

Country Report for SE4ALL Workshop

14-16 February 2017 in Tokyo, Japan

The Status and Potential Issues of the Mandatory EE & C Building Code in Thailand

Department of Alternative Energy Development and Efficiency
Ministry of Energy
Thailand

Content :

1. Status and Future Plan
2. Barriers
3. Countermeasures
4. Request of support by ECCJ
and SE4All

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1. Status and Future Plan

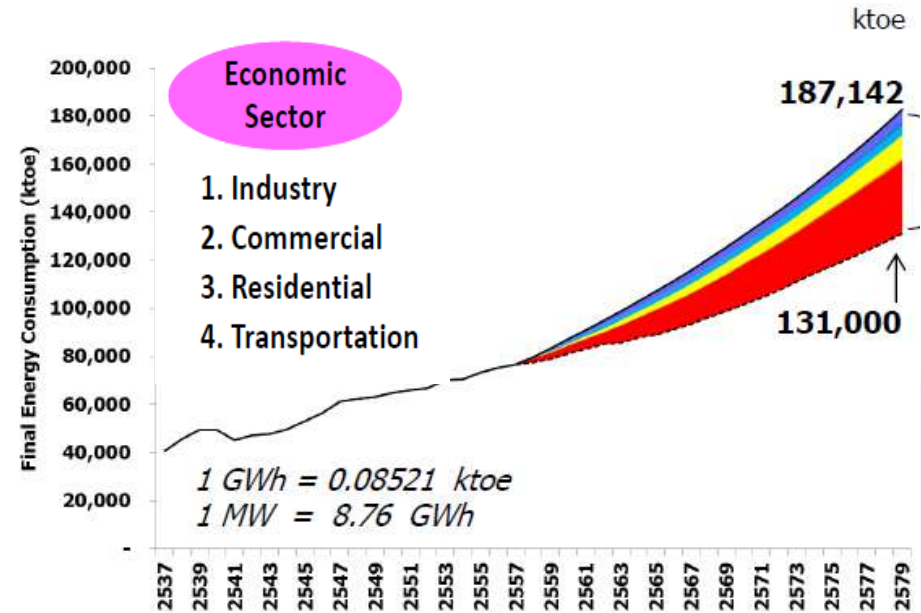
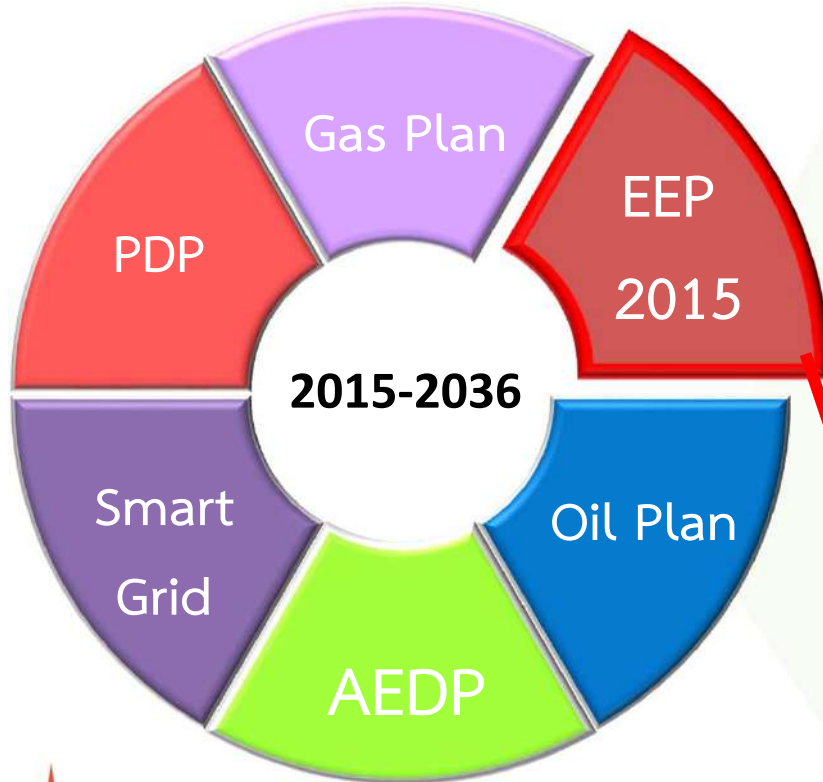
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Building Energy Code



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

Thailand TIEB



Expected Energy Saving by Economic sector		Total	
		(ktoe)	(%)
EE1	Enforcement of energy conservation standard in designated factory/building	5,156	10%
EE2	Building Energy Code (BEC) for the new buildings	1,166	2%

EE2; Building Energy Code (BEC)

EE5	Financial Incentives and support for energy performance achievement	991	2%
EE6	Promoting greater use of LED	500	1%
EE7	Energy saving measures in transport sector	30,213	58%
Total (ktoe)		51,700	100%



