CURRENT SITUATION AND CHALLENGERS IN ENERGY EFFICIENCY S&L POLICY DEVELOPMENT IN INDONESIA

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Agency for the Assessment and Application of Technology

Symposium

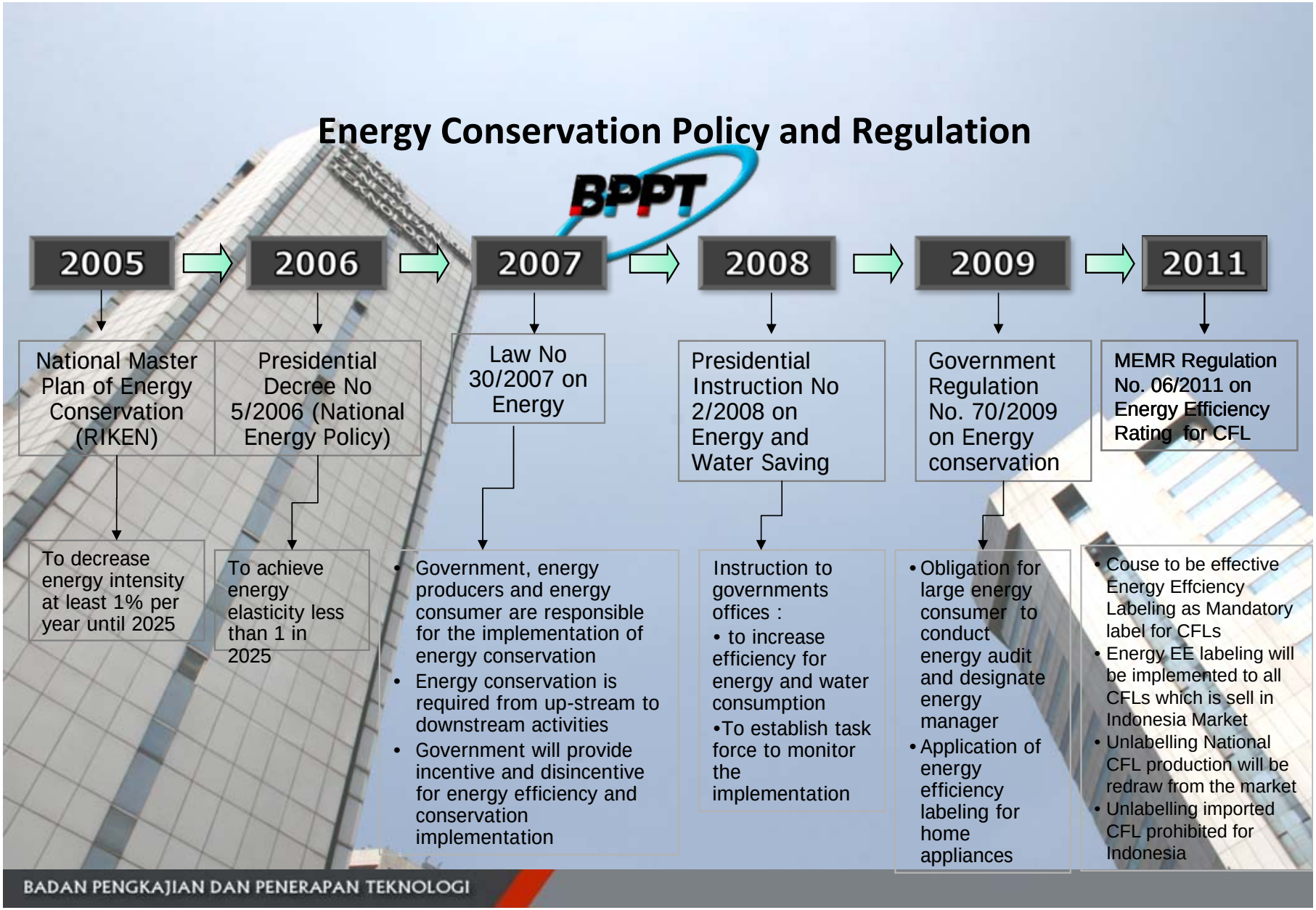
Current Situations of Energy Efficiency Standard and Labeling (S&L) in International Trends of S&L Policy Development Assistance

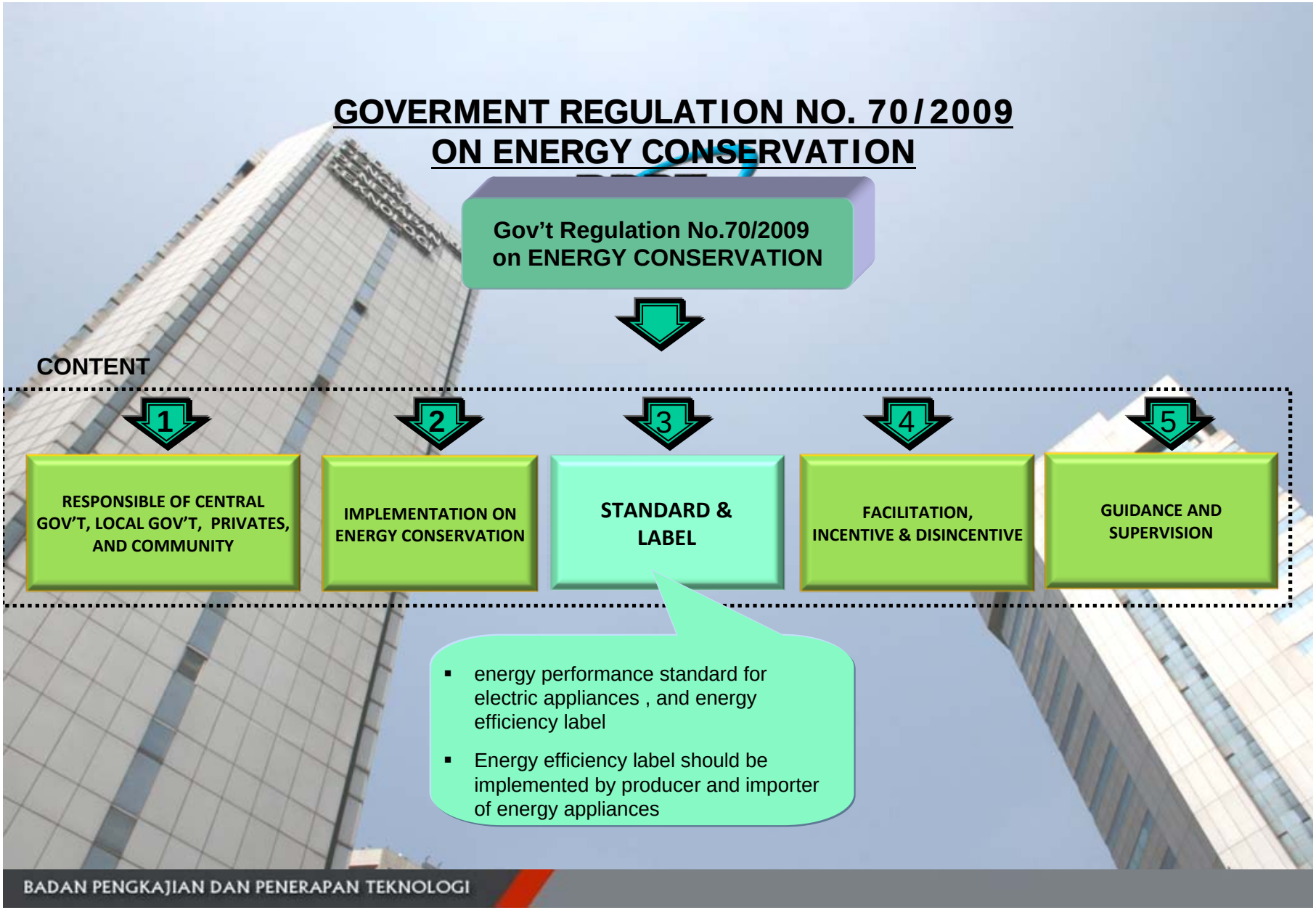
Shinagawa Prince Hotel, Tokyo, February 10, 2012

