

Country Report (Thailand)



Coordinating Center for Energy Conservation Building Design
Department of Alternative Energy Development and Efficiency
Ministry of Energy

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Road Map according to BEC

EEP = Energy Efficiency Plan

PDP = Power Development Plan

AEDP = Alternative Energy Development Plan

1. Enforcement of the Ministerial Regulation

- Enforcement BEC standard
- Development of BEC auditor training
- Tightening BEC standard

- ✓ 9 types of new buildings
- ✓ In 2018, Starting enforce with new buildings area $\geq 10,000 \text{ m}^2$
- ✓ Down to small size in 3 years



2. Supporting new energy conservation building

- Energy building labels
- Financial incentives, for example government funds or low interest personal loans




- ✓ To support the new projects receive formal green building certification as LEED, TREES.



3. Zero Energy Building

- Study green building design, economic value and the climate change of Thailand
- Zero Energy Building Plan

Target: Government and private new building total area $\geq 2,000 \text{ m}^2$

-  Envelop system
-  Lighting system
-  Air conditioning
-  Hot water system
-  Renewable energy



BEC Standard

- ✓ 9 types of new buildings
- ✓ Total area $\geq 2,000 \text{ m}^2$

OTTV
OVERALL THERMAL
TRANSFER VALUE

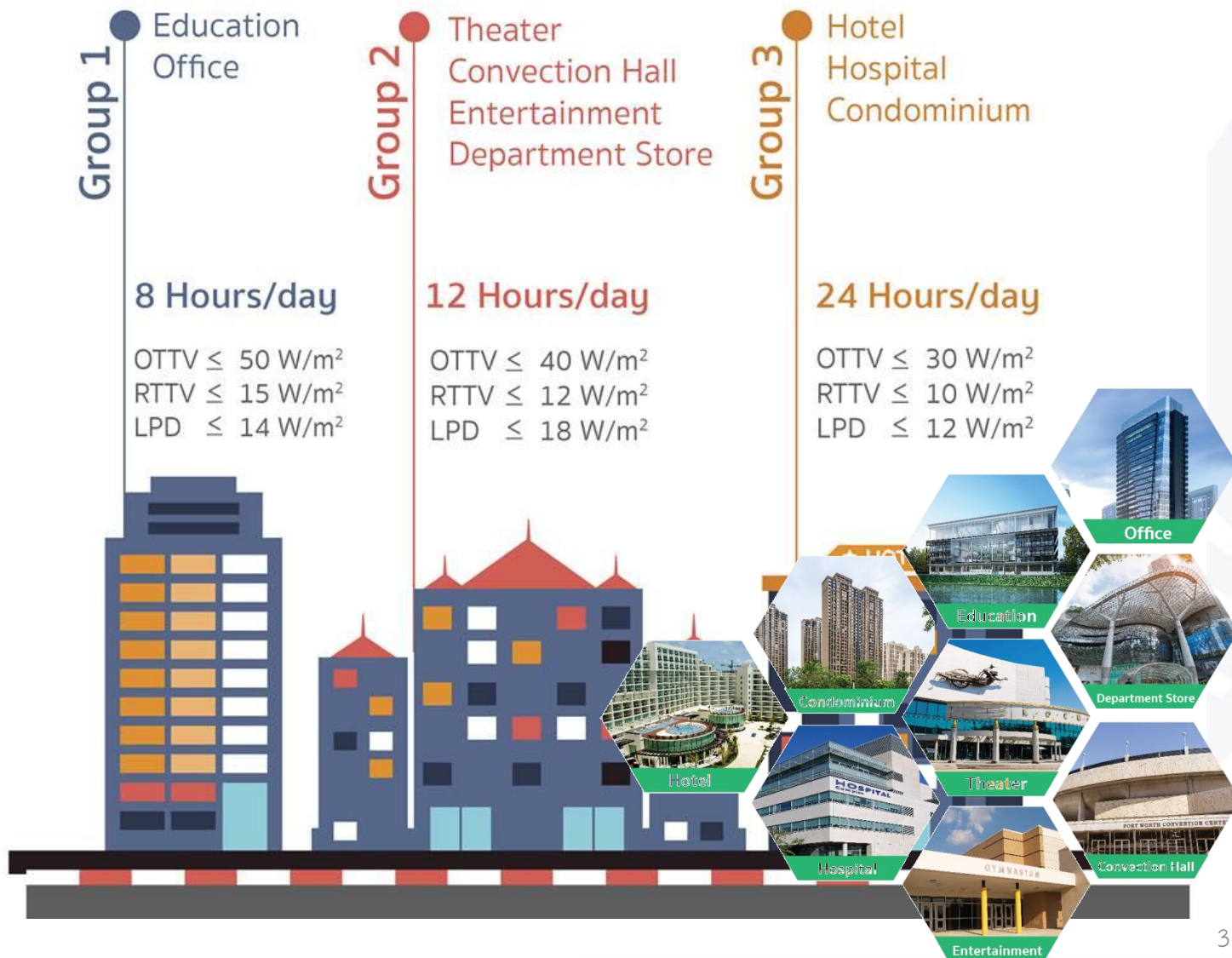
RTTV
ROOF THERMAL
TRANSFER VALUE

A/C
AIR CONDITIONER

LPD
LIGHTING SYSTEM

RENEW
RENEWABLE ENERGY





WHOLE
BUILDING ENERGY



BEC Standard

Standard for building design

1 System compliance

