

Major Developments in
Energy Labels & Standards

< The 34th APEC EGEE&C Meeting, Chinese Taipei >

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*** IEA 4E international conferences in Seoul**



Energy Labels & Standards

◆ 3 programs in Energy Labels & Standards

Energy Efficiency Label and Standard Program (including MEPS)



- **Mandatory**
- 5-grade labeling & MEPS
- 23 items : Refrigerators, Air-conditioners, Automobiles, etc

Energy Labels & Standards

High-efficiency Appliance Certification Program



- **Voluntary**
- 46 items : Transformers, Pumps, LED Lightings, etc

e-Standby Program



- **Voluntary -> Mandatory**
- Standby Korea 2010
- 20 items : PCs, TVs, STBs, etc



Additional information in labels

1. Needs for new labels
2. Indication of CO₂ emissions
3. Indication of electric charges



1. Needs for new labels



◆ Energy Efficiency Label (since 1992)

- Energy Efficiency Label & Standard Program
 - Mandatory attachment of **Efficiency Grade Label**(the 1st ~ 5th)
 - Application of **MEPS** below the 5th grade standard

◆ Necessity for improvement of labels

- Consumers' needs for better design and system
 - New labels with improved efficiency discrimination effect
 - Harmonization of design to minimize consumers' confusion
- Reliable information on energy use and emissions
 - **More practical information** on energy consumption to help consumers select high-efficient products in the market
 - **Consumer education** on GHG emissions caused by use of energy consuming products is needed.



2. Indication of CO₂ emissions

◆ CO₂ emissions on the labels (since July 2009)

- New measure to establish a sustainable production and consumption culture for green growth in Korea
- More detailed information for consumers to address climate change issues more proactively



2. Indication of CO₂ emissions

◆ World's first CO₂ label for electric products

- Korea became the first country to implement CO₂ label for operational stage of various electric products.
 - The first target was automobiles implemented in 2008, and the extent of this policy has expanded to electric goods.
 - Almost 120 million models from 19 products will be managed.

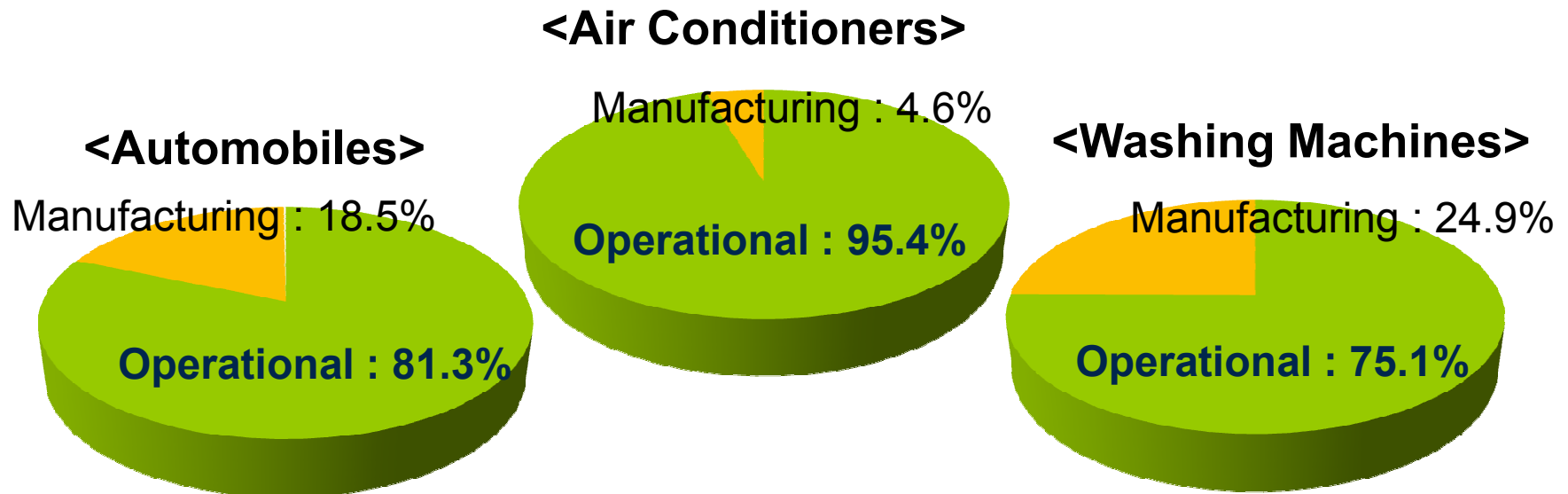
Date	Target products (19 products)
2008.8.1	Automobiles (1 products)
2009.7.1	Refrigerators, Kimchi Refrigerators, Washing Machines, Drum Washing Machines, Dish Dryers, Vacuum Cleaners, Electric Fans, Air Cleaners, Incandescent Lamps, CFLs (10 products)
2010.1.1	Freezers, Air Conditioners, Water Dispensers, Rice Cookers, Fluorescent Lamps, 3 Phase Induction Motors, Commercial Refrigerators (8 products)