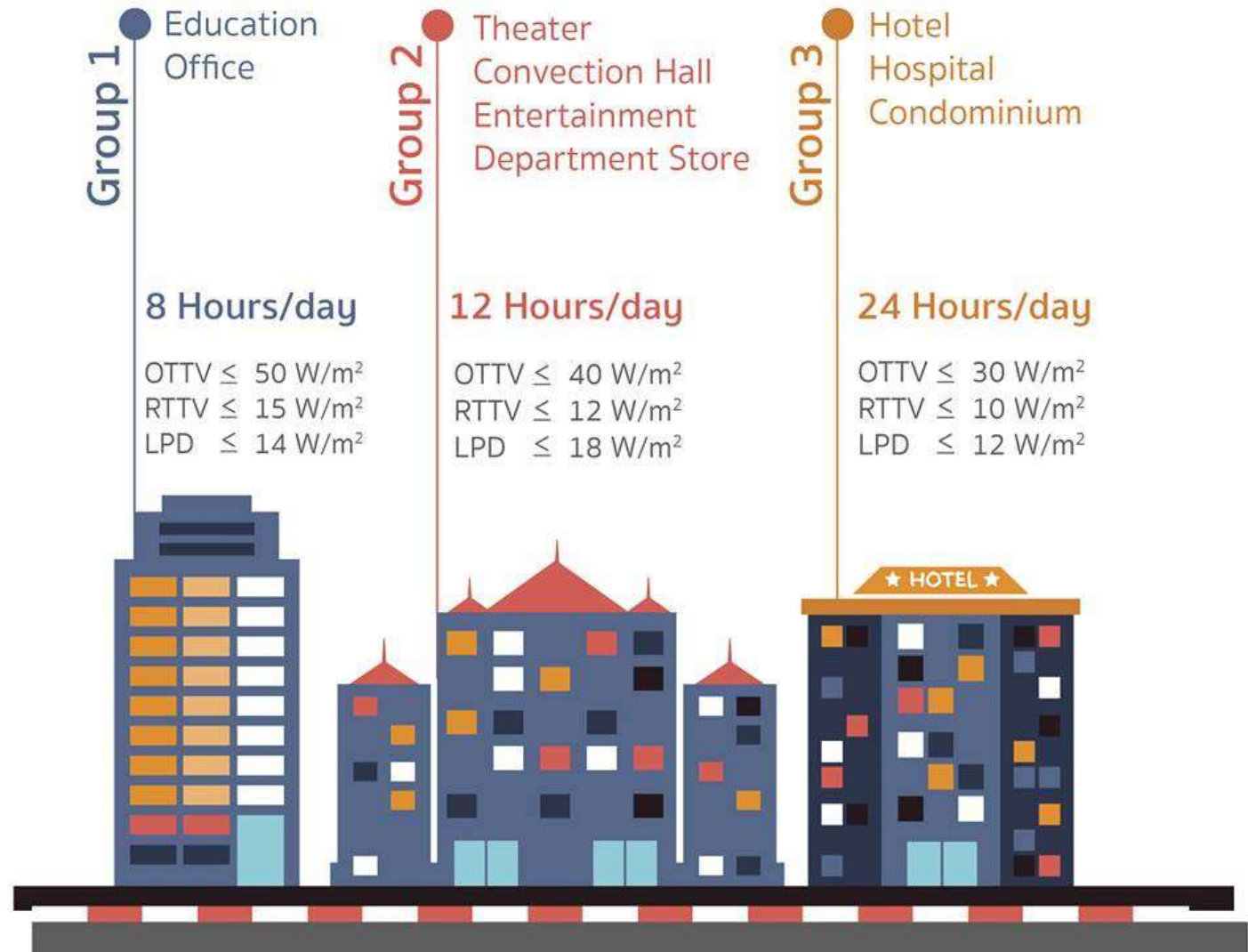
EEP = Energy Efficiency Plan

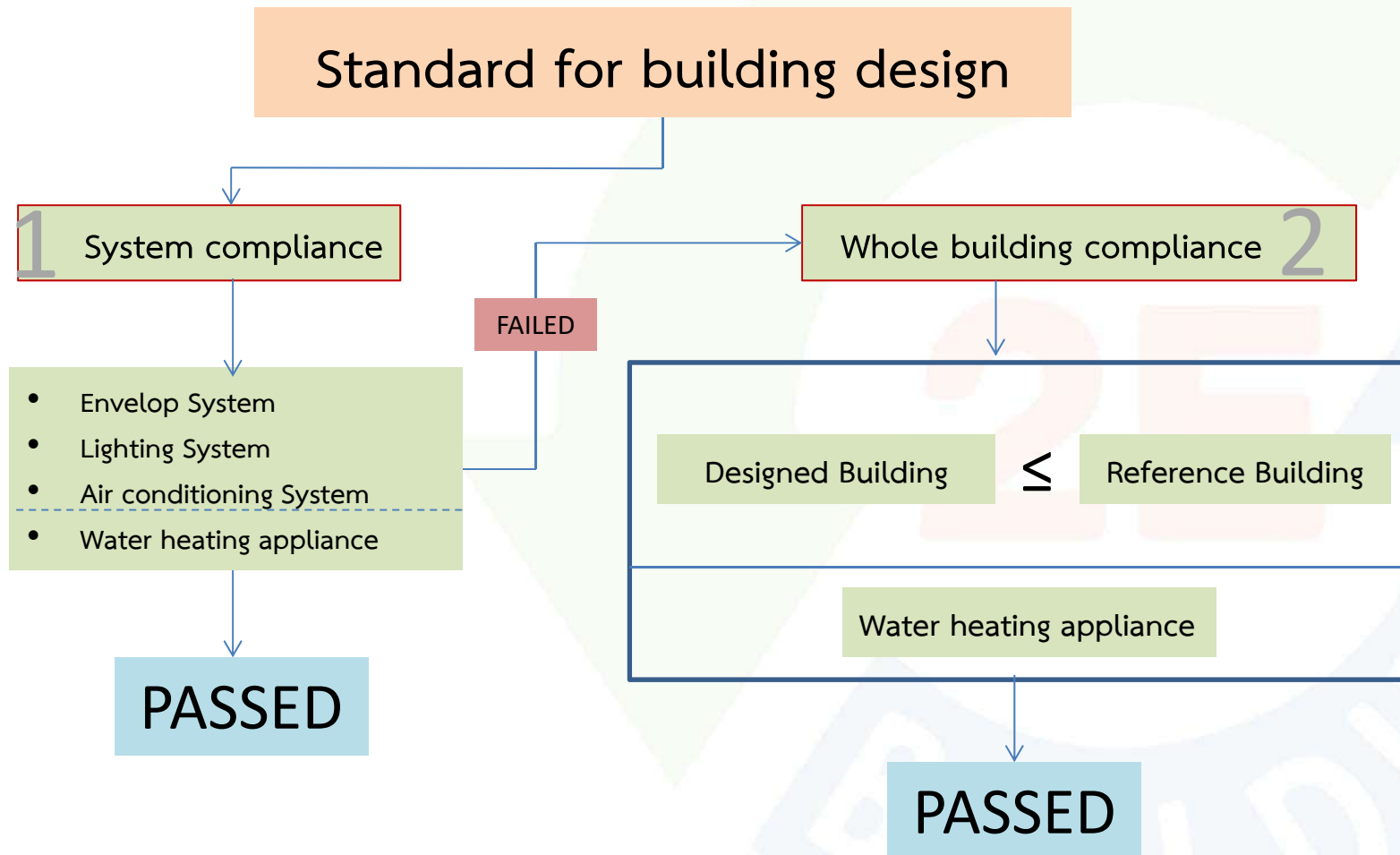
PDP = Power Development Plan

AEDP = Alternative Energy Development Plan



- OTTV**
OVERALL THERMAL TRANSFER VALUE
- RTTV**
ROOF THERMAL TRANSFER VALUE
- A/C**
AIR CONDITIONER
- LPD**
LIGHTING SYSTEM
- RENEW**
RENEWABLE ENERGY
- WHOLE**
BUILDING ENERGY





Road Map according to BEC

1. Enforcement of the Ministerial Regulation

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

- ✓ 9 types of new buildings
- ✓ total area $\geq 2,000 \text{ m}^2$
- ✓ In 2017, Starting enforce with new buildings area $\geq 10,000 \text{ m}^2$
- ✓ Down to small size in 5 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.



