

Country Report for ECAP 20 Building Energy Code (BEC)

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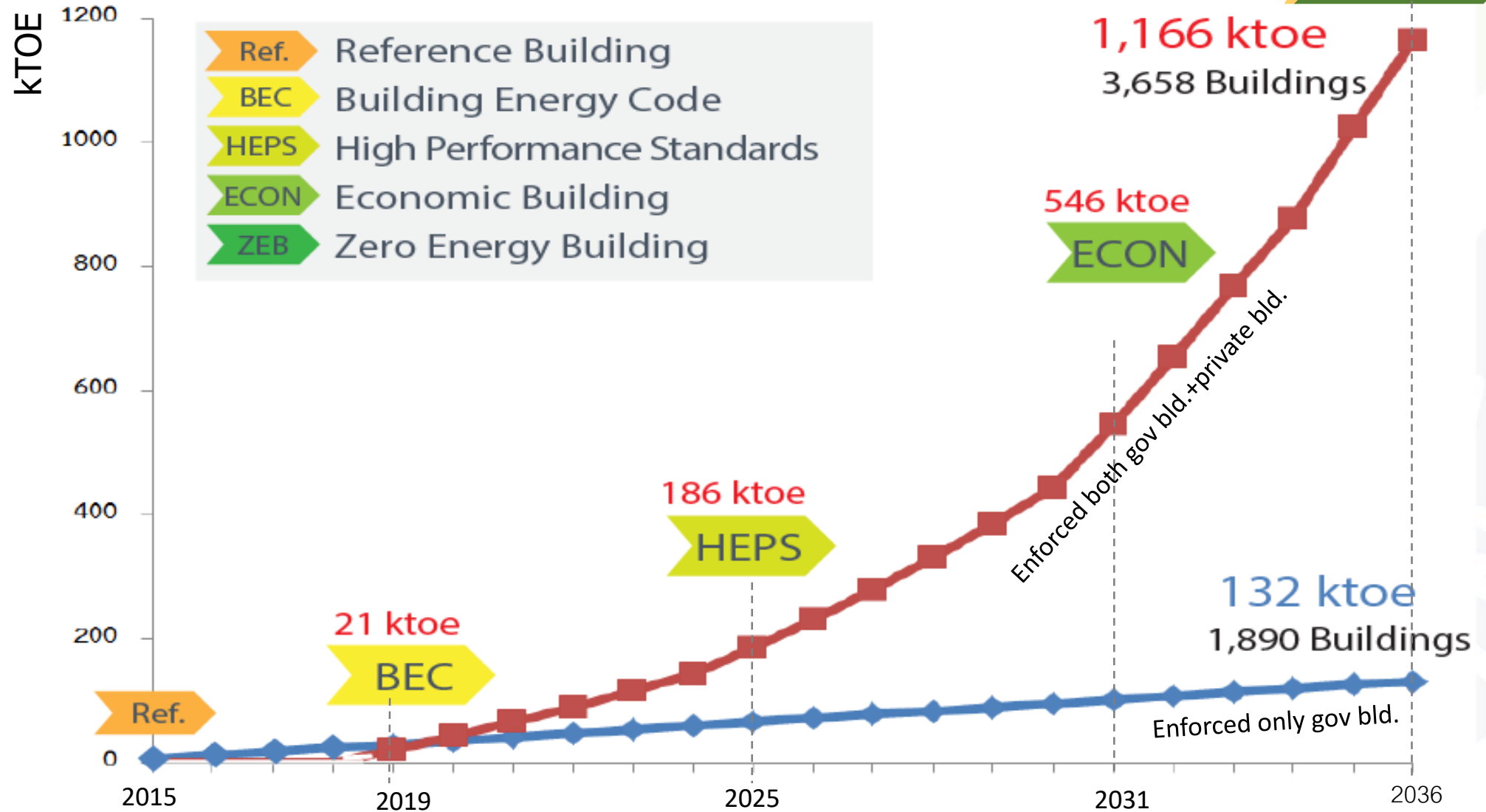
Building Energy Code (BEC) of Thailand