2. Indication of CO₂ emissions

◆ Effectiveness of indication

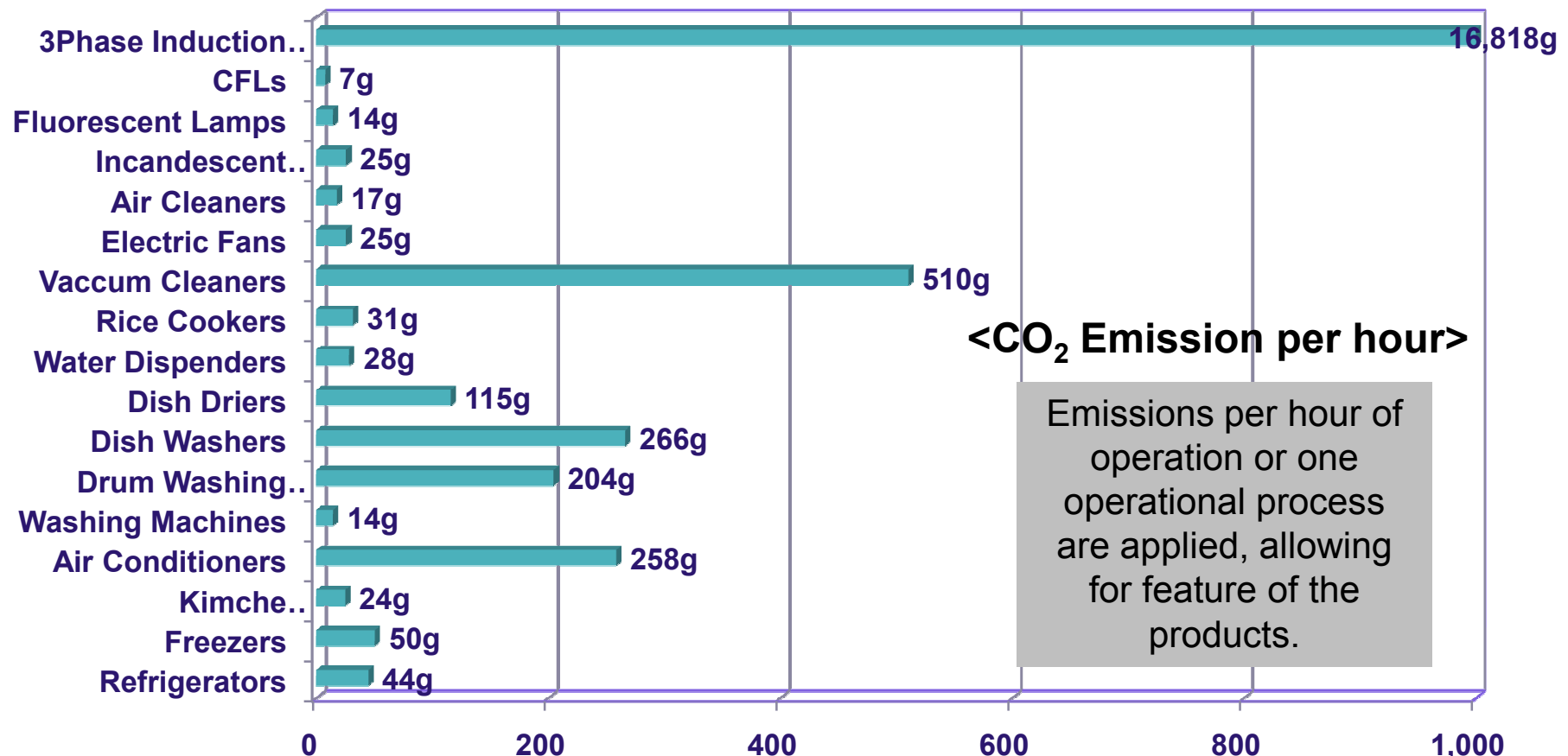
- Energy using products emit 75~95% of CO₂ at their operational stage and other stages are less relatively.
 - Automobiles : 81.3%, Air-Con. : 95.4%, Laundry : 75.1%
- This CO₂ labels indicate the emission at the operational stage only for best effectiveness with the minimal expense.



