

Environmental Action Report 2016

Tohoku Electric Power Group



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We will strive to take appropriate actions toward the issues of global warming and continue to develop measures to work for our customers and communities.

A Message from Our Chief Environmental Management Officer

Dear Stakeholders:

The landscape of our company's environmental management has changed, since important countermeasures against global warming have been decided domestically and internationally.

Domestically, the energy mix (power supply composition) for the year 2030 and the target for reducing greenhouse-gas emissions have been decided. Internationally, the Paris Agreement, a framework for global warming countermeasures, was adopted at COP 21 (the United Nations Framework Convention on Climate Change - the 21st Conference of the Parties). In line with this agreement, the Japanese government formulated the "Global Warming Countermeasures Plan" as an action plan to achieve Japan's goals.

Accordingly, the electric power industry established the Electric Power Council for a Low Carbon Society to reduce CO₂ emissions from both supply and demand aspects.

Tohoku EPCO supports the government's energy mix target and will continue to take appropriate and firm actions to combat global warming as follows:

We continue to make all-out efforts toward the resumption of operations of our nuclear power plants while maintaining their safety as our top priority. Nuclear power is an important power source, in terms of reinforcing energy security, improving economic efficiency and reducing CO₂ emissions.

We are continuing our challenge to reduce CO₂ emissions as much as possible by improving the efficiency of our thermal power plants. In July 2016, our Shin Sendai No.3 series, which boasts the world's highest level of thermal efficiency, started full-scale commercial operations. We will continue to develop and adopt high-efficiency thermal power generation technology.

As for renewable energy, to proactively advance the installation of solar and wind power, we are proceeding with the following initiatives: large storage battery verification projects, development of a remote output control system, and research on output fluctuation countermeasures utilizing hydrogen production technology and others.

We unveiled our new corporate slogan, "Yori Sou Chikara" ("The Power to Work for You"), in October 2015, to help us meet the full-scale competition starting in April 2016. We made clear our corporate stance that the entire company will unite and respond to the needs of our customers and communities.

We will strive to achieve a sustainable society while fulfilling our social responsibilities through active communications with our customers and communities, as well as initiatives to work alongside them.

Sincerely,

樋口 康二郎

Kojiro Higuchi

Managing Director and
Chief Environmental Management Officer

October, 2016



Promotion of Environmental Management

Our Environmental Policies

We regard environmental preservation as one of the most important management issues and firmly deploy measures with the local community based on the “Tohoku Electric Power Group Environmental Policies” and the “Medium-Term Environmental Action Plan for FY2016.”

Tohoku Electric Power Group Environmental Policies

Basic Stance

Through our environment-friendly energy service, we work together with the local communities and our customers, aiming for a sustainable society where future children can live safely and in peace.

We strive to ensure a stable supply of energy that is compatible with environmental conservation and economic efficiency, with the premise of ensuring safety as a corporate group aligning with the local communities.

This is our mission, and it will not change in any way in the future.

We appreciate the earth and its bounty, and we respect the traditional values of the people of this region as they coexist with nature. We aim for sustainable growth along with the local communities and our customers. Through good and faithful communications with them, we seriously consider our commitment to environmental issues and take actions to achieve our goal.

Four Principles of Conduct

1. Appreciate the bounty of the earth and carefully use its limited resources
2. Minimize environmental impact
3. Protect and coexist with the rich natural environment
4. Think and act with the local communities and our customers

Five Important Issues in the Medium-Term Environmental Action Plan for FY2016-FY2018

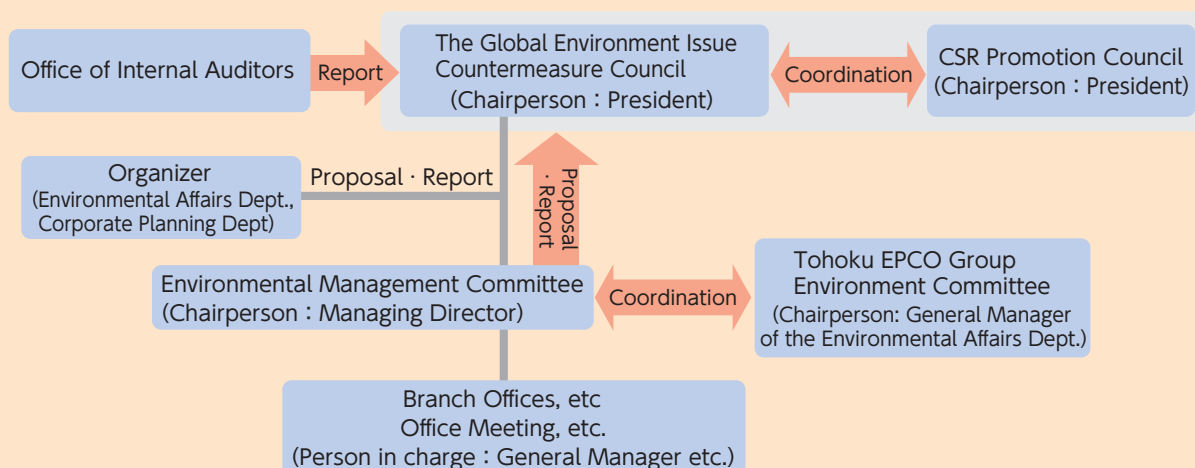
1. Promotion of comprehensive global warming countermeasures based on S+3Es (*)
2. Accurate responses to local environmental and energy-related projects
3. Compliance with environmental laws and regulations, and global environment conservation.
4. Creation of a sustainable, recycling-oriented society
5. Strengthening the relationship of trust with the local communities and customers by promoting communications about environmental issues.