- Energy Saving Target
- Scope
- Implementation
- Zero Energy Building

ASEAN Energy Awards

- Comment
- Recommendations

Energy Saving Target

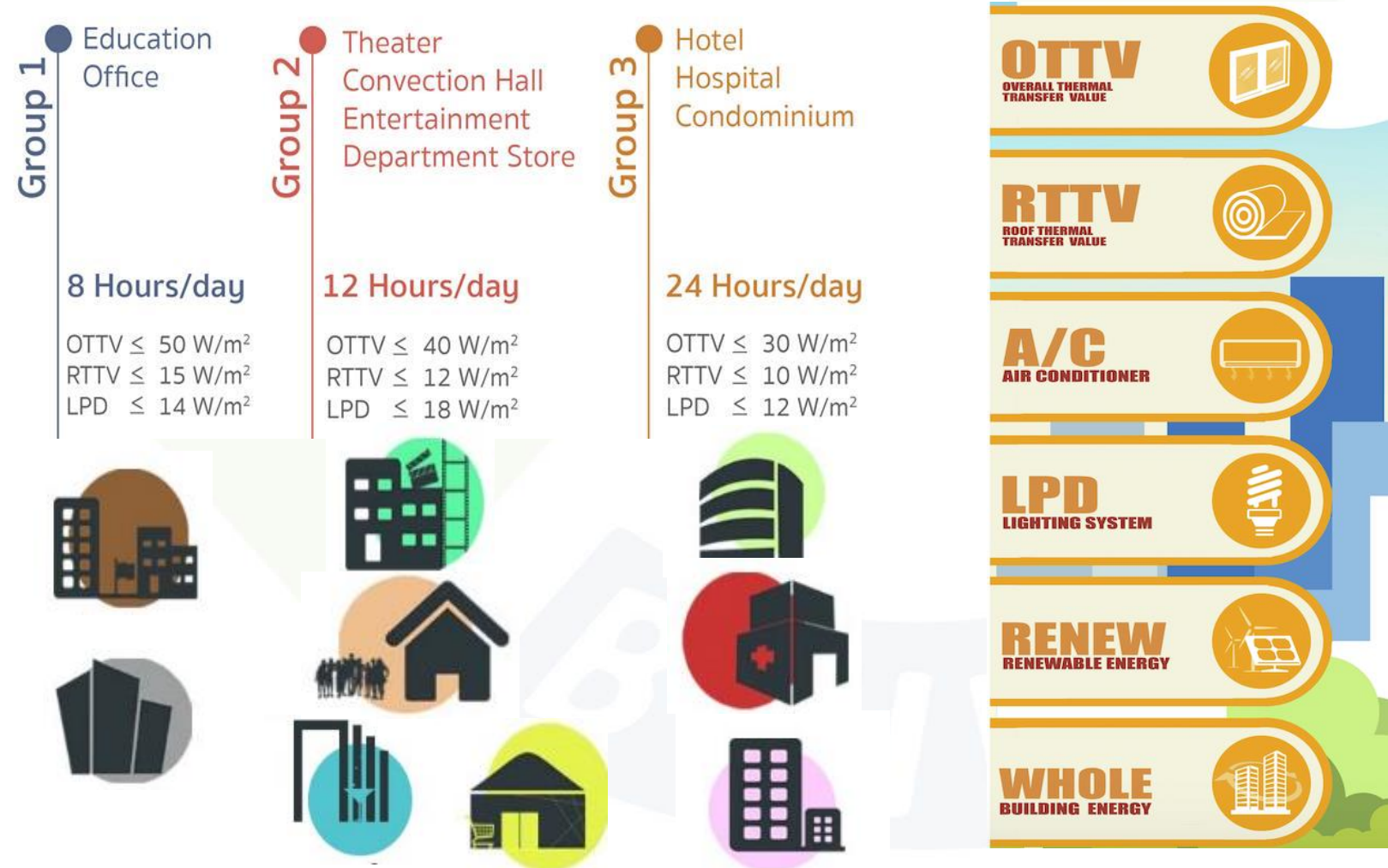


BEC Ministerial Regulations : version 2019

- Enforcement of new or retrofitted buildings with using area more than 2,000 m² in 9 building types (Draft Min Regulations 2019 Will start to force building size of 10,000 m² in the 1st year and reduced to the size of 5,000 m² in the 2nd year and 2,000 m² in the 3rd year)

To prescribe types and sizes of buildings and also standards, rules and procedures for designing of energy conservation building.

New or retrofitted buildings being constructed which have total area of all stories equal to **2,000 m²** or more must be designed under the energy conservation requirements

