

Korea's
**LED Lightings Certification
and Dissemination**

< The 35rd APEC EGEE&C Meeting, New Zealand >

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1. New National Vision of Korea



Low Carbon Green Growth



Implementation of Green Growth (3 Major Areas and 10 Policy Directions)

Expand New Growth Engine

1. Oil/Energy Independence
2. Strengthen green technology/industry
3. Promote green management and greening current industry
4. Activate green financing

Improve quality of life and environment

5. Enforce environmental friendly tariff scheme
6. Create green jobs and train manpower
7. Greening land space
8. Address natural disasters caused by climate change

Elevate National Reputation

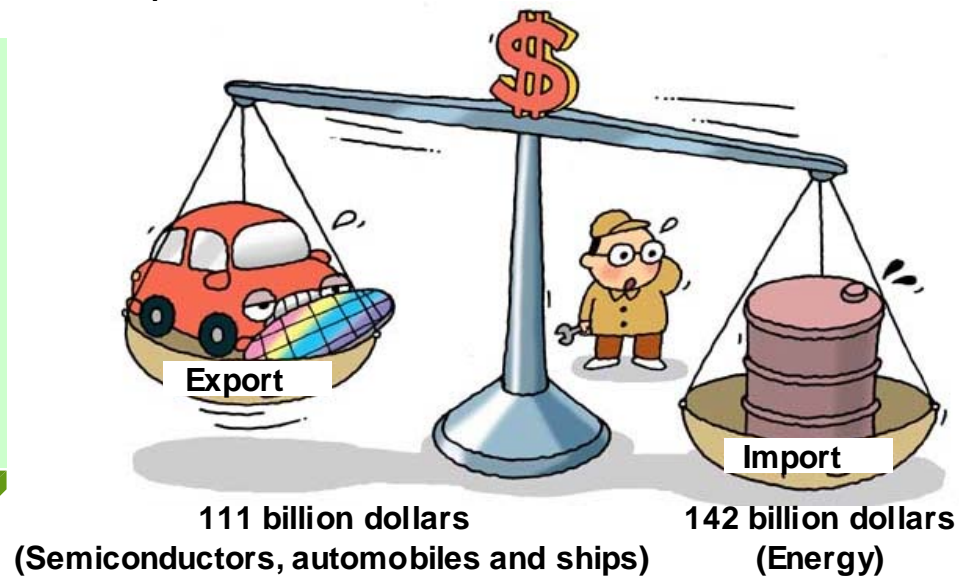
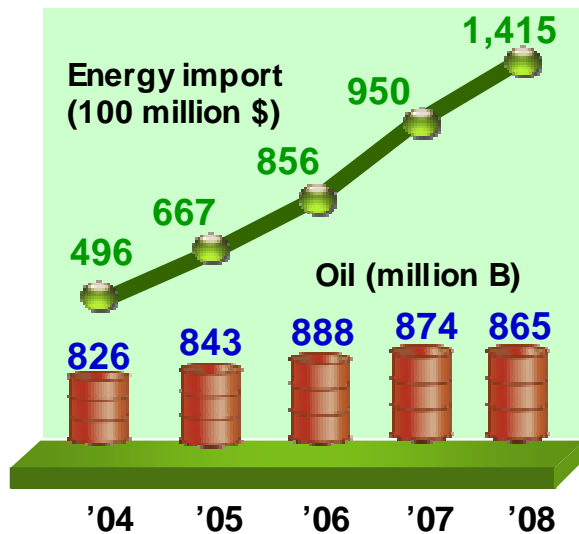
9. Green revolution in daily life
10. Realize world class green growth model



Korea's Energy Situation

◆ World's 10th largest energy consumer

- 7th oil consumer
 - : Korea import 97% of energy
- Korea \$US 142 billion on energy import in 2008
 - : Energy import cost is 33% of total import

