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Summer Electricity Saving Measures and Their Effects for Office and Commercial Buildings

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An outlook for summer electricity supply and demand in Tokyo Electric Power Co.'s service area indicates that there could be a supply-demand gap (a supply shortage) of more than 6 GW at a peak of demand. As the electricity supply-demand balance is expected to tighten, electricity saving measures are important for office and commercial buildings and the like, known as the largest electricity demand sector, during summer electricity peak demand hours in the daytime and evening. TEPCO's service area can be estimated to cut electricity consumption by about 2.8 to 4.7 GW from the usual level during electricity peak demand hours in the daytime and evening through careful measures including the frequent turning off of lights, air conditioners and office automation machines, the adjustment of preset air-conditioning temperatures and the reduction of machines in operation.

1. Outlook for summer electricity supply and demand

TEPCO is expected to increase its electricity supply capacity from 39 GW on May 13 to 53.8 GW by this summer. Based on the data for 2010, maximum electricity demand in the TEPCO service area in 2010 is estimated at around 50 GW at the beginning of the air-conditioning season in June and at around 60 GW during the peak demand period between July and September. If no measures are taken, the supply-demand gap (a supply shortage) may exceed 6 GW.

2. Electricity saving measures and their effects for office and commercial buildings

Various measures are required to be taken as the electricity supply-demand balance is expected to tighten toward this summer. On the demand side, electricity saving measures are important for office and commercial buildings and the like, known as the largest electricity demand sector, which accounts for about 40% of total electricity consumption, during the electricity peak demand hours in the daytime and evening.

Electricity saving measures that require no investment cost apparently include the frequent turning off of lights, air conditioners and office automation machines, the adjustment of preset air-conditioning temperatures and the reduction of machines in operation. These measures are estimated to allow **TEPCO's service area to cut electricity consumption by about 2.8 to 4.7 GW from the usual level during the electricity peak demand hours in the daytime and evening**.

Particularly, the following electricity saving measures have greater effects:

・**Lighting: A 30-50% reduction in lighting can save 1.72 to 2.95 GW in electricity in TEPCO's service area**

→ During the electricity peak demand hours in the daytime, outside light may be used as much as possible to reduce electric lighting to a degree that falls short of affecting business operations or visitors' convenience. All office lights may be turned off during lunch breaks.

・**Air-conditioning: A hike of 1 to 2 degrees Celsius in preset air-conditioning temperatures can save 0.45 to 0.94 GW**

→ A hike of 1 degree Celsius in preset air-conditioning temperatures can cut electricity consumption by about 5%. The Cool Biz campaign may be promoted to raise preset air-conditioning temperatures in offices. In stores, hotels, hospitals and the like, preset air-conditioning temperatures may be raised to levels that fall short of affecting visitors or patients.

・**Office automation machines: Energy saving modes and other measures can save 0.36 GW.**

→ A reduction of personal computer monitors' preset brightness (from the maximum to medium) can cut electricity consumption by about 10%. Printers, fax machines and the like may be switched into energy saving modes. Offices with multiple copiers may reduce the number of copiers in operation.

・**Escalators and elevators: A 30-50% reduction in the number of escalators and elevators in operation can save 0.17 to 0.28 GW**

→ Buildings with multiple escalators and elevators may reduce the number of those in operation. Within buildings, people may walk up stairs up to two floors and down stairs up to three floors.

An industry-by-industry breakdown of electricity saving effects follows:

・**Office buildings to save 1.32 to 2.06 GW in electricity**

→ Office, corridor and lobby lighting may be reduced by some 50% and preset air-conditioning temperatures may be raised. Office lighting may be strictly turned off during lunch breaks. Lighting in restrooms may also be turned off when not in use. Office automation machines may be switched into energy saving modes. People may refrain from using elevators.

・**Department, supermarket and convenience stores, other retailers and wholesalers to save 0.82 to 1.3 GW**

→ Stores may reduce lighting and raise preset air-conditioning temperatures to levels that fall short of affecting visitors' convenience. They may also turn off lighting for refrigerated showcases and raise preset temperatures for them. Escalators and elevators in operation may be reduced to a degree that falls short of affecting visitors' convenience.

