Control Area Above a Certain Amount Etc.	0 instances
III	Items for Which Contact Is Appropriate as Maintenance Information ● Cases When There Is Minor Trouble with Main Equipment, etc. When Nuclear Reactor Is Not in Operation ● Cases When There Are Water Leaks Not Including Radioactive Material during Inspection Work Etc.	3 instances
IV	Items Not Necessitating Contact ● Daily Maintenance Work	-

Information Disclosure to the Community

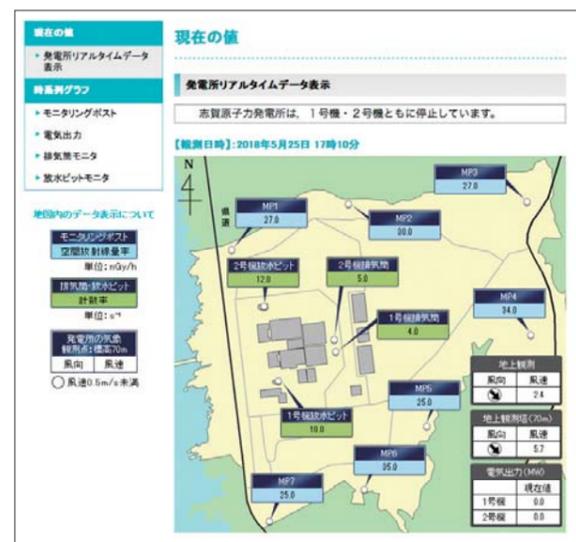
In the event of an accident or other issue at Shika Nuclear Power Station, we provide rapid disclosure through press releases or other means. We also publicize, as appropriate, our current status and efforts based on the Great East Japan Earthquake, etc.

In addition, we provide information on nuclear power through our website and newsletter, as well as making printed reports and other related material available to view at nuclear power information areas at our PR facilities and branches.

● Website

We provide information about our efforts at Shika Nuclear Power Station, including safety measures, current status of review on conformity to new regulatory requirements, and information regarding radiation and nuclear disaster prevention.

Our website also offers real-time information, such as continuous monitoring of radiation levels at Shika Nuclear Power Station and the surrounding area.



<http://atomic-monitoring.rikuden.co.jp/map>

Nuclear Power Station Environmental Radiation Monitoring and Information Disclosure

We perform regional environmental monitoring to ensure that the minute quantities of radiation and radioactive material produced in the operation of a nuclear power station do not affect the environment.

We have installed seven monitoring posts around the border of the site of the power station, which continuously measure and record radiation levels, for centralized monitoring from the main control room. We also have twelve monitoring points in the vicinity of the power station, and one in each of the cities of Kanazawa and Hakui, and every three months we measure the cumulative dose of radiation.

We also periodically collect seawater, soil, agricultural and livestock products, and other samples from both within and outside the power station site, and analyze and measure the radioactive substances they contain.

Alongside our own environmental monitoring, Ishikawa and Toyama Prefectures also perform their own, which can also be found on the internet. Our and Ishikawa Prefecture's measurement results receive technical evaluation by the Ishikawa Prefecture Environmental Radiation Measurement Technical Committee, and are confirmed and publicized by the Ishikawa Prefecture Nuclear Power Environmental Safety Management Council.

Valuing Customer Feedback

Customer Service Improvements

Our Customer Service Center (for applications, inquiries, and consultations), and our Network Service Center (for inquiries regarding power outages and electricity facilities), handle a total of about 530,000 phone calls annually. Both Service Centers work to provide prompt, detailed service.

Our various offices handle consultations regarding electricity, address power outages and equipment trouble, and provide other customer service from locations closer to customers, based on the calls received by our Service Centers.

In order to provide service that satisfies our customers, we offer various types of education to help further improve our employees' customer service skills.



Customer Service Center

Voice of Customers

●Regarding Reception for Start of Electricity Use

"When I moved in, everyone I dealt with was very pleasant, including the phone reception staff and the workers who visited to perform the work. It made me think more highly of the power company."

●Regarding Contact during Power Outage

"One part of my home experienced a power outage, so I tried calling the Hokuriku Electric Power Company. It was late at night at the end of the year, but someone came out to help, despite the snow. I really appreciated it."

Providing Customers with Useful Information

Information

We provide customers with information we would like to share, in a timely manner.

●Safe Ways to Use Electricity

We share information on the proper use of electricity at home, to ensure safe use of electricity.



Newspaper advertisement

●Various Notices and Notes of Caution

We provide information on door-to-door surveys and measures to take during power outages, as well as notices on how to keep safe from electric shocks, scams, etc.



TVCM

Efficient Use of Electricity

We provide information on how to reduce energy use, and on the energy use status of the Hokuriku area.

●Efficient Ways to Use Electricity

We provide tips on how to use air conditioning, lighting, and other electrical items in a way that reduces everyday energy waste.



Web Page (Efficient Ways to Use Electricity at Home): <http://www.rikuden.co.jp/denki-yoho/katei.html>

●Electricity Forecasts

We provide daily electricity information and past records, covering topics like expected maximum power use and supply capability during peak demand.

<http://www.rikuden.co.jp/denki-yoho/>

●Our Lifestyle Newsletter, *Elf Plaza*

Our lifestyle newsletter aims to help support our customers' comfortable lifestyles, with helpful information like quick recipes, as well as comics featuring Rikuko, our mascot character, and her family members, to help customers learn about energy.

Elf Plaza is also available on our website.



Our Lifestyle Newsletter, *Elf Plaza*

Creating a Pleasant Workplace

Efforts to Promote Work Style Reforms

At the Hokuriku Electric Power Group, we aim to be very active in both our work and personal lives, so we promote reforms of the way we work in order to improve labor productivity, in addition to improving our work itself.

We are working on work style reform, with a focus on finishing on time, reducing work hours, and making changes, as well as proactively working to use new technologies, such as drones to patrol and inspect electrical infrastructure. We are also introducing morning work hours, the option of working from home, and other ways to offer a more flexible work environment, in order to help bring about reductions in total hours worked.