BADAN PENGKAJIAN DAN PENERAPAN TEKNOLOGI

OUTLINE

- Policy & regulation
- International cooperation
- Current situation of the energy efficiency labeling program
- Challengers in energy efficiency S & L policy Development In Indonesia



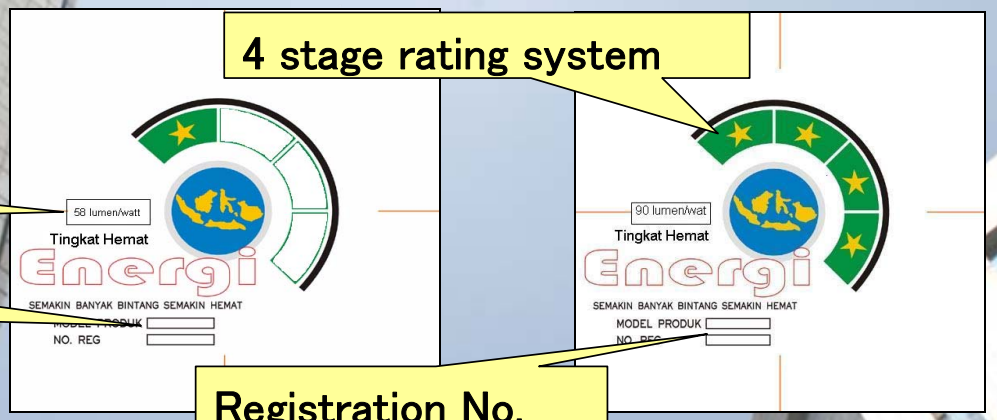


International Cooperation of the Energy Conservation Program

Program	Description
International Cooperation	▪ Bilateral Indonesia-Netherland (NL Agency) : Energy efficiency improvement in industrial sector through implementation of Energy Potential Scan (EPS) ▪ Bilateral Indonesia-Japan (JICA) : ✓ Study on tariff mechanism and load management at peak load ✓ Labeling for energy equipment (AC, refrigerator and TV) ✓ Funding mechanism for energy efficiency ✓ Methodology and emission factor baseline for energy efficient equipment ▪ International Copper Association (ICA) Preparing Minimum Energy Performance Standards (MEPS) for Electric Motor and Air-Conditioning ▪ UNDP - BRESL Energy Efficiency Labeling for 7 appliances ▪ UNIDO Promoting Energy Efficiency in the Industries through System Optimization and Energy Management Standards

Energy Efficiency Label : SNI 04-6958-2003 (Comparative Label)

LOGO

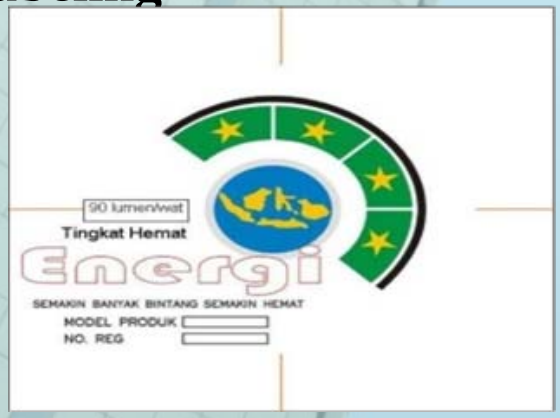


“Labeling” and “ Manufacturer’s Rating ”

“Energy Efficiency Label” and “Product Rating”

Label shall be affixed in line with the manufactuer’s rating marking

Labeling



Marking

Example : CFLs

Print of

- **Manufacturer name**
- **Power consumption**
- **Efficacy**

Target Products for Labeling

1. Compact Fluorescent Lamp
2. Refrigerator
3. Room Air Conditioner
4. Television
5. Electronic Ballast
6. Electric Fans
7. Rice Cooker
8. Motor
9. Washing machine







