

HEPCO's "Pursuit of the Best Energy Mix for the Future and Measures to Realize a Low-Carbon Society"

Based on a perspective of "S+3E" (Safety, Energy Security, Economy, and Environmental Conservation), the HEPCO group will pursue a suitable energy mix, contributing towards the realization of a low-carbon society. In addition to efforts for an LNG thermal power station and for the broader introduction of renewable energies, we will work for the early resumption of operations and for ensuring stable operations at the Tomari Nuclear Power Station on the major premise of guaranteeing safety.

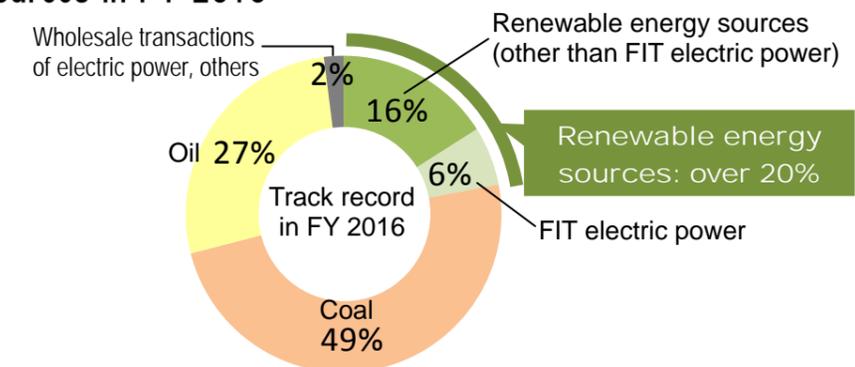
- With an aim of developing an energy mix that ensures a stable energy supply for the future, enhances price competitiveness and is also compatible with the environment, the HEPCO group will proceed to introduce new power sources, such as the Ishikariwan Shinko Thermal Power Station as the company's first LNG thermal power station, and to enhance the Kitahon HVDC Link.
- In Hokkaido's small-scale power system, we are attempting to utilize additional wind and photovoltaic power and to maintain power quality, such as by improving the accuracy of forecasts for the output of wind and photovoltaic power and by establishing control algorithms for the fluctuation of power output. For the sake of utilizing further renewable energy sources, we are also promoting activities such as: verification tests for the broader introduction of wind power generation using the Kitahon HVDC Link; a large-scale storage battery system demonstration project; and utilization of untapped energy in hydroelectric power generation.

Contribution toward reducing emission of greenhouse gases

- We are actively working to expand the introduction of renewable energy sources, such as hydroelectric power, wind power, and photovoltaic power; the share of renewable energy sources in the overall amount of power generated was over 20% in FY 2016. (The share of renewable energy sources in the Projected Energy Mix in FY 2031 according to Japan's Energy Plan, formulated by the government: 22-24%)
- We will contribute toward the realization of a low carbon society by accomplishing the target set by "the Action Plan for the Electricity Industry for Achieving a Low-Carbon Society"

Share of renewable energy sources in FY 2016

The share of renewable energy sources in HEPCO's overall amount of power generated in FY 2016, including the amount generated by Feed-in Tariff (FIT) scheme, was over 20%.