* Aim for simultaneous attainment of the “3 Es”: Energy security, Economic efficiency and Environmental conservation, with the premise of “S” – Assuring Safety.

Our Environmental Management Structure

We will enhance and promote environmental management with the strong and committed involvement of our senior management. At the Global Environmental Issue Countermeasure Council, chaired by the president, companywide environmental management is discussed from a comprehensive perspective, aiming for sustainable development together with the local communities.

At the Environmental Management Committee, companywide environmental management policies and plans, individual measures, performance evaluation are discussed across multiple departments. The Committee reports and makes proposals to the Global Environmental Issue Countermeasure Council.



Our Group-wide Environmental Committees and T-EMS

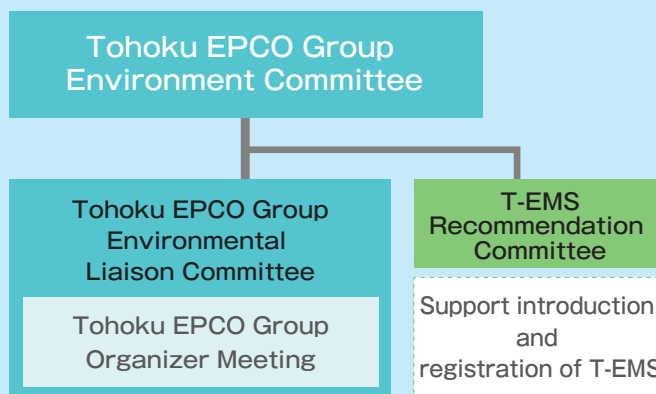
Our 27 corporate group companies have jointly established the Tohoku Electric Power Group Environmental Committee. At the Committee, we have formulated policies and made environmental action plans, and evaluate actual performance to continuously reduce our environmental impact.

In addition, we support the introduction and operation of Tohoku EPCO Group Environmental Management System (T-EMS).

This is a unique environmental management system aimed at raising the level of environmental activities throughout the Group. We are operating based on the "T-EMS Guidelines" formulated with reference to ISO 14001, an international standard for environmental management systems, and Eco Action 21 by Japan's Ministry of the Environment.

For companies that acquire T-EMS certification, qualified persons from ISO 14001 auditors and internal auditors within our Company Group review the status of environmental initiatives. They report the assessment review to the T-EMS Promotion Committee established as an internal organization of the Tohoku EPCO Group Environment Committee.

The T-EMS is composed of predetermined requirements. We continue to improve our environmental efforts by utilizing the PDCA cycle – Plan/implement plan (Do), confirm/evaluate the status of the initiative (Check); and evaluate and review overall (Action).



Results of environmental efforts in FY2015 and self-assessment

Tohoku EPCO has established and is working to achieve guideline targets in line with the Medium-Term Environmental Action Plan for FY2015, our action plan for environmental conservation in the next three years. The following are the main environmental indicators and results of measures and self-evaluation.

Guideline	Index (Unit)	FY2014	FY2015		
		Result	Target	Result	Self-evaluation

Global Warming Countermeasures in both supply and demand aspects due to improving energy efficiency.

Global Warming Countermeasures in both supply and demand aspects due to improving energy efficiency.						
CO₂ emissions control		CO ₂ emission coefficient (Kg-CO ₂ /kWh)	0.573 (0.571) *	-	0.559 (0.556) *	-
In FY2015, CO ₂ emissions and the CO ₂ emission coefficient decreased, due in part to the start of operation of a high-efficiency LNG-combined thermal power plant and an increase in renewable energy such as solar power. *Pre-adjustment CO ₂ emissions do not reflect adjustments by Feed-In-Tariff scheme for renewable energy (Note) Totals may not match due to rounding.						
		CO ₂ emissions (Million t-CO ₂)	43.90 (43.74) *	-	41.94 (41.77) *	-
Efforts to enhance thermal efficiency		Gross thermal efficiency (Lower Heating Value (LHV) standard)	45.3	-	45.6	Achieved
Our thermal efficiency rate in FY2015 increased to 45.6% from 45.3% in FY2014, due to consistent day-to-day management of each thermal power plant as well as efforts to prolong maintenance interval and shorten maintenance periods of our highly efficient thermal plants.						
Reduction of power loss		Power transmission / distribution loss ratio (%)	5.5	-	5.5	Achieved
We tried to suppress the transmission/distribution loss by adopting "low loss wire with fin," as well as by installing low-loss type transformers.						
Proposal for a heat pump electrification system to satisfy customers' electricity needs		Number of heat pump water heaters introduced (Units)	36,799	Implementa-tion	35,283	Substan-tially achieved
We proposed heat pump equipment with excellent environmental friendliness and energy savings to meet customers' needs.						
Energy conservation in offices, etc.		Electricity consumption (GWh)	130.6	-	126.9	Achieved
We have carried out energy-saving measures for air-conditioning, lighting and office automation equipment, etc., at each business site.						

Creation of a recycling-oriented society

3Rs (Reduce, Reuse, Recycle) practice, effective utilization of industrial waste		Effective utilization rate (%)	85.8	-	85.8	Substan-tially achieved
The effective utilization rate was almost the same level as the previous year due to effective use of coal ash, despite an increase in the amount of industrial waste generated. Besides coal ash, 100% of "rubble-type" waste, of which we generate a considerable amount, and almost 100% of metal scrap and gypsum is effectively used.						