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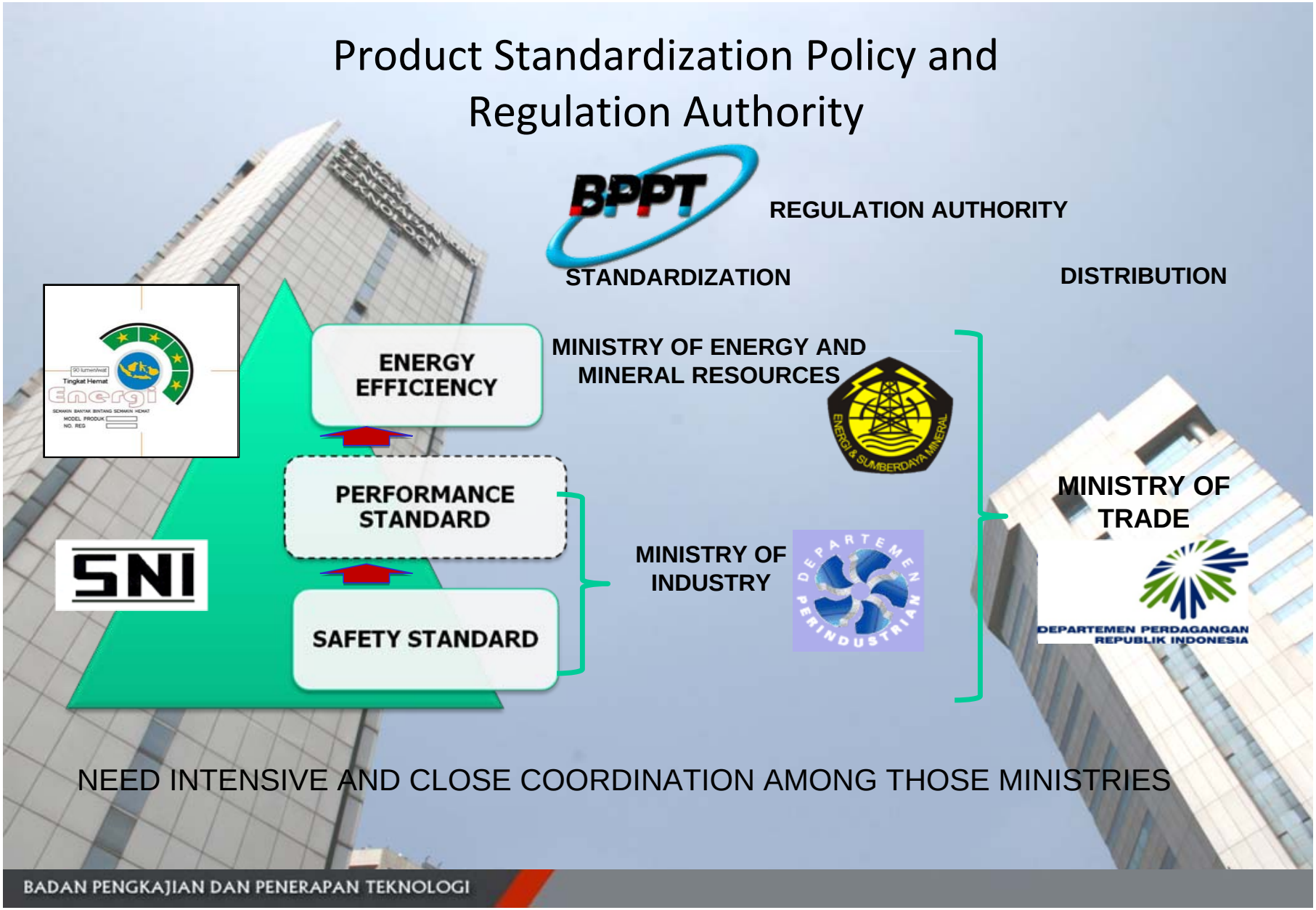
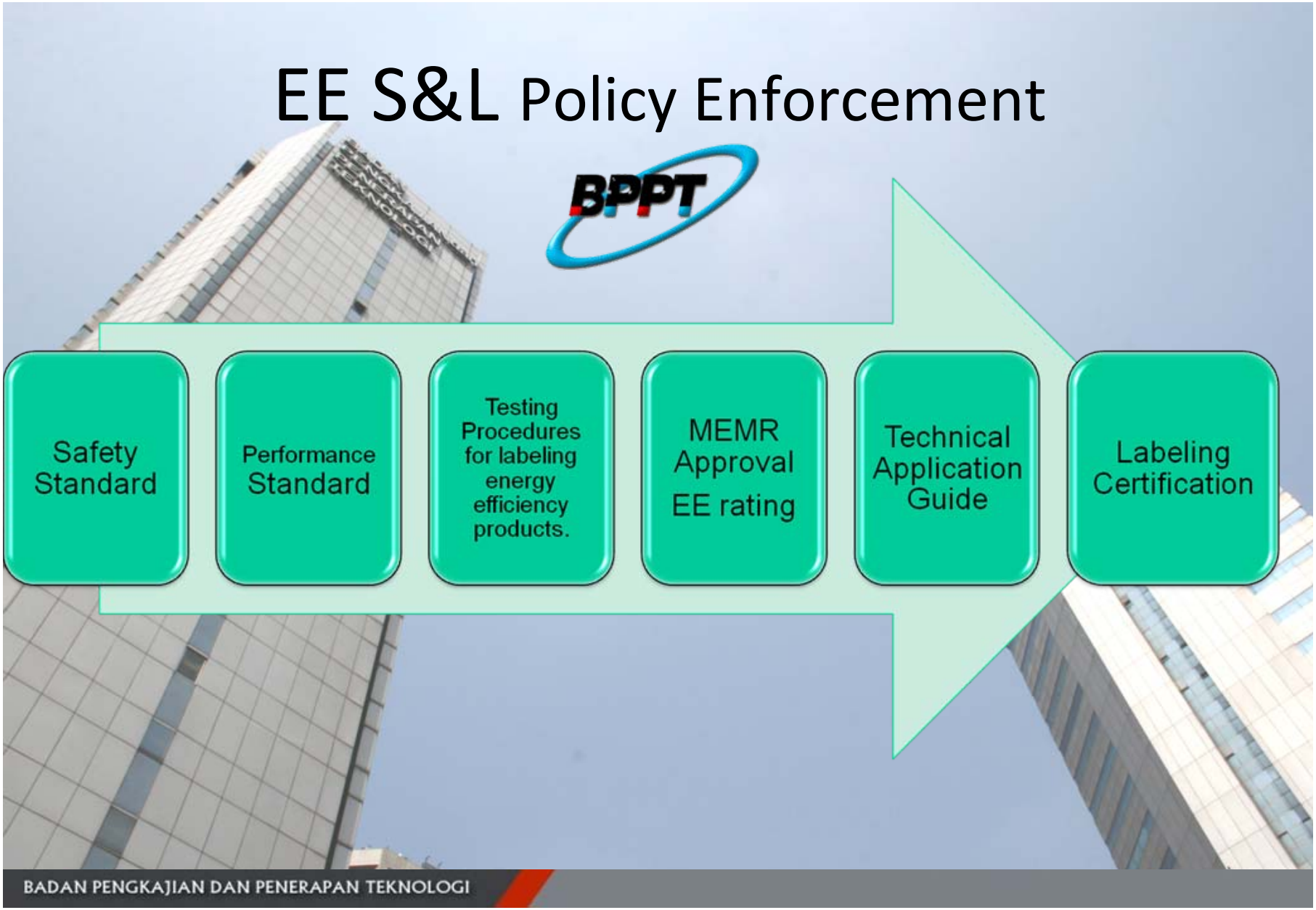
