

Monitoring, Verification and Enforcement of EGAT's Labeling Program



Ms. Kritika Rasisuddhi

Electricity Generating Authority of Thailand (EGAT)

Mr. Pitarn Chaichinda

**Committee-Illuminating Engineering Association of Thailand
(Former Director, DSM and Planning Division, 2013-2014) EGAT**

Feb, 2015

Outline

- I. Introduction: EGAT's Demand Side Management Implementation**
- II. Labeling Program/ Process**
- III. MV&E Activities**
- IV. Lessons Learned/Suggestion**



I. Introduction : The organization

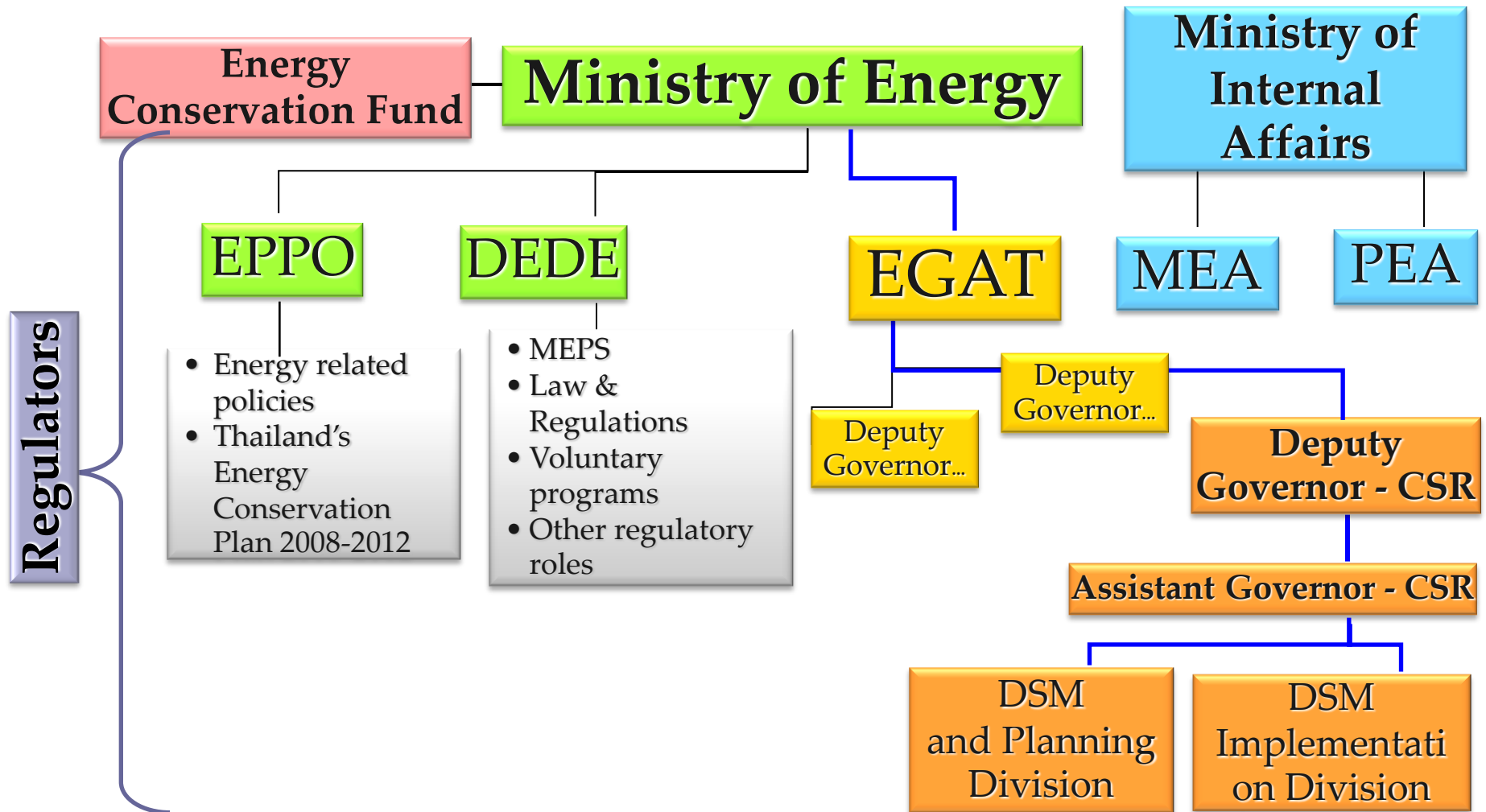
Electricity Generating Authority of Thailand (EGAT)

- Acquire and provide adequate, reliable and reasonably-priced electricity supply.
- Embrace the principle of sustainable energy development taking into account social and environment accountability.