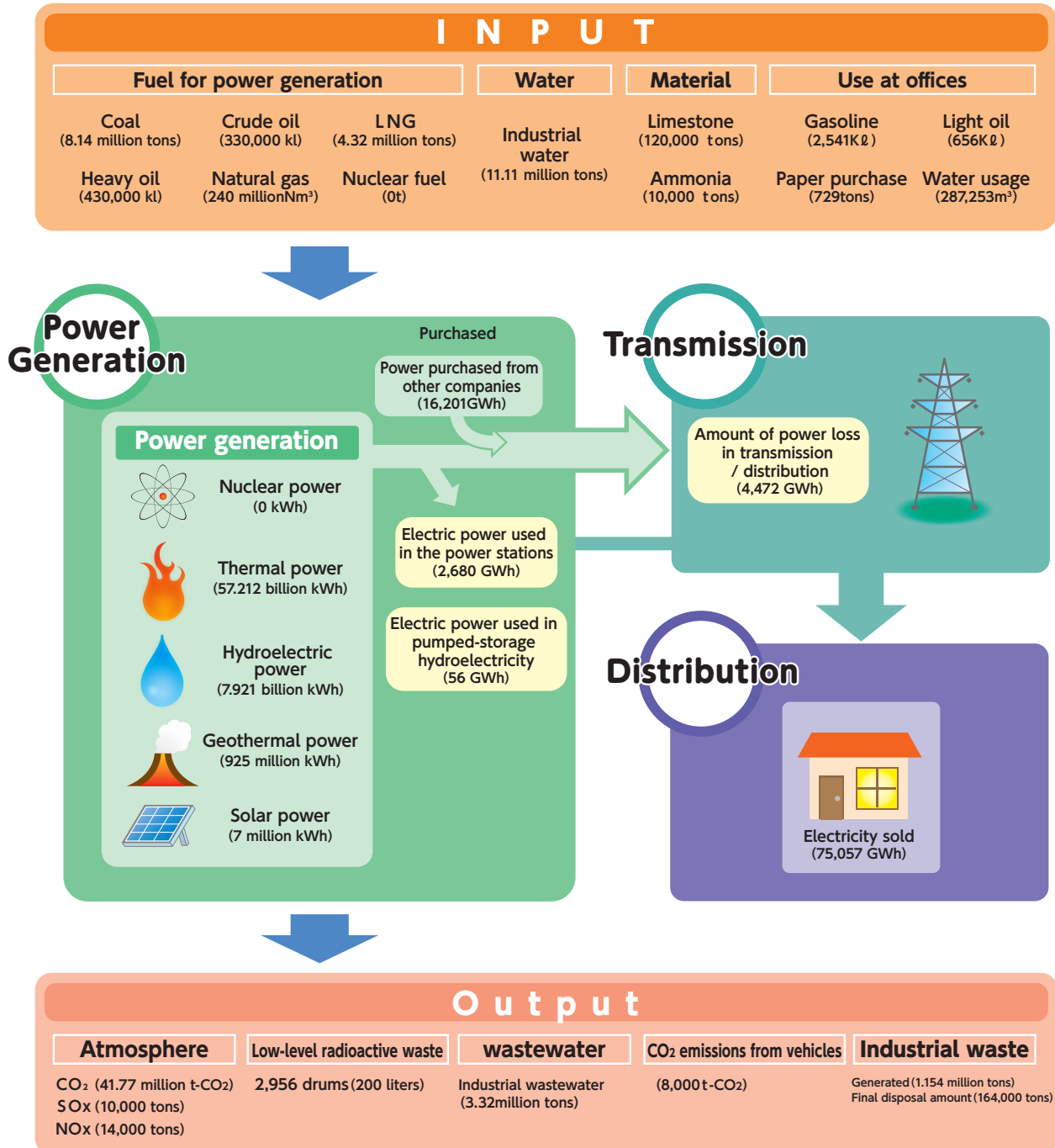
Environmental management

Promotion of measures to strengthen environmental management system		Continuing	Achieved
<ul style="list-style-type: none"> Based on the "Medium-Term Environmental Action Plan for FY2016," the PDCA cycle of environmental indicators and measures was integrated with the company's operations, an action taken in our efforts to realize continuous improvement. We endeavored to strengthen environmental management of group companies through the Tohoku Electric Power Group Environmental Management System (T-EMS). 			

Business activities and environmental impact (FY2015 results)

Our main business, the electric power business, inputs various resources to generate electricity and outputs environmental load such as CO₂ or wastes.

We continue our efforts to accurately understand and recognize such resource consumption and environmental burden in order to reduce the environmental impact.



Realization of Low-Carbon Society

We believe that the simultaneous realization of the principle of S+3Es – “Safety,” “Energy security,” “Economic efficiency” and “Environmental conservation” – is our mission as an energy business, with safety as our central premise.

