

Energy Conservation Efforts at Ministry of Economy, Trade and Industry Government Building Complex

December 2, 2008

**Welfare Planning Office, Minister's Secretariat,
Ministry of Economy, Trade and Industry**

1. Building Outline

Name: Ministry of Economy, Trade and Industry (METI) Government Building Complex

Organizations based in building complex and common facilities:

METI headquarters, Agency for Natural Resources and Energy, Nuclear and Industrial Safety Agency, Small and Medium Enterprise Agency, four independent administrative agencies, common conference rooms, etc.

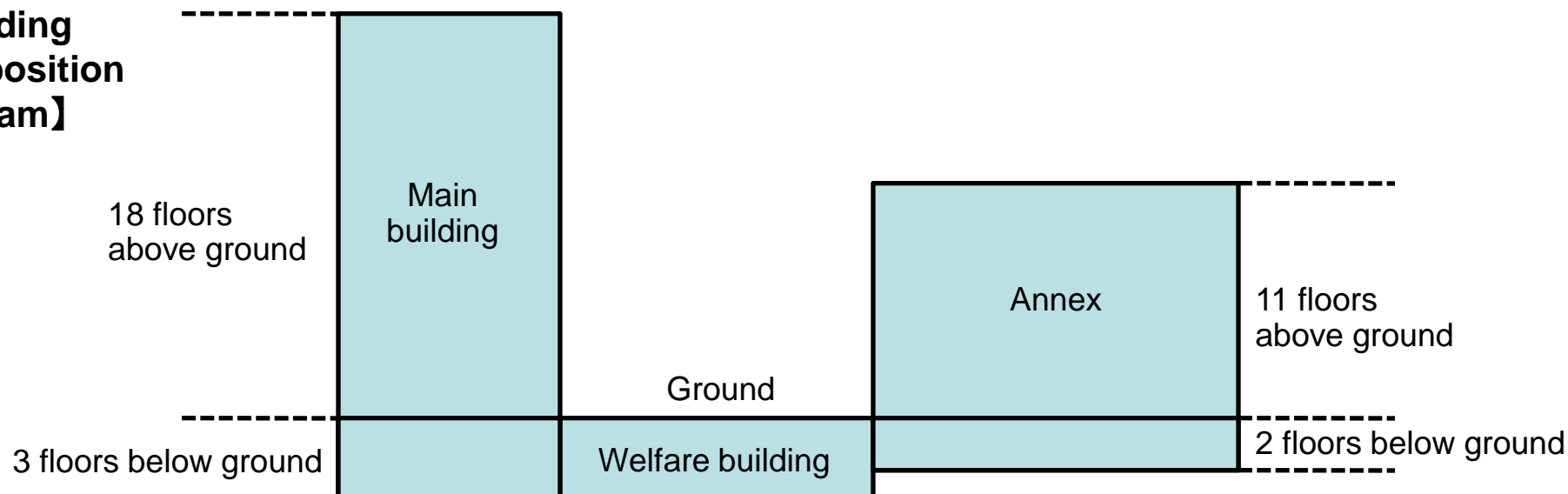
Years of completion:

Main building (three floors below ground and 18 floors above ground)	1984 (24 years old)
Annex (two floors below ground and 11 floors above ground)	1966 (42 years old)
Welfare building (three floors below ground and no floors above ground)	1984 (24 years old)

Combined floor area: 112,421 m²

Number of personnel working at building complex: approx. 3500

【Building composition diagram】



2. Use of Energy

- At the METI Government Building Complex, various forms of energy, including electricity, gas and steam, are used on a daily basis to provide administrative services.
- The combined energy consumption of the building complex is 1761 MJ/m² as heat energy equivalent (FY 2000).

Breakdown: Electricity 1367 MJ/m² (77.6%)

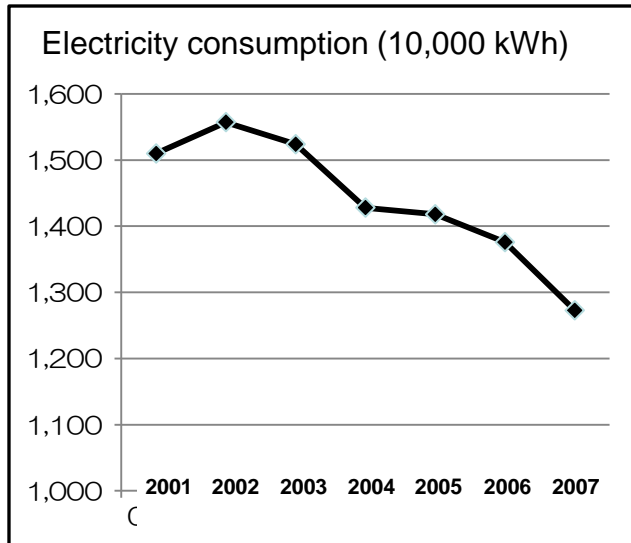
Steam 311 MJ/m² (17.7%)

Gas 84 MJ/m² (4.7%)

* About 60% of electricity, the form of energy with the largest share, is used for air conditioning and heating/cooling, followed by lighting, approx. 30%.