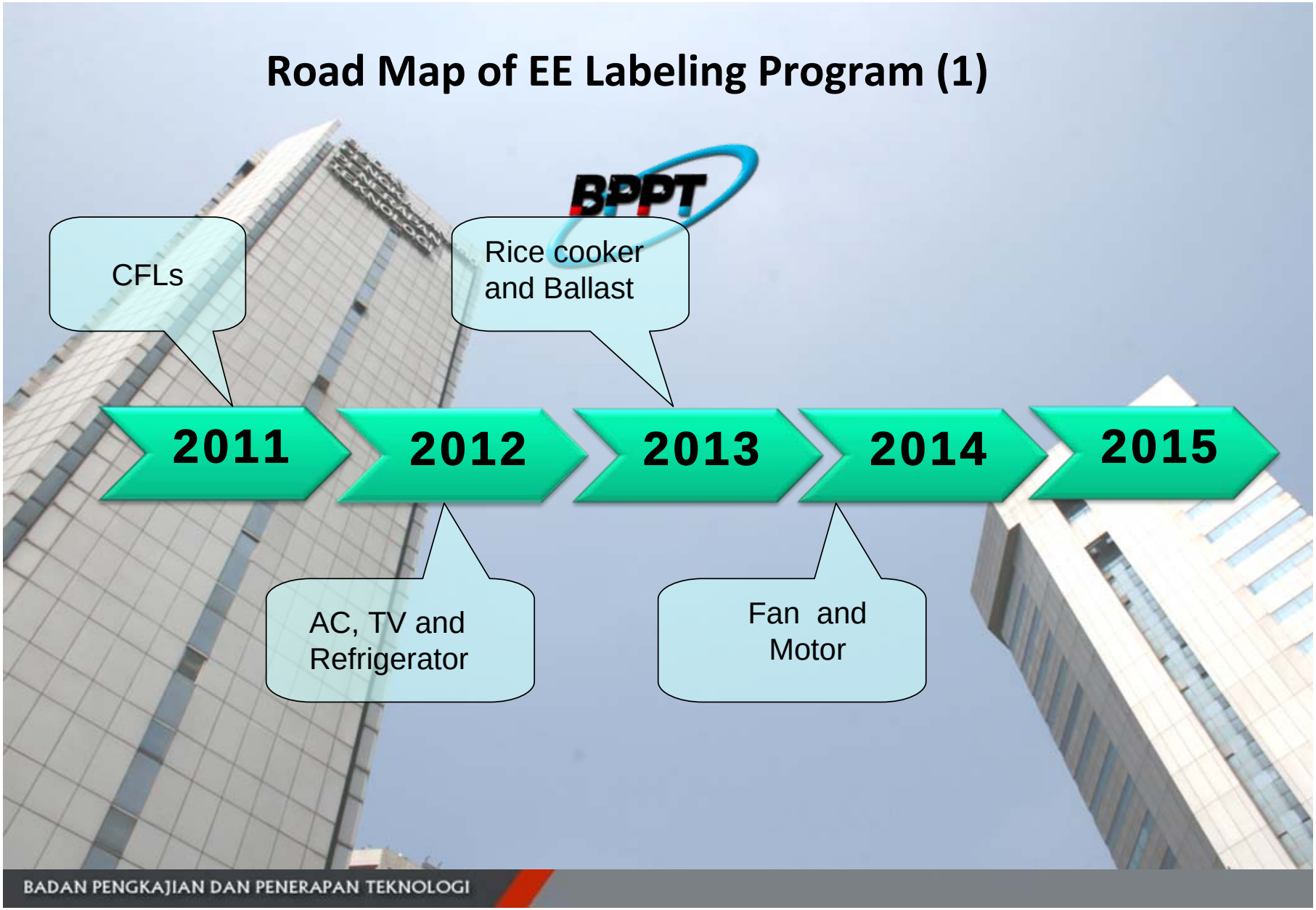
Product Standardization Policy and Regulation Authority