I. Introduction (cont')

EGAT's Demand Side Management Structure

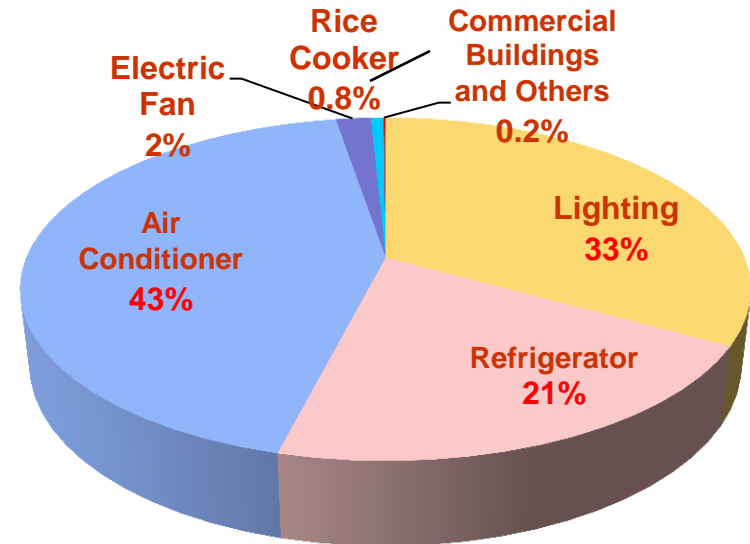


I. Introduction (cont')

Results of Program Implementation

Achieved to date (as of Dec 2014)			
Program	MW	GWh	CO ₂ (Ton)
Lighting	1,124.6	6,273.2	3,724,671
- Fluorescent Tube (T8)	401.5	1,957.5	1,446,682
- Fluorescent T5 Program	174.9	793.9	425,972
- FTL (T5)	129.2	586.5	314,391
- ElecTronic Ballast T5	45.6	207.4	111,580
- CFL(before labeling)	10.0	57.2	42,295
- CFL(labeling 2008)	496.7	3,219.8	1,667,061
- Low-Loss Ballast	18.2	91.3	60,230
- HPSV Street Light	-	17.2	12,723
- LED	23.3	136.3	69,709
- LED Street lighting	-	1.1	543
- Bulb E27	14.5	92.2	47,122
- MR16	3.6	18.4	9,409
- LED T8	5.2	24.7	12,635
Refrigerator	734.9	4,330.7	2,750,380
- 1 door	456.1	2,952.0	2,041,860
- 2 doors	278.7	1,378.8	708,520
Air Conditioner	1,479.0	9,704.0	5,484,622
Fan	71.3	619.1	315,346
Double oscillating fan	5.4	12.5	6,558
Rice cooker	34.1	44.7	22,829
Motor	0.2	1.2	909
Comercial	2.6	10.3	7,583
Standby - TV	1.1	3.8	2,025
Standby - Computer screen	-	2.3	1,241
Eletric kettle	14.3	22.6	11,580
Water heater	71.5	95.6	48,879
Total	3,538.8	21,120.0	12,376,623

