

Situation surrounding Small Coal Power Plants

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The Ministry of Economy, Trade and Industry and the Ministry of the Environment have each established advisory panels on fossil power generation. While their scope is defined as fossil power generation in general, their discussions primarily cover coal power generation, particularly small coal power plants with capacity at less than 112,500 kilowatts. They are considering how to improve the efficiency of coal power generation including possible regulatory measures. Specific regulatory measures under consideration include the environmental assessment of small coal power plants. These panels will give specific directions by the end of this fiscal year.

Coal power plants cost less than other fossil power plants¹. Particularly, many construction plans exist for small coal power plants for which the government's environmental assessment is not required. Small coal power plants that can start operation promptly with less initial investment required are an attractive power source for power generators envisaging the electricity market after the electricity system reform.

But coal power plants, though having a cost advantage over other fossil power plants, emit more carbon dioxide. Since smaller fossil power plants feature less efficiency², small coal power plants' environmental cost is greater.

Under such situation, the minister of the environment has presented the minister of economy, trade and industry with written opinions opposing two coal power plant projects in considering that these planned cannot be viewed in line with the government targets below in response to their environmental assessment. The environment minister's opinions came on June 12, 2015, against Yamaguchi-Ube Power Generation Co.'s plan to build a new 1.2 million kW coal power plant in Ube, Yamaguchi Prefecture, and on August 14, 2015, against Chubu Electric Power Co.'s plan to replace an existing coal power plant with a 1.07 million kW plant in Taketoyo, Chita, Aichi Prefecture. The government target refers its Long-term Energy Supply and Demand Outlook (energy mix) for FY2030 and Japan's Intended Nationally Determined Contributions to greenhouse gas emission cuts. The written opinions call for creating an effective mechanism in accordance with the electric power industry's Low-Carbon Society Action Plan (released on July 17, 2015), a voluntary framework of major electric power generators against global warming.

The energy mix envisages that coal power generation would cover about 26% (about 30% in FY2013³) of electricity demand projected at 980.8 billion kWh for FY2030, up about 1.5% from

¹ Long-term Energy Supply and Demand Outlook Subcommittee Power Generation Cost Verification Working Group, "Report on Power Generation Cost Verification to Long-term Energy Supply and Demand Outlook Subcommittee"

² Long-term Energy Supply and Demand Outlook Subcommittee, "Issues on Fossil Power Generation"

³ Actual FY2013 data from "Electricity Survey Statistics" by Ministry of Economy, Trade and Industry

966.6 billion kWh for FY2013. While general power utilities are expected to reduce the capacity factors of coal power plants due to an increase in nuclear power generation, new power producer and suppliers entering the market are assumed to achieve high capacity factors for new coal power plants including small ones. The overall average capacity factor for coal power generation thus remains uncertain. If the average capacity factor is assumed to retain its present level, an increase in total coal power generation capacity may result in a deviation from the future energy mix. Furthermore, if generally inefficient small coal power plants increase their share of power generation output, Japan's greenhouse gas emissions may deviate from the emission reduction target in its Intended Nationally Determined Contributions.

In order to achieve Japan's greenhouse gas emission reduction target, possible measures are; replacing outdated coal power plants with highly efficient ones within the voluntarily framework; and develop new coal power generation technologies and burning biomass along with coal to help reduce emissions. On the other hand, the government may have to consider various power generators' future trends in the electricity market, coal power plants' roles commensurate with their capacity levels, how to treat small coal plants for private power generation, and how to secure biomass resources and their consistency with the Feed-in Tariff scheme.

As discussions are taking place on arrangements and design institutions regarding small coal power plants, we need to closely pay attention to future developments.

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