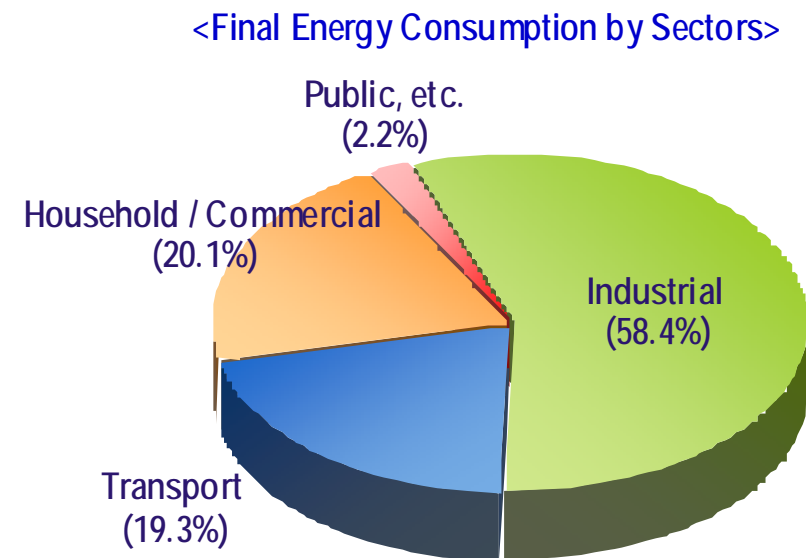
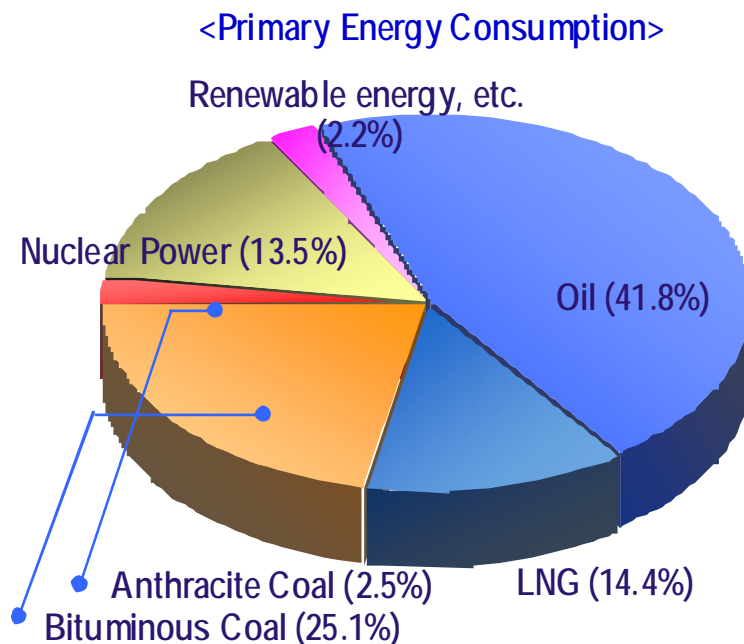