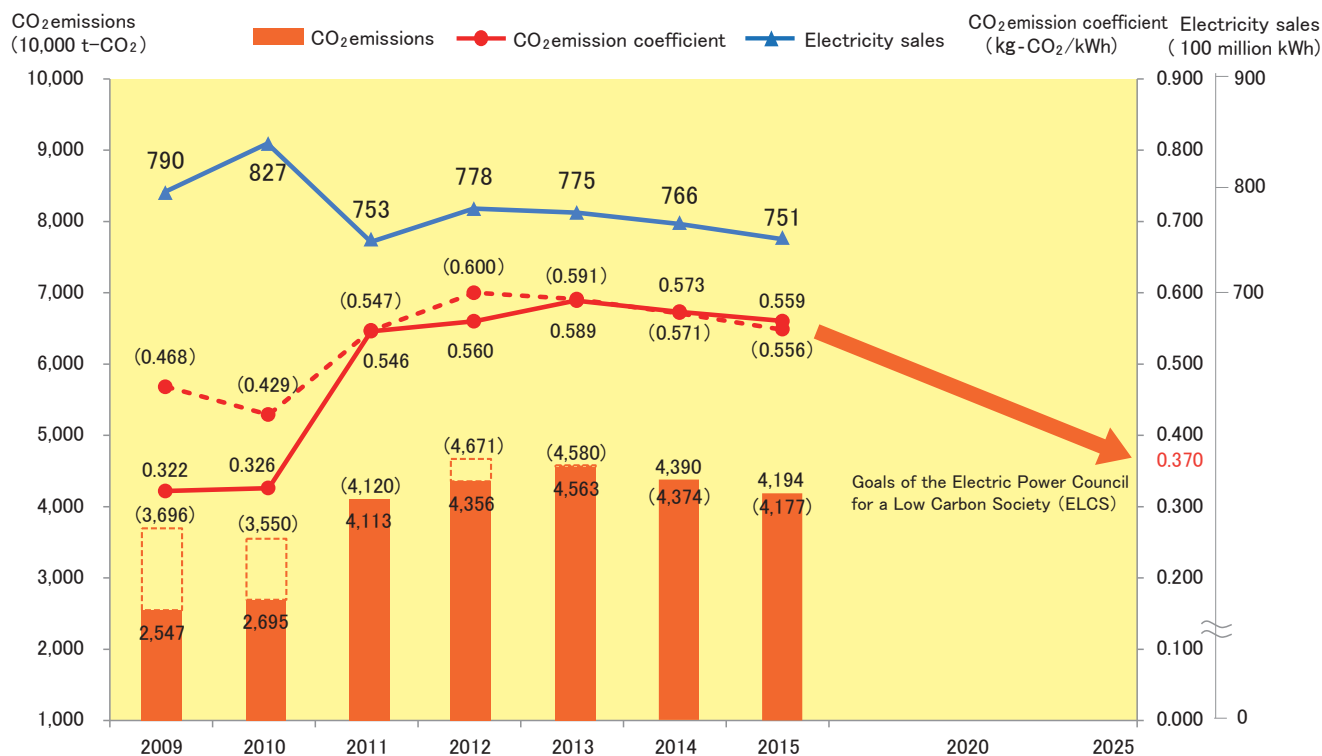
Specifically, in order to realize a low-carbon society, we are working to restart nuclear power plants on the premise of ensuring safety. At the same time, we are trying to utilize renewable energy, as well as further increase and maintain the efficiency of our thermal power plants. Also, we are striving to reduce CO₂ emissions in terms of both supply of and demand for electricity, including supporting customers’ efforts to conserve energy and reduce CO₂.

Greenhouse-gas emissions level for FY2015

Since the Great East Japan Earthquake in March 2011, CO₂ emissions levels have been high, due to prolonged nuclear power shutdowns and other factors. In FY2015, CO₂ emissions from thermal power generation decreased due to the start-up of high-efficiency thermal power plants and expansion of the use of renewable energy. CO₂ emissions decreased by 4.5% from the previous year to 41.94 million t-CO₂ and the CO₂ emissions coefficient decreased by 2.4% to 0.559 kg-CO₂/kWh.

In addition, we participated in the Electric Power Council for a Low Carbon Society (ELCS), established by 36 electric power companies, including Tohoku EPCO, which aims to achieve CO₂ emission coefficient of 0.37 kg-CO₂/kWh by the electric power companies in FY2030. We will continue to promote comprehensive initiatives aimed at reducing CO₂ emissions to fulfill the Low Carbon Society Implementation Plan.

◆ Trends in CO₂ emissions results and sales volume of electricity by fiscal year



* Values in parentheses are pre-adjustment CO₂ emissions and emission factors. They do not reflect the Feed-In-Tariff scheme for renewable energy.

* Refer to the Ministry of Economy, Trade and Industry website for information about the adjustment by Feed-in-Tariff scheme for renewable energy.

Expanding the Use of Renewable Energy

Tohoku EPCO Group is engaged in research into the expansion of the use of renewable energy. At the same time, we are utilizing the rich natural environment in the Tohoku region and introducing hydroelectric and geothermal power generation, as well as expanding solar and wind power generation.

Battery System Verification Project

The Company is working to verify the effects of introducing renewable energy by establishing a storage battery system at the Nishi Sendai and Minami Soma substations with the help of government subsidies.

The Nishi Sendai Substation Storage Battery System Verification Project is aimed at demonstrating the ability to adjust frequency fluctuations by using storage batteries. Until now, this has been mainly done by using thermal power generation. Together with the thermal energy sources, the charge/discharge function of the storage battery system acts as a measure against frequency fluctuation due to the use of renewable energy such as solar and wind, whose output varies depending on weather conditions.

The Minami Soma Substation Storage Battery System Project is aimed at demonstrating the possibility of increasing the acceptance of renewable energy by improving the electricity supply-demand balance. When electricity supply exceeds demand, the battery absorbs the surplus power so that during times of higher demand, the battery takes up the slack by discharging its power into the grid.

We will ascertain the effectiveness with the two verification tests and continue to make maximum efforts to expand the use of renewable energy.



