

## **Benefits of Domestic Electricity-Saving Measures and Reduced Electricity Consumption during the Summer Period**

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According to the projections of electricity supply and demand in the summer period within the service area of Tokyo Electric Power Co., Inc. (TEPCO), there is likely to be a supply-demand gap (short supply) of not less than 10 GW during hours of peak demand. With such tight power supply being expected, drastic electricity-saving measures will need to be implemented during peak hours in the summer period, that is, from daytime to evening. In particular, domestic households will be required to give consideration to electricity-saving by carefully switching off lights and household electric appliances, raising the temperature settings on their cooling equipment and refrigerator, and unplugging equipment when not in use. By estimates, these measures will result in saving about 2.5 to 3.1 GW within the TEPCO service area.

### 1. Projections of electricity supply and demand in the summer period

TEPCO had a power supply capacity of 39.5 GW as of April 10, but it expects to secure supply of 46.5 GW by the summer. Meanwhile, based on the actual results in 2010, the maximum power demand within the TEPCO service area will rise to around 50 GW in June, when air conditioning begins to be used, and will reach a peak at around 60 GW between July and September. With no countermeasures taken, there will be a supply-demand gap (short supply) of not less than 10 GW.

### 2. Benefits of domestic electricity-saving measures and reduced electricity consumption

Given the expected pressure on the electric power supply during the summer period, various countermeasures need to be implemented. In summer, power demand usually peaks from daytime to evening, during which electricity-saving measures at households may bring about only limited benefits because people tend to be out of the home. However, if people attentively take electricity-saving measures such as carefully switching off lights and household electric appliances, raising the temperature settings on their cooling equipment and refrigerator, and unplugging equipment when not in use, about 2.5 to 3.1 GW of energy will be saved within the TEPCO service area.

The following energy-saving measures are particularly effective from daytime to evening (with the estimated benefits within the TEPCO service area).

- Air conditioned cooling: Raising the temperature setting by 1 degree Celsius saves 640MW

(about 10%).

- Air conditioned cooling: Frequently cleaning the filters saves 220 to 440MW (about 5%).
- Housework: Doing washing and cleaning in the morning or nighttime (rather than during hours of peak demand from daytime to evening) contributes to a peak shift by 430MW.
- TV/Video equipment, etc.: Unplugging from the outlets and switching off standby settings saves 380MW (operable when people are not at home).
- Refrigerator: Raising the temperature and refraining from overstuffing save 370MW (operable when people are not at home).
- Lights: Carefully switching off lights saves 150 to 360MW (using sunlight as much as possible instead of electric lights).

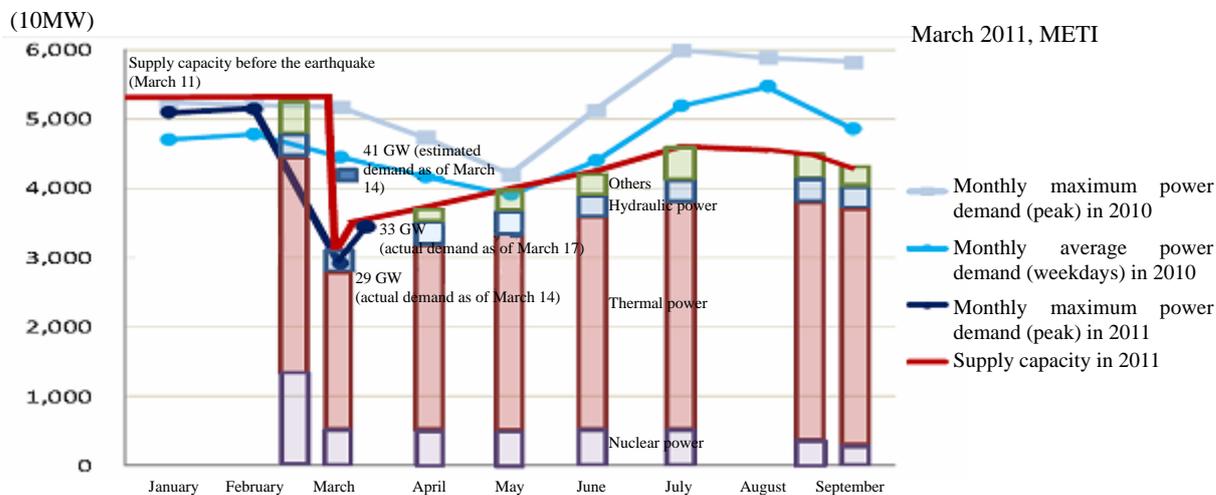
Power demand in households peaks from 7:00 to 8:00 a.m. and from 7:00 to 11:00 p.m. both in summer and winter, when most people are awake and at home. Particularly in summer, power demand is higher during the evening and later hours than during the morning hours due to the intensive use of cooling equipment. This means that energy-saving measures will be effective when implemented during the late hours. On the other hand, the total power demand, including demand at offices and industrial facilities, peaks from daytime to evening, during which energy-saving measures at households may bring about only limited benefits because people tend to be out of the home. However, even such a limited benefit achieved in each household, when multiplied by the number of households within the TEPCO service area (20 million), will amount to a large quantity. In addition, even if only used for a short time, equipment such as microwaves, vacuum cleaners, IH cooking heaters, washing/drying machines, irons, hairdryers, dishwashing/drying machines, etc., use significant quantities of power. It is desirable that people avoid, where possible, using such equipment during peak hours from daytime to evening.