Streamlining through the use of new technologies (field survey using 360° camera)

Efforts to Promote Diversity

We strive to create a work environment where employees with a wide variety of abilities and values, regardless of gender or age, can play active roles. We actively promote diversity to allow us to make the most of employees' differences, enabling us to promptly and flexibly respond to our rapidly changing environment, and helping to bring about growth as a company and bring happiness to each of our employees.

● Supportive Boss Declaration Put into Practice

Our top- and middle-level managers have declared themselves, and strive to be, "ikuboss" ("supportive bosses") who work to support the work-life balance of the people who work under them by building comfortable and pleasant work environments, and who enjoy both work and private life for themselves too.

● Women's Empowerment

We have expanded areas of work where our driven female employees can work, developing and showing their skills not only in office work, but also in technical work such as equipment operation, design work, maintenance work, and more.

As a result, in January of 2017, we earned the highest of the three ranks of "L-Boshi" certification from the Ministry of Health, Labour, and Welfare, based on the Act on the Promotion of Women Participation and Career Advancement in the Workplace.

Specific efforts include a mentor program we have introduced to

back the activities of women members of management with the help of women leaders from various industries, and the inauguration of the Shine! COSMOS Project, an inter-industry exchange meeting that aims to provide women with a chance to learn about career development and work style information, from women who work at other local businesses. This meeting is held on a regular basis.

Our target for women members of management has been set as "By 2020, aim to roughly triple the numbers from 2015" (going from 24 to about 70). As a result of our work toward this target, as of July of 2019, we now have 71 women members of management, meeting our target a year early.



Shine! COSMOS Project inter-industry exchange meeting



L-Boshi Symbol

● Veteran Employees Playing Their Part

We strive to create a comfortable and pleasant work environment for employees 55 to 65 years old, providing peace of mind and keeping motivation high so that they can continue to take advantage of the experience, knowledge, and skills they have developed over the course of their careers in their work (Career Staff system for ages 55-60 and Senior Staff system for ages 60-65).

Since April of 2016, we have introduced various measures to meet the diverse work needs of Senior Staff, including a shortened work hour system, as well as a system for certifying experts whose wealth of specialized knowledge is expected to be of great value and giving them incentives.

(As of end of FY 2018: 386 Career Staff
283 Senior Staff)

● Employees with Disabilities Playing Their Part

We have promoted the hiring of employees with disabilities for years: as of the end of FY 2018, we have 86 employees with disabilities, each demonstrating their skills.

We will continue to work to promote diversity, to create workplaces full of vitality and to help individuals and organizations reach their maximum potential.

Assisting Employees in Balancing Work with Family Care

For employees with childcare and nursing care needs, we work to build a work environment that helps balance work and personal life.

We have established childcare and nursing care leave systems, a shortened work hour system, and temporary care leave systems to take care of sick children or other family members. We are planning to further enhance these systems.

In FY2018, our childcare leave system was used by 100% of female employees who gave birth (18 employees), as well as by two male employees.

We also provide support for employees who are on leave for child-rearing or nursing care, such as offering loans of computers to share company-internal information, and holding seminars on maintaining a balance between work and child-rearing or nursing care, in order to help them continue to work without feelings of alienation or anxiety.

Results of Our Efforts

- Acquired Kurumin certification (May 2013)
- Received an award from the Toyama prefectural government for our efforts to support employees balancing work and child-rearing (September 2015)
- Honored as a Toyama Prefecture Child-Rearing Model Business (February 2017)
- Certified as a Fukui Prefecture Child-Rearing Model Business (April 2017)
- Acquired Platinum Kurumin certification (June, 2019)



Platinum Kurumin symbol

Platinum Kurumin is a sub-certification within Kurumin, a certification for companies that provide support for child-rearing, issued by the Minister of Health, Labour and Welfare, for companies whose efforts meet particularly high standards.



Seminar for families on returning to work after child-rearing leave

Promotion of Health-conscious Management

We promote health-conscious management, in order to make sure that employees can be healthy, both physically and mentally, in their work. To maintain and promote employee health, we make efforts toward mental health and preventing lifestyle-related diseases. As a result of our health-conscious management efforts, we have earned White 500 certification as a Health and Productivity Management Organization.

In April of 2019, we released our Health-conscious Management Declaration under our president's name. We will continue to work toward health-conscious management in the future.



White 500 certification logo



Health-conscious Management Declaration

Respect for Human Rights

Efforts to Promote Human Rights

Starting in 1995, we have annually held a Human Rights Enlightenment Promotion Committee meeting, including group-based information sharing, for the purpose of establishing better understandings of human rights issues and promoting the creation of a corporate culture with an open atmosphere, free of discrimination.

Each year, we host a lecture on human rights by an outside lecturer, on topics such as discrimination, harassment, and diversity. In 2016, we set a Progress Week to correspond with Human Rights Week (December 4-10) in order to further deepen our understanding of diversity; during this period, we share a message from the company president, and hold workplace discussions and other events.



2018 lecture on human rights

Corporate Governance

Basic Way of Thinking for Corporate Governance*

The Group operates a comprehensive energy business centering on its competitive electricity business, and works toward coexistence and co-prosperity with the Hokuriku region, with the goal of being a company trusted and chosen by customers and all other stakeholders.

In order to make this goal a reality, achieving sustainable growth and evolution, with higher social trust through continuous efforts to increase the quality of our operations and services, we maintain internal control systems centered around our board of directors and audit & supervisory board, and strive to increase transparency through sharing information, IR activities, and more.