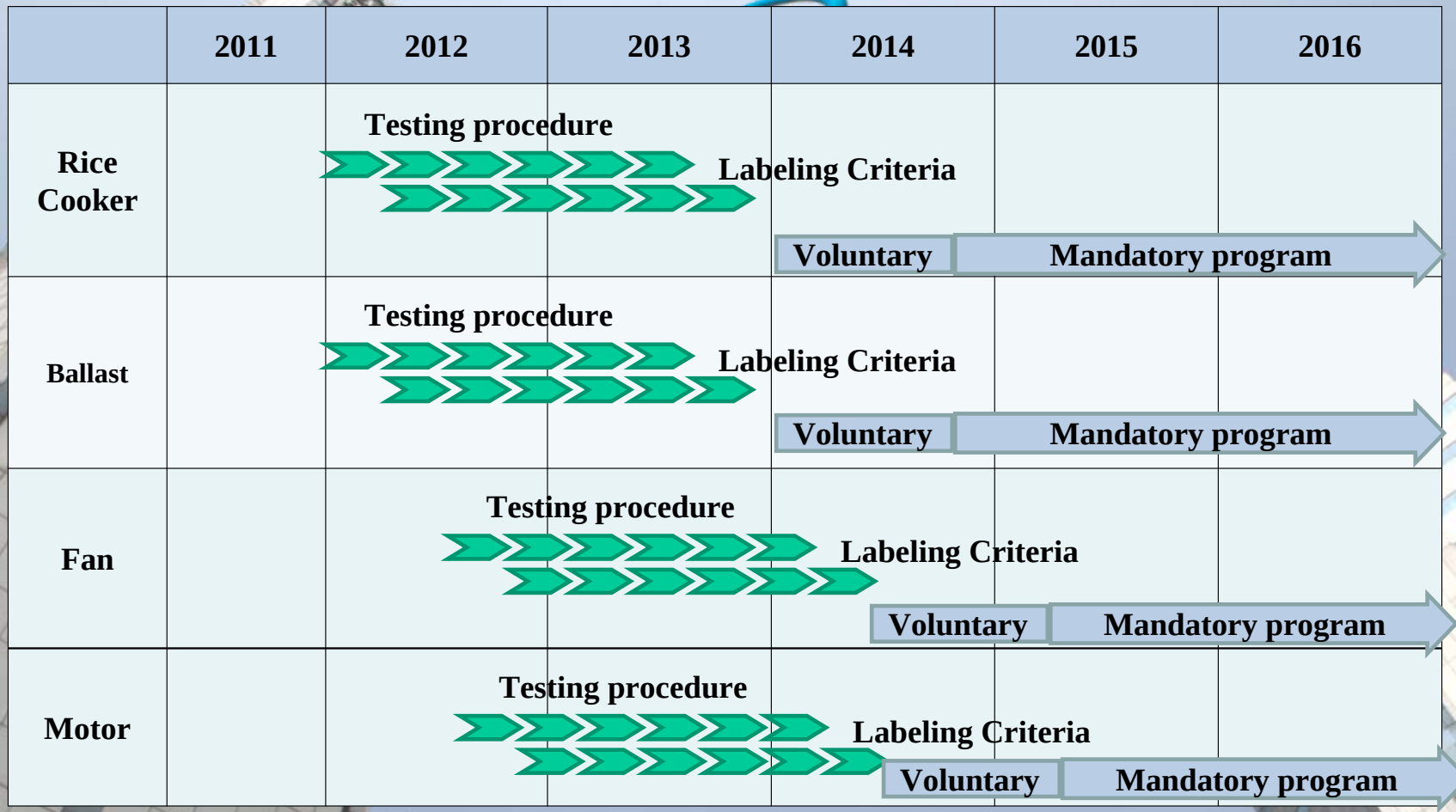






Road Map of EE Labeling Program (2)

Road Map of EE Labeling Program (3)



Status of the Standard for labeling

Products	National Safety Standard	National Performance Standard	Testing Procedure Draft	EE Labeling (App'd by MEMR)
CFLs	SNI 04-6504-2001	SNI IEC 60969 : 2009	2010 : the draft was finished by TWGs	MEMR Regulation No. 06/2011 on Energy Efficiency Rating for CFL
Refrigerator	SNI IEC 60335-2-24:2009	SNI -04-6710-2002 SNI -04-6711-2002 SNI ISO 15502-2009	In progress	N/A
AC	SNI 19-6713-2002 SNI IE C 60335-2-40:2009	SNI 04 - 6958-2003 ISO 5151 ;2010	In progress	N/A
TV	SNI 04-6253-2003	IEC 62301 IEC 62087 SNI 04 – 6958 - 2003	In progress	N/A
Ballast	SNI IEC 60928 SNI 04-6959.2.3-2003	SNI IEC 60929 : 2009	UNDER CONSIDERATION	N/A
Fan	SNI IEC 60335-2-80_2009	SNI 04-6292.80-2003	UNDER CONSIDERATION	N/A
Rice cooker	SNI IEC 60335-1:2009	UNDER CONSIDERATION	UNDER CONSIDERATION	N/A
Motor Pump	SNI IEC 60335-2-41	IEC 60034-1 ed12.0	UNDER CONSIDERATION	N/A

KAN = National Acreditation Committe

Type and Characteristic of Labels

Country	Minimum Efficiency Performance Standards (MEPS)	High Efficiency Performsnce Standard (HEPS)	Comparative Labels (CL)	Endorcement Label (EL)
CFLs	Under consideration	N/A	Yes (M)	N/A
Refrigerator	Under consideration	N/A	Yes (M)	N/A
AC	Under consideration	N/A	Yes (M)	N/A
TV	N/A	N/A	Yes (M)	N/A
Ballast	N/A	N/A	Yes (M)	N/A
Fan	N/A	N/A	Yes (M)	N/A
Rice ooker	N/A	N/A	Yes (M)	N/A
Motor	N/A	N/A	Yes (M)	N/A

M : Mandatory

LS Pro & Testing Laboratory

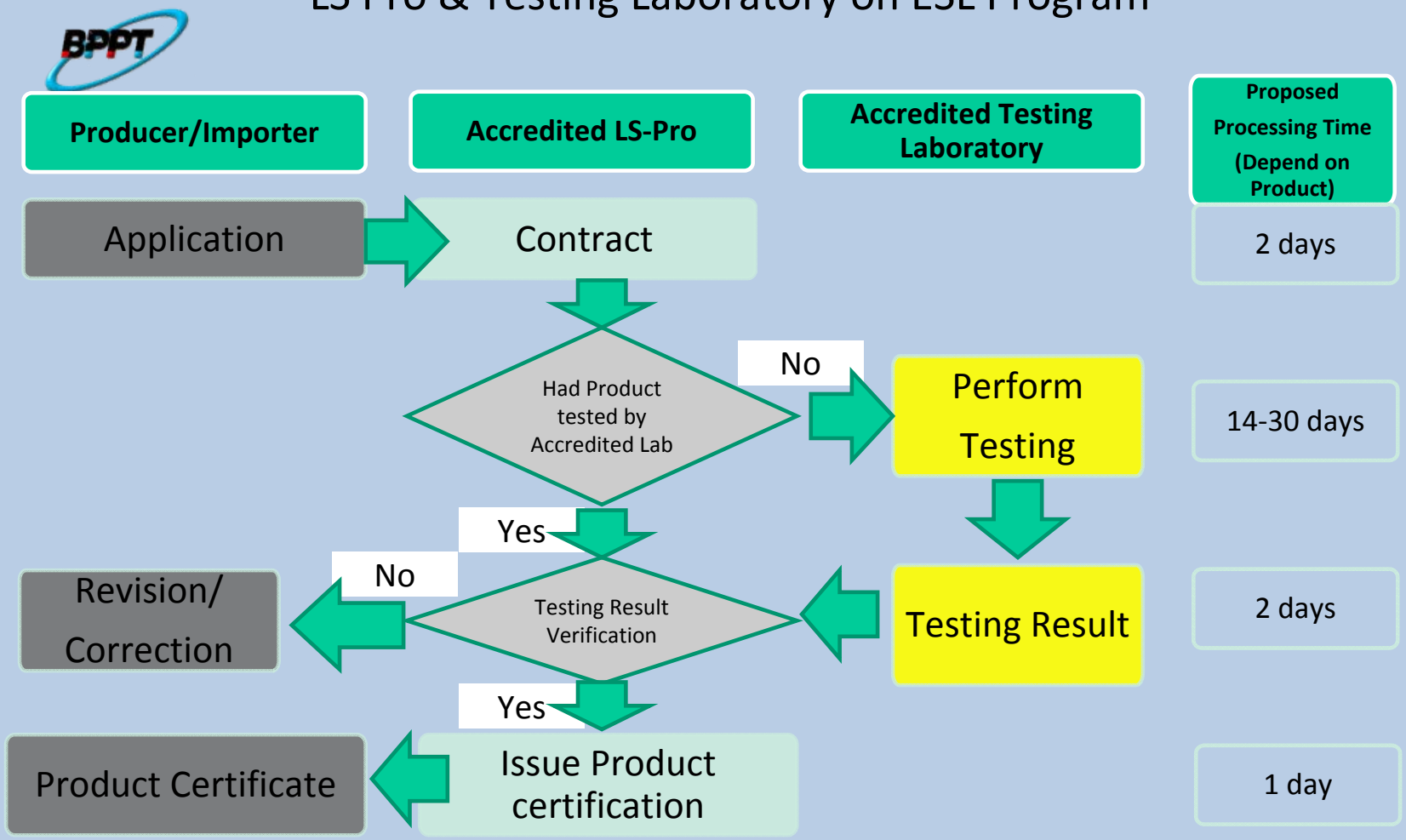
LS Pro

- Acredited by KAN or appointed by Government
- Check & ensure all provided data are correct.
- Arrange Testing.
- Verify Testing Result.
- Issue Product Certification.