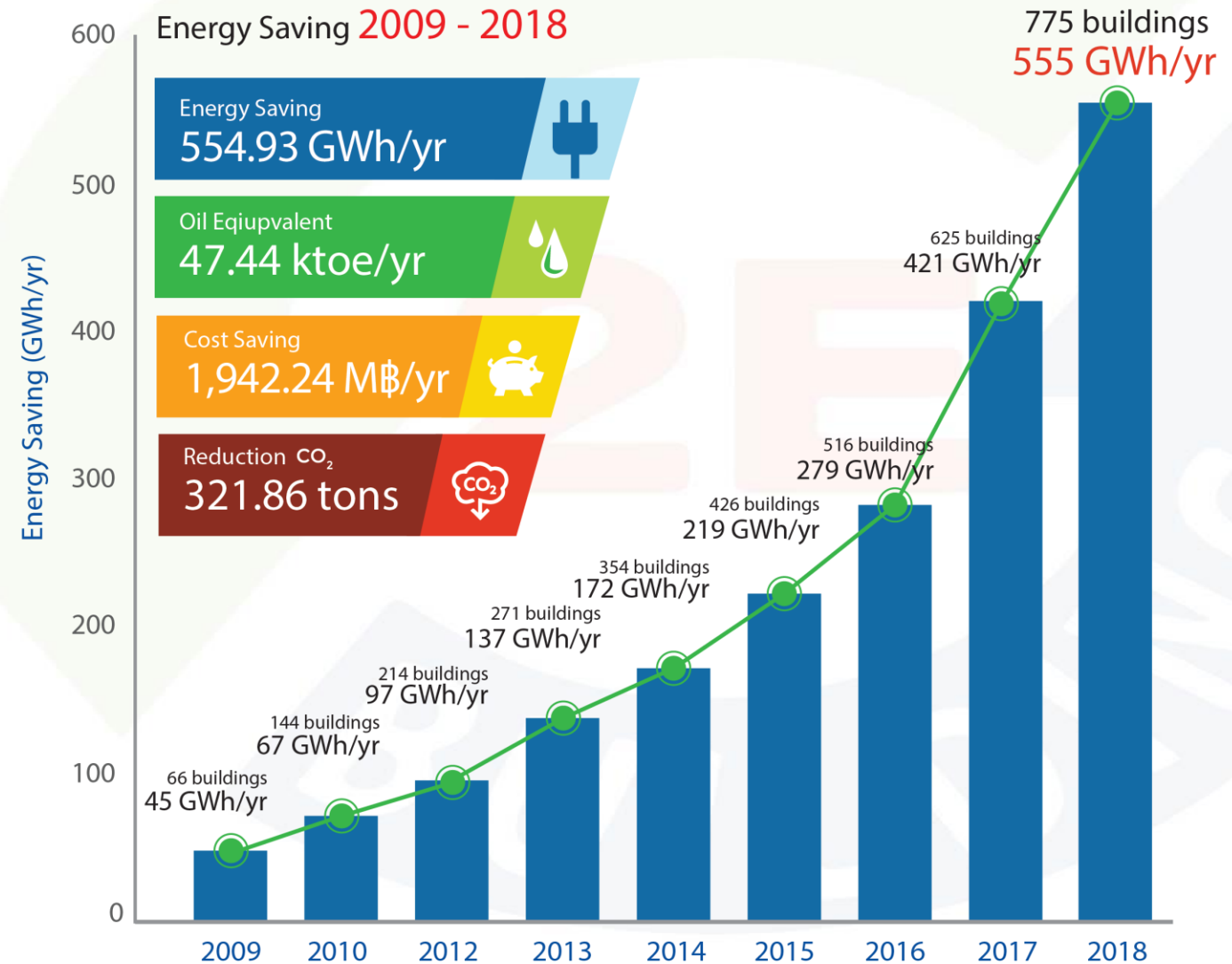
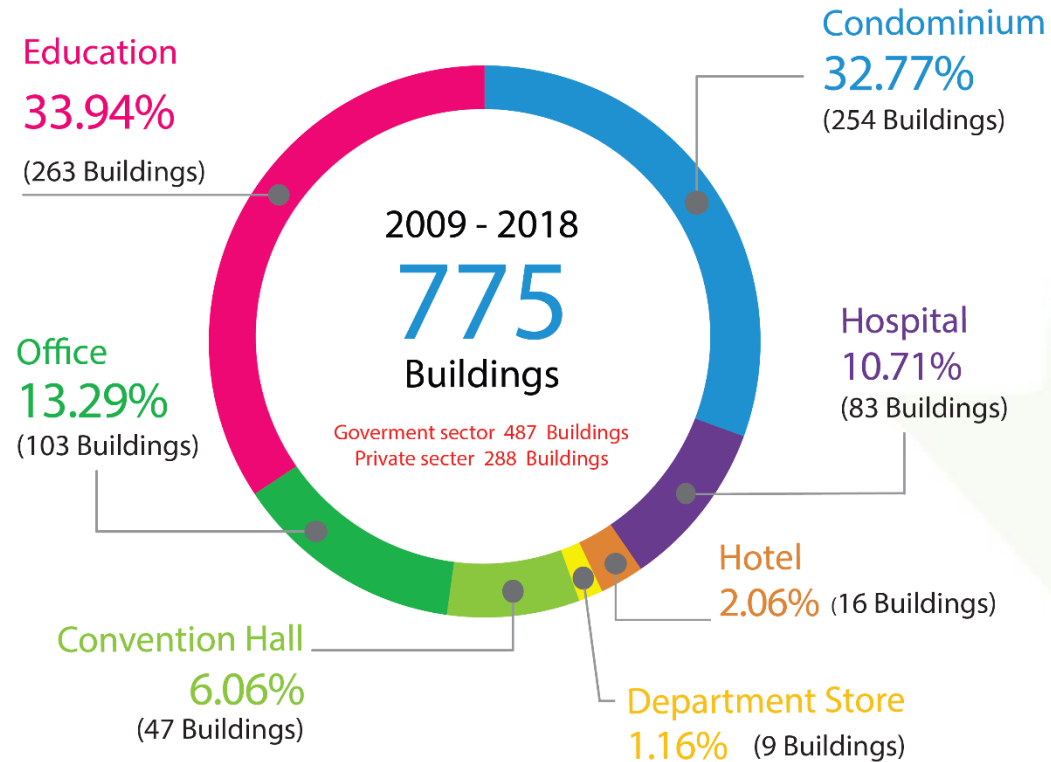




- Revise energy conservation act and set standard for energy consumption on building design plan (Expect enforced start in 2020)
- Training and certified "Energy Conservation Building Auditor"
- Educate stakeholders such as Institute, building design engineer & architect
- Promote energy efficiency building design (enforced gov-buildings, voluntary private buildings)
- Improve database system for encon building construction materials & appliances
- Promote BEC Award to public