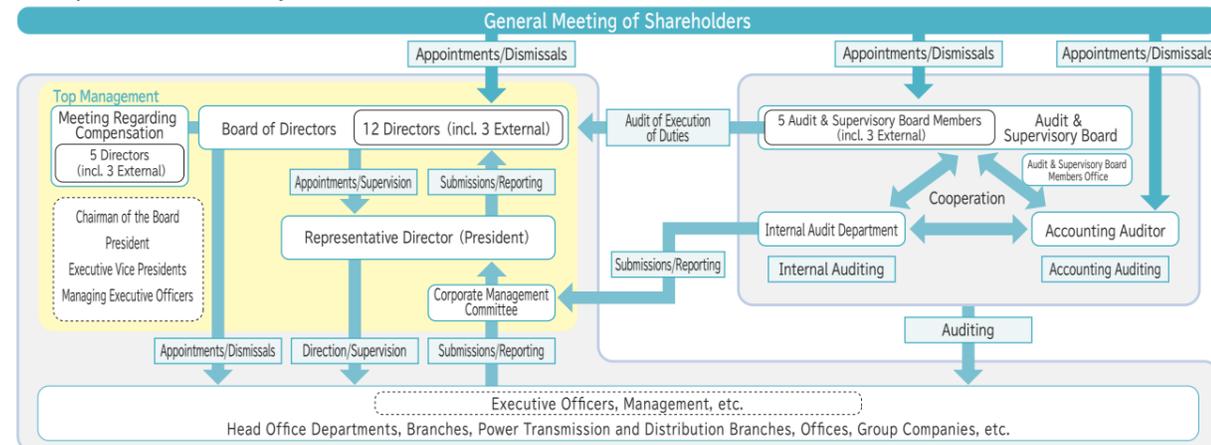
These are based on a resolution of our board of directors on the maintenance of a structure to ensure the propriety of our operations, as well as the Corporate Governance Code stipulated by the Tokyo Stock Exchange. We will continue these efforts to ensure the effectiveness of our corporate governance.

For more information on our fundamental policies related to corporate governance, as well as the status of our compliance with the Corporate Governance Code, please see the Corporate Governance Report on our website.

<http://www.rikuden.co.jp/management/governance.html>

Corporate Governance System

■Corporate Governance System



■Board of Directors

As a general rule, the board of directors meets once monthly, or as necessary. In addition to making decisions on important business execution matters in accordance with laws, regulations, and our articles of incorporation, the board also receives reports from directors on the status of their execution of duties, and supervises the directors' execution of duties. External directors provide surveillance, instruction, and advice for managerial judgment and decision-making processes, from various points of view. In addition, five audit & supervisory board members, three of whom are external members, are also present at meetings of the board of directors, and supervise the directors' execution of duties.

In order to build a management system capable of responding more quickly to changes in the business environment, the term of office for directors is one year; through this, we intend to allow even stricter supervision of our business operations by shareholders.

■Audit & Supervisory Board Members' Audits and Internal Audits

Our five audit & supervisory board members (including three external members, and a full-time corporate auditor with considerable knowledge of financial affairs and accounting) attend important meetings such as meetings of the board of directors, and engage in careful readings of important documents and investigation of operations and property at our offices and facilities, for audits of directors' execution of duties, the maintenance and operation of internal control systems, etc. In addition, our auditors hold periodic meetings with directors, the internal audit department, and the accounting auditor to exchange opinions, in order to strengthen their auditing functions.

In addition, we have established an internal audit department, which works in cooperation with the audit & supervisory board members and accounting auditor to ensure the propriety of our operations.

■External Directors and External Audit & Supervisory Board Members

In order to strengthen our business supervisory functions from an outside perspective, we appoint three external directors. External directors provide surveillance, instruction, and advice for managerial judgment and decision-making processes, from various points of view.

In addition, audits by our three external audit & supervisory board members provide surveillance, instruction, and advice through more objective and multifaceted points of view, and we take their work seriously as we work to take proper measures in response.

All of our external directors and external audit & supervisory board members are designated as independent officers, as stipulated by the Tokyo Stock Exchange, and notifications are filed with the Tokyo Stock Exchange.

Analysis and Evaluation of the Effectiveness of the Board of Directors

Matters requiring a resolution of the board of directors undergo advance deliberation by the corporate management committee and sufficient advance explanation to external directors, before being brought up for discussion by the board of directors. In addition, after evaluation of the operation, etc. of the board of directors, the company issues a report to the board of directors at the end of each fiscal year, alongside which, as necessary, the operation of the board of directors is reviewed, including revisions to standards for bringing up matters for discussion and reporting.

We also engage in opinion exchanges with external officers on the operation of the board of directors, among other efforts toward further improvements to the effectiveness of the board of directors.

Through these efforts, we believe that the effectiveness of our board of directors is satisfactory.

Policies and Procedures for Appointment and Dismissal of Key Management Personnel, and for Nomination of Candidates to Director and Audit & Supervisory Board Member Positions

Individuals are nominated to be key management personnel, or as candidates to serve as directors or audit & supervisory board members, based on their career backgrounds, as well as their excellent character, insight, and abilities.

For our external directors and audit & supervisory board members, we nominate individuals who possess broad knowledge and experience, and who can make use of their outstanding experience and insight to provide surveillance, instruction, and advice on our management, from a more objective perspective.

In the event of dishonesty in the execution of the duties of a member of the key management personnel, or a serious violation of laws, ordinances, or our articles of incorporation, that individual shall be dismissed.

Candidates for director and audit & supervisory board member positions shall be decided after sufficient deliberation at a meeting of the board of directors at which all members of the board, including the external directors and external audit & supervisory board members, are present.

Executive Compensation

Base compensation (fixed) for directors is within the range of the total sum approved at the general meeting of shareholders, and determined at a meeting of the board of directors after discussion at a meeting regarding compensation consisting of the three external directors, the chairman of the board, and the president.

Director bonuses shall be decided by the board of directors, taking into account factors including achievements during the relevant term, after a resolution of the general meeting of shareholders, and deliberation at a meeting regarding compensation.

Base compensation (fixed) for audit & supervisory board members is within the range of the total sum approved at the general meeting of shareholders, and determined through discussion among the audit & supervisory board members.

Internal Control

In accordance with the Companies Act, our board of directors has made a resolution on the maintenance of a structure to ensure the propriety of our operations (fundamental policies of the internal control system), stipulating basic systems such as compliance, risk management, and propriety in the operations of the Group. Based on this resolution, we work to maintain and operate systems to ensure propriety in our work.

Other Group companies have also decided upon fundamental policies based on each company's current status, as part of our Group-wide efforts to ensure propriety in our work.

With regards to the Financial Instruments and Exchange Act internal control and reporting system*, our company rules stipulate systems and mechanisms to ensure the trustworthiness of Group financial reporting, and we operate them appropriately. Alongside this, we also evaluate the effectiveness of our internal control, and perform the necessary corrections and improvements. In June of 2019, we also submitted our internal control report to the prime minister, in which we judged our internal controls to be effective based on a self-appraisal.

