

Korea's
Evaluation Methodologies
for EE Policies and Programs

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Overview

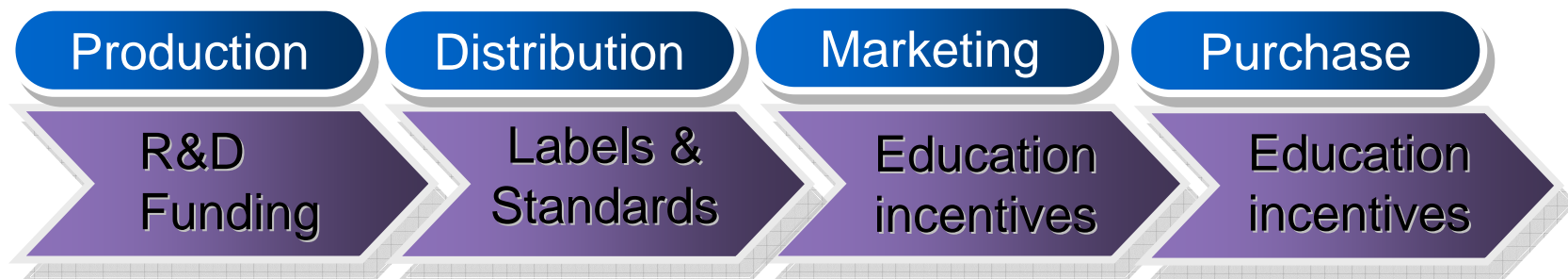
1. Intervention Scheme
2. Market Transformation Stages



1. Intervention Scheme

◆ Intervention for Market Transformation

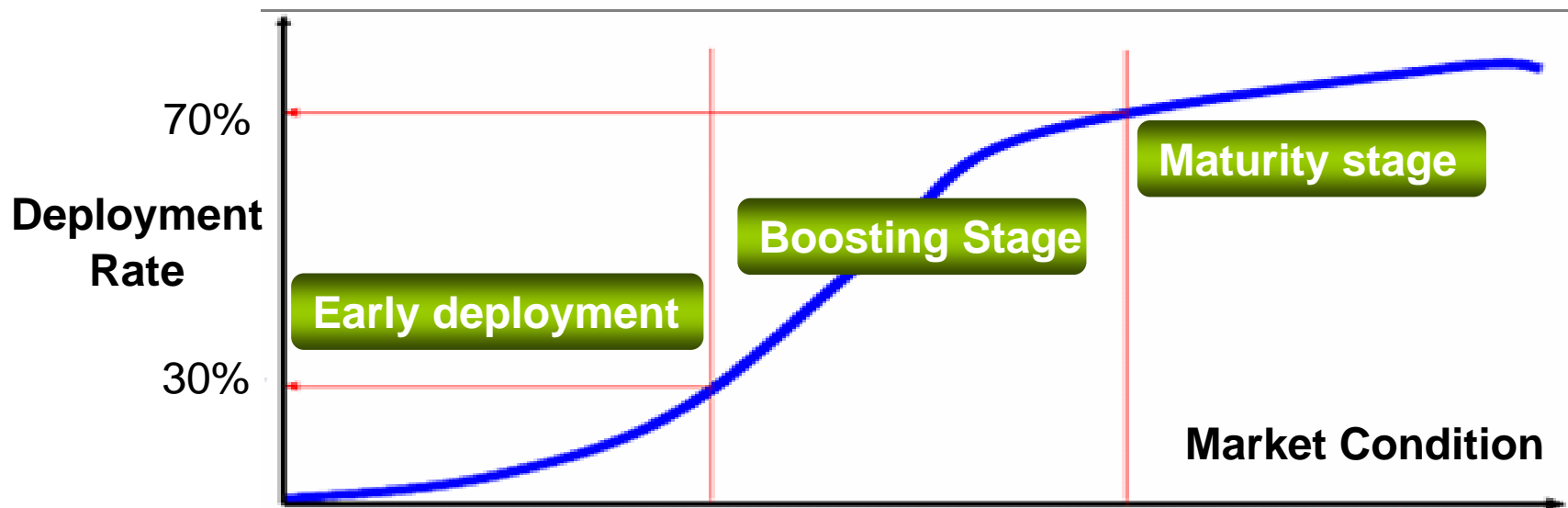
- All kinds of intended actions in production, distribution, marketing and purchase phase to create sustainable market through various intervention
 - Deployment of new technology related to energy efficiency and wide spread adoption of efficient products and service
 - Reduction of dependence on public actions for promotion of efficiency to make market work by itself in the long run
 - Reduction of energy use and GHG emissions