Result of the Evaluation of Energy Conservation Building Design



Pilot Net Zero Building For government Building by DEDE

- 2019 study and design Phase (gov building 2,000 m²) **In progress**
- 2020 budget request (approx. 60 million baht/building)
- 2021-2022 construction & commissioning phase

Net ZEB target Criteria

- OTTV \leq 20 W/m²
- RTTV \leq 12 W/m²
- COP \geq 5.45
- LPD \leq 2 W/m²
- EUI \leq 75 kWh/m² ASHRAE 2019
- PV Gen 98 % ZERO CODE 2018



Thailand has considered the proposed changes in the scoring system and would like to comment as follow:

1. With the existing rule which doesn't allow the judge to score reports from his/her own country, it is noted that the proposed ranking system may cause biases amongst countries, as shown in figure 1.

Category : DDD

Judges		Report 1 (Country B)	Report 2 (Country B)	Report 3 (Country C)	Report 4 (Country C)	Report 5 (Country E)	Report 6 (Country E)	Report 7 (Country F)	Report 8 (Country G)	Report 9 (Country G)
Judge (Country A)	Score	81	81	72	68	75	67	82	80	72
	Rank	2	2	6	8	5	9	1	4	6
Judge (Country B)	Score			78	74	68	70	73	83	75
	Rank			2	4	7	6	5	1	3
Judge (Country C)	Score	71	67			50	58	58	71	57
	Rank	1	3			7	4	4	1	6
Judge (Country D)	Score	62	61	63	60	62	60	69	71	69
	Rank	5	7	4	8	5	8	2	1	2
Judge (Country E)	Score	48	24	44	46			46	49	49
	Rank	3	7	6	4			4	1	1
Judge (Country F)	Score	86	75	76	77	69	70		82	85
	Rank	1	6	5	4	8	7		3	2
Judge (Country G)	Score	71	67.5	79	65	65	73	64		
	Rank	3	4	1	5	5	2	7		
Average Score		69.83	62.58	68.67	65.00	64.83	66.33	65.33	72.67	67.83
Winners		2	9	3	7	8	5	6	1	4
Average Rank		2.50	4.83	4.00	5.50	6.17	6.00	3.83	1.83	3.33
Winners		2	6	5	7	9	8	4	1	3

Figure 1: AEA EM 2018 – Category DDD

2. In addition, it should be noted that the ranking system may not reflect the true quality of each report. This effect is most prominent when each report is of similar level in quality

Category : CCC

Judges		Report 1 (Country D)	Report 2 (Country D)	Report 3 (Country A)	Report 4 (Country A)	Report 5 (Country B)	Report 6 (Country B)	Report 7 (Country C)	Report 8 (Country C)
Judge (Country A)	Score	72	89			69	87	90	90
	Rank	5	3			6	4	1	1
Judge (Country B)	Score	52	51	53	53			52	53
	Rank	4	6	1	1			4	1
Judge (Country C)	Score	67	54	58	51	66	60		
	Rank	1	5	4	6	2	3		
Average Score		63.67	64.67	55.50	52.00	67.50	73.50	71.00	71.50
Winners		6	5	7	8	4	1	3	2
Average Rank		3.33	4.67	2.50	3.50	4.00	3.50	2.50	1.00
Winners		3	6	2	4	5	4	2	1

Figure 2: AEA EM 2017 – Category CCC

1. It should be voted that both the old and proposed system have their own limitations. However when enough judges are presented, the old and the proposed system produce similar result. Hence, Thailand would like to encourage all ASEAN countries to actively participate in the AEA judging session and invite all countries to propose possible ways to promote participation.
2. Thailand would like all members to consider the possibilities of using online system to encourage participation by all countries. This may ultimately eliminate the need for physical meeting which helps reduce cost and promotes participation.

Thank you for your attention

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