

# Energy Efficiency Standards And labeling Measures in Thailand : Air Conditioner



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Development And Efficiency  
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# Outline

## Part1

### **1. Background :**

**Thailand Energy and Electricity Situation**

### **2. EE S&L Measures in Thailand**

**2.1 Framework**

**2.2. Legislative Measure of HEPS**

**2.3 Labeling & Promotion**

**2.4 Testing Laboratory Network**



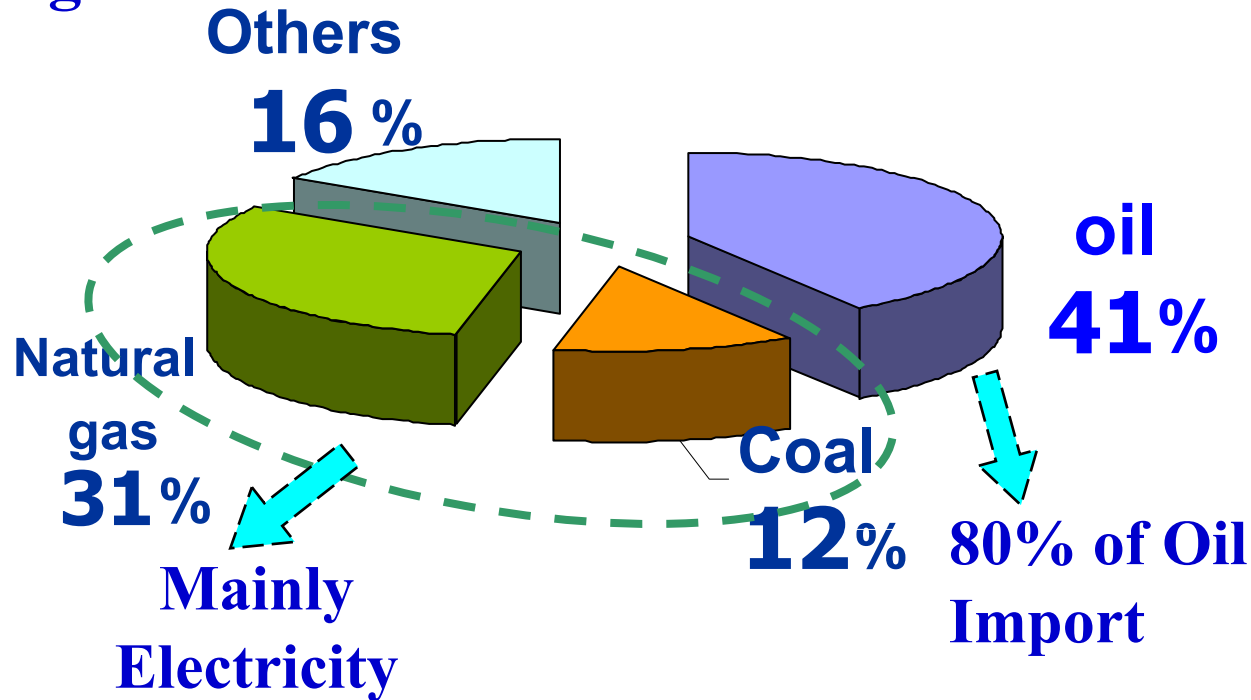
# Outline

## Part 2

- 1. Thailand Air Conditioner (AC) situation**
- 2. Air Conditioner EE S&L Law**
- 3. AC Labeling & Promotion**
- 4. Conclusion :  
Challenge & Expectation**