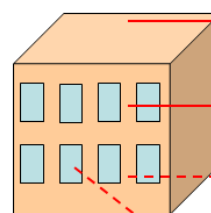
	Envelop system	<input type="checkbox"/>
	Lighting system	<input checked="" type="checkbox"/>
	Air conditioning	<input checked="" type="checkbox"/>
	Hot water system	<input checked="" type="checkbox"/>

FAILED

PASSED

2 Whole building compliance

Designed Building \leq Reference Building

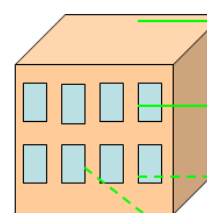


RTTV = 17

OTTV = 55

Lighting = 7

250,000 kWh/year



RTTV = 15

OTTV = 50

Lighting = 14

300,000 kWh/year



Hot water system

PASSED

BEC Center






Since 2010

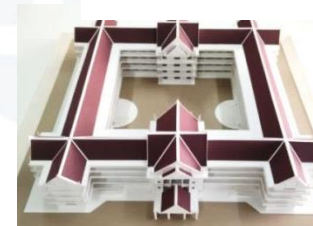


www.2e-building.com

◆ “Coordinating Center of Energy Conservation Building Design”

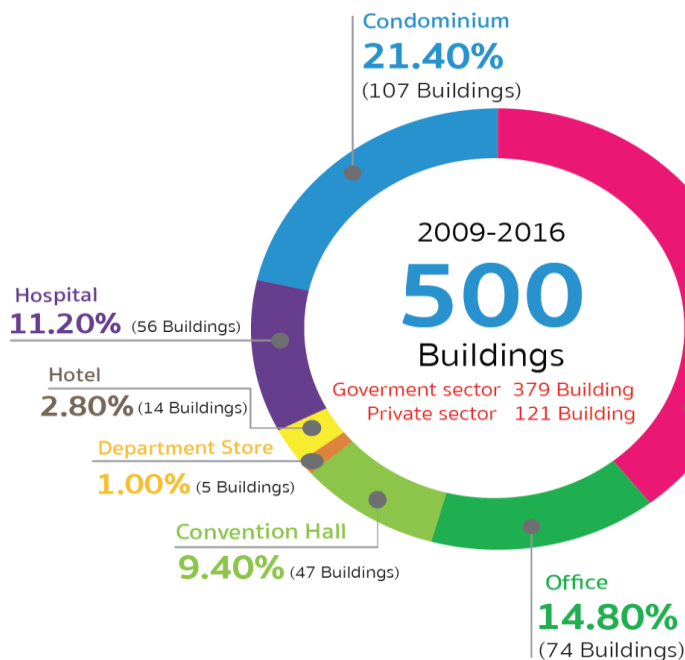
- To provide information to any government sectors, state enterprises, or project stakeholders regarding the evaluation procedures of building plans for energy conservation as required by the Ministerial Regulation
- To create collaborative networks between the government and private sectors in order to lay the foundation of energy conservation building design

-  **Evaluation of energy conservation building**
(2009 – 2017 = 500 building drawing plans)
-  **BEC's auditor training 2,000 persons**
(Architect, Engineer and Building Owner etc.)
-  **MOU municipalities and universities**
(Bangkok, Chiangmai, Pattaya etc.) (KU, TU, CMU, KMITL etc.)
-  **Private network and professional associations**
(Engineering institute, Siamese Architects) (SCG, CPN, LPN)
-  **Develop of prototypes for standard government conservation building drawing plans**