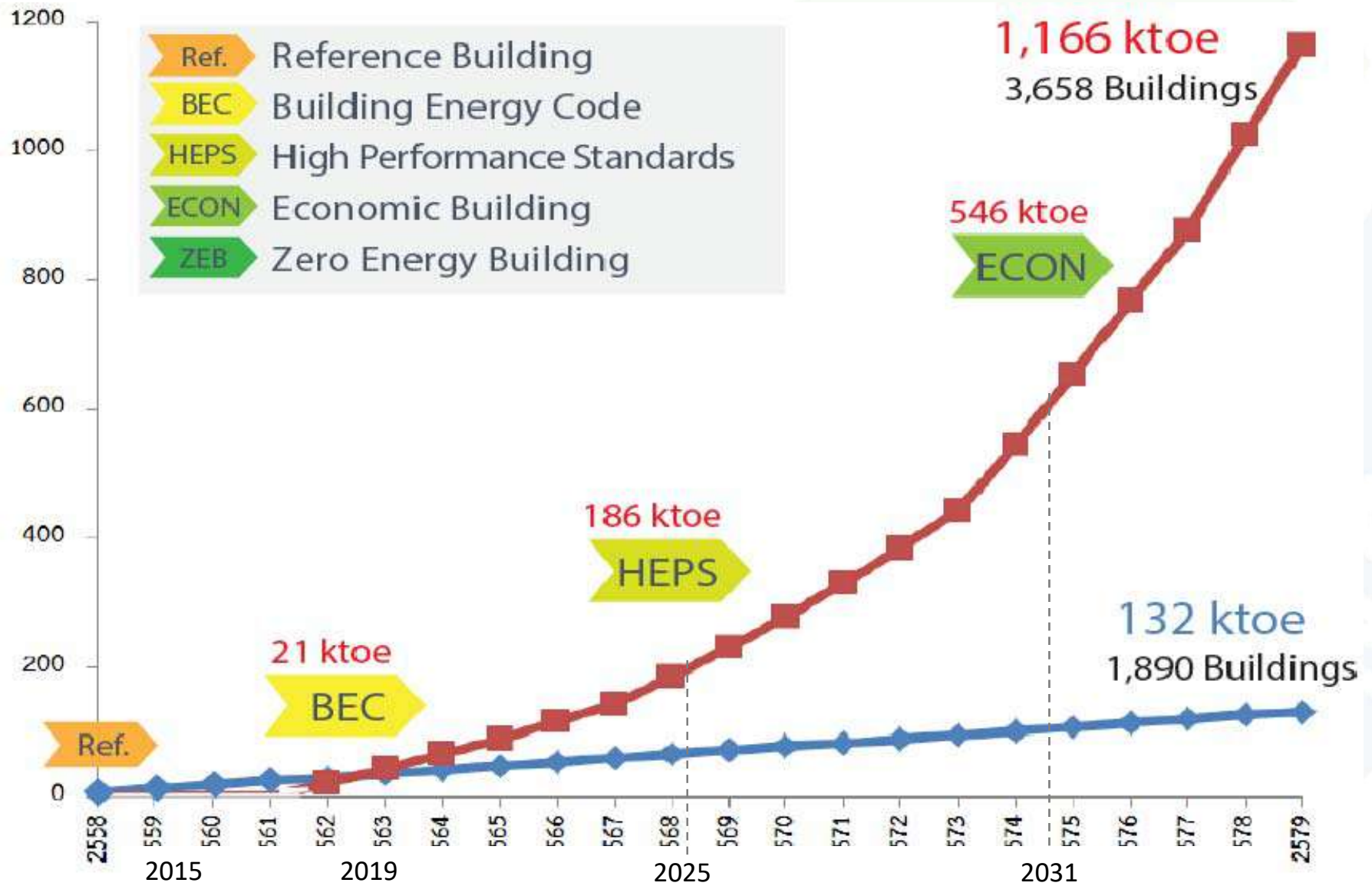
3. Zero Energy Building

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

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