Peak Demand Reduction by Program



Cost Effectiveness of DSM Program

- Estimated Total DSM Expenditures to Date

4,902.1 Million baht

- Cost of Peak Demand Saving

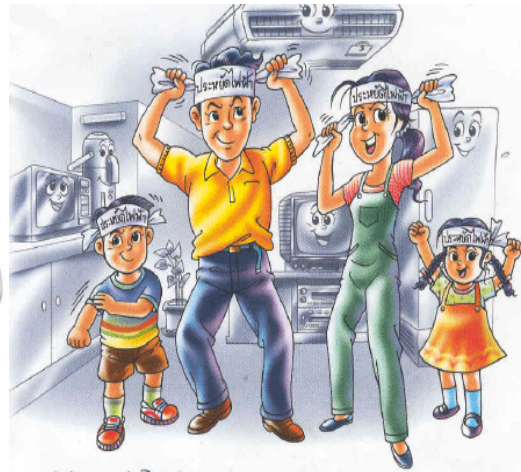
1,385.2 Baht/kW

- Cost of Energy Saving

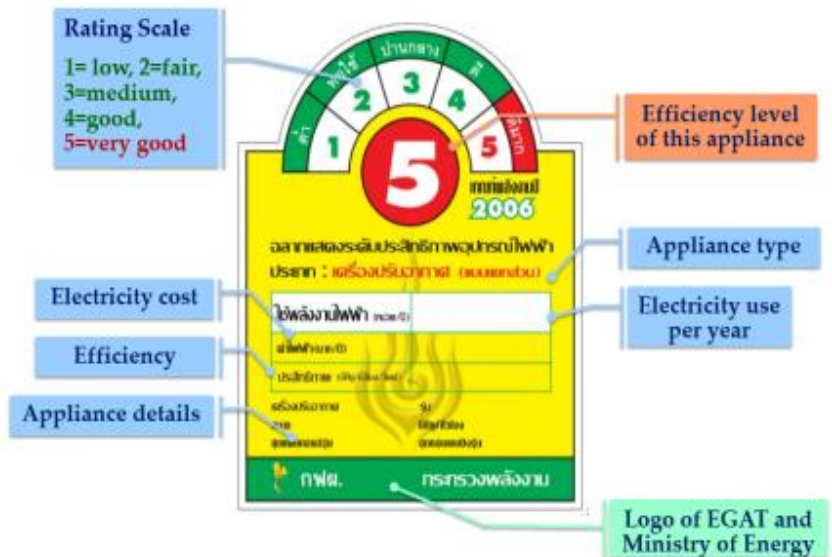
0.23 Baht/kWh

II. Labeling Program - EGAT's DSM Initiatives

- Voluntary Electricity efficiency labeling program
 - Rating scale 1-5 (worst-best)
 - 24 kinds of appliance



What's on the label?