2. Indication of CO₂ emissions

◆ Emission factor and CO₂ emission

- Average value of domestic greenhouse gas emission factor during these five years (1Wh = 0.425g of CO₂)



3. Indication of electric charges

◆ Information on electric charges

- More practical information for end-users
 - Information on energy consumption is not familiar or comprehensive to consumers and a little hard to understand.
 - **Estimated electric charges are the most practical and useful** information consumers need.
- Difficulty in determining unit price of electricity
 - Because of **progressive tax rates** and **complicated electricity pricing**, applying unit price is hard and indicated data can be incorrect information under specific use condition.
- Indication on labels
 - Research projects to find reliable resolution to this problem and to determine measuring and calculation measure.
 - Enforcement date : **Jan. 1, 2012** (to be determined)



Expansion of Warning Label Scheme

1. Standby Korea 2010
2. Expansion of scope
3. Accomplishment



1. Standby Korea 2010



◆ e-Standby Program (since 1999)

- It was launched as voluntary program for reduction of standby power of 20 office and consumer electronics
 - Energy Saving Label for Energy Saving Products

◆ Standby Korea 2010

- To reduce standby power consumption of all electronic products below 1 watt in Korea by 2010
- Step-by-step policy approaches of each stage

1st stage - Voluntary 1W Policy ('05-'07)





2nd stage - Preparation for transition to Mandatory ('08~'09)

3rd stage - **Mandatory 1W Policy** ('10~)



1. Standby Korea 2010

◆ Mandatory 1W policy to maximize saved energy

Policy Tools	MEPS	Warning label	1 st Grade label
Programs	Energy Efficiency Label and Standard Program	e-Standby Program	Energy Efficiency Label and Standard Program
Labels	 모델명 : ABC-12345 최저소비효율기준 만족제품	 or  에너지절약	
Specification	<0.5W (No load)	<1W (Off or Passive standby)	<1W (Off or Passive standby)
Target products	1 products - Adapters & Chargers	19 products - Televisions, - Computers, - Monitors, - Printers, - Set-Top Boxes, etc	8 products - Air-Conditioners, - Washing Machines, - Dish Washers, - Rice Cookers, - Air Cleaners, etc



2. Expansion of Scope

◆ Introduction of Warning Label (since Aug. 2008)

- Mandatory reporting of standby power usage of products
- Mandatory indication of warning label for all products below the announced standby power specification



Voluntary

For products that meet standby power standard



Mandatory

For products that don't meet standby power standard

◆ Target products as of now

Date	Target products
2008.8.28	Televisions (1 products)
2009.7.1	Computers, Monitors, Printers, Multi-Function Devices, Set-Top Boxes, Microwave Ovens (6 products)



2. Expansion of scope

◆ 12 more target products (from 2010)