Minami Soma Substation Storage Battery System

◆ Outline of storage battery system demonstration project

	Nishisendai Substation [Sendai City, Miyagi Prefecture]	Minamisoma Substation [Minamisoma City, Fukushima Prefecture]
Main purpose	Measures against frequency fluctuation	Improving supply-demand balance
Facility overview	Type: Lithium-ion battery Output: 20,000 kW (short time output: 40,000 kW) Capacity: 20,000 kWh	Type: Lithium-ion battery Output: 40,000 kW Capacity: 40,000 kWh
Start of operations	February 2015	February 2016

Hydroelectric power generation

The Company has 208 hydropower stations*, the largest number in the country, totaling about 2.43 million kW. When this is combined with about 120,000 kW of hydro plants owned by our group companies, the total output is about 2.55 million kW.

We are actively working to establish new hydropower facilities, and in May 2016 we launched commercial operations at the Tsugaru Power Station in Nishimeya Village, Aomori Prefecture. In June 2016 we started up the No.2 Yabukami Power Station.

According to our calculations, we will see an annual reduction of 33,000 tons of CO₂ emissions due to the operation of the Tsugaru and No.2 Yabukami hydropower plants.

This is the amount of CO₂ generated by about 19,000 typical homes every year due to their electricity use.

* Number of hydroelectric power plants as of the end of 2015.



The No.2 Yabukami Power Station
(Uonuma City, Niigata Prefecture)

Solar power

In addition to our solar power plants at Hachinohe, Sendai and Haramachi, we also began operations at Ishinomaki Hebita in March 2016. We estimate that operating these plants will lead to a reduction of about 2,900 tons of CO₂ emissions per year.



Ishinomaki Hebita Solar Power Station
(Ishinomaki City, Miyagi Prefecture)

Wind-power generation

We are blessed with excellent wind conditions in the Tohoku region, and since FY1991 we have tried to expand our use of wind power by conducting a verification test at Tappi Wind Park.



Noshiro Wind Power Station Tohoku Energy Co., Ltd. / Noshiro City, Akita Prefecture

Geothermal power generation

Since the start of operation of the Kakkonda Geothermal Power Plant in 1978, our Company Group has been actively working on expanding the use of geothermal power. We now have six units in five locations in the Tohoku area, with total output of 247,300 kW. This is the largest geothermal capacity in the country – about 48% of total nationwide geothermal power production.



Yanaizu-Nishiyama Geothermal Power Station (Yanaizu Town, Fukushima Prefecture)

Wood biomass power generation

Our Company Group is making efforts to suppress CO₂ emissions by using wood biomass fuel in coal-fired thermal power plants.



Wood biomass fuel

Improvement of efficiency in thermal power generation

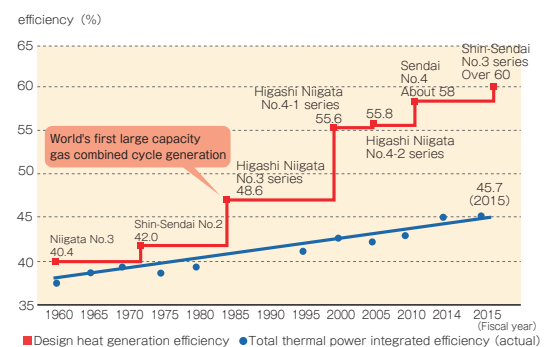
The improvement of thermal efficiency in power generation contributes not only to reducing the amount of fossil fuels used but also boosts the effective use of energy resources, as well as contributing to the suppression of CO₂ emissions. We are proactively introducing highly efficient power generation technology.

The Higashi Niigata Thermal Power Station No.3 Series, which began commercial operation in 1985, is the world's first large-capacity gas combined cycle power generation facility. It achieved thermal efficiency of about 48%, the highest level at the time.

After that, Higashi Niigata Thermal Power Station No.4 series and Sendai Thermal Power Station No.4 series realized even higher thermal efficiency. In December 2015, Shin-Sendai Thermal Power Station No.3 series started half-scale operations and, in July 2016, began full operations. This power plant achieved the world's highest thermal efficiency of over 60%.

The Shin-Sendai Thermal Power Station No.3 series is expected to realize further reduction of CO₂ emissions and costs. After shutting down the existing Shin-Sendai Thermal Power Plants No.1 and 2, replacement construction work was conducted on No.3. It is a combined cycle power generation facility, and is highly efficient compared to conventional gas-fired plants. Fuel consumption and CO₂ emissions can be reduced by about 30%.

◆ Trends of thermal efficiency of thermal power plant (Lower Heating Value (LHV) standard)



Shin-Sendai Thermal Power Station No.3 series (Sendai City, Miyagi Prefecture)

Reduction of CO₂ emissions associated with transmission and distribution

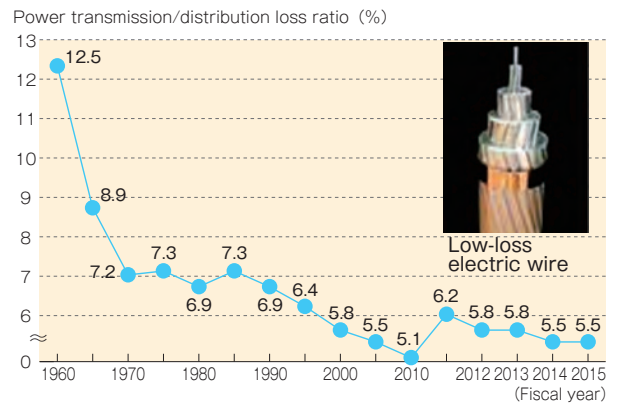
We are working to curb CO₂ emissions by reducing electric power losses associated with transmission and distribution. In collaboration with other companies, we developed a new transformer for distribution that realized reduction of power loss and long life in January 2016.