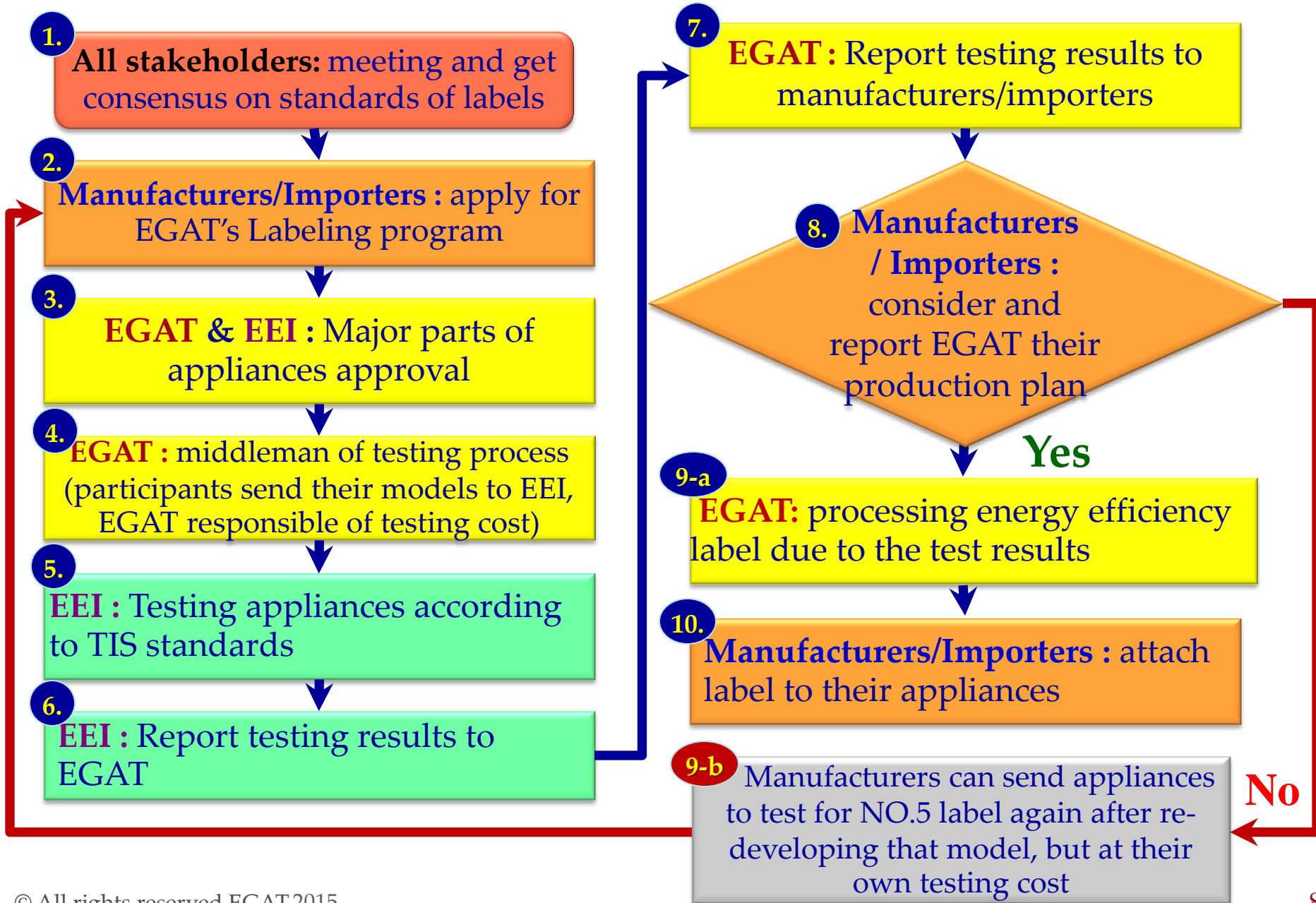


Energy Labeling by EGAT

1. Refrigerator (1994)
2. Air conditioner (1995)
3. Compact Fluorescent Lamp (1996)
4. Electromagnetic Ballast (1998)
5. Electric Fan (2001)
6. Automatic Rice Cooker (2003)
7. Lighting Luminaire (2003)
8. T5 (2009)
9. Electronic Ballast (2009)
10. Double-oscillating Fan (2009)
- 11.-12. Standby 1 Watt- TV & Monitor (2010)
13. T5 Luminaire (2010)
14. Electric Thermal Pot (2011)
15. Ventilation Fan (2012)
16. Water Heater (2012)
17. Electric Iron (2012)
18. Washing Machine (2012)
19. T5 Retrofit Set (2013)
20. LED – MR 16 (2013)
- LED – T8, Par (2014)
21. Microwave Oven (2014)
22. Induction Cooker (2014)
23. Television (2014)
24. Electric Kettle (2014)