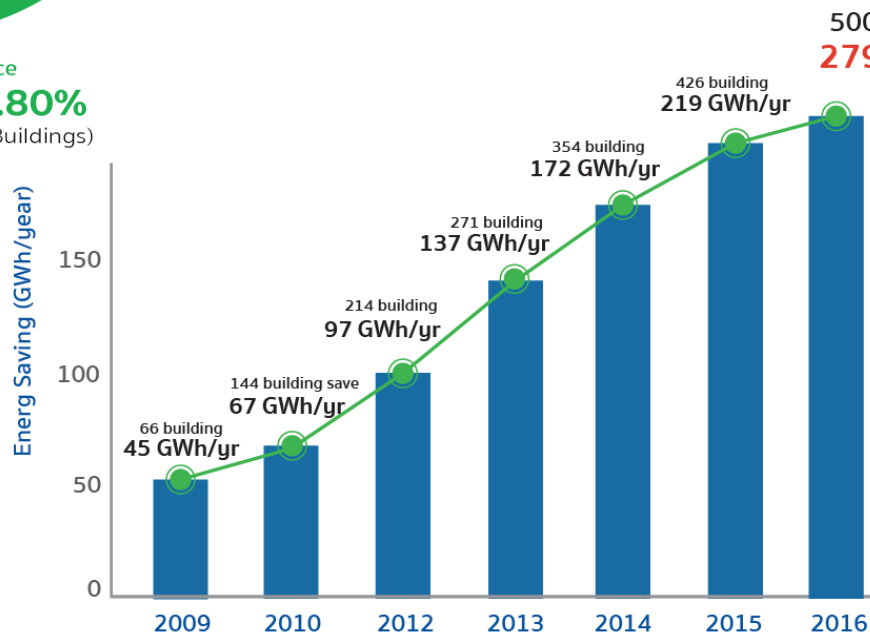




Result of the Evaluation of BEC



Only 32% of Private Building in
Cooperation with the Promotion of
BEC from 2009 to 2016



Energy Saving 2009 - 2016

Energy Saving
278.81 GWh/y



Oil Equipvalent
23.83 ktoe/y



Cost Value
975.84 Baht/y



Reduce CO₂
161.71 tons





Energy conservation Building's Label

Rewards in 2016-2017, 96 buildings

Excellent 9, Very good 38, Good 49

For the energy conservation buildings
passing every saving system.

>70%

50-70%

30-50%



Excellent



Very good



Good

BEC AWARDS 2017



อาคารสินแพทย์เมดิคอลคอมเพล็กซ์
โรงพยาบาลสินแพทย์

	Reference	Using Energy
OTTV	≤ 30	27.03
RTTV	≤ 10	7.68
LPD	≤ 12	5.03
WHOLE	22,357,500	6,916,800

- ประเภท: สถานพยาบาล
- ขนาดพื้นที่ 43,000 ตร.ม. (ปรับอากาศ 23,660 ตร.ม.)
- อัตราส่วนพื้นที่ที่กระจกต่อพื้นที่ผนังทั้งหมด (WWR) ร้อยละ: 47

69% SAVING

Evaluation of Thailand Energy Award

Since 2000

www.thailandenergyaward.com

1. Renewable Energy
2. Energy Efficiency
 - Building
 - Small and Medium Building Category (1)
 - BEC Category (6)
 - New and Existing Building Category (3)
 - Retrofitted Building Category (3)
 - Tropical Building Category (1)
 - Industry
 - Transportation
3. Personnel
4. Energy Creativity
5. Contributor of Efficiency Energy and Renewable Energy

Energy
Consumption





ASEAN Energy Award 2017

1. Renewable Energy
2. Energy Management in Building and Industry
 - Small and Medium Building Category (1)
 - Large Building Category (2)
3. Energy Efficiency Buildings
 - Retrofitted Building Category (2)
 - Tropical Building Category (1)
4. Green Building (1)



From AEA 2017, Thailand joined the event in 27 September 2017. There are 19 awards that Thailand entrepreneur get from AEA 2017.





THANK YOU



www.dede.go.th

www.2e-building.com

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