Directors and Audit & Supervisory Board Members of the Hokuriku Electric Power Company

(As of July 31, 2019)

Directors



Representative Director & Chairman of the Board

Susumu Kyuwa

Apr., 1972: Joined Hokuriku Electric Power Company
 Jun., 1999: Became Manager
 Jun., 2003: Became Director
 Jun., 2004: Became Managing Director
 Jun., 2007: Became Representative Director & Vice President
 Apr., 2010: Became Representative Director & President
 Jun., 2015: Became Representative Director & Chairman of the Board
 (Current Position)

Representative Director
& President

Yutaka Kanai

Apr., 1977: Joined Hokuriku Electric Power Company
 Jun., 2005: Became Manager
 Jun., 2007: Became Executive Officer
 Jun., 2010: Became Managing Director
 Jun., 2013: Became Representative Director & Vice President
 Jun., 2015: Became Representative Director & President
 (Current Position)



Representative Director & Executive Vice President
 General Manager of Community Relations & Development Division
 General Manager of Nuclear Power Division

Nobuhiko Ishiguro

Apr., 1983: Joined Hokuriku Electric Power Company
 Jun., 2011: Became Manager
 Jun., 2012: Became Executive Officer
 Jun., 2015: Became Director & Managing Executive Officer
 Jun., 2017: Became Representative Director & Executive Vice President (Current Position)



Representative Director & Executive Vice President
 General Manager of Marketing & Sales Division

Shiro Ojima

Apr., 1981: Joined Hokuriku Electric Power Company
 Jun., 2009: Became Manager
 Jun., 2012: Became Executive Officer
 Jun., 2014: Became Managing Director
 Jun., 2015: Became Director & Managing Executive Officer
 Jun., 2018: Became Representative Director & Executive Vice President (Current Position)



Representative Director & Executive Vice President
 General Manager of Power Transmission and Distribution Division

Koichi Mizuno

Apr., 1983: Joined Hokuriku Electric Power Company
 Jun., 2011: Became Manager
 Jun., 2014: Became Executive Officer
 Jun., 2016: Became Director & Managing Executive Officer
 Jun., 2018: Became Representative Director & Executive Vice President (Current Position)

Directors



Directors & Managing Executive Officer
 Deputy General Manager of Power Transmission and Distribution Division

Motonobu Sugawa

Apr., 1982: Joined Hokuriku Electric Power Company
 Jun., 2011: Became Manager
 Jun., 2014: Became Executive Officer
 Jun., 2016: Became Managing Executive Officer
 Jun., 2017: Became Director & Managing Executive Officer (Current Position)



Directors & Managing Executive Officer

Kazuhisa Mizutani

Apr., 1984: Joined Hokuriku Electric Power Company
 Jun., 2015: Became Executive Officer
 Jun., 2018: Became Director & Managing Executive Officer (Current Position)



Directors & Managing Executive Officer

Seisho Shiotani

Apr., 1983: Joined Hokuriku Electric Power Company
 Jun., 2016: Became Executive Officer
 Jun., 2018: Became Director & Managing Executive Officer (Current Position)



Directors & Managing Executive Officer

Koji Matsuda

Apr., 1985: Joined Hokuriku Electric Power Company
 Jun., 2016: Became Executive Officer
 Jun., 2019: Became Director & Managing Executive Officer (Current Position)



Director (External)

Tatsuo Kawada

Mar., 1962: Joined Fukui Seiren Kako Co., Ltd.
 Aug., 1981: Became Director at Seiren Co., Ltd.
 Aug., 1985: Became Managing Director
 Aug., 1987: Became Representative Director & President
 Jun., 2003: Became Representative Director and President, and COO
 May, 2005: Became Representative Director and Chair of KB Seiren, Ltd. (Current Position)
 Oct., 2005: Became Representative Director and President, COO, and CEO of Seiren Co., Ltd.
 Jun., 2008: Became Audit & Supervisory Board Member of the Hokuriku Electric Power Company
 Mar., 2009: Became President of the Fukui Chamber of Commerce and Industry (Current Position)
 Jun., 2011: Became Representative Director and Chair, President, COO, and CEO of Seiren Co., Ltd.
 Jun., 2014: Became Representative Director and Chair, and CEO (Current Position)
 Aug., 2014: Became Chair of Seiren U.S.A. Corporation (Current Position)
 Jun., 2015: Became Director at the Hokuriku Electric Power Company (Current Position)



Director (External)

Shigeo Takagi

Apr., 1971: Joined the Hokuriku Bank, Ltd.
 Jun., 1998: Became Director
 Jun., 2002: Became President
 Sep., 2003: Became President of Hokuin Financial Group
 Jun., 2013: Became Special Adviser to the Hokuriku Bank, Ltd.
 Nov., 2013: Became President of the Toyama Chamber of Commerce and Industry (Current Position)
 Jun., 2014: Became Audit & Supervisory Board Member of the Hokuriku Electric Power Company
 Jun., 2015: Became Director (Current Position)
 Jul., 2016: Became Special Counselor for the Hokuriku Bank, Ltd. (Current Position)



Director (External)

Tateki Ataka

Apr., 1973: Joined the Hokoku Bank, Ltd.
 Jun., 1998: Became Director
 Jun., 2002: Became Managing Director
 Jun., 2004: Became Senior Managing Director
 Jun., 2006: Became President (Current Position)
 Nov., 2016: Became President of the Kanazawa Chamber of Commerce and Industry (Current Position)
 Jun., 2017: Became Director at the Hokuriku Electric Power Company (Current Position)

Audit & Supervisory Board Members



Audit & Supervisory Board Member

Tadashi Takamatsu

Apr., 1983: Joined Hokuriku Electric Power Company
 Jun., 2011: Became Manager
 Jun., 2015: Became Executive Officers
 Jun., 2016: Became Audit & Supervisory Board Member (Current Position)