Labeling Process





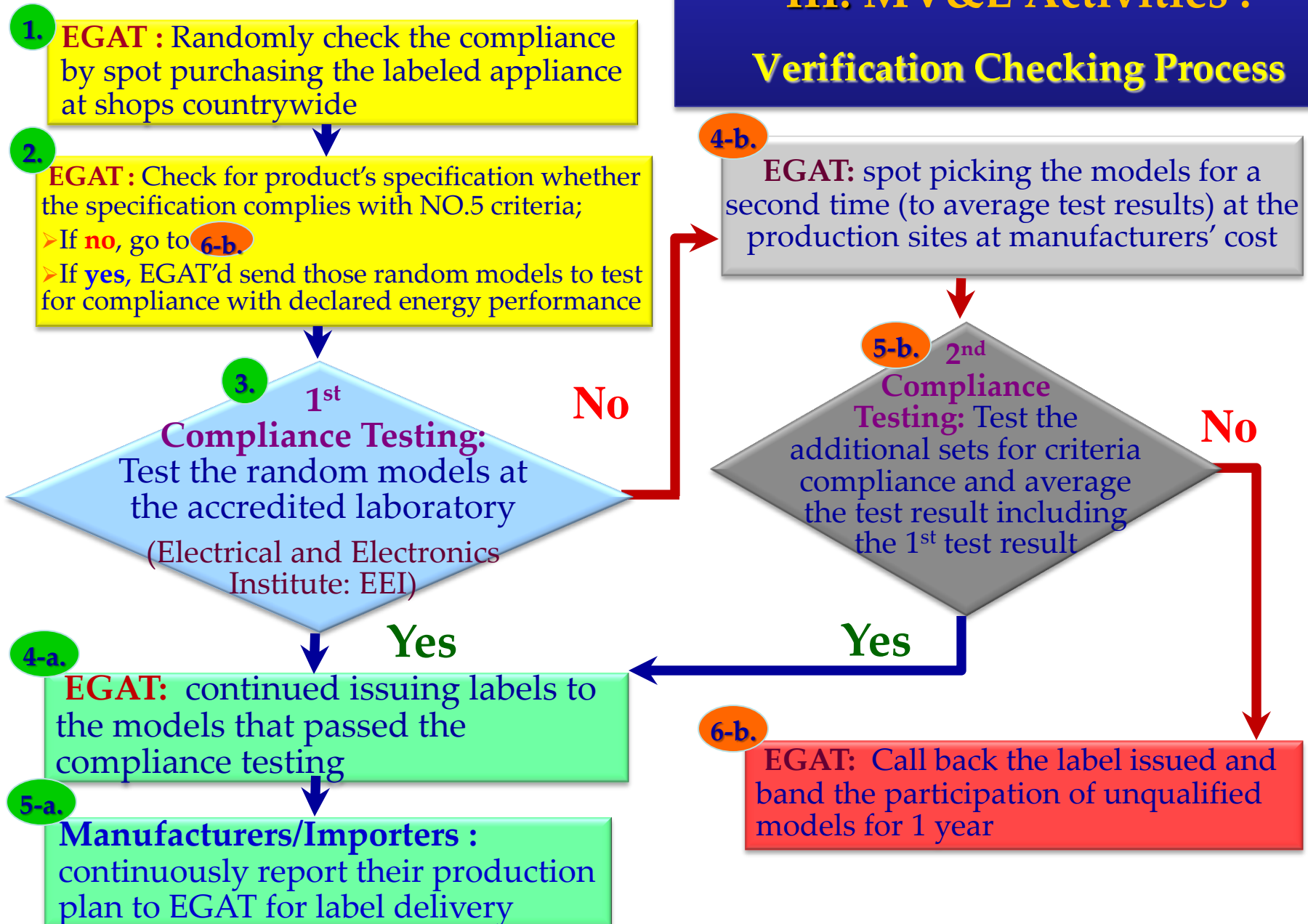
“ใช้” อย่างรู้คุณค่า
“ปิด” เมื่อไม่ใช้งาน
“เปลี่ยน” มาใช้อุปกรณ์ประหยัดไฟฟ้า เบอร์ 5



โครงการลดการปล่อยไฟฟ้า เบอร์ 5
กฟผ. กระทรวงพลังงาน

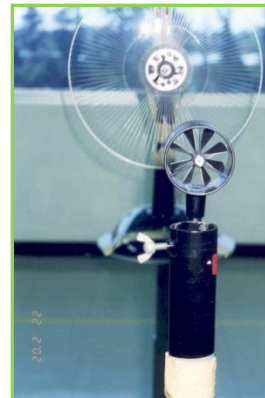


III. MV&E Activities : Verification Checking Process



Verification Process : Spot checking

- Randomly spot-purchase the NO.5 appliances at the electric appliances shop and department stores countrywide
- Check product's specification whether main specification complies with NO.5 criteria
- Send those models to test for compliance with Label NO.5's criteria at the accredited laboratory (Electrical and Electronics Institute: EEI)



lites.asia cooperative activities on MVE survey ASEAN's performance standard of lighting products

Involvement of the country's focal points

- ❑ Department of Alternative Energy Development and Efficiency (DEDE)
- ❑ Electricity Generating Authority of Thailand (EGAT)
- ❑ International Institute for Energy Conservation (IIEC)



Process



- ◆ Sample the popular models in the local market;
- ◆ Choose different brands, from different manufacturers