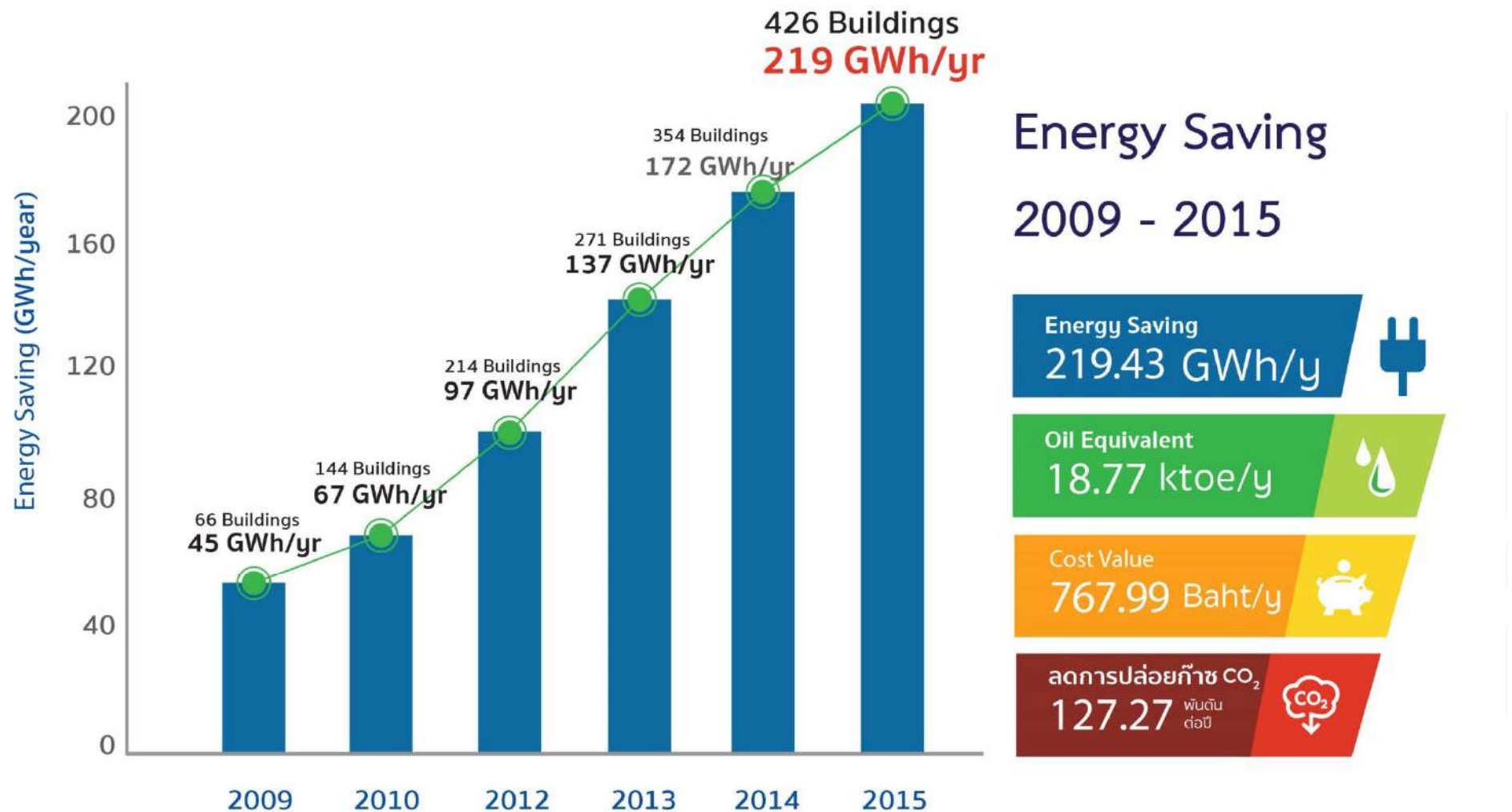
-  Envelop system
-  Lighting system
-  Air conditioning
-  Hot water system
-  Renewable energy