# Thailand's Energy Situation

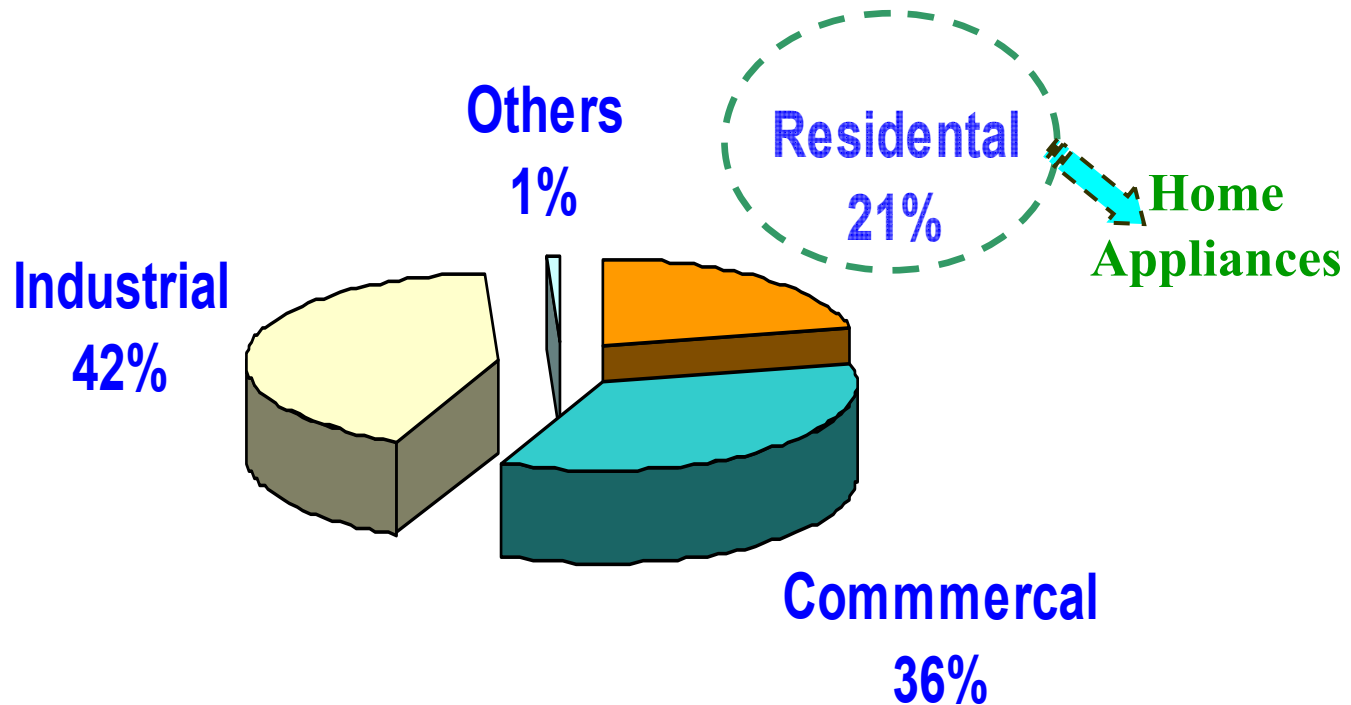
- 80% of Energy consumed is oil and electricity
- In 2008, Thailand spent 24 billion USD on energy accounting for 13% of GDP.