Progress

Lamp sampling requirements

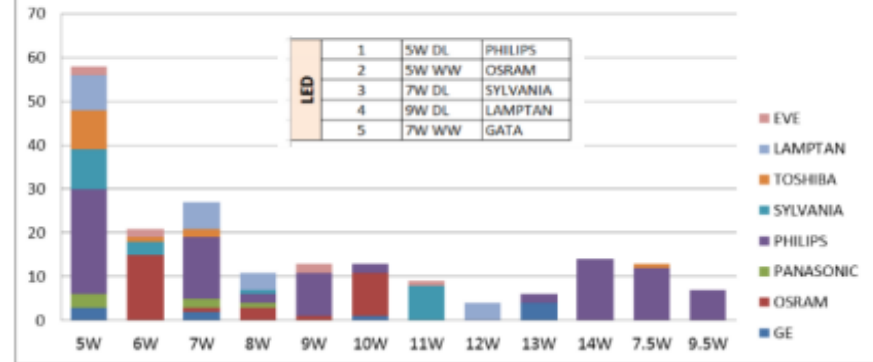
Sampling process

Shipping requirements

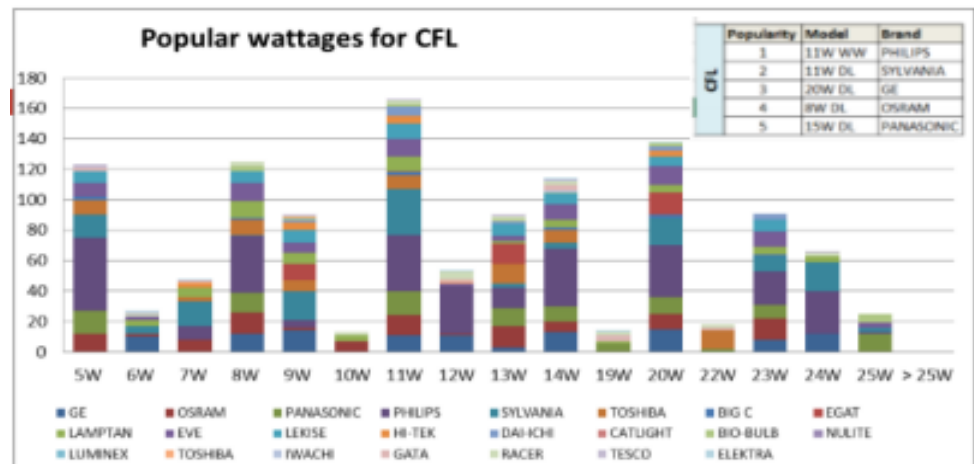
Sampling discipline

22-30 Sep,
2014

Popular wattages for LED



Popular wattages for CFL



Enforcement Process: Control Measures

- In case the test result of the random model doesn't comply with the declared performance on label (+/- x%) :
 - spot picking the models for a second time at production sites (twice amount) at producers/importers 'cost
 - average test results of 1st and 2nd random models to justify the compliance
- Control measures: in case the average test results doesn't comply with the declared performance on label (+/- x%) :
 - If the test results still pass label NO.5 criteria, producers/manufacturers would be forced to edit the information published, and after that EGAT would distribute new label base on the new test results
 - If the test results fail, EGAT will call back all distributed labels of the unqualified models and forbid those models to participation in labeling program for at least 1 year



MVE revision

Activity	2014	2015	2016
The process of MVE revision	A/C	Refrigerator	Others
	LED	Others	
Effective schedule		A/C	Refrigerator
		LED	Others