Also, losses during transmission via overhead transmission lines have been reduced to 5-6% in recent years by increasing the adoption of "low-loss finned wires" that can reduce electrical resistance by 20% or more.



New distribution transformer

◆ Trends of transmission/distribution loss ratio



*Power transmission/distribution loss ratio (%)
The ratio of the amount of electricity lost in transmission and distribution to the amount of electricity transmitted

Proposal for electrification system to help customers realize energy savings

In addition to introducing energy-saving equipment such as electrification systems and lighting for customers, we are proposing equipment with excellent environmental and energy-saving properties, according to customers' needs. In this way, we are helping our customers improve their energy efficiency.



Consulting with a customer about energy reduction

Ensuring energy saving and energy conservation at our business sites

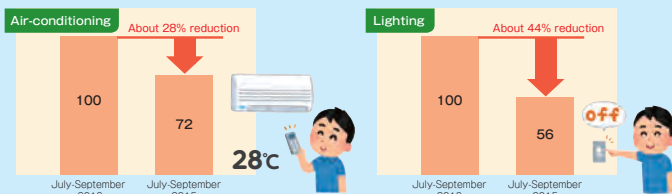
The Company Group has formulated a Power Saving Action Plan focusing on summer and winter, when power demand is highest, and is working to ensure thorough energy savings. Specifically, we aim to reduce the maximum power usage level in the summer season by 30% compared with the same month of FY2010 at business sites. For example, at our head office, our Building Energy Management System (BEMS)* collects data on the operating conditions of a number of highly efficient devices and confirms the quantitative effects of a power saving action plan. The data is effectively utilized to improve the devices' operation so they can perform at their best.

* BEMS: A system for reducing energy consumption by managing the operation of equipment and facilities in buildings.

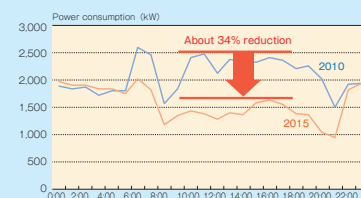
◆ The summer Power Saving Action Plan at our head office and its effects

Air conditioning	<ul style="list-style-type: none"> Operation is based on indoor temperature of 28°C, and implementation of the "Cool Biz" * power-saving scheme. * A campaign during the summer season, initiated by the Japanese Ministry of Environment, that recommends turning down air conditioners to 28°C in offices and encouraging workers to dress down without jackets and ties, in an effort to reduce electricity use, resulting in a decrease in CO₂ emissions Air conditioning is switched off during lunch breaks and after business hours.
Lighting	<ul style="list-style-type: none"> Turn off some fluorescent and other lights in executives' offices and shared spaces (lobby, corridors, etc.) Keep the lights off in all the executives' offices and common spaces (corridors, etc.) Use minimum lighting in outdoor areas
Others	<ul style="list-style-type: none"> In summer, turn off heated water for hand washing and heated toilet seats, and restrict use of automatic doors.

Electric power consumption ratio for head office building after the 2011 Great East Japan Earthquake (July-September 2010 = 100)



Daytime maximum power comparison before and after the earthquake (summer cumulative electric energy peak day) (head office building)



Conservation of Local Environment

We are making efforts to conserve the local environment in order to minimize the environmental burden of our business activities as we generate, transmit and deliver electricity to our customers.

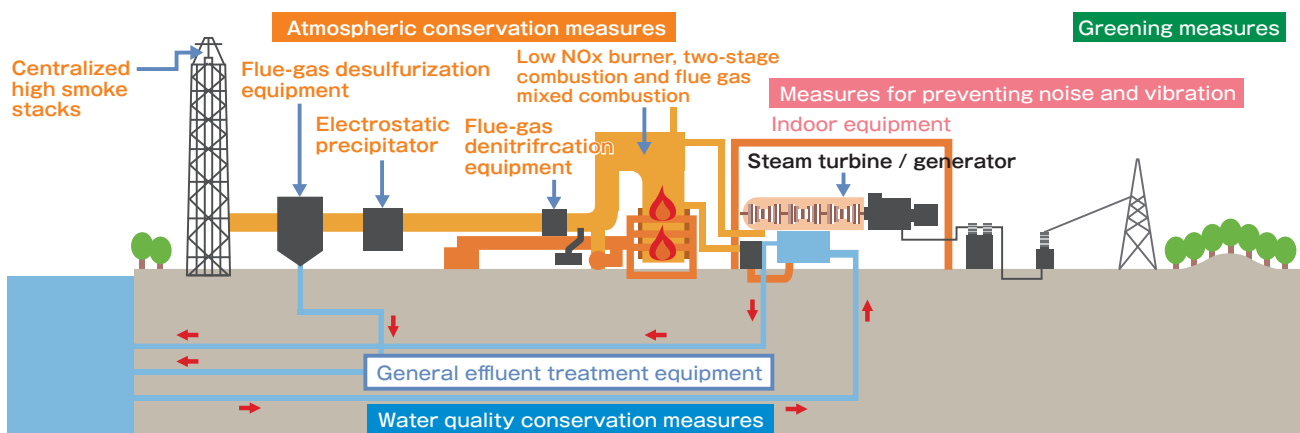
Compliance with environmental laws and pollution control agreements

At thermal power stations and other plants, we strive to preserve the local environment by concluding a "pollution prevention agreement" with relevant local governments as well as observing laws and regulations concerning environmental conservation in our operations.