Energy Consumption Breakdown

◆ Industrial sector is 58% at energy consumption

- Oil 41.8%, Nuclear power 13.5%, LNG 14.4%

Final : Industrial 58.4%, Transport 19.3%, Household/Commercial 20.1%



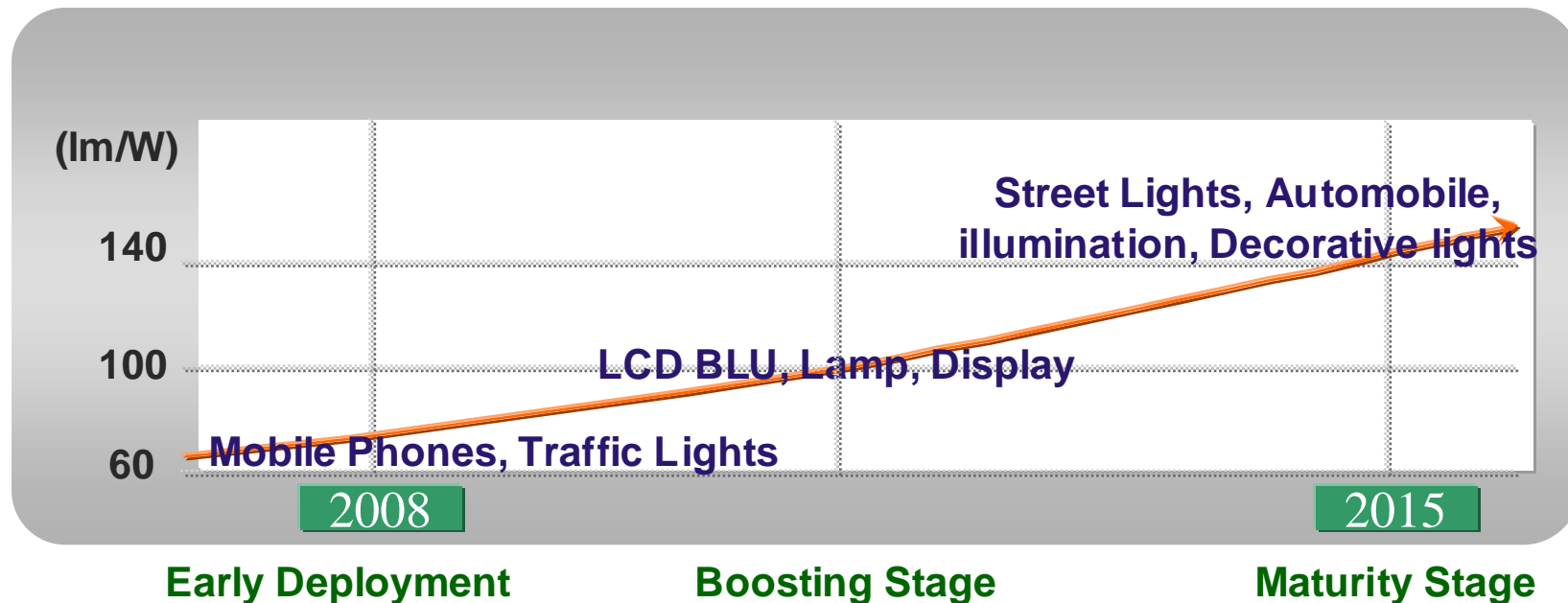
LED Industrial Development

◆ Overview of LED Industry

- Rapid development of domestic LED Market caused by technical enhancement and increase investment
 - \$ 2.4 billion market with 850 domestic companies

◆ LED Market Trend

Source : mocie ('09.7)



2. LED Lighting Certification Plan



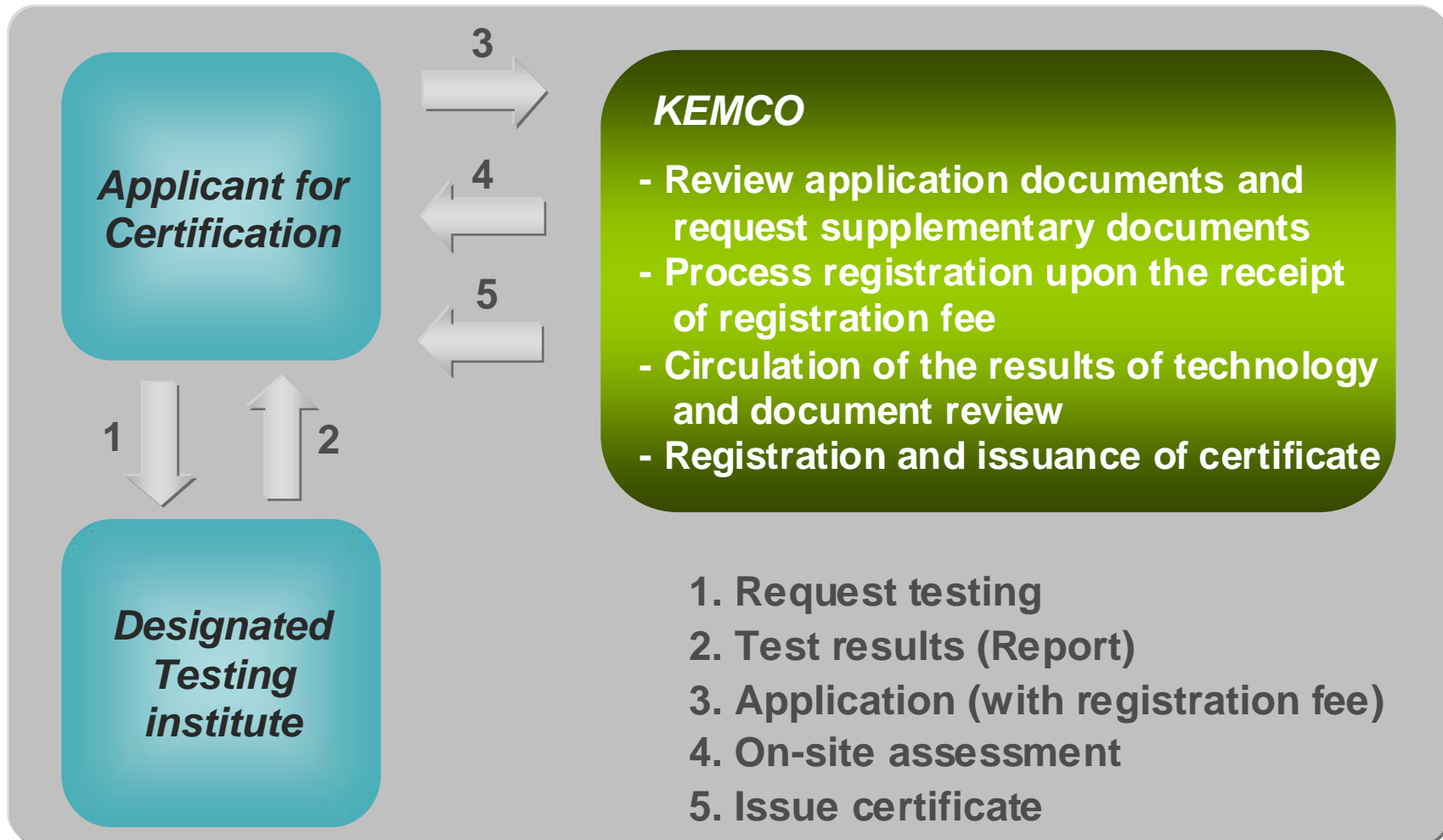
◆ High-efficiency Appliance Certification Program