2. Market Transformation Stages

◆ Successful Intervention tools

- Implementation of articulated and mixed intervention tools
 - Intervention tools are selected taking account of development stages of the targeted market.
 - Sequential or integrated implementation of voluntary and compulsory intervention is needed for synergy.



Pre-Intervention Methodologies

1. Identifying State and Problems
2. Possible Intervention tools
3. Selection of Intervention tools



1. Identifying State and Problems

◆ Market Research

- Survey on current market state, prospective outlook, deployment rate of target products is performed.
 - Various regular survey is achieved by power suppliers, Korea Energy Management Corporation (KEMCO), Korea Energy Economics Institute (KEEI), Korea Power Exchange (KPX), etc and generalized by KEEI.

◆ Sales Data Analysis

- Production, sales and import data from companies
 - All participating entities of Energy Labels & Standard Programs shall submit documents on production and sales performance.
 - Computed and analyzed annually by KEMCO and utilized as basic data for management of policies and programs.



1. Identifying State and Problems

◆ R&D scheme and technical development

- Study on technical level of target products and prospective technical progress for enhancement of energy efficiency
 - Various projects of specialized laboratories and manufacturers
 - Government leading R&D projects such as the 7-Runner Program, Standby power projects, LED projects, etc

The 7-Runner Program

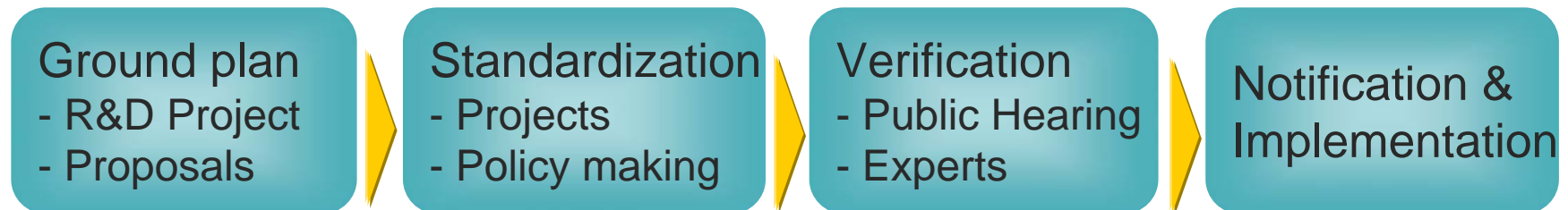
- Governmental R&D for enhancement of efficiency and devising a future deployment scheme for 7 target products
 - To increase dissemination rate of efficient products by 25%
 - Target Products : Boilers, Motors, Driers, Lighting, HVAC, Appliances
- The results of the program will be reflected on Energy Labels & Standards (new target projects, strengthening of standards)
 - Expected Savings : 1,818,000TOE(1,507,000TC,) (2012)



1. Identifying State and Problems

◆ Opinion of experts and companies

- Proposals on new targets from experts and industries
 - Proposals are reviewed by KEMCO, designated experts form laboratories and companies.
 - Technical Standardization Projects for standards making
 - Public hearing on implementing scheme of intervention



◆ Case study about other countries

- IEA's policy recommendation and international projects
- Study on policy tools and Best practices of other countries



2. Possible Intervention tools



◆ Voluntary intervention measures

- Voluntary Energy Labels & Standards programs
 - High Energy Efficiency Appliance Certification Program
 - For early stage market of high-efficient products (since 1996)
 - ① Attachment of High-efficiency Equipment Label
 - ② Issue of High-efficiency Appliance Certificate
 - Industrial products with low deployment rate are targeted. (41 items including Pumps, Motors, Transformers, LED lightings)
 - e-Standby Program (Standby Korea 2010)
 - For reduction of standby power (since 1999)
 - ① Attachment of Energy Saving Label
 - Products with significant standby power are targeted. (22 items including TVs, Computers, Monitors, Printers, MFDs, STBs)



2. Possible Intervention tools

◆ Voluntary intervention measures

- Promotion policies for energy-efficient products (1)
 - **Preferential government procurement**
 - The Office of Supply should procure energy efficient products as a top priority in government purchases.
 - New Bidding system with extra points for efficient products
 - **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 High-efficiency Appliances.
 - **Tax deduction for investment in energy conservation**
 - Amounts up to 10% of total investment can be deducted from the tax of installers of energy conservation facilities.