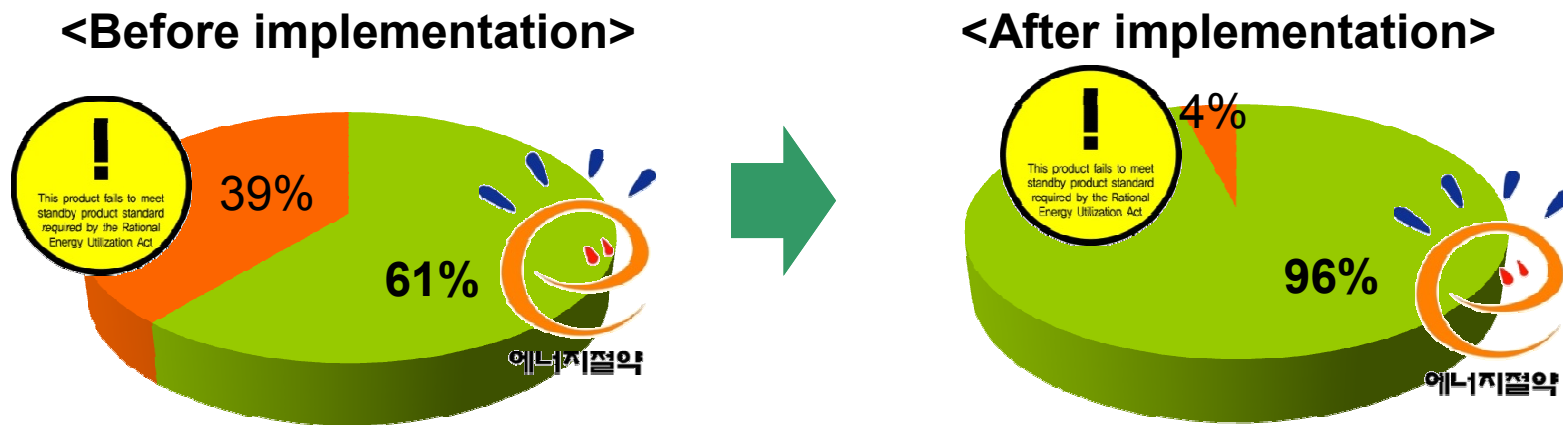
- To maximize energy conserved of 12 more items through promotion of market share of Energy Saving Products
 - Estimated energy savings : 283GWh/year
 - Market share of Energy Saving Products will go up from 7% to 90% after implementation of Warning Label Scheme.
- To cover all the target products of e-Standby Program
 - Date of enforcement : 2010 (to be determined)
 - Target products (12 products)

Categories	Target products
Office equipments	Fax Machines, Copiers, Scanners
Consumer electronics	VCRs, Audios, DVD Players, Radios, Door Phones, Cord / Cordless Phones, Electronic Toilet Seats, Modems, Home Gate Ways



3. Accomplishment

- ◆ **Innovative and critical policy change**
 - The first country with mandatory Warning Label
 - IEA evaluates the Warning Label as “Adding new initiatives” and reported it to G8 Summit (March 2008)
- ◆ **Enlarged market share of energy saving products**
 - For 7 products warning label scheme was implemented, the proportion of energy saving products has increased.



3. Accomplishment

- Proportion of Energy Saving Products

Categories	Before		After implementation ('09.7.31)			
	Energy Saving Products		Energy Saving Products		Warning Labeled Products	
	Proportion	(Models)	Proportion	(Models)	Proportion	(Models)
TVs	71%	(690)	85%	(739)	15%	(132)
Computers	56%	(485)	99.8%	(1,043)	0.2%	(2)
Monitors	66%	(797)	98%	(1,271)	2%	(2)
Printers	93%	(136)	98%	(530)	2%	(11)
MFDs	91%	(167)	98%	(472)	2%	(12)
STBs	12%	(29)	98%	(47)	2%	(1)
Microwave Ovens	50%	(114)	98%	(160)	2%	(3)
Total	61%	(2,418)	96%	(4,580)	4%	(188)