Regarding the pollution prevention agreement, we are taking into account the characteristics of the area, concerning the entire environment such as air, water quality, waste, noise and greening. Our values are stricter than the national regulatory standards and we regularly report the results of our environmental measurements to the relevant local governments.

As for environmental laws and regulations, in coordination with our group companies, we are working to ensure compliance by sharing up-to-date information.

◆ An example of environmental measures for thermal power plants



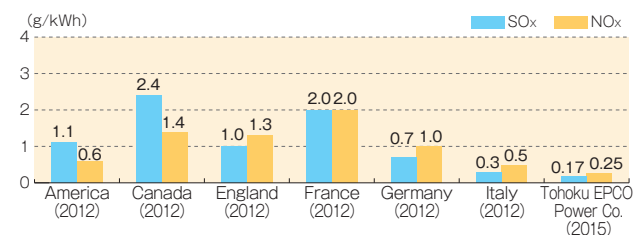
Atmospheric conservation measures

Major air pollutants emitted from thermal power plants include nitrogen oxides (NOx), sulfur oxides (SOx), soot and dust. In order to curb these emissions, in addition to installing environmental facilities*, we are working to prevent air pollution by implementing operational measures such as combustion management.

Our company's NOx emissions intensity for FY2015 was 0.25g/kWh. For SOx, the emission intensity was 0.17g/kWh. These are much lower values than in other countries.

* Flue-gas denitrification equipment, flue-gas desulfurization equipment, electrostatic precipitator

◆ Emissions of SOx and NOx per unit of generated electric power



Sources: Amount of emissions, OECD.StatExtracts Complete databases available via OECD's iLibrary. Amount of electricity generated, IEA ENERGY BALANCES OF OECD COUNTRIES 2014 EDITION.

Water quality conservation measures

We are working to prevent water pollution. Drainage water from thermal power plants is treated to meet water discharge standards by coagulation sedimentation, filtration and purification.

Also, in thermal power stations and the like, seawater is used to cool the steam used in the steam turbine, and the heat-exchanged seawater is discharged into the ocean as warm wastewater.

In discharging, we adopt a discharge method according to the characteristics of the surrounding sea areas, and reduce the environmental impact.



Survey of the ocean near a power station.

Formation of a Recycling-Oriented Society

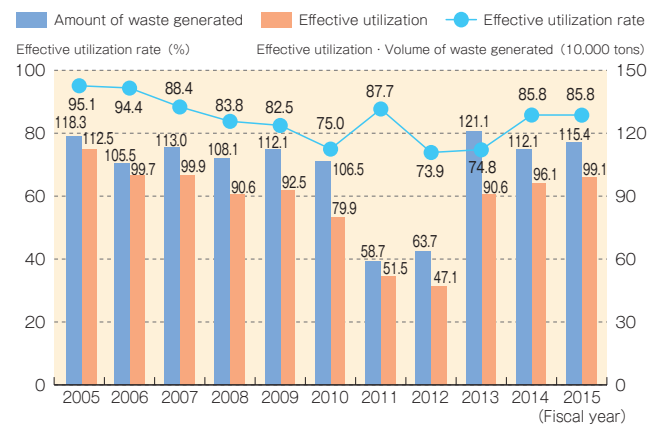
In our efforts to create a recycling-oriented society, we manage and process waste in accordance with related laws and regulations. We also actively promote 3Rs -- reduce, reuse and recycle.

The majority of our waste includes coal ash and gypsum generated by our coal-fired power plants, as well as various types of rubble and scrap metal, which we put to effective use.

This material is processed through a waste management system and a digital manifest system. At the same time, we are making efforts to further promote 3Rs; this year we established the Waste 3Rs Measures Review Committee.

As a result, although the amount of waste generated has increased since the restoration of damaged facilities caused by the Great East Japan Earthquake in 2011, the effective utilization rate has improved to the level before the disaster.

◆ Production volume and effective use of waste

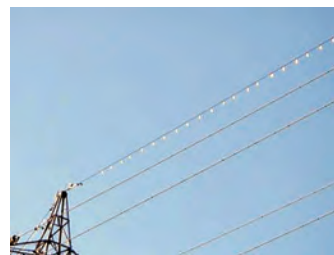


Consideration of Biodiversity

Biodiversity may be affected by the environmental burden imposed by our business activities and the installation of facilities. For this reason, we fully consider biodiversity when conducting our business activities.

Measures to keep birds safe from transmission lines

In order to allow migratory birds to recognize and avoid transmission lines, we are taking measures to prevent them from colliding with the lines, such as attaching bird-repelling devices after investigating flight paths.



Signs installed on a transmission line



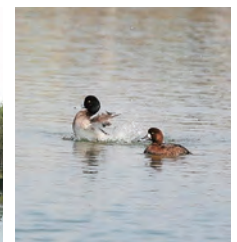
Bird-repelling signs on power lines

Developing the waterside environment at thermal power plant sites

At the Sendai Thermal Power Plant, we are working to conserve biodiversity by rebuilding the biotopes (habitats of living things) that exist around the reservoir damaged by the Great East Japan Earthquake.



Reservoir at Sendai Thermal Power Plant
The waterside at Shichigahama-machi, Miyagi Prefecture



Suzugamo ducks on the reservoir

Protecting marshes around nuclear power plants

Many rare animals and plants have been sighted in the wetlands at the Higashidori Nuclear Power Station, and in order to protect them, it is necessary to control the growth of plants such as reeds.

For this reason, regular grass cutting is carried out so that the habitat and growing environments of rare animals and plants can be maintained.