2. Possible Intervention tools

◆ Voluntary intervention measures

- Promotion policies for energy-efficient products (2)
 - **Supporting service charge for product testing**
 - Small and medium companies can be provided with a service charge to test products up to two times a year.
 - **Appliance supporting rebate**
 - Consumers and installers can benefit from rebates in the case of installation and replacement.
 - **Education and information delivery**
 - Consumer education including educational and vocational programs and information delivery related target products
 - Various event such as Energy Conservation Exhibition (ENCONEX), Mobile Energy Conservation Exhibition



2. Possible Intervention tools

◆ Compulsory intervention measures

- Mandatory Energy Labels & Standards programs
 - Energy Efficiency Label and Standard Program including MEPS
 - For enhancement of energy efficiency (since 1992)
 - ① Mandatory report on energy efficiency of products
 - ② Attachment of Efficiency Grade Label (1st~5th)
 - ③ Application of MEPS below the 5th grade
 - Widespread and energy intensive products are targeted. (20 items including Refrigerators, Air-conditioners, Motors, etc)
 - Application of Standby Warning Label (from Aug. 28th)
 - ① Mandatory reporting of standby power usage
 - ② Mandatory indication of warning label for products below the standards



2. Possible Intervention tools

◆ **Compulsory intervention measures**

- Promotion policies for energy-efficient products
 - **Mandatory use in public buildings**
 - Government agencies or public organizations must install energy efficient products in their buildings.
 - **Mandatory use in new apartment buildings**
 - Builders must install High Efficiency Lighting Products in new apartment buildings accommodating 50 households or more.