Certification of LED Lightings

1. Main policies
2. Certification of LED lightings
3. Promotion Policies



1. Main Policies

◆ Governmental policies

- 15/30 LED Lightings Diffusion Project
 - To increase dissemination rate of LED lightings to 30% by 2015 realizing Solid-State Lighting Based Society
- Strategy for national major industry
 - About 15% of whole global LED market share by 2012
 - The third leading countries in the global LED industries
- Firm foundation for sustainable growth
 - New standardization for KS and certification program
 - Market formation through governmental preliminary promotion
- LED lighting Promotion for public sectors
 - Replacement of 30% of lighting products in the whole public building with LED lighting products by 2012
 - Phasing out incandescent and halogen lamps in public sectors



1. Main Policies

◆ Promotion Scenario

- Implementation of proper promotion policies that consists of various intervention tools for market transformation
 - **Certification is the first intervention** for market transformation

Categories	2007	2008	2009	2010	2011	2012	2013	2014	2015
Traffic Lights	Cert.('01), Deployment in local governments				MEPS				
Guiding Lights	Cert.	Pilot / Rebate						MEPS	
LED Lamps with Internal (or External) Converters		Cert.	Pilot / Rebate					MEPS	
Inner-Wall or Fixed / Guard / Sensor Lights, etc			Cert.	Pilot	Rebate				
Street Lights				Cert.	Pilot	Rebate			