**Have to Reduce Oil Import & Save Energy**

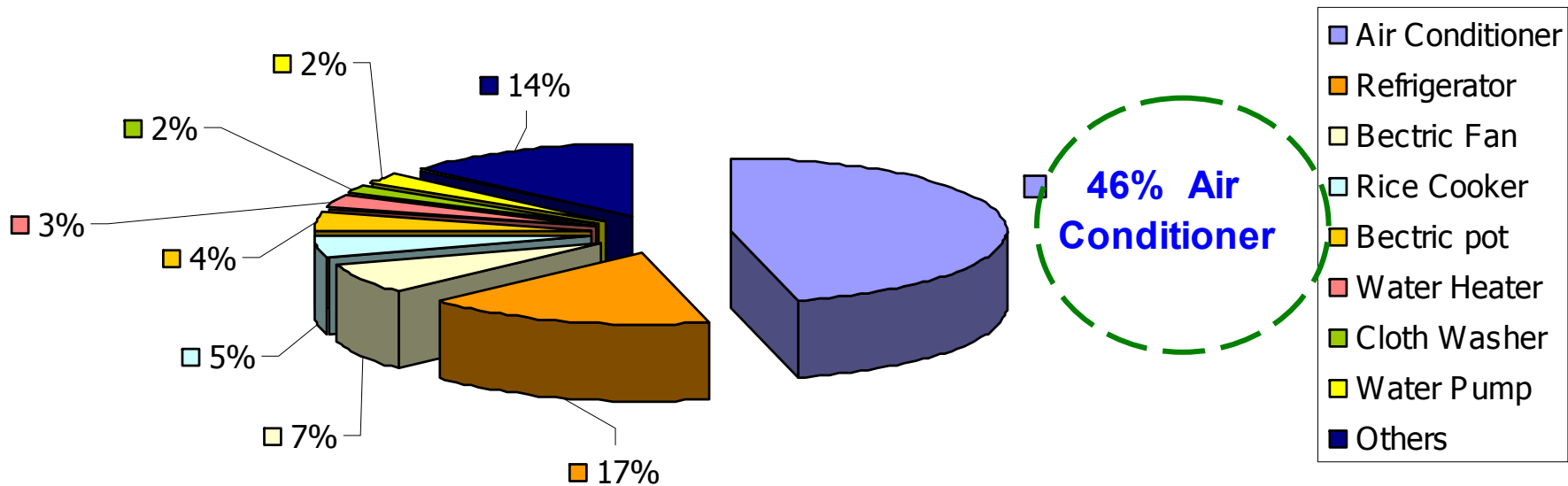


# Electricity Consumption in Thailand



Source: DEDE

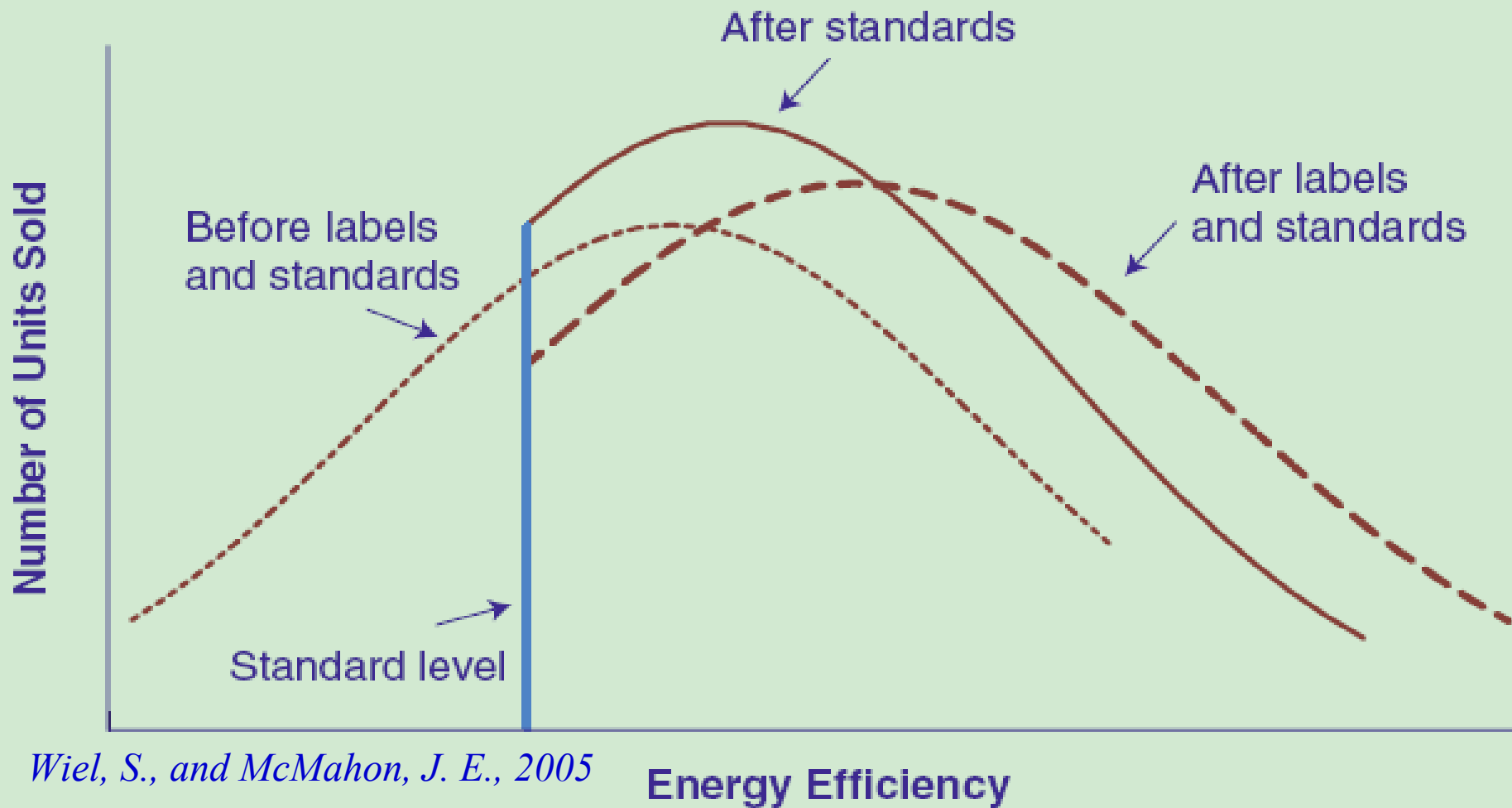
# Load Sharing In Residential Sector



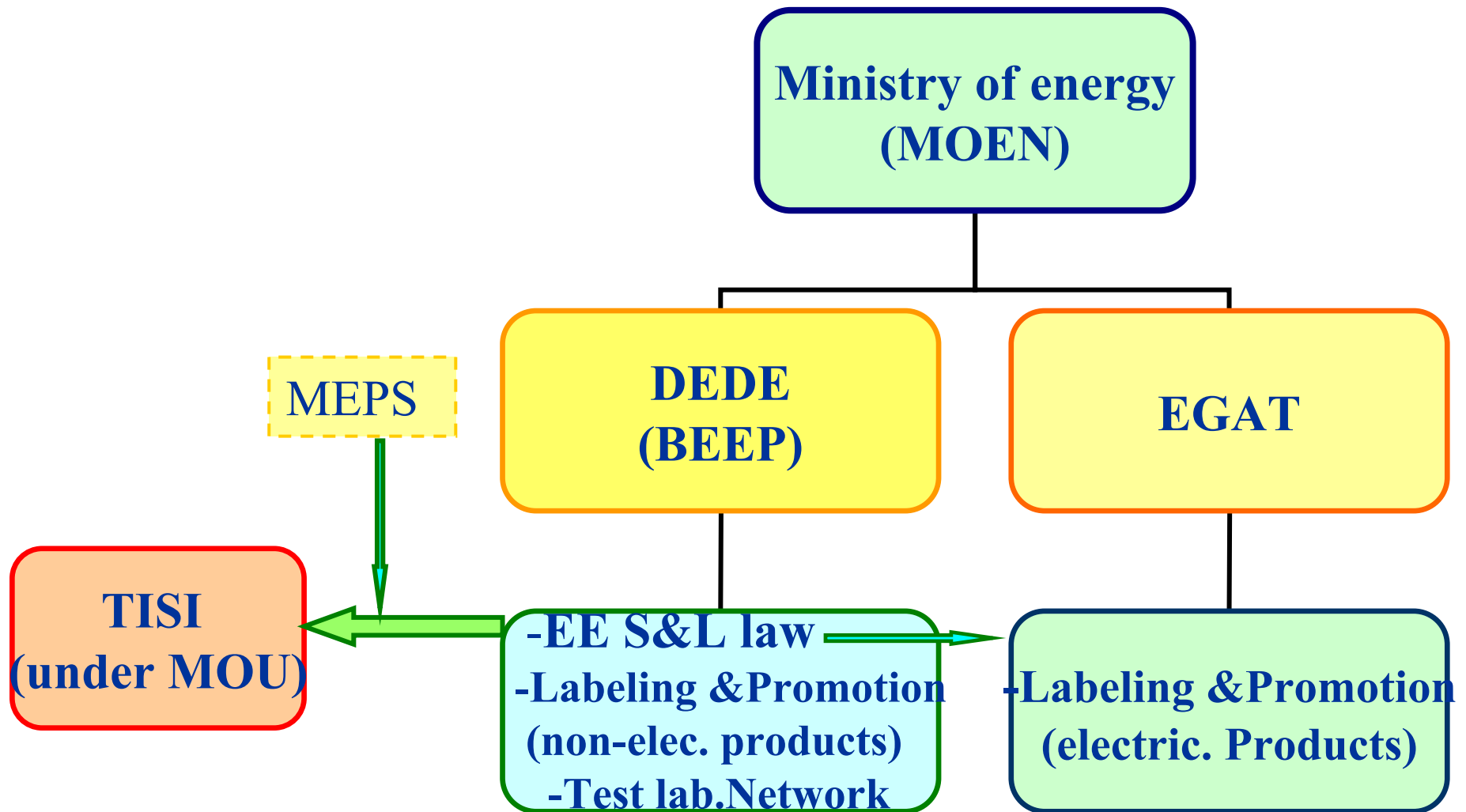
Source : EGAT



# Market Transformation



# Thailand EE S&L Structure





## 2.1 Framework of EE S&L Measures

### 1. Voluntary Measure(HEPS)

**Objective:** Encourage & promote to increase high energy efficient product utilization.

Ministerial  
Regulation(MR)  
&Announcement  
(MA) of HEPS  
under section 23  
of ECP Act,  
1992&2007



