



Adapted from : Energy Efficiency Plan 2015, DEDE



#### 3 Strategies – 10 Measures

#### Compulsory

- EE 1 : Energy Management system in designated factory/building
- EE 2 : Building Energy Code
- EE 3 : Energy Standard and Labeling (HEPS/MEPS)
- EE 4 : Energy Efficiency Resources Standard (EERS)

#### Voluntary

- EE 5 : Financial Incentive
- EE 6 : Promotion of LED (Light Emitting Diode)
- EE 7 : Promotion of EE in Transport Sector
- EE 8 : Research and Development in Energy Efficient Technologies

#### Complementary

- EE 9 : Human Resources Development
- EE 10 : Promotion of Public Awareness on Energy Conservation



Source: The ASEAN Post





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#### EE1: Enforcement of Energy Conservation Standards

#### Classification of designated factories/buildings

Critorio	Designated Factories/Buildings			
Criteria	Group 1	Group 2		
Installed electric meter (total)	Between 1000 – 3000 kW	More than 3000 kW		
Installed transformers (total)	Between 1,175 – 3,530 kVA	More than 3,530 kVA		
Total annual energy consumption	Between 20 – 60 TJ/year	More than 60 TJ/year		

# Legal responsibilities of designated factories/buildings

1. Appoint Person Responsible for Energy (PRE)

- At least 1 PRE for Group 1
- <u>At least 2 PREs for group 2, in which one</u> must be senior PREs.

2. Conduct energy management system as described in regulation and <u>submit an annual report</u> to DEDE every March.

#### Current status (as of May 2019):

6,000 designated factories 3,113designated buildings 9,113 in total



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#### Smart metering allows flows of information which can then be utilized.



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#### Criteria:

- Available for factories/buildings/project developers for both EE and RE (RE ~ 37%)
- DEDE loans the funding via financial institutions to familiarize the bank with EE/RE investment
- Maximum loan of no more than 50M baht with interest rate of no more than 3.5%
- Payback period of 7 years

#### EE5: Financial Incentive – Revolving Fund



Phase	# of projects	Total investment (Mbaht)	Investment via ENCON Fund (Mbaht)	Investment via bank/applicant (Mbaht)	Energy saved (ktoe)	Energy saved (Mbaht)
1 (2003)	78	3,427	1,902	1,525	98	1,805
2 (2006)	83	3,330	1,735	1,595	99	1,713
3 (2007)	98	5,878	2,702	3,176	93	2,329
4 (2009)	12	1,282	377	905	13	421
5 (2010)	24	2,042	489	1,554	17	539
6 (2015)	76	1,284	1,215	69	7.3	236
6 (extended)	84	1,681	1,641	40	5.7	276
Total	455	18,924	10,061	8,864	333	7,319











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EE5: Internet of Things (IoT) Subsidy Program

## Internet of Things (IoT) Subsidy Program

#### Target group:

IoT technologies implementation (either with new or existing system) in designated buildings and factories

#### Program detail:

- Subsidize 20% of total cost but no more than 2 million Baht (around46,000 USD) per entity, with a minimum of 50,000 Baht ( around 1,600 USD)

- Payback period no longer than 7 years
- Must include **BOTH** monitoring and control

#### In Progress...

- Total budget allocated for subsidies: 220,000,000 Baht
- Number of approved applicants: 87
- Expected energy saving: 29.18 ktoe

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#### **EE10: Awareness Promotion**

#### **Technologies** Demonstration

#### **Energy Display Center**

#### 54 technologies showcased

- 37 Industrial sector technologies
- 10 Commercial building technologies
- 7 Residential sector technologies
- 20,000 visitors per year



Focus on new and highly efficient technologies with small coverage publicly.

- Subsidize 40% of the cost
- Max subsidy = 6 million Baht
- Energy saving of at least 15% for manufacturing process or 20% for utility system



**Adsorption Chiller** 

Organic Rankine Cycle (ORC) Generator





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#### **EE10: Awareness Promotion**



### "Thailand Energy Awards"

- Awareness Raising
- Participation
- Public Relation
- Increase Visibility



"ASEAN Energy Awards"







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## **Thank You**