1
Compliance
Testing:

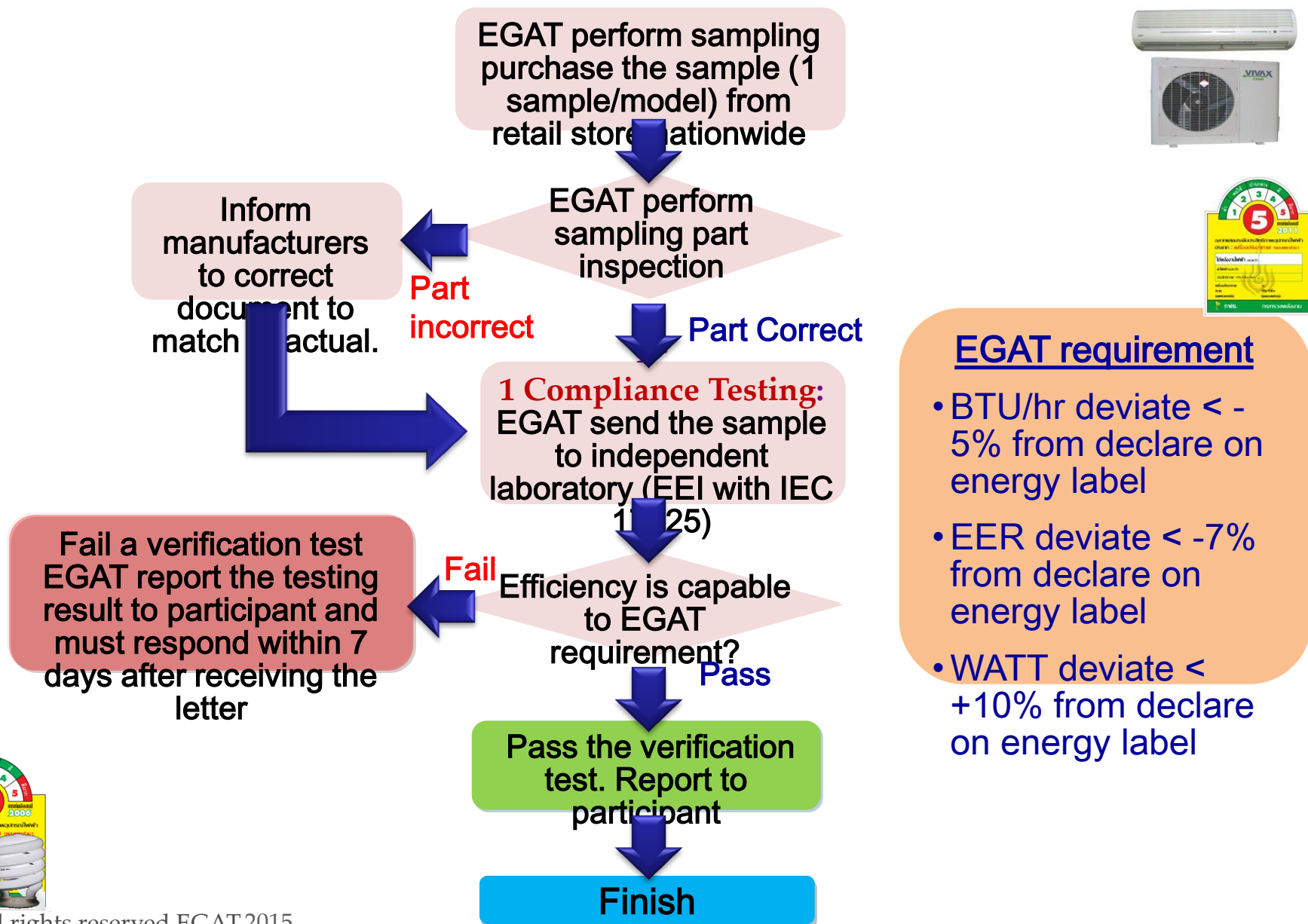
Compliance
Criteria

Conditions of
Sampling &
Testing

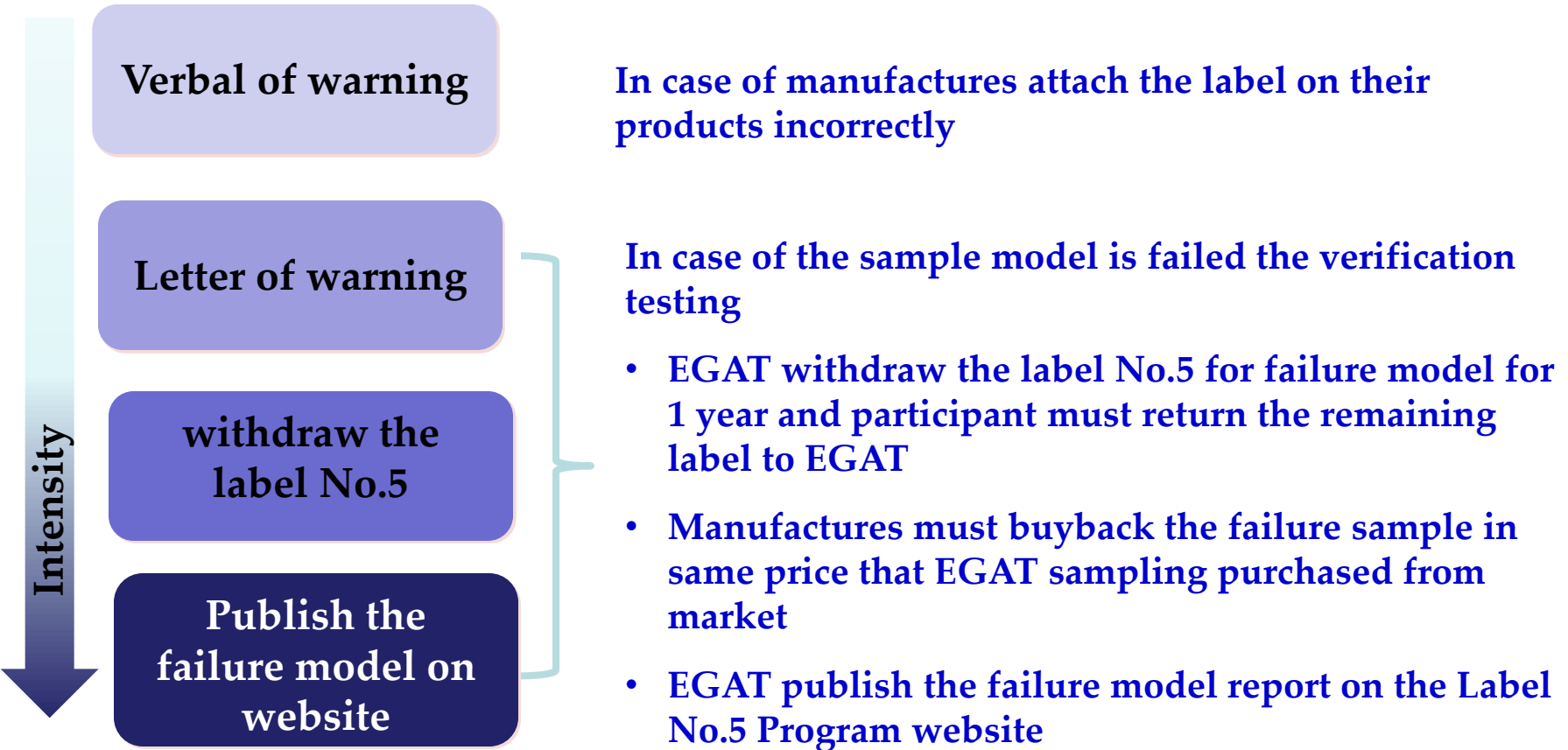
Level of Non-
Compliance



Revised Verification Checking Process



Enforcement for non-compliance



IV. Lesson Learned : LED Dilemmas

Dilemmas of LED Promotion

1. Immature technology with high Investment	vs	Existing lighting with lower investment
2. Life test <ul style="list-style-type: none">- Project prediction- Low cost- Match to short product life cycle	vs	<ul style="list-style-type: none">- Full life testing- High reliability- Long period (need acceleration)
3. Cost of Testing the changing model	vs	Amount of product sales
4. Light quality	vs	System cost
5. Innovation	vs	Reliability standard to cover the necessary conditions
6. Harmonization	vs	Local manufacturers protection



IV. Lesson Learned : MV&E system

The key features of Label NO.5's monitoring, verification and evaluation are :

Key Features	Effectiveness	Notice
Permanent structure of MV&E implementation	<ul style="list-style-type: none">➤ MV&E unit is separated from implementation units➤ The MV&E processes have continuously implemented since 2005.	MV&E unit should be established separately from the label distribution units for its creditability
Testing facilities	<ul style="list-style-type: none">➤ EGAT has assigned Electrical and Electronics Institute (EEI), an accredited laboratory, as program's testing laboratory	Qualified and adequate testing facilities is needed for MV&E processes