Testing Lab

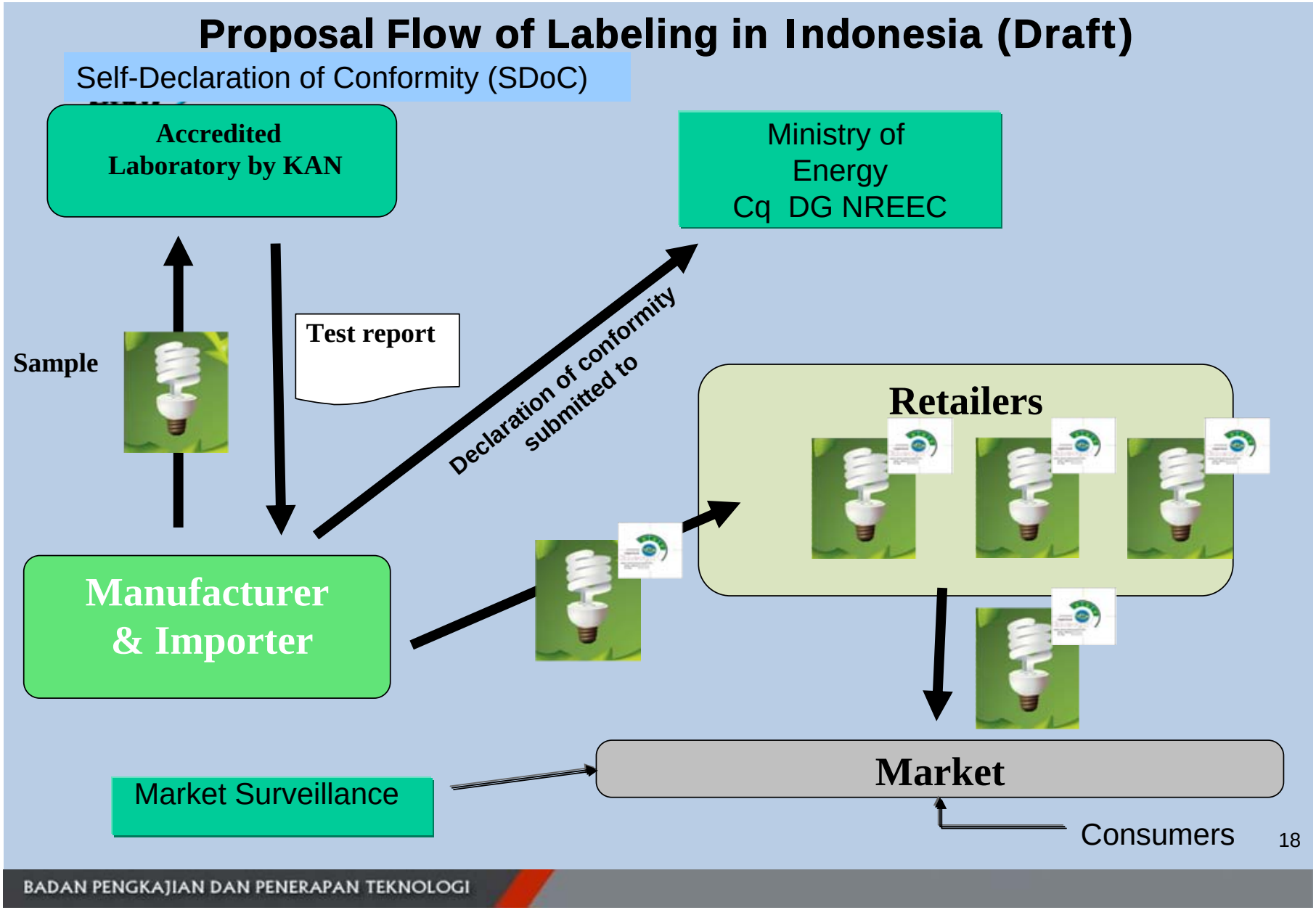
- Acredited by KAN or appointed by Government
- Perform Testing based on Testing Standard and criteria.
- Issue Testing Result & Opinion.
- Independent

LS Pro & Testing Laboratory on ESL Program



Proposal Flow of Labeling in Indonesia (Draft)

Self-Declaration of Conformity (SDoC)