Cert. : Certification, Pilot : Pilot Deployment Service

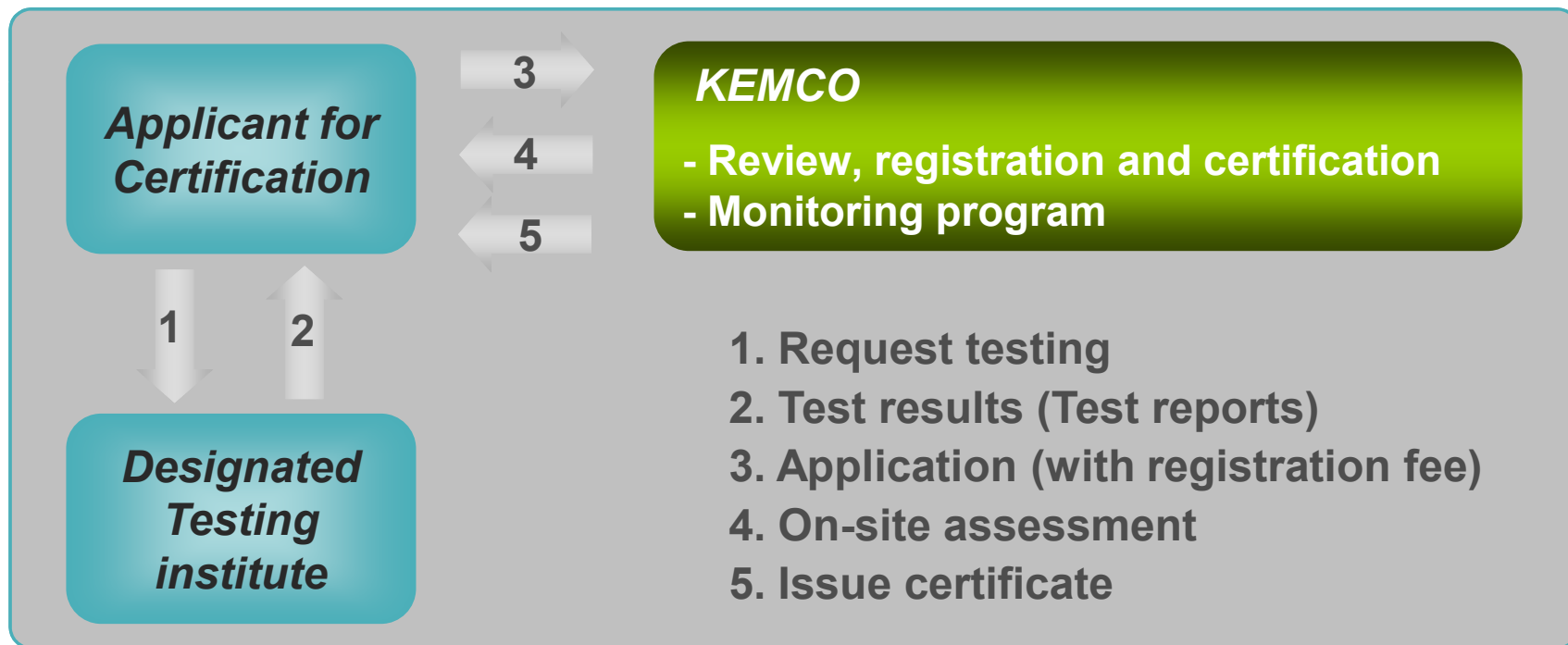


2. Certification of LED lightings



◆ High-efficiency Certification (since 1996)

- Voluntary certification program for 46 items to establish early stage market of high-efficient products
 - High-efficiency Equipment Label and Certificate



2. Certification of LED lightings

◆ Certification of LED Lightings

■ Current LED target products

Categories	2001	2007	2008	2009
Target Products	Traffic Lights	Guiding Lights	LED Lamps with Internal Converters ¹⁾ , LED Lamps with External Converters ²⁾	Inner-Wall or Fixed Lights ³⁾ , Guard Lights, Sensor Lights, Converters
Companies (Models)	72 (618)	10 (119)	9 (27), 2 (5)	-

*Substitution for : 1)Halogen Lamps, 2)Incandescent Lamps, 3)FL Equipments

■ Prospective LED target products

- Reflecting the rapid development of LED technology

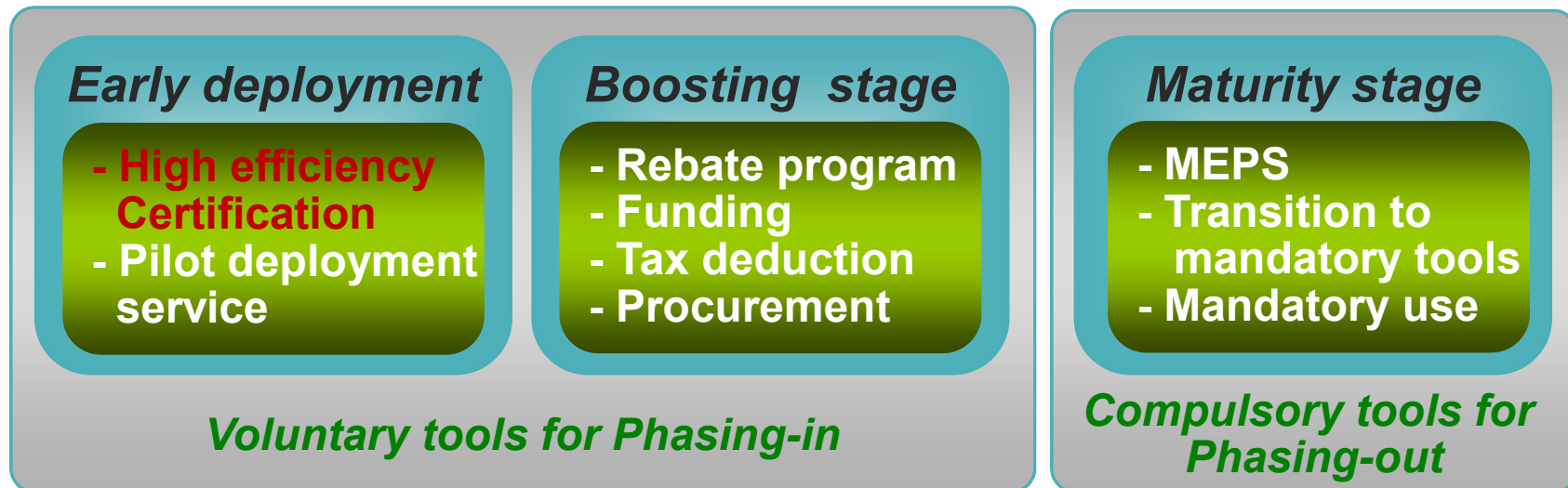
Categories	2010	2011
Target Products	Street Lights, Tunnel Lights, Flood Lights	Large Size Lights Fish-Luring Lights