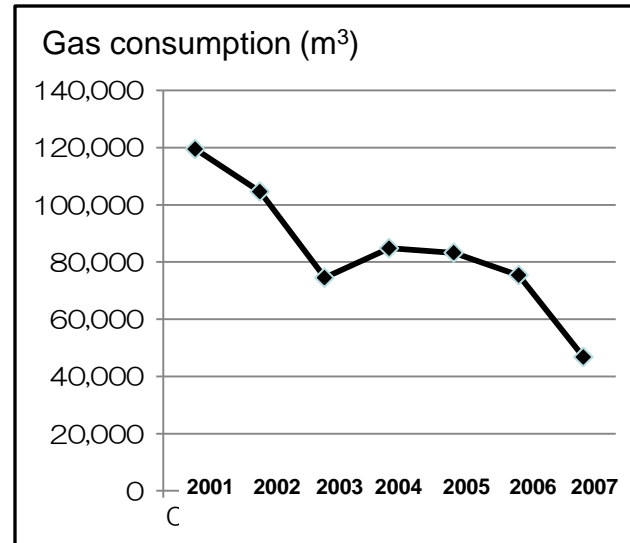
【Energy Consumption Trends】

(Electricity)



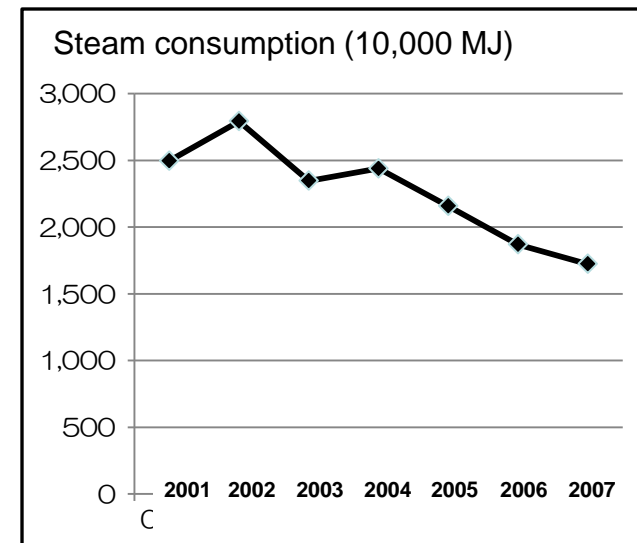
→Compared to FY 2001, consumption is down 15.7% in FY 2007.

(Gas)



→Compared to FY 2001, consumption is down 60.9% in FY 2007.

(Steam)



→Compared to FY 2001, consumption is down 31.0% in FY 2007.

3. Main Energy Conservation Efforts (1)

[Air conditioning and heating/cooling]

- Renewal of equipment
 - Heat source-related upgrading at main building (introduction of ice thermal storage system)
 - Fan coil-related upgrading at main building (improvement of air-conditioning efficiency)
 - Window frame-related upgrading at annex (improvement of thermal insulation of building)
- Strict enforcement of hours of operation and temperature setting
(Uniform setting of summer cooling and winter heating temperatures at 28°C and 19°C, respectively)
 - Cool Biz and Warm Biz seasonal dressing styles are promoted to make working in those conditions as comfortable as possible.

[Lighting]

- Renewal of equipment
 - Upgrading relating to power receiving and transforming equipment (introduction of high-efficiency transformers)
 - Lighting equipment-related upgrading (introduction of centralized control from central monitoring room)
- Illumination control
Ministry-wide uniform setting of illumination intensity to 750 lux (normally around 1200 lux)
- Introduction of motion sensor control
Lights are automatically dimmed after signs of the presence of people are absent for a predetermined length of time.
- Timer control
Lights are automatically turned off at 12:15 (lunchtime) and at 20:00 (nighttime).

3. Main Energy Conservation Efforts (2)

[Installation of photovoltaic power generation systems]

- The rooftop of the main building: 20 kWh (installed in FY 2007, planned for expansion to 100 kWh by the end of the current fiscal year)
 - The rooftop of the annex: 40 kWh (installed in FY 2002)
 - The courtyard: 3 kWh (installed in FY 2000)
- Generate about 60,000 kWh of electricity from a renewable source of energy (solar light) each year to meet part of the energy needs of the building complex.

[Building greening]

Establishment of approx. 390 m² of green space on the rooftop of the annex.

→ Helps reduce energy demand for cooling because of the cooling effect it has on the surrounding space and the building.

[ESCO project]

Implementation of nine energy conservation measures, including an improvement of the efficiency of air conditioner operation, introduction of flushing sound-mimicking devices in female toilets and an improvement of the efficiency of lighted exit signs, as recommended by an ESCO (FY 2004).

Currently, the effectiveness of those measures are being verified, with the process scheduled to continue until FY 2008.

[Government car fleet]

- Introduction of low-emission vehicles (e.g. a switch to hybrid cars at the time of renewal)
- Introduction of cutting-edge technology vehicles (fuel-cell cars and hydrogen-powered cars)
- Introduction of biogasoline (starting in FY 2007)
- Provision of eco-driving training to all drivers