- **Voluntary program** to establish **early stage market** of high-efficient products (since 1996)
 - The program guarantees the **high efficiency of products with high performance** above certain standards by certification.
 - Attachment of High-efficiency Equipment Label and issue of High-efficiency Appliance Certificate
- Target products (40 items ; **6 items Sun-set**)
 - Industrial and building products with low deployment rate, but considerable energy conservation potential
 - Pumps, Fans & Blowers, Induction Motors, Transformers, general lighting equipment and **LED lighting equipments**, etc
 - New LED lighting equipments will be added as target products.



LED Lighting Certification Plan

■ Procedure of certification



LED Lighting Certification Plan

◆ Promotion Scenario

- Implementation of proper promotion policies that consists of various intervention tools 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	
Substitutions for Halogen / Incandescent Lamps		Cert.	Pilot / Rebate					MEPS	
Substitutions for FLs, Guard / Sensor Lamps, etc			Cert.	Pilot	Rebate				
Street Lights, Tunnel Lights, Flood Lights, etc				Cert.	Pilot	Rebate			

Cert. : Certification, Pilot : Pilot Deployment Service



LED Lighting Certification Plan

◆ Status and future plan

■ Current LED target products

Item	2009.4		2010.1	
	Manufacturers	Models	Manufacturers	Models
LED Lamp (internal)	-	-	19	66
LED Lamp (external)	-	-	8	14
Inner wall or Fixed Lights	-	-	2	10
LED Guard Lights	-	-	1	2
LED Traffic Lights	65	587	107	617
LED Guiding Lights	9	61	12	129

*growing number of Led goods started to certificate.



LED Lighting Certification Plan

◆ Status and future plan

■ Current LED target products

Categories	2001	2007	2008
Items	Traffic Lights	Guiding Lights	Indoor Down Lighting (Substitutions for Incandescent / halogen lamps)

■ Prospective LED target products

- Reflecting the rapid development of LED technology

Categories	2009	2010	2011
Items	Lighting Panel (Substitutions for FLs), Guard / Sensor Lamps, Converter	Street / Tunnel / Flood lights	Large size / Fish-luring lights



Current Challenges

◆ Technical Development

- For penetration of the international market, getting more **patent** and **cross license** for cooperation is needed.
 - Attain to 80% of technical level of advanced countries

◆ Low deployment rate

- Low diffusion rate caused by **high prices** and **lack of social understanding** about LED as energy efficient products.
 - 10 to 100 times more **expensive** than general ones installed
 - Considerable rate of dependence on imports of key devices