Sources of MV&E fund	<ul style="list-style-type: none">➤ EGAT's budget for random checking is approximately 5 million Baht (~166,000 \$US) yearly	Concrete sources of fund is needed for effective MV&E implementation



IV. Lesson Learned : MV&E system (cont')

The challenges:

1. As a voluntary labeling scheme, there is no law and regulation to support the MV&E processes and penalty for non-compliance product models are not fully enforced.
2. As a state-owned enterprise, some of EGAT's regulations don't support MV&E system which needs more flexibility and efficiency in randomly purchasing products.



IV. Lesson Learned: General Suggestion

1. **High Efficiency Lighting Programs** can result in significant energy savings, since lighting is commonly used everywhere. Hence, continuous efforts are needed to promote energy efficient lighting.
2. **Product quality** is always a challenging barrier for lighting programs. Therefore, standardization is a critical success factor.
3. **Government or policy bodies** can be a key factor for removing barriers on lack of customer information and awareness by demonstrating the use of energy conservation products.
4. **High initial price** of energy efficiency products can be lowered by intervention in marketing channels, together with a strong and continuous promotion campaign.

**“Save Your Money
Save Our Energy
Save The Environment”**

Q & A

**DSM and Planning Division
Electricity Generating Authority of Thailand**

[http:// www.egat.co.th/dsm](http://www.egat.co.th/dsm)

<http://www2.egat.co.th/labelNo5>