3. Selection of Intervention tools

◆ Main Criteria for Decision

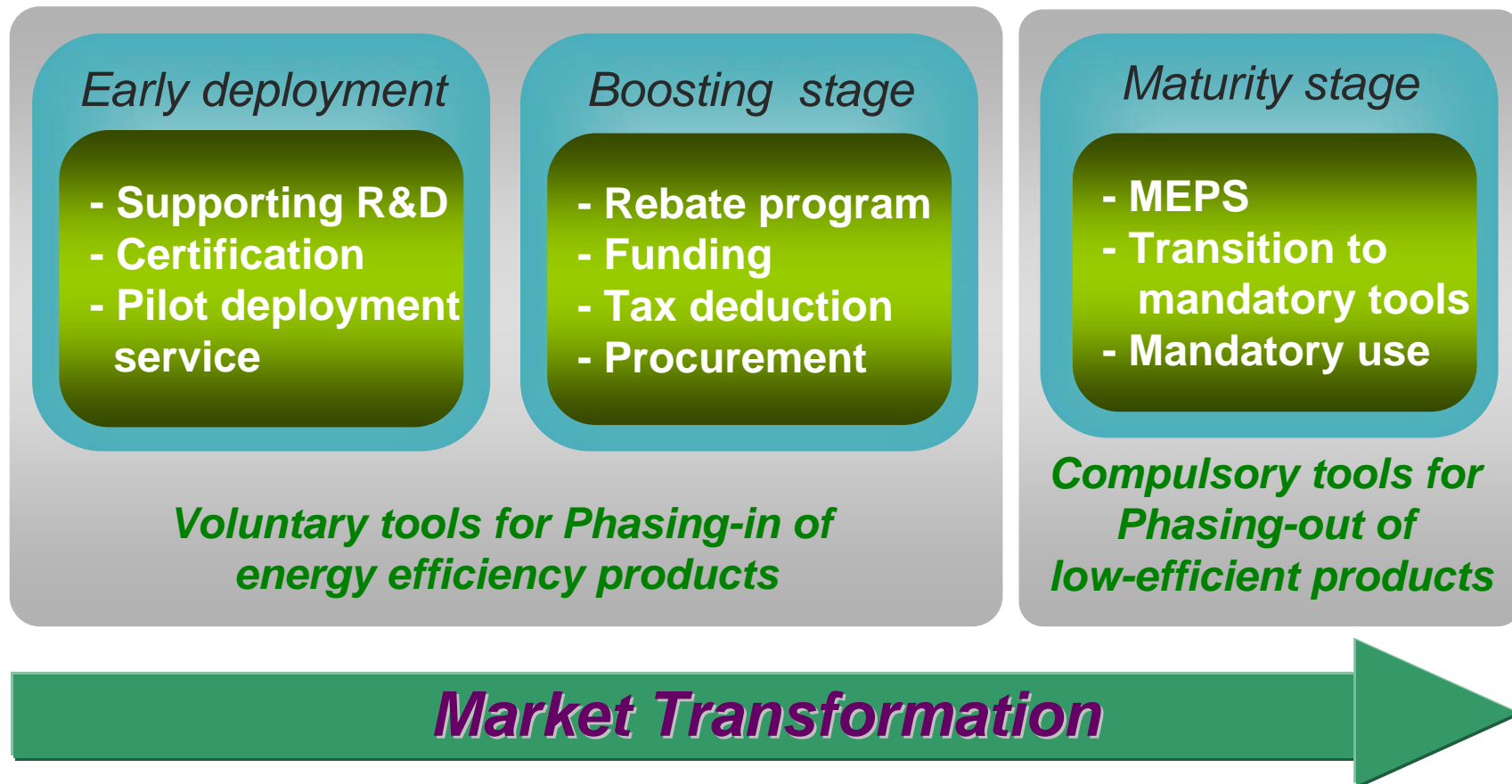
- Analysis for selection of intervention tools
 - Study on general state and future outlook of market
 - Energy consumption, energy conservation effect, deployment level, effectiveness of intervention, influencing power of technology is considered.
- Considering ultimate goal, Market Transformation
 - Determine appropriate intervention scenario that consists of various intervention tools for market transformation
 - Set a appropriate and acceptable level of intervention such as regulatory action, size of funding taking account of deployment stages, internal condition and dissemination foothold
 - Consider transition from voluntary tools to mandatory ones