◆ Improvements of quality

- **Short Lifetime** caused by bad heat-resisting property
- Difficulty of Replacement of components



3. Benchmarking

DOE Solid-State Lighting CALiPER Program (since 2006)

CALiPER
ROUNDTABLE REPORT

December 2007

DOE Solid-State Lighting CALiPER Program
2007 Roundtable

Prepared for the U.S. Department of Energy by
Pacific Northwest National Laboratory

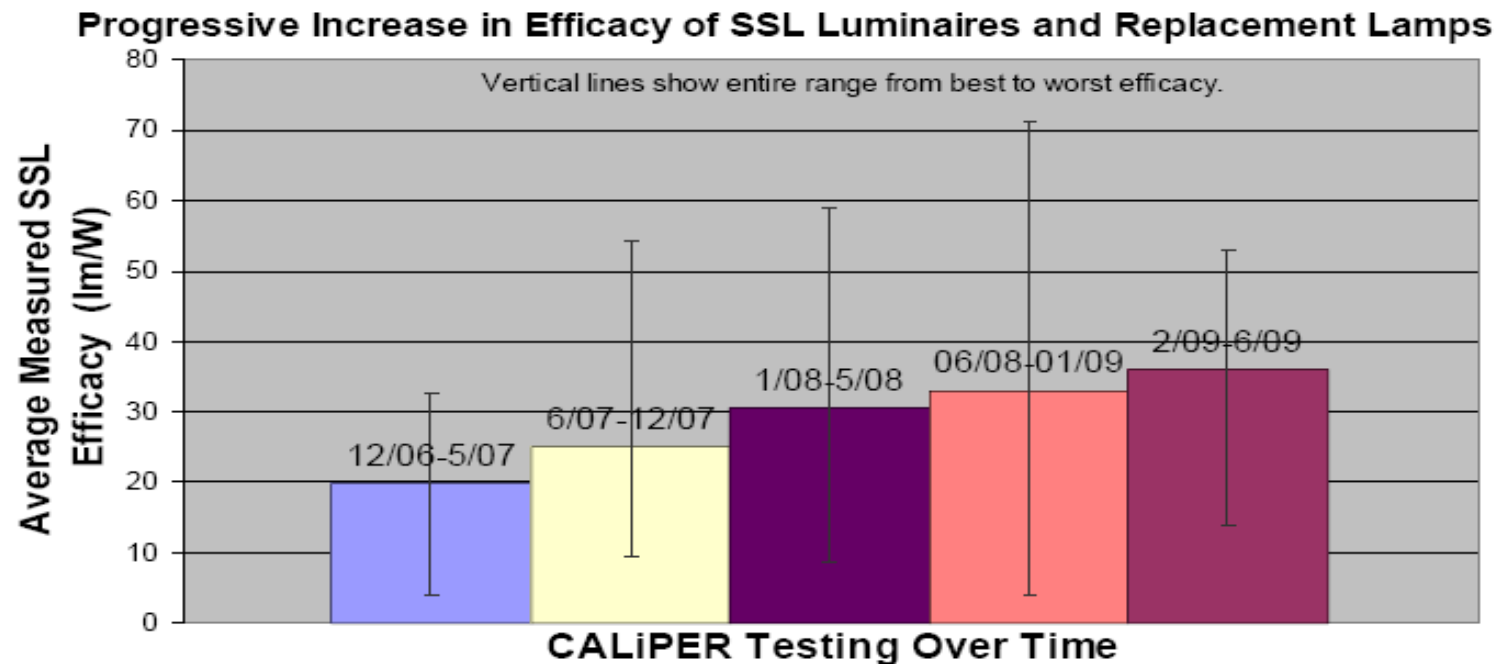


Scope : General Illumination
“No Commercial Use Policy”