Audit & Supervisory Board Member

Yasuhito Mizukami

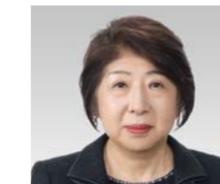
Apr., 1981: Joined Hokuriku Electric Power Company
 Jun., 2009: Became Manager
 Jun., 2012: Became Executive Officers
 Jun., 2018: Became Audit & Supervisory Board Member (Current Position)



Audit & Supervisory Board Member (External)

Toshihiko Hosokawa

Apr., 1970: Appointed as Public Prosecutor
 Apr., 1981: Registered with Osaka Bar Association
 Apr., 1985: Registered with Toyama Bar Association
 Apr., 2000: Became Professor for Kanazawa University Faculty of Law
 Apr., 2004: Became Professor for Kanazawa University Law School
 Apr., 2004: Re-registered with Toyama Bar Association (Current Position)
 Jun., 2015: Became Audit & Supervisory Board Member of the Hokuriku Electric Power Company (Current Position)



Audit & Supervisory Board Member (External)

Etsuko Akiba

Apr., 1971: Joined Japan Airlines
 Jul., 1989: Joined Public Relations Department of the Foundation of Electric Power Companies
 Apr., 1996: Joined Kanto Branch Public Relations Department of the Nippon Telegraph and Telephone Corporation
 Jun., 1999: Became Director of the Nippon Association of Consumer Specialists
 May., 2003: Became Chief Director of the Asca Energy Forum
 Jan., 2010: Became Member of the Japan Atomic Energy Commission
 May., 2014: Reappointed as Chief Director of the Asca Energy Forum (Current Position)
 Jun., 2015: Became Audit & Supervisory Board Member of the Hokuriku Electric Power Company (Current Position)



Audit & Supervisory Board Member (External)

Tadaaki Ito

Apr., 1971: Joined the Fukui Bank, Ltd.
 Jun., 1999: Became Director
 Jun., 2006: Became Managing Director
 Jun., 2007: Became Managing Executive Officer
 Jun., 2008: Became Director and Representative Senior Executive Officer
 Mar., 2010: Became Director and Representative Executive President
 Jun., 2015: Became Chair of the Board
 Jun., 2015: Became Audit & Supervisory Board Member of the Hokuriku Electric Power Company (Current Position)
 Jun., 2019: Became Adviser to the Fukui Bank, Ltd. (Current Position)

Efforts toward the Legal Unbundling of Power Transmission and Distribution

Establishment of Power Transmission and Distribution Division

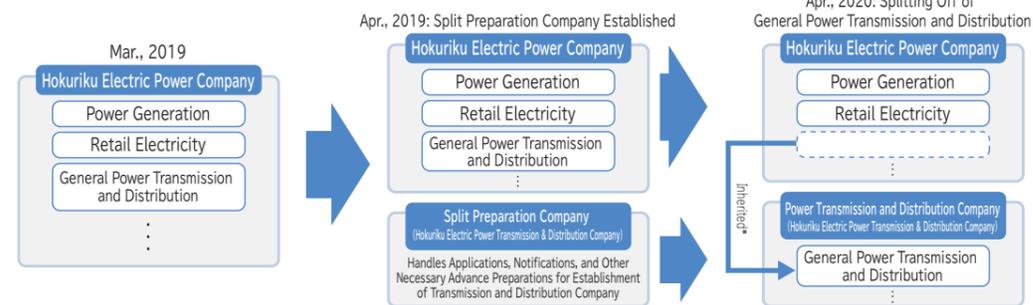
For the purpose of smooth implementation of the legal unbundling of power transmission and distribution, scheduled to be carried out from April of 2020, we established the Power Transmission and Distribution Division in July of 2018 as a transition preparation organization, and are carrying out investigations concerning the organization and operations after the legal unbundling.

We strive to establish even fairer, more transparent, and more neutral frameworks for power transmission and distribution business operations, and to ensure that Hokuriku Electric Power Company as a whole can demonstrate its overall capability to meet customers' expectations.

Company Structure after Legal Unbundling

Regarding our company structure after legal unbundling, in order to further ensure the neutrality of our Power Transmission and Distribution, we plan to split off our general power transmission and distribution operations into a separate power transmission and distribution company, whose stock is 100% owned by an operating holding company, which handles power generation and retail electricity business. Following advance preparations performed by a split preparation company established on April 1, 2019, our general power transmission and distribution business is planned to be succeeded by the split preparation company.

Reference: Explanatory Diagram of Company Structure after Legal Unbundling



*Rights and obligations related to general power transmission and distribution, such as assets and liabilities, are inherited by the split preparation company, which then begins business as a power transmission and distribution company.

Overview of the Hokuriku Electric Power Transmission & Distribution Company (As of Apr. 1, 2020)		
● Trade Name: Hokuriku Electric Power Transmission & Distribution Company	● Description of Business: General power transmission and distribution	● Date of Establishment: Apr. 1, 2019
● Head Office Location: 15-1 Ushijima-cho, Toyama City	● Representative: Representative Director & President Koichi Mizuno (planned)	● Capital: ¥10 billion (planned)

Risk Management

Crisis Management

We are working to establish crisis management regulations, in order to build a company-wide crisis management system to address various critical situations that would, or may potentially, have a significant effect on our business, and to avoid, as much as possible, any effect on our stakeholders.



Company-wide disaster prevention training

Protection of Personal Information

In January of 2005, we established our Personal Information Protection Regulations, stipulating fundamental matters regarding the handling of information, and internal management systems to prevent information leakage. General managers at our head office and other individuals have been appointed as personal information protection managers, who work to systematically ensure thorough management of the personal information under their jurisdiction.

In October of 2015, we also established our Personal Number (Social Security and Tax Number) Handling Regulations, for the proper management and handling of personal numbers and other information.

Establishment of Disaster Prevention Systems

We immediately declare Alert Status when a disaster is expected to

strike, and Red Alert Status when a disaster is predicted to occur within the next few hours, or has already occurred, or when an earthquake rated 6 Lower or above on the JMA Seismic Intensity Scale has occurred within the area we supply electricity to. In these cases, we set up an alert status (general) headquarters or a disaster response (general) headquarters at the relevant facility or office, according to the level of the alert status.