3. Selection of Intervention tools

◆ Main Criteria for Decision

- Intervention scheme for Market transformation



3. Selection of Intervention tools

◆ Selection of programs

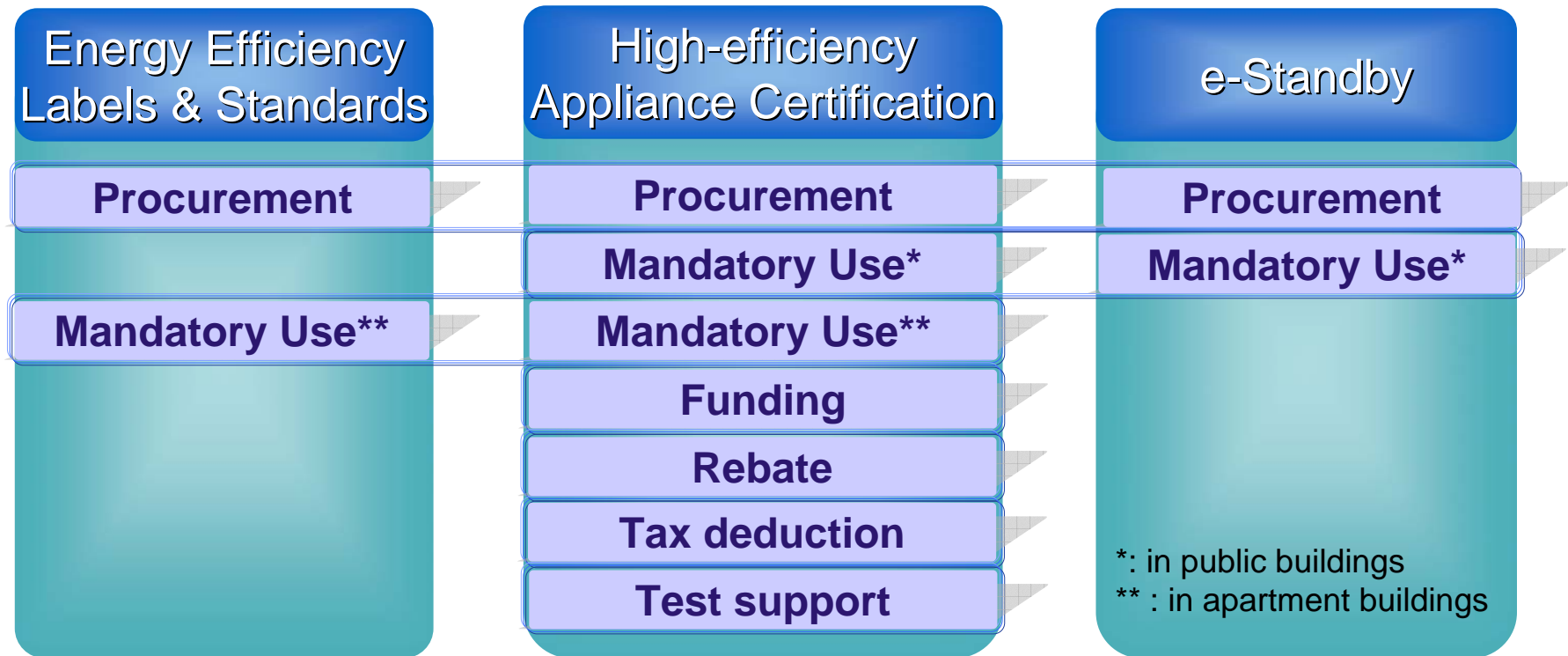
Categories	Introduction	Discontinuance or Transition
Funding & rebate	<ul style="list-style-type: none"> - Energy savings - Deployment level - Gap of price - Marketability 	<ul style="list-style-type: none"> - High deployment level (>70%) - Small gap of price - Substitute products - Expiration of scheme
High-efficiency Appliance Certification	<ul style="list-style-type: none"> - Energy savings - Technology reliability - Marketability 	<ul style="list-style-type: none"> - High deployment level (30~40%) - Technology limit - Substitute products
Energy Efficiency Labels & Standards	<ul style="list-style-type: none"> - Energy consumption - Energy savings - Deployment level - Marketability 	<ul style="list-style-type: none"> - Discrimination among levels - Technology limit - Substitute products
e-Standby	<ul style="list-style-type: none"> - Energy consumption - Energy savings - Marketability 	<ul style="list-style-type: none"> - Technology limit



3. Selection of Intervention tools

◆ Selection of Promotion tools

- Promotion policy tools can be adopted flexibly.
 - More promotion tools are need in early development stage compared with boosting or Maturity stage.



3. Selection of Intervention tools

◆ Cost-benefit analysis

- Comparison between Cost and benefit
 - Cost : Increase in production cost, expense of consumers, etc
 - Benefit : Energy conservation effect, expansion of market, etc
- Funding and rebate scale analysis
 - Statistical model and specific analysis using market data, prospective outlook and national budget state

Example of intervention scheme

MEPS for 3-phase induction motors

: Certification('98~) – Rebate('02~) – Agreement('06) – MEPS('08)

LED 15/30 Project

: Certification – Rebate and Pilot deployment – MEPS

Mandatory 1W Policy including introduction of Standby Warning Label

: Voluntary Policy('05~'07) – Transition('08~'09) – Mandatory Policy('10~)



Post-Intervention Methodologies

1. Research & Evaluation
2. Monitoring



1. Research & Evaluation

◆ Market Research

- Survey on the progress of market transformation after implementation of intervention tools
 - Survey on significant changes in market share and deployment rate of target products of intervention
- Polls to know consumer's reaction and preferences
 - satisfaction research and regular poll about implemented tools

◆ Sales Data Analysis and Evaluation

- Computing and analyzing sales data from companies and evaluating the effect of intervention
 - Check the increase of sales and changes in grade distribution condition of target products of intervention
 - Energy conserved, reduction of CO₂ emission is calculated.



