

Calculation of the Effect of the Restriction on Electricity Consumption based on Article 27 of the Electricity Business Act Looking at Power-saving Measures Last Summer

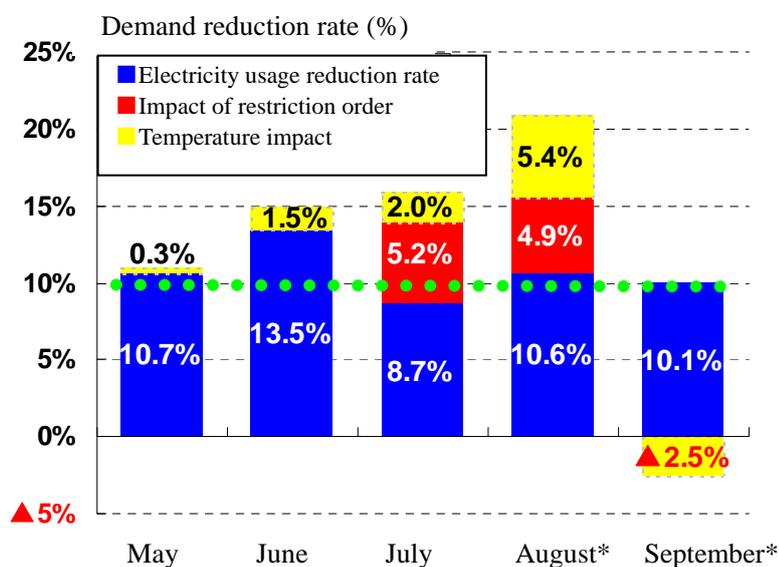
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Overview

The Great East Japan Earthquake caused severe damage to power generation facilities in the service areas of Tokyo Electric Power Company (TEPCO) and Tohoku Electric Power Company (Tohoku EPCO), raising concerns about a power shortage. Last summer, electricity usage reduction measures were steadily implemented through the power-saving efforts of respective entities, and adding this to the fact that the temperature was relatively mild compared to that of FY2010, the electricity usage reduction far exceeded the goal set by the government. On the other hand, restrictions on electricity consumption based on Article 27 of the Electricity Business Act (electricity usage restriction order) were imposed within the services areas of TEPCO and Tohoku EPCO. The impact of this order was significant. In addition to advancing power-saving efforts that could be taken without a heavy burden being imposed, there were also aspects to the order that imposed an economic burden to reduce electricity usage, such as halting operation of facilities.

This paper organizes data from May to September within the TEPCO service area and analyzes the impact of the electricity usage restriction order, based on the analysis of electricity usage reduction rates excluding the temperature factor in Nagatomi (2011). The additional power-saving impact within the TEPCO service area prompted by the electricity usage restriction order is estimated to be about 5 percent. The analysis indicates that the restriction order promoted continuous implementation of power-saving measures that did not impose a burden, while at the same time, had the additional effect of prompting power-saving measures at a level severe enough to impose a certain degree of burden on entities. Categorizing electricity usage reduction factors into power-saving efforts, impact of the electricity usage restriction order, and temperature impact, voluntary power-saving efforts had the highest impact, while the restriction order encouraged those efforts. The temperature factor, especially in August, also had a significant influence. Moreover, for measures under the electricity usage restriction order, we can estimate from an analysis of electricity usage reduction rates by weekend, weekday, and by time, that power-saving measures in July and August, when the restriction order was in effect, were more emphatic during weekdays rather than on weekends, and during the day rather than at night.

Diagram: Breakdown of Factors for Electricity Demand Reduction Rates (within the TEPCO Service Area)



Note August: all of August and up to September 9

Note September: September 10 and onward