As a precaution for disasters, we have built a system of mutual cooperation to share disaster prevention information with disaster-prevention-related organizations (local meteorological observatories, fire stations, the Self-Defense Forces, police, etc.). In addition, we have also established a mutual support system in association with other electric power companies, the Electric Power Development Co., Ltd., the Organization for Cross-regional Coordination of Transmission Operators, contracted companies, electrical engineering work companies, and more, to provide mutual assistance, such as supply of electric power, personnel, materials, transportation equipment, etc.

Information Security

In order to prevent leaks of critical information, we enforce measures such as prevention of virus infection and encryption of digital data under a management system with our management layer at the top, and strive to further enhance our information security through the continuing implementation of employee education.

Connecting with Shareholders and Investors

IR Activities for Individuals and Corporations

In order to further increase our individual and corporate shareholders' understanding of our business activities, we proactively share necessary information and solicit opinions from shareholders.

In FY 2018, our activities on this front included three facility tours for individual shareholders, of Shika Nuclear Power Station, photovoltaic power stations, wind power stations, etc. We also held financial settlement briefings, facility tours, etc. for our corporate shareholders.

We also held corporate information events and facility tours for representatives from securities companies.

In addition, we post information on our website, as part of our efforts toward approachable, easy-to-understand IR* activities.



Tour for individual shareholders

General Meetings of Shareholders

At our general meetings of shareholders, we use a large projection screen to show the key points of business reports and financial statements, with spoken explanations. We also strive to provide easy-to-understand, detailed explanations in response to questions and opinions from shareholders regarding our business conditions and other topics.

Glossary

*IR: Abbreviation for "investor relations." Company activities to provide shareholders and investors with timely and fair corporate information necessary for making investment decisions.

IR Activities for Institutional Investors

We hold corporate information sessions for institutional investors and analysts, at which we engage in candid exchanges of opinions with top management about our business policies, financial status, and other topics. We also proactively engage in visit activities, post information to our website, and more. Through these efforts, we aim to further increase understanding of the Group's business activities.

Corporate Information Sessions for Institutional Investors and Analysts (FY 2018)

Date	Nov. 2, 2018	Apr. 26, 2019
Explainer	Representative Director & President Yutaka Kanai	
Details	<ul style="list-style-type: none"> FY 2018 2nd Quarter Financial Results Efforts toward Restart of Shika Nuclear Power Station Efforts for Improving Competitiveness Response to Electricity System Reform 	<ul style="list-style-type: none"> FY 2018 Financial Results Hokuriku Electric Power Group 2030 Long-term Vision Hokuriku Electric Power Group First Mid-term Business Plan (FY 2019-2022)

Note: Materials used for, and minutes from, the events can be found on our website under "IR Information."

Connecting with Suppliers

Fair and Impartial Procurement Activities

Bearing in mind our social mission to ensure a stable supply of low-cost, high-quality electricity, we strive to procure excellent-quality and economical materials, equipment, and services based on our policies of safety first and through compliance, as well as proactively working toward corporate social responsibility (CSR) through efforts such as reducing our environmental burden.

In addition, we aim to build long-term relationships of trust with all of our suppliers, who are our business partners, as we work together toward the development of both our company and theirs.

Based on this understanding, we engage in procurement activities based on our fundamental policies, as listed to the right.

Fundamental Policies for Procurement

1	Compliance with Laws, Ordinances, and Social Norms
2	Highest Priority on Safety
3	Consideration for the Environment
4	Open Transactions
5	Fair and Impartial Procurement
6	Establishment of Mutual Trust (Partnerships)
7	Proper Management and Protection of Information
8	Contribution to the Local Community

Deepening Our Safety Culture

Fundamental Ways of Thinking about Safety

In 2007, it came to light that we had not properly handled some incidents regarding power generation facilities, including the criticality accident at Unit 1 of Shika Nuclear Power Station.

Following this, we have worked to establish a corporate culture for ensuring transparency and safety, with efforts company-wide to prevent any such issues from happening again.

In February of 2011, the examination committee composed of external experts evaluated our efforts toward the recurrence prevention, and concluded that the corporate culture for ensuring transparency and safety had been established. Even after this evaluation, every employee has continued and improved these long-term efforts, taking to heart the importance of never flagging in our dedication to the corporate culture.

We continue further deepening the culture that we have built, improving company-wide quality of services and operations, as we work to earn the community's trust and provide sense of security.

Enlightenment on Prioritizing Safety, and Improving Safety Quality

● Discussions between Top-level Managers and Front-line Site Employees

We aim to share top-level managers' thoughts and passion for putting safety first with the company as a whole, as well as to increase mutual understanding within the company through frank discussion activities between top-level managers and employees.

● Sharing Case Studies of Failures to Prevent Reoccurrences

We share the lessons of failure cases within the company and facilitate improvement efforts in each department, with the goal of preventing similar accidents and problems through such conferences as "Electric Power Security Committee" and "Failure Cases Review Meetings."



Discussions between upper-level management and head office managers (Electric Power Security Committee)

Promoting Compliance

In 2002, we established the Compliance Promotion Committee, with the company president serving as chair, and a code of conduct.

We have continued to improve our efforts over time. In order to further increase the effectiveness of our compliance promotion, in 2003, we established Whistle Hokuden, a point of contact for business ethics information; in 2007, we added an external third party (lawyer) point of contact for reports; and starting in 2010, Group companies' compliance violations can now also be reported.

We continue efforts to maintain our dedication to our climate of straightforwardness and culture of safety, such as messages from the president on in-company TV broadcasts. In addition, we strive to promote compliance through autonomous initiatives, such as compliance training for each layer of our company, including top- and middle-level managers and general employees, as well as group compliance discussions at each workplace.

● Compliance Training

We hold compliance lectures for top-level management, training for compliance leaders and other staff at each workplace, and basic education and training for middle-level management and general employees, with a focus on risk management, the importance of compliance, etc.



Compliance lecture

● Group Discussions at Each Workplace

We have worked to increase awareness of compliance through lively discussions at each workplace, choosing themes, such as failure cases at work or scandals in society, based on the situation at each workplace.