1. Research & Evaluation

◆ Sales Data Analysis and Evaluation

- Analysis for intervention changes and future scheme
 - Sunset law for transition from voluntary tools to compulsory tools for the target products, whose deployment rate of energy efficient products is significantly improved is applied.

Report to KEMCO

Reporting sale, production and import record of the previous year to KEMCO

Totalizing

Computing the total of data reported by manufacturers and importers

*Analysis,
Evaluation*

Market analysis, evaluation of energy conserved and reduction of CO₂ emission

Application

Making practical application of the analyzed material in various ways



2. Monitoring

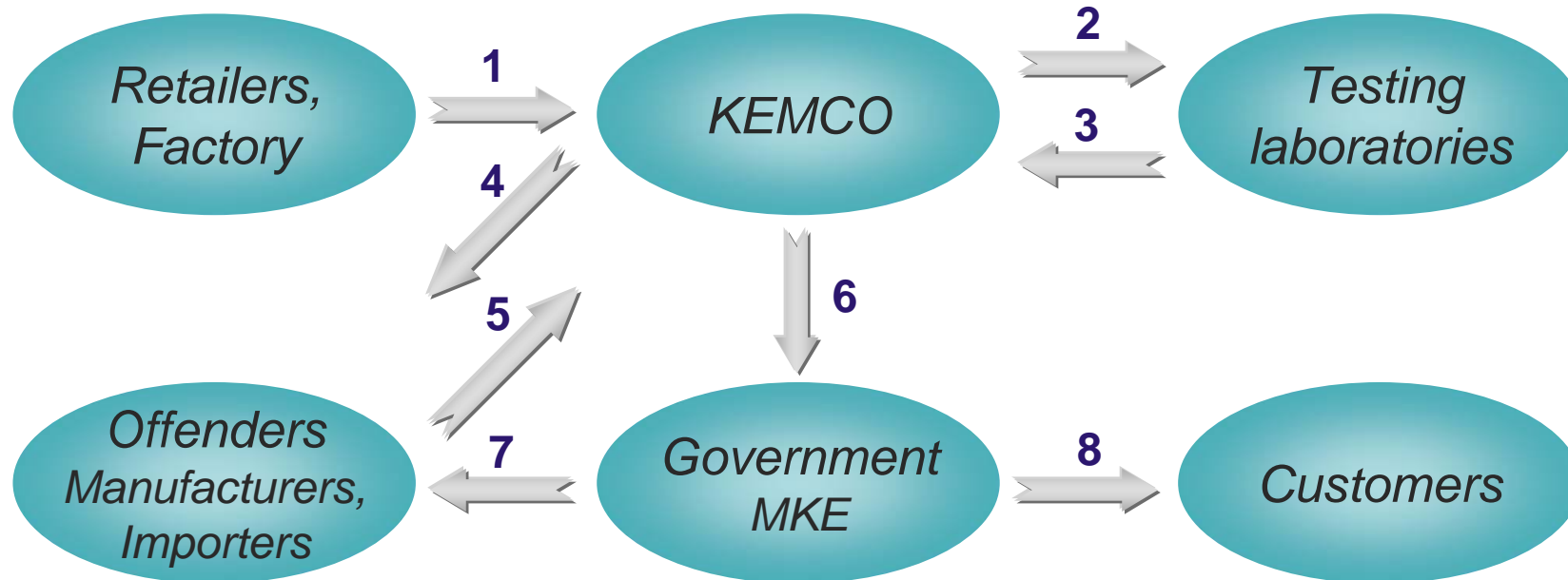
◆ Monitoring Program

- For prohibition of distribution of illegal products that do not meet the standards and improving the program's reliability
 - Regular monitoring : annually
 - Irregular monitoring : if necessary (Arisen from market research or information from consumers, civic groups, etc)
- Compliance with grade labeling standards and MEPS is checked and the lack of compliance with standards is fined.
 - Noncompliance with labeling standards : \$5 thousand fine
 - Noncompliance with MEPS : \$20 thousand fine
- Analysis on influencing power of programs and modification of management scheme can be occurred
 - Enhancement of compliance with standards Programs



2. Monitoring

◆ Procedure



1. Purchase of samples

3. Test reports

5. Accept / Request for retest

7. Administration action

2. Request for test

4. Notice of test results

6. Results of monitoring

8. Information



Thank You !

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