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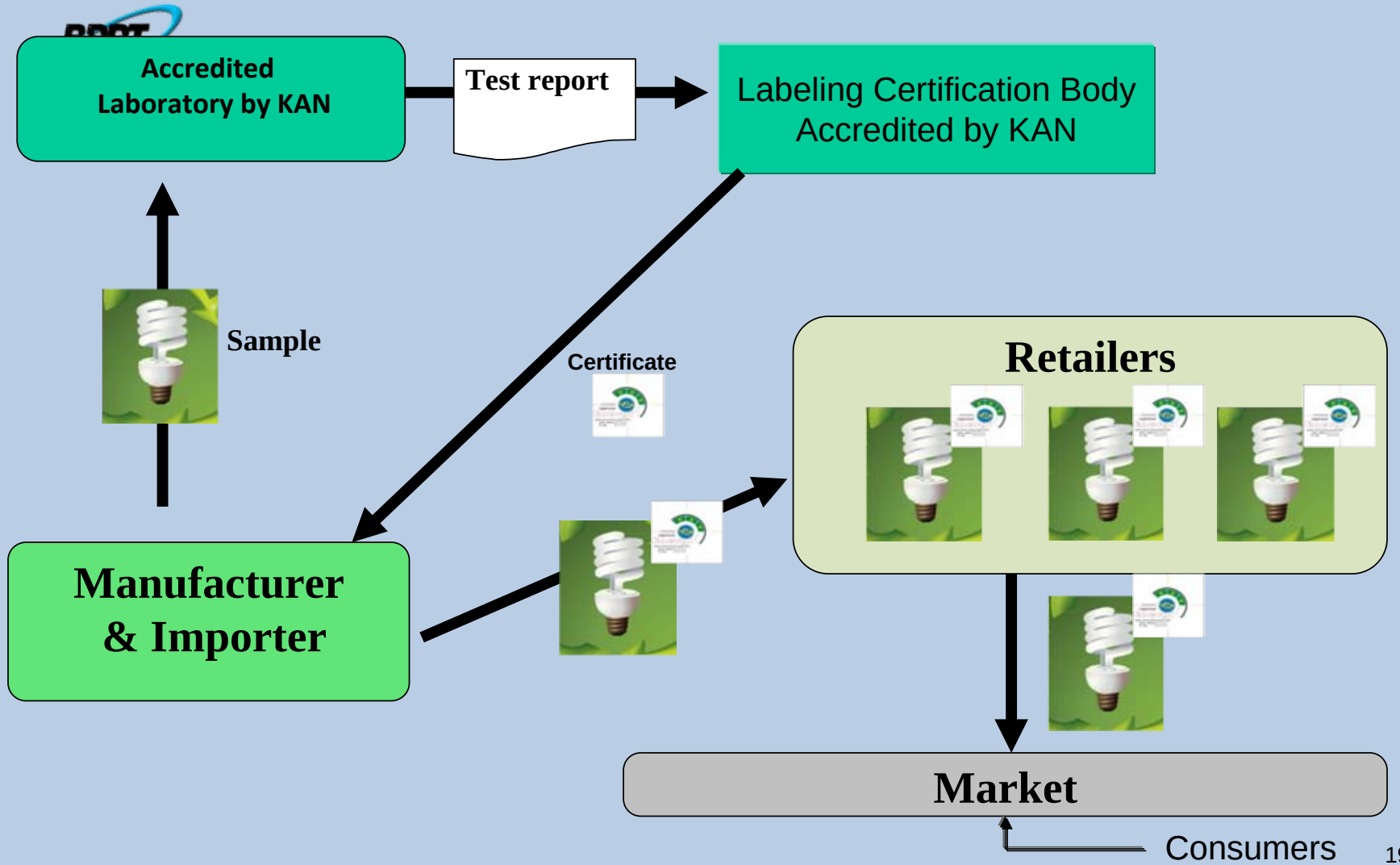
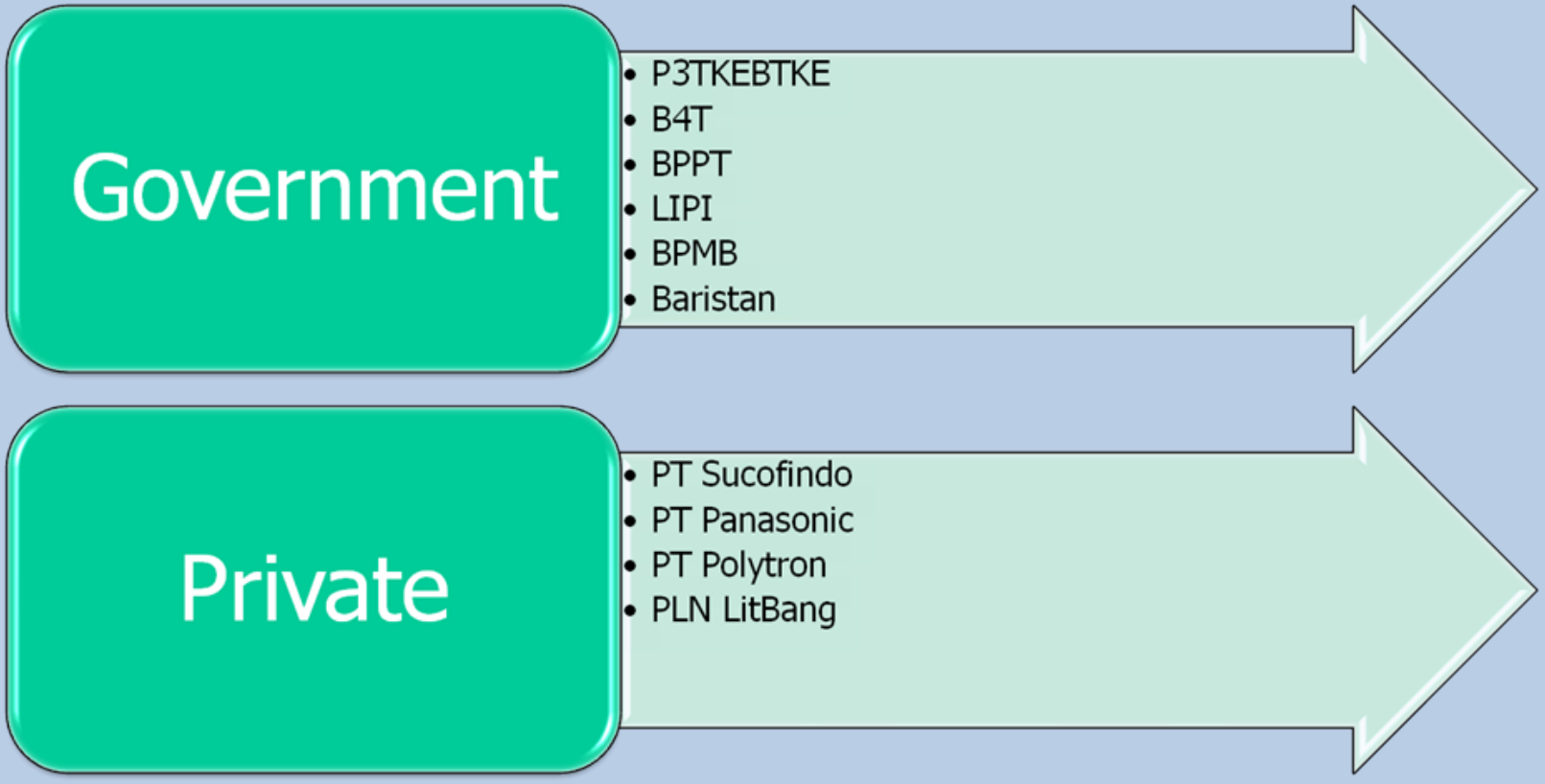


Availabel Testing Lab



Testing Capability of Laboratories

Products	Available Laboratories	Number of Accredited Labs
CFLs	8	5
Refrigerator	6	1
AC	3	1
TV	3	N/A
Ballast	10	
Fan	1	N/A
Rice cooker	3	N/A
Motor Pump	N/A	N/A

KAN = National Acreditation Committe

MINISTERIAL DECREE NO. 6 YEAR 2011 ON ENERGY EFFICIENCY LABELING FOR CFL

- Before you sign energy efficient, the manufacturer or importer **must issue** a written **declaration of conformity** stating CFLs already meet the applicable provisions.
- Declaration of conformity **submitted to the Ministry of Energy and Mineral Resources cq DG NREEC**.
- Violations of the provisions of the Declaration of conformity may be **sanctioned** according to regulations.
- **CFL production in domestic** that do not bear signs of energy-saving label is pulled from the market.
- **CFL imports** that do not bear the label of energy saving signs are prohibited entry into Indonesia and must be re-exported or destroyed.

