

Energy Efficiency and Conservation in Commercial Building: Thailand

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The Energy Conservation Promotion Act ENCON Act, April 2, 1992

ENCON Act classifies:

- Designated Building
- Designated Factory

Designated Building

Designated Building: Total installed capacity of 1 MW or more	✓ Office	✓ Hospital
	✓ Hotel	✓ Educational Building
	✓ Shop	✓ Shopping Center

ENCON Act specifies the scope of conservation measure:

- Efficient Lighting System
- Efficient Cooling System
- Use of appropriate Construction Material
- Installation of Operation Control System

Energy Audit and Management Scheme

- ✧ **Compulsory Energy Audit Programs for designated facilities**
 - **With grants and subsidy for energy audit**
 - **No grant and subsidy since 2005**
- ✧ **Voluntary Energy Management and Audit Programs for non-designated facilities**

Building Energy Codes

Minimum requirement on OTTVs, RTTVs For Designated Building

➤ OTTVs- Overall Thermal Transmittance Value

- Improve performance of the building
- Heating/Cooling temperature
- Lighting level
- Maximum values for heating/cooling/ventilation

➤ RTTVs- Roof Thermal Transfer Value

Current Practice in Energy Efficiency in Commercial Building: Thailand

No subsidy /no requirement for the energy audit since 2005

Low cost/No cost options

- Value engineering (VE)
- Public Participation
- Incentive: *Thailand Energy Award*

Demand Side Management Program Electricity Generating Authority of Thailand (EGAT)

- **Energy Efficiency Appliances:**
 - ❑ Refrigerators
 - ❑ Fluorescent tubes
 - ❑ Air-condition
 - ❑ Electric fans
 - ❑ Rice cooker
- **Energy Efficiency Attitude**
- **Energy Efficiency Architecture**
- **Green building Program:** Promoting energy efficiency
 - ❑ Residential Building
 - ❑ Commercial
 - ❑ Industrial

Demand Side Management Program Electricity Generating Authority of Thailand(EGAT)

Under Demand Side Management Program
during 1991-1997:

- Peak demand reduction 1,435.2 MW
- Energy demand reduction 8,148.3 GWh
- CO₂ Emission reduction 5.63 million tons

Thailand Energy Award 2009

Designated Building: Grand Mercure Fortune Bangkok



Best Practice in Energy Management

- Energy management in boiler
- Change to use energy saving light bulb
- Use cool air from chiller instead of air condition
- Staff involvement in energy efficiency

investment 0.54 MB pay back period < 3 years

Thailand Energy Award 2009

Innovation for energy conservation (New Building):
Electricity Generating Authority of Thailand(EGAT)



Designing to be the energy conservation building:

- Nature light
- Maximize inlet heat
- Insulating laminated glass
- Install solar panel
- Insulate building with Al composite sheet, rock wool, gypsum
- Energy management in air-con, lighting, air to air heat exchanger , etc.
- Public participation in energy efficiency and conservation

Source: [http:// www.energy-awards.com](http://www.energy-awards.com)

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