Energy Saving Target according to EE2, EEP 2015

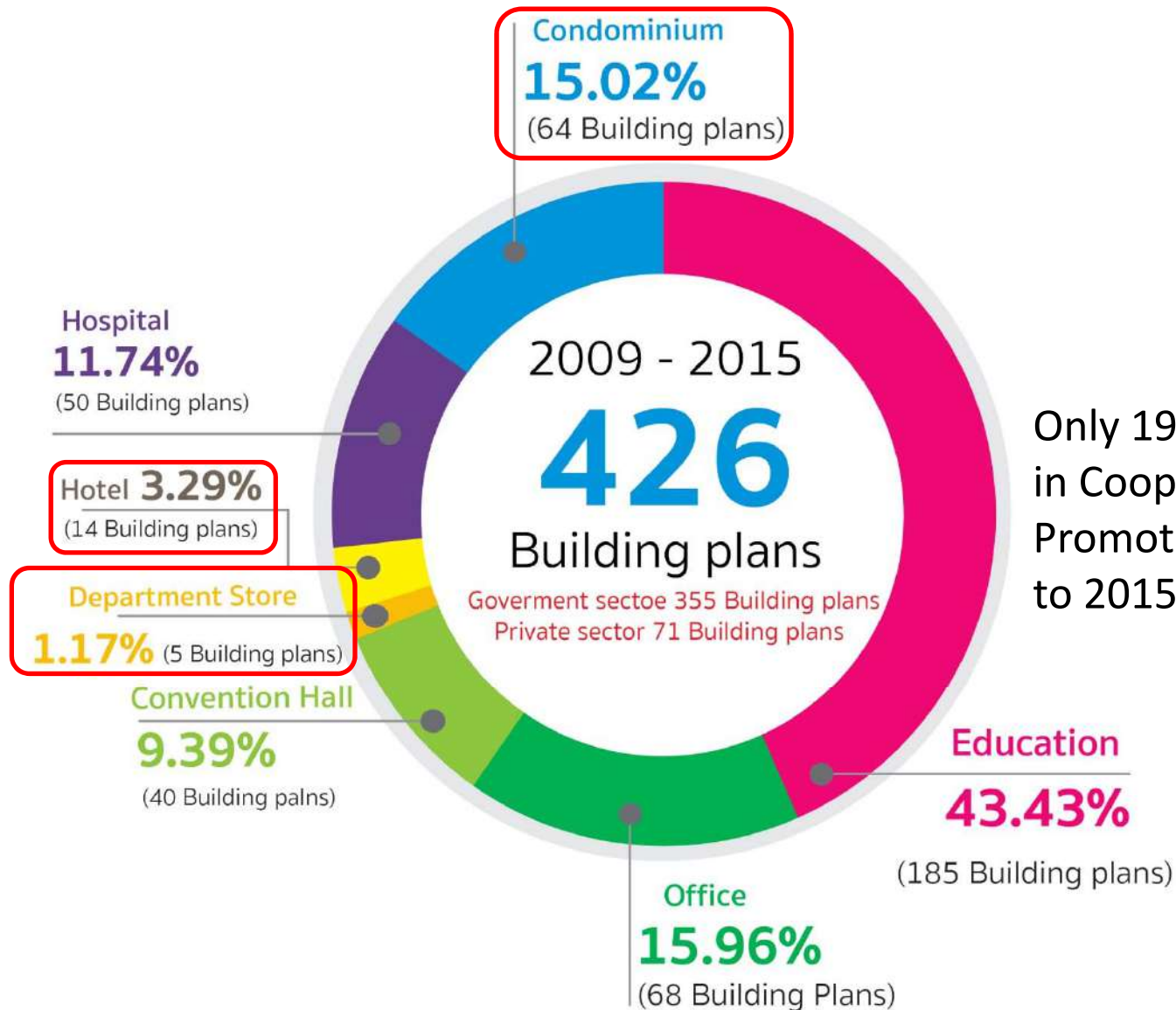




Energy Saving



Result of the Evaluation of Energy Conservation Building Design

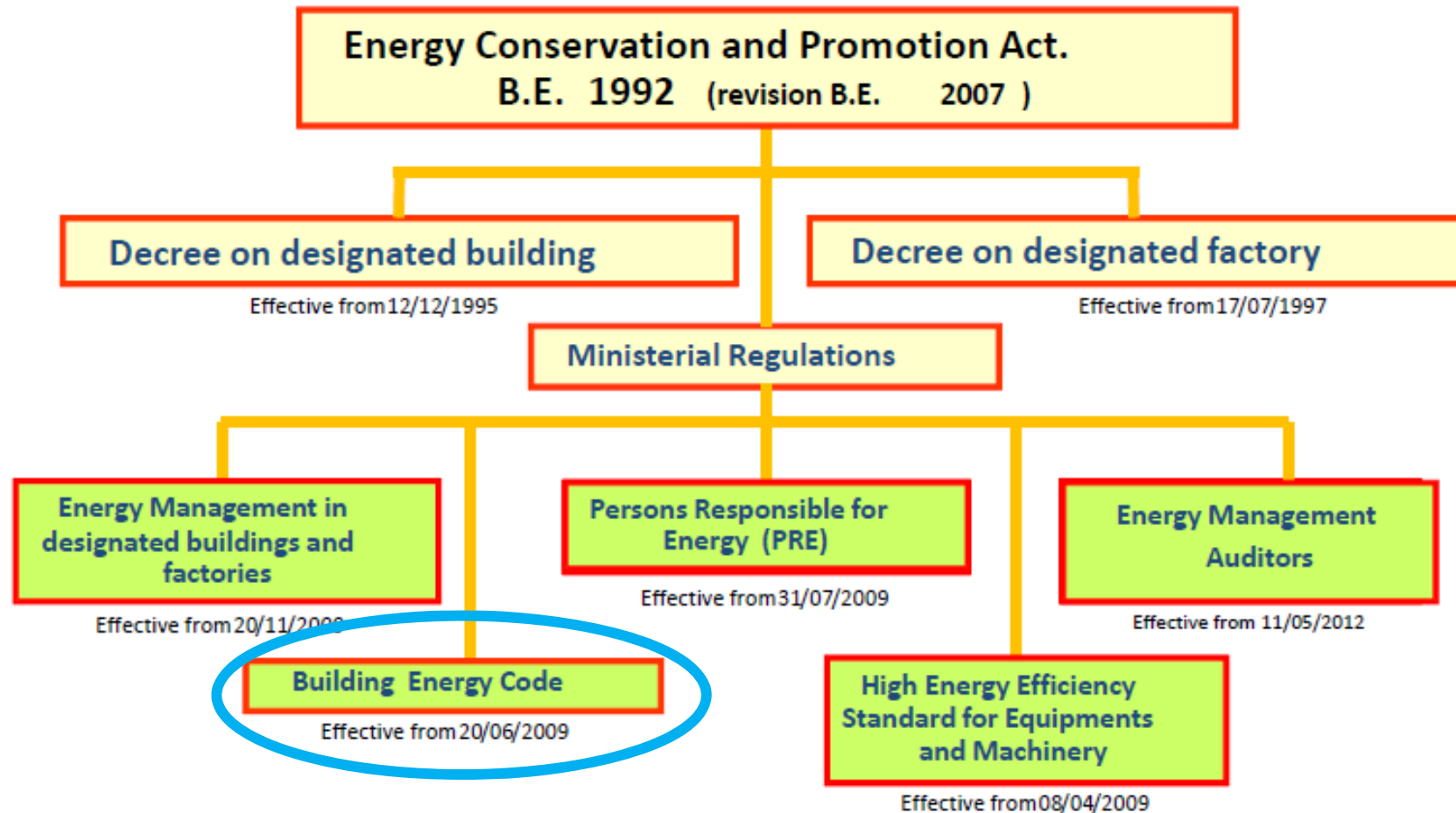


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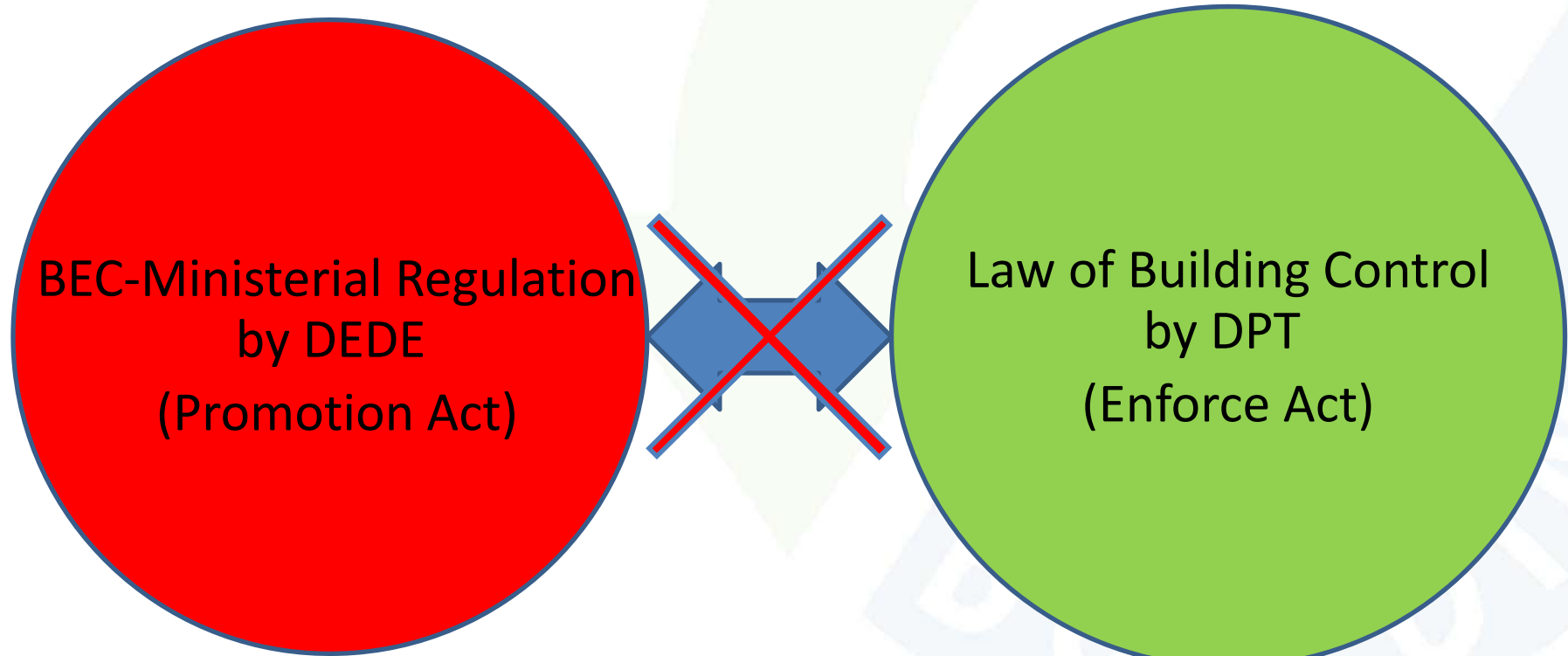
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2. Barriers

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1st Barrier: The Ministerial Regulation of DEDE not connect with the Law of Building Control from Department of Public Works and Town & Country Planning (DPT)



2nd Barrier: Lacking of Cooperation with the Private Sector

The Circle 2
(Condominium)



	BEC	Design
OTTV (W/m ²)	30	29.93
RTTV (W/m ²)	10	7.45
LPD (W/m ²)	12	4.29
SEC(kWh/y-m ²)	292	190

Siam@Pattaya
(Hotel)



	BEC	Design
OTTV (W/m ²)	30	29.83
RTTV (W/m ²)	10	7.33
LPD (W/m ²)	12	10.82
SEC(kWh/y-m ²)	191	180.47