Energy Efficiency Rating for CFL

MEMR Regulation No. 06/2011 on Energy Efficiency labeling (star rating) for CFL

Capacity Power (Watt)	Lumen/Watt			
	★	★★	★★★	★★★★
5 – 9	45 – 49	>49 – 52	>52 – 55	> 55
10 – 15	46 – 51	> 51 – 54	> 54 – 57	> 57
16 – 25	47 – 53	> 53 – 56	> 56 – 59	> 59
≥ 26	48 – 55	> 55 – 58	> 58 – 61	> 61

Energy Efficiency Rating for Reftigerator (Draft)

Star rating proposed by :

JICA Frame work

Draft Rev03, Nov. 23,2011

without Freezer

Star rating	Annual electricity consumption (E)
★★★★	E < 0.571 * Vadj + 236
★★★	0.571 * Vadj + 236 < E < 0.660 * Vadj + 272
★★	0.660 * Vadj + 272 < E < 0.767 * Vadj + 316
★	0.767 * Vadj + 316 < E < 1.378 * Vadj + 368

with Freezer

Star rating	Annual electricity consumption (E)
★★★★	E < 0.536 * Vadj + 213
★★★	0.634 * Vadj + 213 < E < 0.817 * Vadj + 276
★★	0.817 * Vadj + 276 < E <1.068 * Vadj + 358
★	1.068 * Vadj + 358 < E < 1.378 * Vadj + 465

GABEL Proposal

Draft, Nov 24, 2011

without Freezer

Star rating	Annual electricity consumption (E)
★★★★	≤ 3 Star x 0.77
★★★	≤ 2 Star x 0.77
★★	≤ 1 Star x 0.77
★	≤ (456+1378*Vadj)*1.15

with Freezer

Star rating	Annual electricity consumption (E)
★★★★	≤ 3 Star x 0.77
★★★	≤ 2 Star x 0.77
★★	≤ 1 Star x 0.77
★	≤ (456+1378*Vadj)*1.55

GABEL : The Indonesia Electronic and Electrical Appliance Industries Association

Energy Efficiency Rating for AC (Draft)

Star rating proposed by :

JICA Frame work

Draft Rev03, Nov. 23,2011

Star rating	Non Inverter		Inverter (weighted COP)
★★★★	Not given	Not given	3.34 < rated COP and 3.76 < weighted COP
★★★	3.20 < rated COP	3.34 < rated COP	3.06 < rated COP and 3.34 < weighted COP
★★	2.78< rated COP	2.92< rated COP	2.92 < weighted COP
★	2.50 < rated COP	2.64< rated COP	2.64 < weighted COP

Note : Rated COP = COP at full load cooling capacity
Weighted COP = 0.4*rated COP + 0.6 * half load COP
Half load COP is the COP at 50% cooling capacity

GABEL Proposal

Draft, Nov 24, 2011

Star rating	Non Inverter	Inverter (weighted COP)
★★★★	3.05 ≤ COP	3.76 ≤ weighted COP
★★★	2.92≤COP< 3.05	3.34 ≤ weighted COP< 3.79
★★	2.64≤COP< 2.92	2.92 ≤ weighted COP< 3.34
★	2.50≤COP< 2.64	2.64 ≤ weighted COP< 2.92

Note : Rated COP = COP at full load cooling capacity
Weighted COP = 0.4*rated COP + 0.6 * half load COP
Half load COP is the COP at 50% cooling capacity

Energy Efficiency Rating for TV (Draft)

Star rating proposed by :

JICA Frame work

Draft Rev02

Star rating	ENERGY EFFICIENCY INDICATOR
★★★★	E < 1 / (0.00144* SA + 7.586)
★★★	1 / (0.00144* SA + 7.586) < E < 1 / (0.00128* SA + 6.746)
★★	1 / (0.00128* SA + 6.746) < E < 1 / (0.00112* SA + 5.898)
★	1 / (0.00112* SA + 5.898) < E < 1 / (0.00096* SA + 5.058)

GABEL Proposal

Draft, Nov 24, 2011

Star rating	ENERGY EFFICIENCY INDICATOR
★★★★	E < 65 + 0.047 * SA
★★★	65 + 0.047 * SA < E < 82 + 0.058 * SA
★★	82 + 0.058 * SA < E < 102 + 0.073 * SA
★	102 + 0.073 * SA < E < 128 + 0.091 * SA

SA = Screen Area (cm2)

$E = 365 * [(P_{on} * 5) + (P_{ps} * (19 - T_{as}) + (P_{as} * T_{as})] / 1000$

P_{on} = Power at ON mode (W)
P_{ps} = Power at passive standby mode (W)
P_{as} = Power at active standby mode (W)
T_{as} = Time on active standby mode (hour)

$$E = \frac{(P_o - \frac{PA}{4}) \times t1 + Ps \times t2}{1000}$$

E : Annual Energy Consumption [kWh/year]
Po : Power at ON mode [W]
Ps : Power at active standby mode [W]
PA : Energy-saving function Power reduction [W]
t1 : Annual Time at ON mode [hour] 2.920 (= 365 days × 8 hours)
t2 : Annual Time on active *standby* node [hour] 5.840 (= 365 days × 16 hours)

Challengers in Energy Efficiency S & L Policy Development in Indonesia

Policy and Regulation Aspects

- Government Regulation No. 70/2009.. Obligation of energy efficiency labeling for home appliances
  → Need detail guideline to implemet this regulation
- MEMR Regulation No. 06/2011 on Energy Efficiency Rating for CFLs
  → Seriousness of the government is required to implement this regulation
- To many regulation body are included in system
- Bureaucracy is too convoluted, so impressed slower
- Lack of support from Industrial assosiation

Technical Aspects

- Need acceletarate accreditation of the testing laboratories and labeling sertification body
- Some household appliances do not have a performance national standard
- Most of the household appliances do not have energy efficiency rating
- Lack of accredited testing laboratory
- Limiter number of people having sufficient testing capabilities

Economic and Social Aspects

- High efficient products are costly, and domestic market is low price oriented
- Lack of knowledge and awardness on energy saving

Thank You

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