3. Promotion Policies

◆ Intervention policies

- Funding for rational utilization of energy
- Mandatory use in public buildings and new apartment
- Preferential government procurement
- Tax deduction in investment for energy conservation
- Supporting service charge for product testing for SME



3. Promotion Policies

◆ Key Promotion projects for LED lightings

- **Rebate** for certified products
 - Regularly **20~50% of the price difference** between general products and the certified high-efficient products
 - Targets : LED lightings, Motors, Pumps and Inverters
- **Pilot deployment service**
 - Replacement of general lights with **LED lightings in public site** such as airports, stations, stadium and convention centers.
 - Installation of LED lightings in some regions such as Dokdo according to green growth plan of local governments.
- Deployment in **public institutions**
 - Management of LED manufacturers and public institutions, and support contract and replacement of general lights.
 - 2,485 institutions have installed **52,936 products** as of now.



*** IEA 4E international conferences in Seoul**

1. Meetings information
2. Detailed schedule



1. Meetings information

◆ Information

- 6 international meetings including IEA 4E ExCo(Executive Committee) meeting and 4E annex meetings will be held.

◆ Meetings Schedule

- Date & Venue : Nov. 2 ~ 5, 2009, Shilla Hotel, Seoul
- About 40 persons from 17 countries are expected.
- Meetings
 - ① The 4th IEA 4E ExCo meeting(11.4~11.5)
 - ② IEA 4E Standby Power Annex meeting(11.2)
 - ③ IEA 4E Mapping and Benchmarking Annex meeting(11.3)
 - ④ APP BATF Standby Power meeting(11.2)
 - ⑤ Joint 4E, APP, APEC Standby Power meeting(11.3)
 - ⑥ Appliance S&L Program Managers closed meeting(11.3)



1. Meetings information

<Introduction of IEA 4E>



◆ Outline

- IEA 4E (Efficient Electrical End-Use Equipment) is a implementing agreement under End-Use Working Party (EUWP) of Committee on Energy Research and Technology (CERT)

◆ Objectives

- Effective policy development and enhancement of energy efficiency
- Focus on equipment and technologies that contributes most to the total end-use electricity consumption and stand-by consumption.

◆ Annexes and participating countries

Annex	Leader	Participating Countries
Mapping and Benchmarking	UK	US, Canada, Australia, France, Netherlands, Denmark, Switzerland, Austria, Korea
Standby Power	Australia	US, Canada, UK, France, Netherlands, Denmark, Switzerland, Austria, Korea
Motor System	Switzerland	UK, Australia, Netherlands, Denmark, Austria



2. Detailed schedule

Monday		Tuesday		Wednesday		Thursday		
2-Nov-09		3-Nov-09		4-Nov-09		5-Nov-09		
8.30	APP BATF Standby Power meeting	8.30	IEA 4E Mapping and Benchmarking Annex meeting	9.00	Welcome address	9.00	4 th IEA 4E ExCo Meeting	
11.00	IEA 4E Standby Power Annex meeting			9.10	4th IEA 4E ExCo meeting			
<i>Lunch</i>								
13.30	IEA 4E Standby Power Annex meeting	13.30	IEA 4E Mapping and Benchmarking Annex meeting	<div style="border: 2px solid red; border-radius: 15px; padding: 5px; display: inline-block;"> <i>Joint 4E, APP, APEC Standby Power meeting</i> </div>	13.30	Site Tour (Samsung Electronic)	4 th IEA 4E ExCo meeting	
		16.00	Appliance S&L Program Managers closed meeting					
18.30	IEA 4E Standby Power Dinner	19.00	Appliance S&L Program Managers closed meeting & dinner		18.30	Welcome Reception	16.30	Close



Thank You !



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Korea Energy Management Corporation