

Saving Energy by Reviewing Air Conditioning Settings

Here, air conditioning consumes 30% of office building power.

We use the CLAMP-ON POWER HiTESTER 3169 to investigate the present state and review air conditioner settings in order to save energy.

■ Highlights

Measuring power consumption trends enables capturing wasted energy from air conditioning. Energy-saving effectiveness can then be verified from power trend data collected after taking energy-saving measures.

Energy-Saving Measurement Flow

Investigate the Present State

Measure the power consumption of present Air Conditioning Settings as it relates to the work schedule at daily, weekly and monthly intervals. Office and outdoor temperatures are measured simultaneously to investigate the relationship between air conditioner operating states and environmental conditions.

Select Features of Air Conditioning Settings and Operation

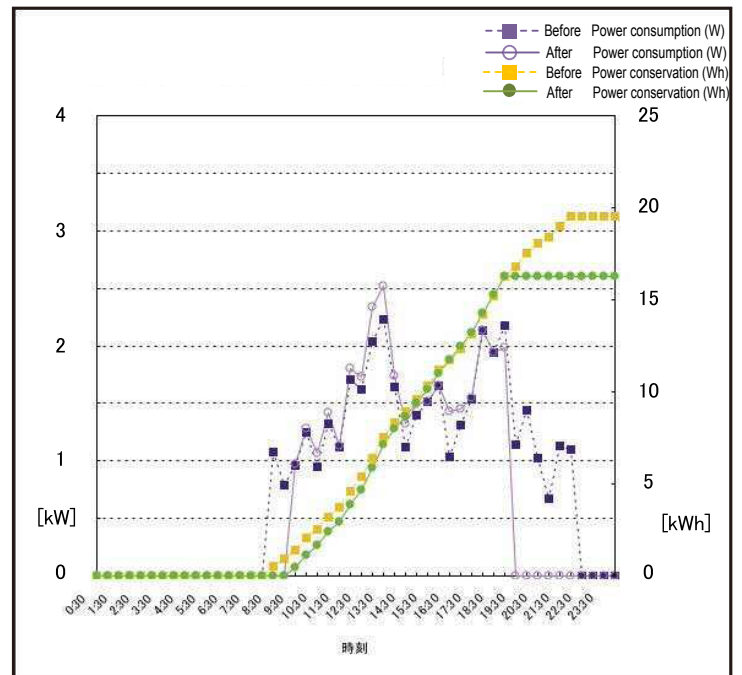
All main and sub air conditioners are running.
Power to each sub air conditioner is turned on and off individually.
Air conditioner operating times are unregulated.
Air conditioner temperature setting objectives were established.
The air conditioner is turned on by anyone who feels uncomfortably hot.
After hours, if a department works overtime, air conditioners remain operable.

Ascertain Problems

Operating start temperature is undetermined.
Once an air conditioner is turned on, it is not turned off.
The air conditioner sometimes runs even when the room temperature is below the setting.
North and south ends of the floor have the same temperature setting.

Measure and Ascertain Effectiveness

Reviewed the air conditioner operating start temperatures and appointed someone responsible to oversee operation.
Operating start temperatures were set to at least 26°C on the south side, and to at least 27°C on the north side.
Operating hours are constrained to the hours between start-of-work and 19:00.
Blinds were installed on the south side to reduce direct sunlight.
To support the national "Cool Biz" energy-saving campaign, air conditioner operating times were shortened and temperature settings reviewed.



Before and After Air Conditioning and Power Consumption Measurements



CLAMP-ON POWER HiTESTER 3169
CLAMP-ON SENSOR 9661

Products used

CLAMP-ON POWER HiTESTER 3169
CLAMP-ON SENSOR (500A) 9661
PC CARD (512MB) 9728

- * The photo shows four 9661 clamp current sensors, which enables up to four systems to be measured at once.
- * The graph shows the acquired data displayed in a PC spreadsheet program.