・**Hotels and inns to save 0.15 to 0.26 GW**

→ Hotels and inns may reduce lobby and corridor lighting and raise preset air-conditioning temperatures to a degree that falls short of affecting users' convenience. Televisions, refrigerators and other appliances may be unplugged in vacant rooms.

・**Schools to save 0.14 to 0.23 GW**

→ Schools may reduce classroom, corridor and gymnasium lighting to a degree that falls short of affecting lessons. Preset air-conditioning temperatures may be raised.

・**Hospitals to save 0.07 to 0.22 GW**

→ Lighting may be reduced in waiting lounges and bedrooms for patients. Preset air-conditioning temperatures may be raised to a degree that falls short of affecting patients.

・**Restaurants to save 0.06 to 0.09 GW**

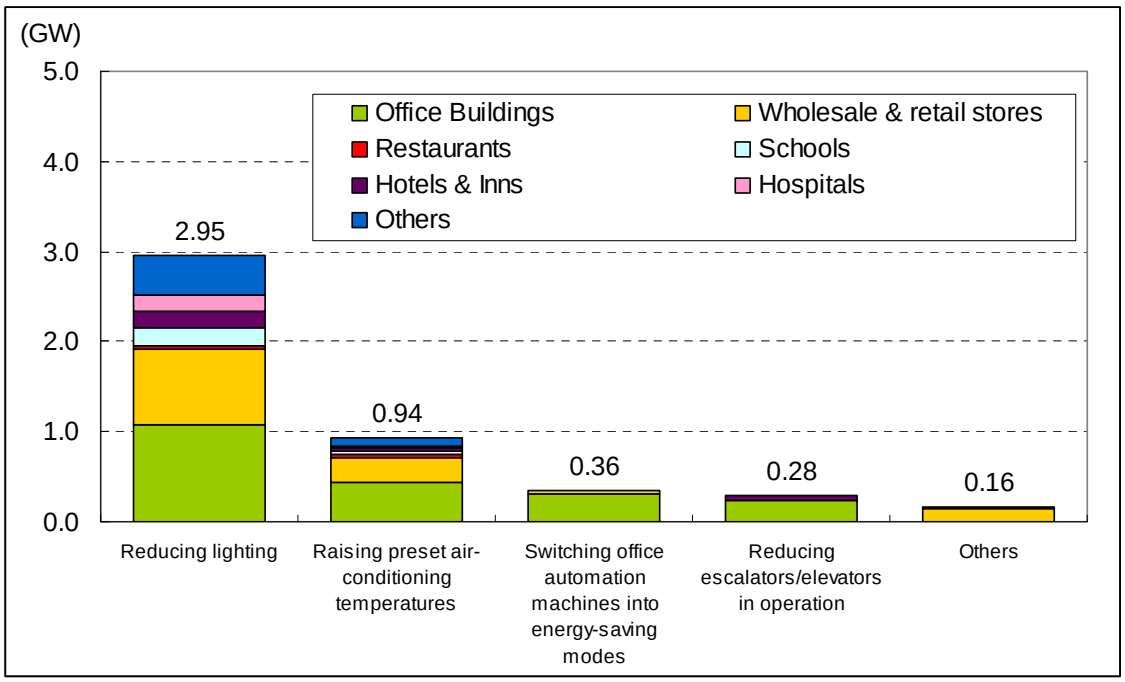
→Restaurants may raise preset air-conditioning temperatures to a degree that falls short of affecting customers' convenience. They may also reduce lighting and raise preset temperatures for refrigerators.

(These measures may allow restaurants to save 0.22 to 0.37 GW in their electricity peak demand hours in the nighttime.)

As estimated above, careful electricity saving measures in office and commercial buildings and the like are expected to produce great effects. Before the summer season, there will be time to spare for investing in the introduction of energy-saving equipment to further conserve electricity. (For example, we can cut electricity consumption by 50% by switching from straight tube fluorescent lamps to LED (light-emitting diode) lamps and by 90% by switching from incandescent lamps to LED lamps.)

Electricity Savings Potential for Office and Commercial Buildings in the TEPCO Service Area

(Maximum expected values)



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