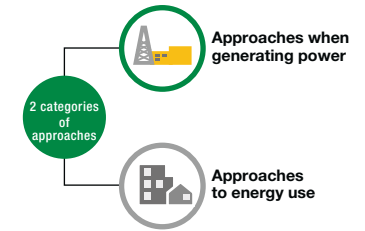




Protecting the Earth from global warming

Increase thermal power efficiency



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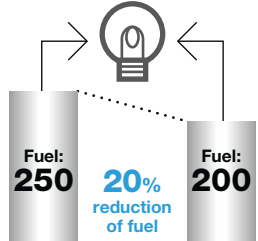
TEPCO approaches

Terminology

Thermal efficiency

The share of the total thermal energy in the fuel consumed occupied by that effectively converted into electrical energy, expressed as percentage.

When electricity is assigned the value 100



Thermal efficiency: 40%

Thermal efficiency: 50%

CC power generation

Combined Cycle power generation

ACC power generation

Advanced Combined Cycle power generation, an improvement upon CC power generation.

MACC power generation

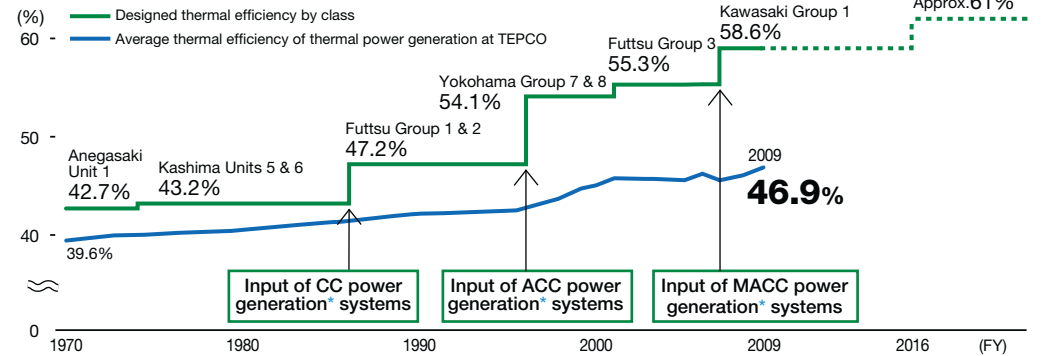
More Advanced Combined Cycle power generation (CC power generation in the 1,500°C class)

We are working to reduce CO₂ emissions by improving thermal efficiency*

In thermal power stations fired with fossil fuels, a higher thermal efficiency is linked to lower levels of fuel input and CO₂ emissions.

At TEPCO, we are striving to improve thermal efficiency by introducing high-efficiency facilities. A 1% improvement in the average thermal efficiency of all TEPCO thermal power stations would reduce CO₂ emission levels by 1.9 million tons per year. TEPCO also plans to introduce a 1,600°C combined-cycle power generation system (MACC II system) to the Kawasaki Thermal Power Station in FY2016. The system would deliver a thermal efficiency of around 61%.

Trend of change in thermal efficiency of thermal power generation



* Lower Heating Value (LHV) equivalents: estimated based on the performance of Higher Heating Value (HHV) using conversion factor shown in General Energy Statistics (FY2004).

Higher efficiency through generation system evolution

Coupling gas turbines with steam turbines, Combined Cycle (CC) power generation systems enable more efficient use of thermal energy. Additional refinements of these systems are steadily raising their thermal efficiency even higher. The latest MACC combined-cycle system in the 1,500°C class has a thermal efficiency of about 59%, the highest in the world. Such systems were introduced to thermal power stations in Kawasaki in June 2007 and in Futtsu in July 2008.



Diagram of Combined Cycle power generation