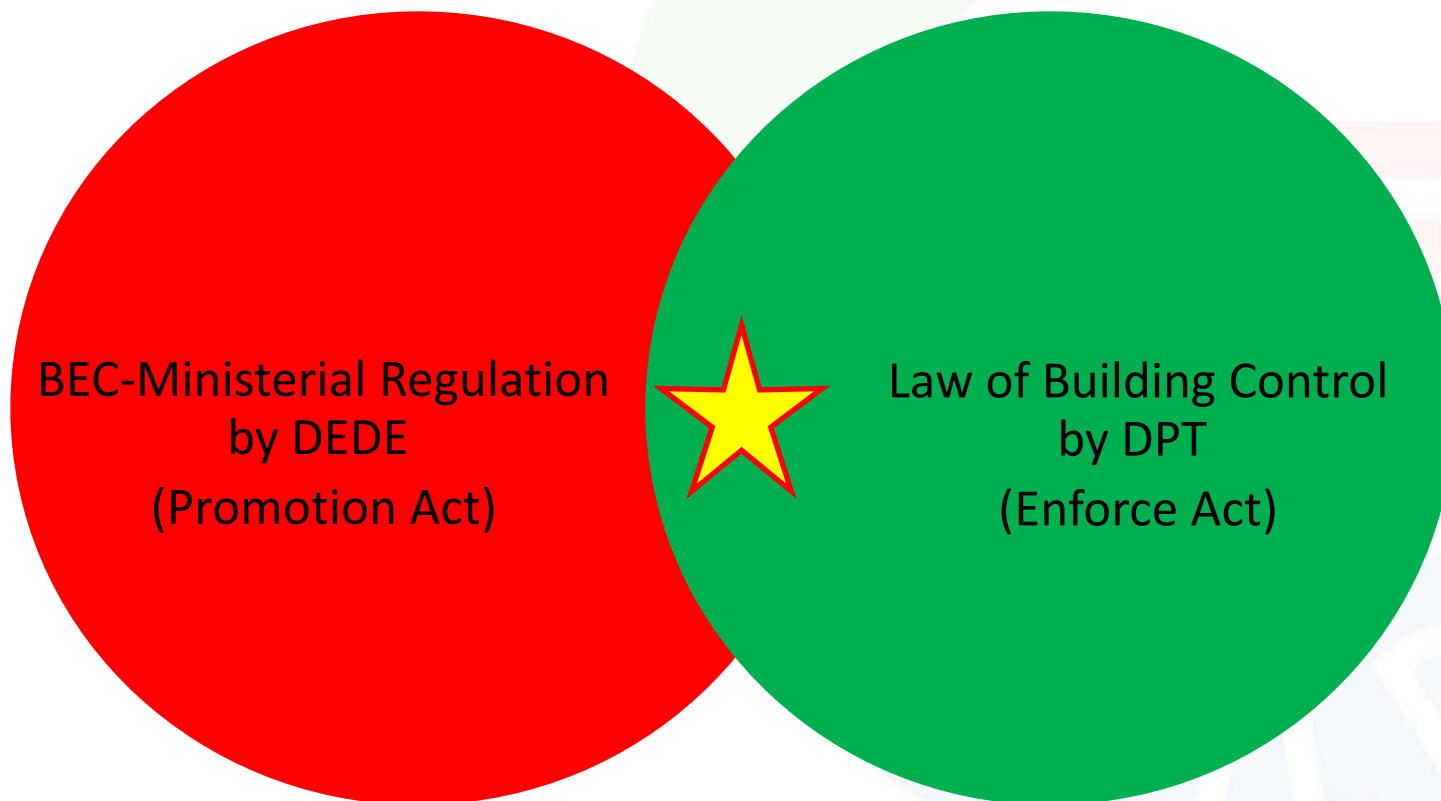
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3. Countermeasures

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Establishment of DEDE & DPT Subcommittee for the Draft of the New BEC-Ministerial 2017 which cooperative with the Law of Building Control. Under the Directed from the Prime Minister.



 **New Enforcement BEC Regulation 2017**



The meeting for the Draft of New BEC Regulation



Ministerial Regulation 2009

Old standard Enforcement new or retrofitted buildings of 9 buildings types which have total area $\geq 2,000 \text{ m}^2$

- Define OTTV, RTTV, Lighting system and Hot water system standard in Ministry's regulation of Ministry of Energy, 2009



Ministerial Regulation 2017

New standard Enforcement new or retrofitted buildings of 9 buildings types which have total area $\geq 2,000 \text{ m}^2$. Starting enforce with new buildings area $\geq 10,000 \text{ m}^2$ and down to small size in 5 years

- Update defining of “retrofitted buildings”
- Define all standard (OTTV, RTTV etc.) in Ministry's Announcement Ministry of Energy, 2017



BEC Center ♦ “Coordinating Center of Energy Conservation Building Design”

Since 2010



www.2e-building.com

- 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 – 2015 = 426 building drawing plans)



BEC's auditor training 1,800 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, SANSIRI, LPN)



Develop of prototypes for standard government conservation building drawing plans





4. Request of support by ECCJ and SE4All

1. BEC Implementation Technology and Experience Sharing between ACE Members
2. Advices and Information on Best Available Technics for Implement the Financial Subsidy or Tax Concession Measure for BEC
3. Any Support will be found upon the Idea from this workshop!

THANK YOU

For your attention



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