

Review of Electricity Usage Reduction Rates by Sector and by Time Looking at Power-saving Measures Last Summer

Yu Nagatomi, Researcher, Energy Data and Modelling Center

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. The government goal imposed a uniform reduction target across sectors; however, there was debate on the advantages and disadvantages of imposing a uniform target on sectors which have different electricity demands. In order to consider future power-saving measures, this paper attempts to analyze the characteristics of each sector's electricity usage reduction rate by time, taking into consideration the demand characteristics of each sector, and to contribute to consideration of a more rational realization of the power-saving potential in each sector.

The results indicate the possibility that power-saving efforts by the business sector account for a comparatively large part of all electricity usage reduction during peak hours within the TEPCO service area. Specifically, looking at 2 PM, the business sector is estimated to have reduced electricity usage by 21 percent, the industrial sector by about 18 percent, and the residential sector by about 11 percent, in each respective sector. Moreover, the overall electricity usage reduction rate at 2 PM is estimated to be about 17 percent and the degree of contribution of each sector is estimated to be about 9 percent by the business sector, and about 5 percent and 3 percent by the industrial and residential sectors, respectively. This shows that the contribution of the business sector for reducing power consumption was considerable.

Diagram: Calculation of Electricity Usage Reduction Rates by Sector and by Time Excluding the Temperature Factor (within the TEPCO service area; summer weekdays)

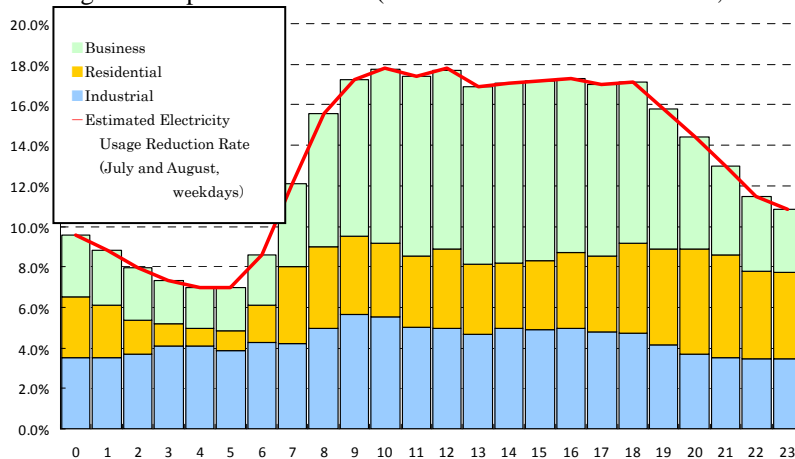


Figure: Electricity Usage Reduction Rate by Sector and Contribution to Overall Electricity Usage Reduction Rate at 2 PM

	Industrial	Business	Residential	Total
Electricity Usage Reduction Rate by Sector	18%	21%	11%	17%
Contribution to Overall Electricity Usage Reduction Rate	4.9% (about 3 GW)	8.9% (about 5.3 GW)	3.2% (about 2 GW)	17% (about 10.3 GW)

Note The figures in parentheses show the amount of demand reduction when calculating the maximum power demand to be 60 GW.