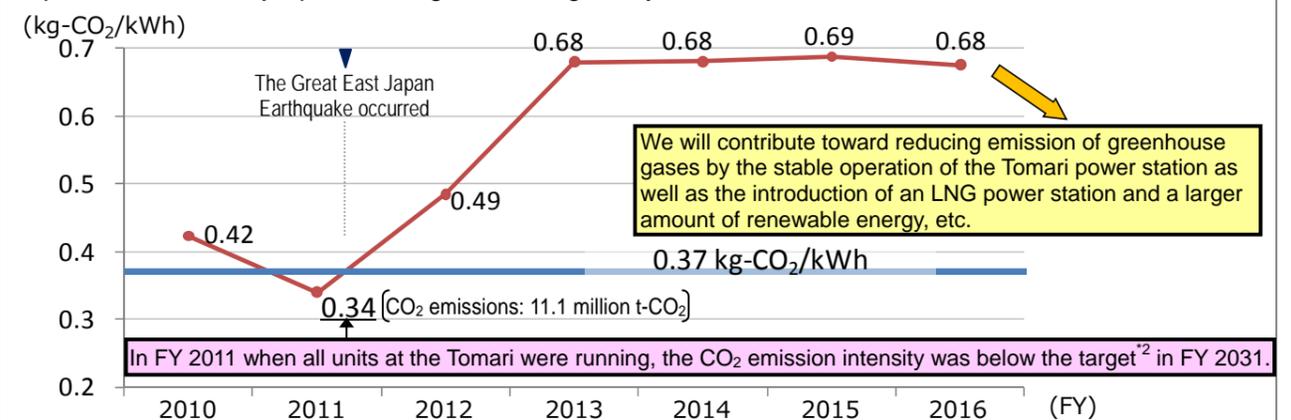


Target set by "the Action Plan for the Electricity Industry for Achieving a Low-Carbon Society"

⇒ We aim to reduce the CO₂ emission intensity to approximately **0.37 kg-CO₂/kWh*** (Target [weighted average] to be achieved by all the electric companies in Japan) in FY 2031.
* Per kWh of electricity consumed by customers

Changes in the CO₂ emission intensity*¹ of Hokkaido Electric Power Co.

- The one-by-one shutdown of the reactors at the Tomari Nuclear Power Station after the Great East Japan Earthquake led to a significant increase in the amount of power generated by thermal power stations.
- We are now undergoing screening to ensure that we meet the new regulations based on the Nuclear Regulatory Requirements set out by the Nuclear Regulatory Authority as we work towards the resumption of operations. We are fully committed to restarting the Tomari Nuclear Power Station as soon as possible on the major premise of guaranteeing safety.



*1 After reflecting carbon credits according to the stipulated methods, etc.

*2 Target (weighted average) to be achieved by all the electric companies in Japan

Power generation	
Nuclear power	Efforts for the early resumption of operations and for ensuring stable operations at the Tomari Nuclear Power Station on the major premise of guaranteeing safety
Thermal power	Introduction of the Ishikariwan Shinko Thermal Power Station (LNG: 569.4 MW x 3 units) · Fulfilled with the best available technologies (BAT).
Hydroelectric power (renewable)	Introduction of the Kyogoku Power Station (Pure pumped-storage station: 200 MW x 3 units) · In addition to its role during peak supply capacity, the Kyogoku Power Station contributes to the expansion of renewable energy through the introduction of superior variable speed system for load following capabilities and frequency adjustments due to fluctuating demand. Take advantage of untapped energy in hydroelectric power generation facilities · Promote redevelopment of small and medium-sized hydropower in conjunction with replacement of superannuated hydro generators, and promote efforts to improve output at existing power stations with the installation of high-efficiency runners.
Renewable	Demonstration of small-scale woody biomass power generation using hydrogen Survey of geothermal resources and consideration of commercial development
Power transmission and distribution	
System interconnections HVDC	Enhancing the Kitahon HVDC Link · Contributes to the broader introduction of renewable energies and activating power transactions in Hokkaido, in addition to ensuring stable power supply in the Hokkaido area.
Networks	Large-scale storage battery system demonstration project · Aims to demonstrate performance and develop and establish optimal control technologies as a new way to adjust power with respect to output fluctuations for wind power and photovoltaic power.
Renewable	Broader introduction of renewable energies · Introduction of a forecasting system for renewable generation · Verification tests for the broader introduction of wind power generation using Kitahon HVDC Link. · Total Volume of interconnected inverters as of the end of March 2016 was 3,000 MW; over 20% share of renewable energies in the overall amount of power generated. Research on output control for generation from livestock manure
Retail	
Energy savings and CO ₂ reduction activities	Recommendations based on energy conservation · Implementation of energy-saving services from the customer's perspective, including recommendations to switch to smart electrical appliances, such as high-efficiency heat pumps, and the dissemination of information on energy savings.