The energy efficiency of air conditioners currently on the market has improved by about 20% and that of refrigerators has also improved by as much as 80% as compared to the level a decade ago. Although there are initial required costs, replacing low-efficient equipment with new one also contributes to energy-saving.

(Please note that the estimates shown above are subject to review based on close examination in the future.)

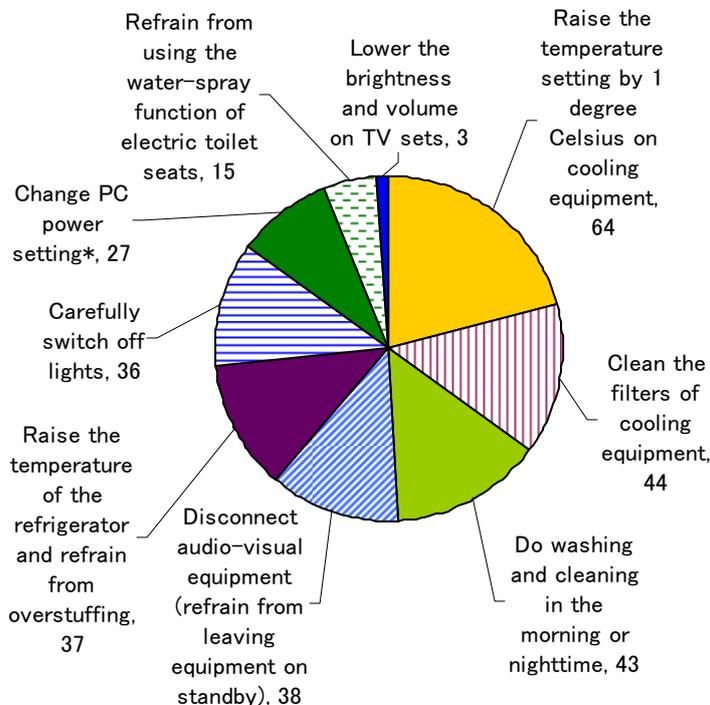
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(Fig. 1) Projected electricity supply and demand within the TEPCO service area



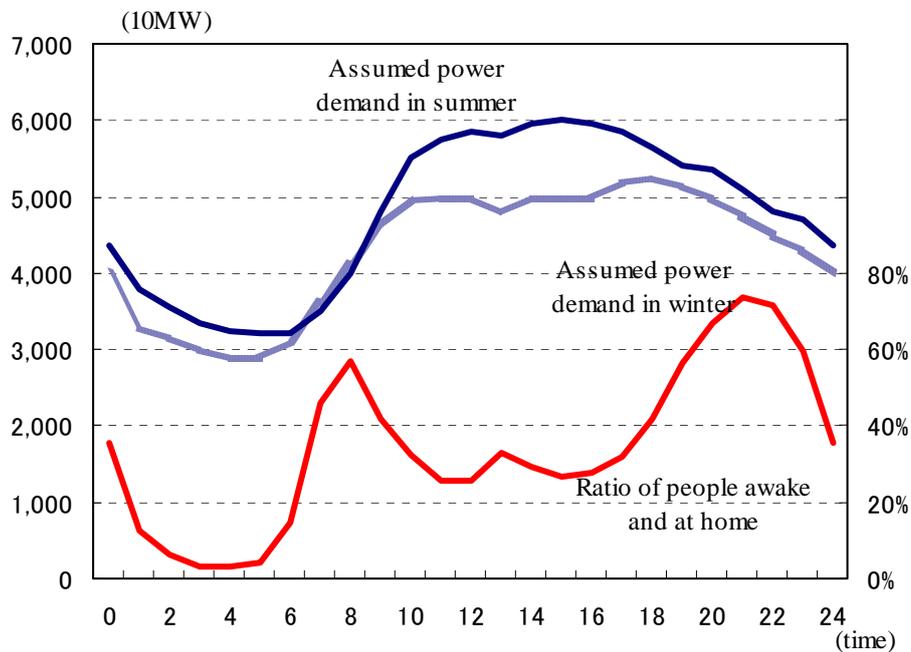
Source: METI

(Fig. 2) Energy saved within the TEPCO service area by domestic energy-saving measures (Maximum, 10MW)



\* Difference achieved by changing power setting from "Monitor power switch OFF" to "System standby"

**(Fig. 3) Hourly power demand (TEPCO) and the ratio of people awake and at home (weekdays)**



Source: Ratio of people awake and at home, NHK Broadcasting Culture Research Institute, *National Motion and Time Study Report of 2010*

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