Energy  
Testing  
Lab.  
Network

Labeling &  
Promotion

### 2. Mandatory Measure(MEPS)

**Objective:** Eliminate very low energy efficient products out of the market.

**DEDE&TISI**  
:Sign MOU;  
Energy Standard  
Measure Cooperation

MEPS : DEDE Set up  
&TISI implement

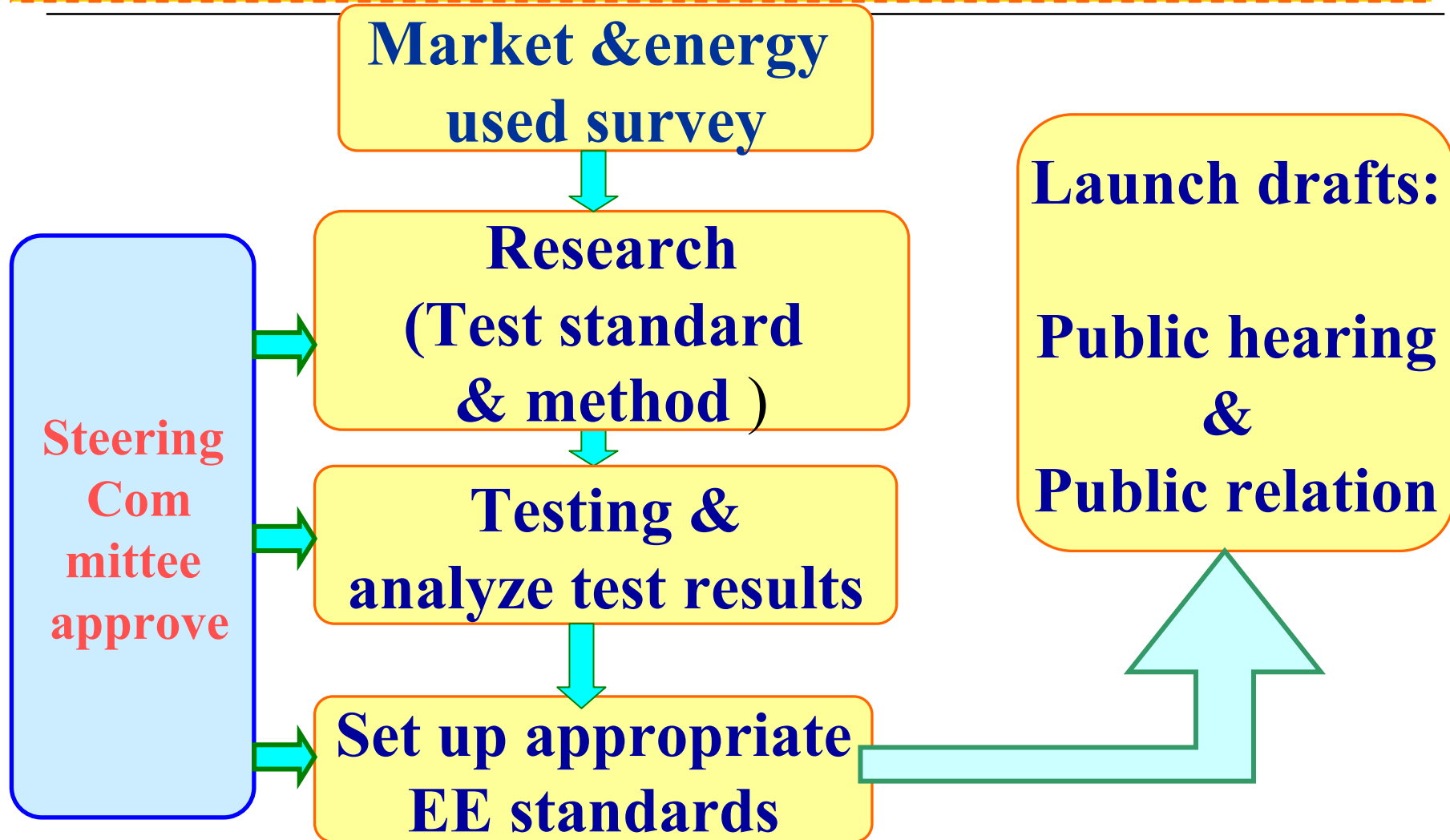


## 2.2 HEPS Legislation Process

**1. Feasibility Study for MR&MA draft**

**2. MR&MA draft of HEPS to be legislated**

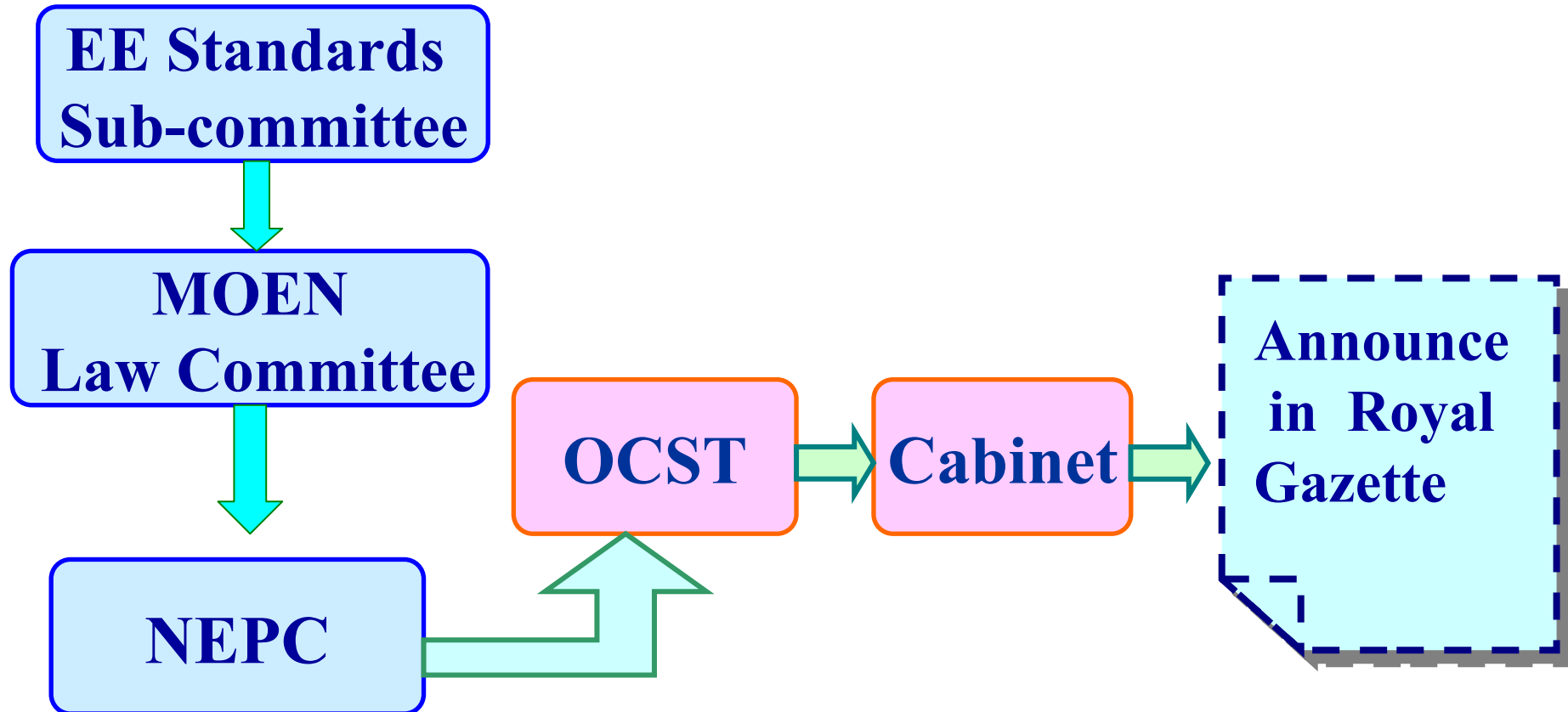
# 1. Feasibility Study for MR&MA draft





## 2. MR&MA draft of HEPS to be legislated

Approved by:

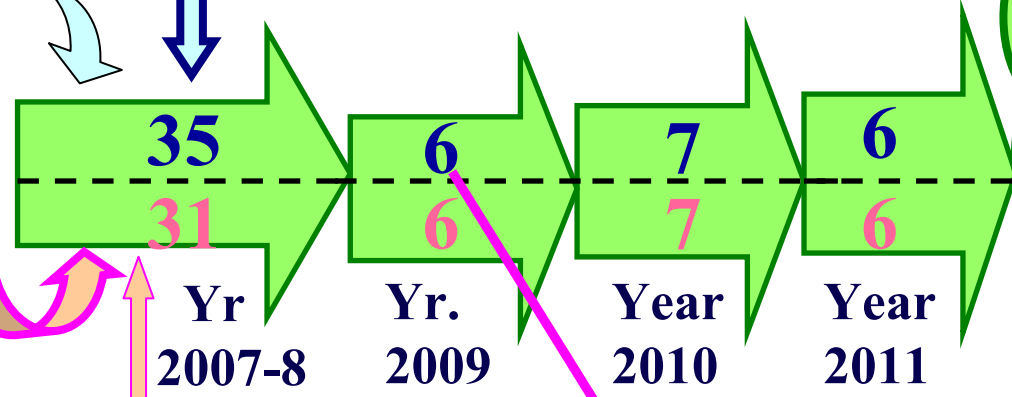


# Road Map of HEPS&MEPS : In 2007-11

**HEPS** :- 8 MR & 4 MA are announced as law, and 4 MA are being processed.  
 -10 MR(draft) are approved by Energy Efficiency Standard Sub-committee. (EESS)  
 -17 MR(draft) of HEPS are studied.

**HEPS (54)**

**MEPS (50)**



**: Energy Saving Potential ~280ktoe/yr (~7,500m B/yr.)**

**MEPS** :-14 drafts ,sent to TISI.  
 -2 drafts will be approved by the EESS.  
 -17drafts are being studied.

- 6 drafts of HEPS and MEPS are being studied.

# High Energy Efficiency label In Thailand



**EGAT's : for Elec. Equipment Implementation**



**DEDE's : for Non-elec. Equipment Implementation**



# Labeling & Promotion

## 1. Label for Non-electrical products (Pilot project)

- ❑ 4 products : LPG gas stove , VSD , glazing, & insulation
- ❑ Energy Saving 23 ktoe /year

## 2. Label for Electrical Products

- ❑ Together Conservation Project (Number 5 EE Label)
- ❑ 10 Electrical equipments labeling (including AC)
- ❑ Energy Saving (during 1993-2009)
  - Electricity Saving 1,752.2 MW or 10,175.4 GWH
  - CO<sub>2</sub> emission reduction 6.57 MTON



# Labeling & promotion

## Promotional Campaign

- ❑ Advertising in media
- ❑ Public relation between consumers and strategic partners (government agencies, producers etc.)
- ❑ Attitude Creation Program (The Green Learning Room in school)
- ❑ Tax Incentive Program



# Promotional Campaign



**Advertising &  
Public Relation**

**The Green Learning  
Room ,Activities  
in school**

## 2.4 Energy Efficiency Testing Lab.Network

### :Objective

- Facilitate and certify suitable testing lab.
  - Disseminate and provide the relevant information.
- :23 members apply for EE Testing lab. network**