Health and Safety Activities

We have established a health and safety management policy based on our fundamental belief that health and safety take priority over all else, and we work to promote the creation of comfortable workplaces built with a thorough focus on proactive safety and comprehensive health management, in order to ensure employees' safety and good health. In FY 2018, our efforts to improve employees' sensitivity to danger and encourage healthy habits included danger simulations featuring videos and other technologies, as well as education for each layer of the company to increase awareness of health management.

Business Risks

Main risks that may potentially impact the Group's performance are noted below.

Note that items in reference to the future were determined as of the submission date of our financial statement (June 26, 2019).

Main Risks That May Potentially Have Effects on the Group's Performance

(1) Current Status of Shika Nuclear Power Station

After the accident at Fukushima Daiichi Nuclear Power Station caused by the Great East Japan Earthquake, we quickly collected and implemented measures to improve safety at Shika Nuclear Power Station. We have continued with construction work related to safety measures, taking into account the new regulatory requirements as well, and Unit 2 is undergoing reviews on conformity to the new regulatory requirements.

Regarding measures to improve safety, based on the need to install backup equipment for residual heat removal due to a revision to the new regulatory requirements, progress continues on detailed plans for said equipment. However, plans are expected to require a prolonged period of time, due to the time necessary to select piping routes, etc.; as a result, we have opted to change the completion date of the construction work, and are now targeting completion within FY 2019.

Based on future reviews of Unit 2 and the review status of other companies' power stations, there is a possibility that we may need to further upgrade the specifics of the construction work, but we aim to complete the construction work as early as possible by proactively taking measures based on the review status and new knowledge. We also continue our considerations regarding Unit 1.

Regarding the faults at the site, review is currently in progress on conformity to the new regulatory requirements by the Nuclear Regulation Authority, based on consideration of three main matters: the sampling of faults at the site and selection of evaluation target faults; evaluation of activity of faults at the site; and the landform, geological features, and geological structure of the area around the site.

At the review meeting regarding the faults at the site in January of 2019, we explained that we had selected eight evaluation target faults, of which we received approval for our choice of the six land area faults as evaluation targets. We will proceed to prepare for the review of evaluation of their activity. Regarding coastal area faults, we will supplement and reorganize our data regarding the intake tunnel's fracture zones, etc., and will provide explanations regarding selection of evaluation target faults and evaluations of their activity.

In order to provide evidence for our assertions that these are not considered faults that may be active in the future (capable faults), and are not related to nearby faults, we will continue to provide detailed explanations of new findings, including geological data we have acquired through additional surveys, etc. in addition to our existing survey results, as well as other efforts as appropriate.

With regard to safety measures and surveys of faults at the site, we will provide easy-to-understand, detailed explanations for the people in the local communities, and make every possible effort to gain their understanding, with the goal of an early restart of Shika Nuclear Power Station.

We will take appropriate actions to address new regulatory requirements and other issues, as we continue to strive toward the world's highest level of safety.

However, the progress of reviews on conformity to new regulatory requirements, revisions to nuclear energy policy and regulations, and other factors that may prolong the shutdown of our nuclear power station or lower its rate of operation may impact the Group's performance.

(2) Changes to Systems Related to Our Electricity Business

Japan's Strategic Energy Plan, revised in July of 2018, includes the country's activities for the utilization of renewable energy as the major power source, as well as unchanged positioning of nuclear power as an important base-load power source contributing to the stability of the energy supply-demand structure in the long term, on the major premise of ensuring its safety.

Regarding electricity system reform, the full liberalization of the electricity market began in April of 2016, and the legal unbundling of power transmission and distribution is scheduled to start in April of 2020.

These changes to the systems related to our business may impact the Group's performance.

Beyond this, revisions of systems related to back-end operations, environmental regulation attitude related to global warming, and other factors may impact the Group's performance, but our social mission to ensure a stable supply of low-cost, high-quality electricity remains unchanged, as we continue striving to provide stable supply and further streamline our business, taking the points of view of customers and other stakeholders into consideration.

(3) Changes to Electricity Sales Volume, etc. Due to Economic Circumstances, Weather, etc.

The Group's performance may be affected by changes to electricity sales volume caused by economic and weather (particularly temperature) circumstances, competition in the electricity market, a hollowing out of the industry due to companies moving overseas, etc.

Annual precipitation rates may also cause increases and decreases in hydroelectric power generation, causing fluctuations in thermal power fuel expenses, which may impact the Group's performance.

(4) Fluctuations, etc. in Fuel Prices

Thermal power fuels refer to coal, crude and heavy oil, and LNG, and the prices of these can fluctuate abruptly due to trends in supply and demand conditions or foreign exchange rates. Operational issues in areas where we procure them from, changes in political situations, and other factors may render us unable to smoothly procure fuels. Each of these factors may have an effect on the Group's performance.

However, the fuel cost adjustment system, under which changes in fuel prices are reflected in electricity rates, alleviates the impact of fuel prices fluctuations on the Group's performance to a certain extent.

(5) Financial Market Trends

The Group's outstanding interest-bearing debt as of the end of FY 2018 was 980.4 billion yen, which may impact the Group's performance, due to the rise in borrowing rates caused by a change in the market interest rates, a ratings downgrade, or other factors.

However, because the majority of our interest-bearing debt is composed of bonds payable and long-term loans payable, for which the interest rates are fixed in the medium and long term, the impact of rising interest rates on the Group's performance would be limited.

The market value of part of the company pension assets, etc. change due to fluctuations in share prices, interest rates, etc., which may impact the Group's performance.

(6) Natural Disasters and Operational Issues

The Group possesses a significant amount of equipment, centered around power supply equipment. While we make doubly sure of the maintenance of this equipment, in the event of a large-scale natural disaster, such as an earthquake or typhoon, or operational issues affecting our equipment or the equipment belonging to other companies from whom we receive electricity, there may be an impact on the Group's performance.

(7) Businesses Other Than Electricity Business

The Group continues to work on non-electricity businesses, fully taking future prospects and profitability into consideration, but market environment changes such as competition with other companies may impact the Group's performance.

However, because the Group's non-electricity businesses are of a smaller scale than our electricity business, we believe that the impact on the Group's performance would be limited.