A view of a wetland at the Higashidori Nuclear Power Station (Higashidori-mura, Aomori Prefecture)



Rare Gomashijimi butterflies

Promotion of Environmental Communication

To build relationships of trust with local communities and customers, the Company Group actively discloses environment-related information and considers environmental activities, which will allow us to integrate with local residents. In this way, we are developing “environmental communication” aligned with the local communities and customers.

Green curtain campaign

One energy-saving measure that takes advantage of nature’s power is the “green curtain,” consisting of creeping vines such as goya (bitter melon) and others that extend their vines to provide shade over the windows. We have been working since 2010 on a campaign to spread the use of such green curtains. In FY2016, we recruited people to participate in this campaign to grow green curtains, and many local communities participated. Also, 100 office sites and six companies of our group, as well as schoolchildren are growing green curtains.

The progress of the green curtains at our offices, and the activities we are working on with the community, are described in full on our website.



Children with a green curtain at a nursery school



Children plant goya seedlings

Tohoku Electric Power Group recovery activity for the coastal disaster prevention forest

Our Company Group is working to restore the coastal disaster prevention forest, which was devastated by the tsunami that accompanied the Great East Japan Earthquake on March 11, 2011. This activity was started in 2013 by our employees with a strong passion for the local communities under the slogan, “Let’s help to restore the coastal disaster prevention forest damaged by the tsunami.” Local people are eager to revive the beautiful, lush forest that protects the coast from high winds, waves and tsunami. Our employees have been supporting the reconstruction of this part of the Tohoku region. This activity has connected wish of the local people for restoring the coastal forest with the passion of our employees to rebuild the communities.



Reviving the coastal disaster prevention forest

Performance data

Major item	Classification	Data item	Unit	2011	2012	2013	2014	2015
Environment	Electricity-generating capacity	Nuclear power	100 million kWh	0	0	0	0	0
		Thermal power	100 million kWh	511	528	610	566	572
		Hydroelectric power	100 million kWh	64	60	74	82	79
		Renewable Energy, etc.	100 million kWh	10	9	9	9	9
	Purchased electric power	Purchased electricity from other companies	100 million kWh	244	255	159	181	162
	Amount of power used / lost	Used within power plants	100 million kWh	22	24	29	26	27
		Used for pumped-storage power generation	100 million kWh	3.3	0.7	0.5	0.6	0.6
		Used in offices	100 million kWh	1.3	1.3	1.3	1.3	1.3
		Lost in transmission/distribution	100 million kWh	51	49	49	46	45
	Amount of electricity sales		million kWh	75,304	77,833	77,452	76,623	75,057
	Fuel consumption to generate electricity	Coal	10,000 tons	331	438	890	771	814
		Heavy oil	10,000 kl	112	144	99	89	43
		Crude oil	10,000 kl	74	44	33	31	33
		Natural gas	100 million Nm ³	2.6	2.4	2.4	2.4	2.4
		LNG	10,000 tons	489	466	428	408	432
		Nuclear fuel	t	0	0	0	0	0
	Water usage	Industrial water	10,000 tons	772	1,055	1,160	1,174	1,111
	Vehicle fuel	Gasoline	kl	2,209	2,673	2,669	2,397	2,541
		oil	kl	838	794	775	672	656
	Other usage	Limestone	10,000 tons	5	6	12	10	12
		Ammonia	10,000 tons	0.5	0.5	1.0	1.0	1.0
	CO ₂ emissions	CO ₂ (before adjustment)	10,000 t-CO ₂	4,120	4,671	4,580	4,374	4,177
		CO ₂ (after adjustment)	10,000 t-CO ₂	4,113	4,356	4,563	4,390	4,194
		CO ₂ emission coefficient (before adjustment)	kg-CO ₂ / kWh	0.547	0.600	0.591	0.571	0.556
		CO ₂ emission coefficient (adjusted)	kg-CO ₂ / kWh	0.546	0.560	0.589	0.573	0.559
	Greenhouse-gas emissions other than CO ₂	SF ₆ recovery rate	%	99.5	99.6	99.7	99.3	99.4
		HFC holding capacity	t	37.8	42.7	41.5	47.7	52.6
		HFC emissions	t-CO ₂	2,699	1,019	1,638	563	1,349
	Waste	Amount of waste generated	10,000 tons	58.7	63.7	121.1	112.1	115.4
		Final disposal amount of waste	10,000 tons	7.1	16.6	30.5	15.9	16.4
		Industrial waste recycling volume	10,000 tons	51.5	47.1	90.6	96.1	99.1
		Effective waste utilization rate	%	87.7	73.9	74.8	85.8	85.8
	Other emissions	SOx emissions	10,000 tons	0.9	1.1	1.3	1.2	1.0
		SOx emission intensity	g / kWh	0.19	0.22	0.22	0.21	0.17
		NOx emissions	10,000 tons	1.5	1.6	1.6	1.5	1.4
		NOx emission intensity	g / kWh	0.29	0.31	0.27	0.27	0.25
		Industrial wastewater	10,000 tons	215	278	324	326	332
		CO ₂ emissions from vehicles	10,000 tons	0.7	0.8	0.8	0.7	0.8
	Prevention of global warming	Total thermal power integrated efficiency (lower heating value (LHV))	%	45.3	44.8	44.7	45.3	45.6
		Power purchased from solar power generations	10,000kW	25.1	37.5	81.2	152.9	245.4
Trends of transmission/distribution loss ratio		%	6.2	5.8	5.8	5.5	5.5	
Trend in popularity of Eco Cute devices within Tohoku EPCO (cumulative) Individual		Individual units	215,294	253,493	295,675	332,474	367,757	

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