Testing term : lm/W, CCT,
CRI, Light output, distribution
Power Factor, etc

Benchmarking

CALIPER : DOE Commercially Available LED Product Evaluation and Reporting



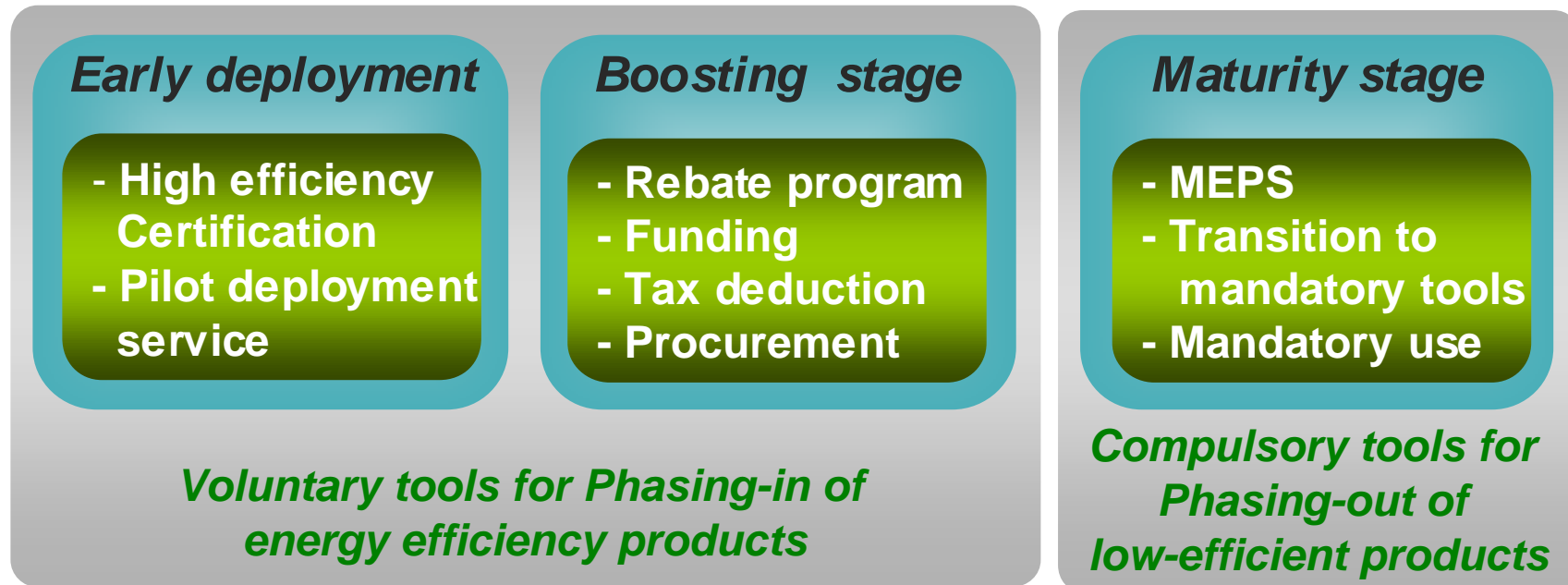
The overall average efficacy per round is still climbing, now reaching 36 lm/W

Measurement method : IESNA LM-79-08 testing method.

Focused primarily on replacement lamps, including MR16 lamps, PAR lamps, and small, omni-directional replacement lamps.

4. Promotion Policies

- LED lighting Promotion for public sectors
 - Replacement of 30% of lighting products in whole public building with LED lighting products by 2012
 - Phasing out inefficient lighting products such as incandescent lamps and halogen lamps in public sectors



Promotion Policies

◆ Promotion

■ Funding for rational utilization of energy

- Manufacturers or installers can benefit from funding offered for installation(20billion US\$) or operation(1billion US\$, small and medium enterprises only) of certified high-efficiency products.

■ Mandatory use in public buildings

- Government agencies or public organizations should use certified high-efficiency products in their buildings.

■ Preferential government procurement

- The Office of Supply should procure certified high-efficiency products as a top priority in governmental purchases.
- Appointment certified high-efficiency products as superior procurement products (reduction of fee by 10%)



Promotion Policies

- **Mandatory use in new apartment buildings**
 - Builders must install certified high-efficiency products in new apartment buildings accommodating 50 households or more.
- **Tax deduction for investment in energy conservation**
 - Amounts up to 10% of total investment can be deducted from the income or corporation tax of installers of energy conservation facilities.
- **Supporting service charge for product testing for small and medium enterprises**
 - Small and medium enterprises can be provided with a service charge to test products up to two times a year.





Thank You !

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