(8) Observance of Business Ethics

Thorough compliance is a part of our business policy: in addition to establishing and observing our code of conduct and Personal Information Protection Regulations, we also provide extensive compliance training and more, as part of our Group-wide efforts to establish an operational framework with a focus on observance of business ethics. However, if a breach of business ethics were to occur, this would cause a decline in social trust in the Group, which may impact the Group's performance.

Financial and Business Information

Main Data for the Past Five Years (Consolidated)

Fiscal Year	2014	2015	2016	2017	2018
Sales (Operating revenue) (Million yen)	532,760	544,568	542,572	596,283	622,930
Operating Income (Million yen)	39,959	38,124	10,539	14,826	12,824
Ordinary Income (Million yen)	22,331	28,041	2,012	2,671	6,656
Net income (Loss) Attributable to Owners of Parent (Million yen)	8,990	12,891	Δ622	Δ485	2,520
Return on Equity (%)	2.7	3.9	Δ0.2	Δ0.2	0.8
Return on Assets (%)	1.9	1.8	0.5	0.7	0.6
Net Income per Share (Yen)	43.05	61.74	Δ2.98	Δ2.33	12.07
Capital Investment (Million yen)	118,900	99,558	94,889	109,057	102,988
Total Assets (Million yen)	1,479,451	1,509,393	1,518,076	1,588,757	1,573,127
Net Assets (Million yen)	344,209	334,003	327,614	327,645	326,950
Capital-to-asset Ratio (%)	22.7	21.5	20.8	19.8	19.9
Outstanding Interest-bearing Debt (Million yen)	875,257	920,034	952,145	990,004	980,494
Net Assets per Share (Yen)	1,607.60	1,552.48	1,515.08	1,509.29	1,501.40
Cash Flows from Operating Activities (Million yen)	113,132	69,792	63,547	82,277	54,018
Cash Flows from Investing Activities (Million yen)	Δ104,048	Δ85,006	Δ104,252	Δ91,259	Δ101,338
Cash Flows from Financing Activities (Million yen)	Δ19,368	33,962	21,322	35,401	Δ9,912
Cash and Cash Equivalents at End of Period (Million yen)	174,379	193,128	173,746	200,166	142,934
Number of Employees	8,239	8,299	8,346	8,433	8,498

Group Companies

Total energy

Hokuriku Electric Power Company
The Nihonkai Power Generating Company, Inc.
Kurobegawa Denryoku
Toyama Kyodo Jikahatsuden Co., Ltd.
Hokuriku Lnes Co., Ltd.

Information & Telecommunications

Hokuriku Telecommunication Network Co., Inc.
Power and IT Company
Hokuden Information System Service Company, Inc.

Electricity & Engineering

Hokuriku Plant Services Co., Ltd.
Hokuden Techno Service
Nihonkaikenko Corporation
HOKURIKU ELECTRICALCONSTRUCTION CO., LTD.
Hokuden Engineering Consultants Co., Ltd.
Hokuriku Electric Power Biz Energy Solutions Co., Ltd.
Hokuden Partner Service Inc.
Hokuriku Electrical Safety Inspection Association

Environment & Recycling

Nihonkai Environmental Service Inc.
Japan Ecology and Security Service Company

Life & Office

Hokuden Sangyo Co., Ltd.
Hokuriku Electric Power Living Service Co., Ltd.
Hokuhai Dengyou Co., Ltd.

Manufacturing

Nihonkai Concrete Industries Co.
Hokuriku Instrumentation Co., Inc.
Hokuriku Energys Co., Ltd.
Hokuriku Electric Co., Ltd.

Main Data for the Past Five Years (Non-consolidated)

Fiscal Year	2014	2015	2016	2017	2018
Sales (Operating revenue) (Million yen)	513,008	494,180	497,617	549,148	575,576
Operating Income (Million yen)	35,260	28,788	2,568	5,375	4,522
Ordinary Income (Million yen)	18,100	18,992	Δ3,256	Δ5,630	2,447
Net Income (Million yen)	6,657	8,723	Δ1,848	Δ4,195	2,411
Ordinary Income / Loss (Million yen)	516,067	496,984	503,650	552,604	583,062
Electricity Sales (Retail)	444,869	432,327	433,913	472,251	477,440
Electricity Sales (Wholesale)	48,425	35,866	31,078	38,812	48,124
Other	22,772	28,791	38,658	41,540	57,497
Ordinary Expenses (Million yen)	497,966	477,992	506,906	558,234	580,614
Personnel Expenses	50,485	44,289	50,940	49,676	48,033
Fuel Expenses	128,758	102,396	102,624	118,990	124,485
Maintenance Expenses	60,839	57,911	63,111	69,087	64,414
Depreciation Expenses	66,830	63,696	61,328	59,162	68,330
Purchased Power Expenses	56,202	63,802	69,660	84,636	103,426
Interest Expenses	15,148	11,224	10,396	9,612	8,786
Taxes and Public Charges	31,284	30,462	30,281	30,787	30,457
Other	88,416	104,208	118,563	136,280	132,681
Return on Equity (%)	2.2	2.9	Δ0.6	Δ1.5	0.9
Return on Assets (%)	1.7	1.4	0.1	0.3	0.2
Net Income per Share (Yen)	31.88	41.78	Δ8.85	Δ20.09	11.55
Dividend (Yen) per Share	50	50	35	–	–
Capital Investment (Million yen)	115,722	97,971	90,563	103,662	93,708
Total Assets (Million yen)	1,419,487	1,458,977	1,460,682	1,526,576	1,508,900
Net Assets (Million yen)	302,809	297,163	286,698	280,500	280,243
Capital-to-asset Ratio (%)	21.3	20.4	19.6	18.4	18.6
Outstanding Interest-bearing Debt (Million yen)	882,017	929,327	960,198	999,883	988,764
Net Assets per Share (Yen)	1,450.13	1,423.17	1,373.09	1,343.47	1,342.28
Number of Employees	4,956	4,997	5,010	5,229	5,278

 **Hokuriku Electric Power Company**

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<http://www.rikuden.co.jp/english/>

The meaning of “Kotaeteiku Kanaeteiku” : “Continuing to live up to customers' needs.”