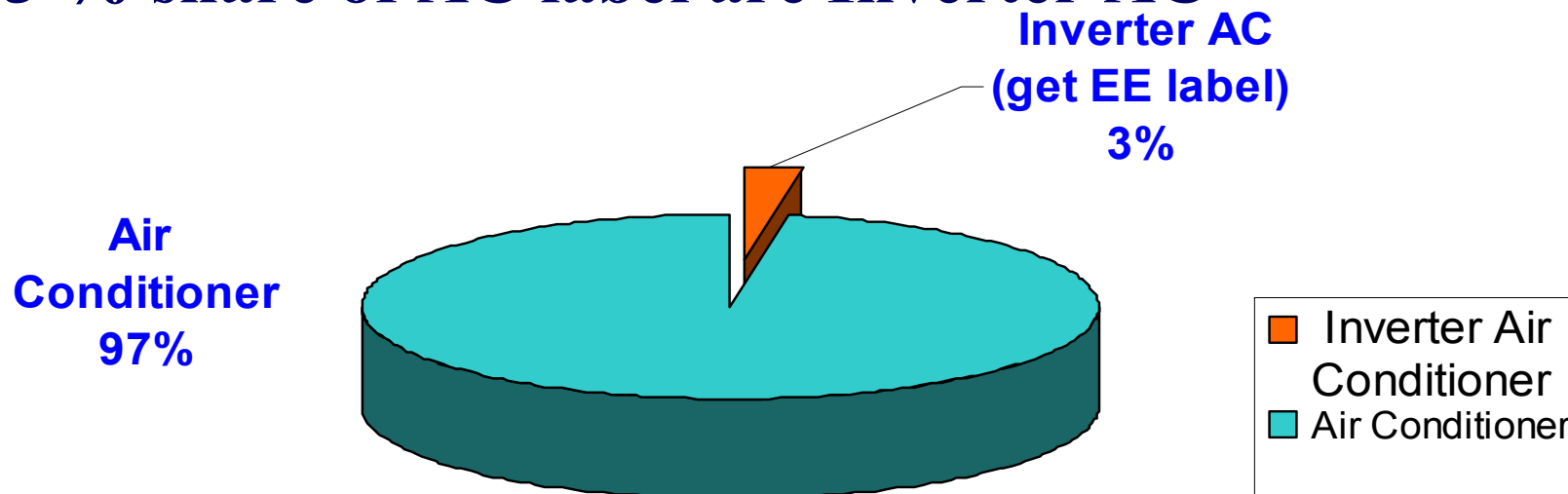




# Part 2 : Air Conditioner (AC)

## 1. Thailand Air Conditioner Situation, 2008

- Approx. 5-10 % share in market (mostly inverter AC )
- 3 % share of AC label are Inverter AC





## 2. Air Conditioner EE S&L Law

- **MEPS& HEPS law of air conditioner are two main laws for EE S&L measure**

### 1. TIS 2134-2545 :

-**MEPS** for energy compulsory measure

-Spec.: Room AC , Air-cooled , split type,

:Cooling capacity  $\leq 12,000$  watt

Type	Cooling capacity $\leq 8,000$ W	Cooling capacity 8001-12,000 W
Wall type(no lees than)	2.82 w/w	2.53 w/w
Split type(no lees than)	2.82 w/w	2.53 w/w



## 2. Air Conditioner EE S&L Law

### 2. DEDE Ministerial Regulation (MR) & Announcement (MA) of HEPS

- **HEPS** for energy voluntary & promotion measure
- Spec.: same as TIS 2134-2545

Cooling capacity	<u>MR</u> COP(W/W)	<u>MA</u> COP(W/W)
Cooling capacity $\leq$ 8,000 W EER (Btu/watt)=	3.22 - 4.1 (11.0-14.0)	3.22
Cooling capacity 8001-12,000 W EER (Btu/watt)=	3.22 - 4.1 (11.0-14.0)	3.22



## Air Conditioner EE S&L Law

### □ New Technology AC

-Approx. 5-10 % share in market.

### □ Feasibility study

- Start to be studied by DEDE

-To set up appropriate EE standard for HEPS  
Ministerial Regulation & Announcement draft.

-Suitable test standard & method ,insufficient  
lab. facilities are concerned.



## 3.AC Labeling & Promotion

- AC Labeling
  - start in 1995
  - In 2006, rescale (4%) from 10.6 to 11.0 Btu/hr.
- **Electricity Saving 798.0 MW or 4,117.0 GWH  
& CO<sub>2</sub> emission reduction 2.5 MTON**
- Promotional Campaign
  - public relations & Advertising in media
  - Tax incentive project
    - :-25% Tax break on Corporate Tax for the investment (equipment cost) in EE projects  
(AC with EE label are included.)

## **4. Conclusion: Challenge & Expectation**

- **Feasibility study & Cooperation**
  - **Research cooperation (EE&S knowledge ,technology & test methods) , such as how to know that should & how we change EE index from COP,EER to APF,SEER**
  - **Appropriate energy efficiency standards for Thai weather & Thai people behavior are expected.**
- **EE Testing Laboratory Network**
  - **Appropriate ,fair, accuracy and sufficient test facilities for testing laboratory accreditation system under HEPS Ministerial Announcement are expected.**



# Energy Efficiency Standards And labeling Measures In Thailand : Air Conditioner



Department of Alternative  
Energy Development and Efficiency

**MINISTRY OF ENERGY**

**Thank you**

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