
Korea's Energy Efficiency Policies for
Green Growth
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Ministry of Knowledge Economy
Energy Efficiency Bureau
MKE
Ministry of
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Economy

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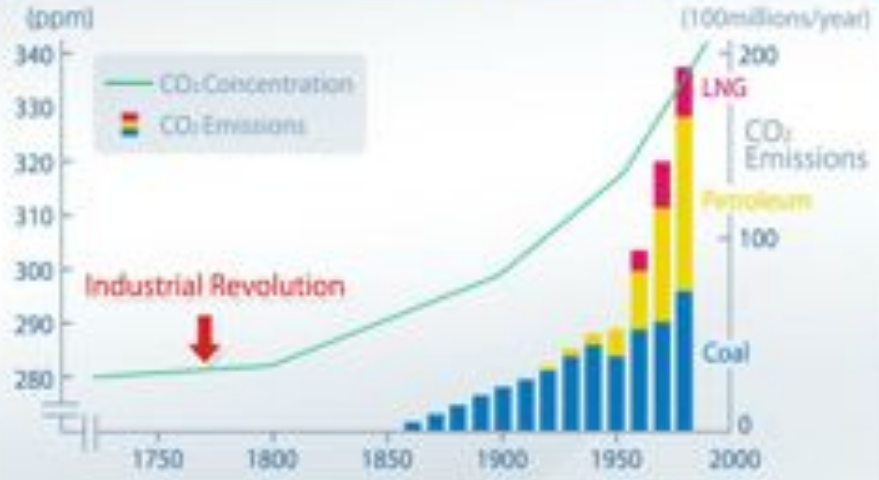
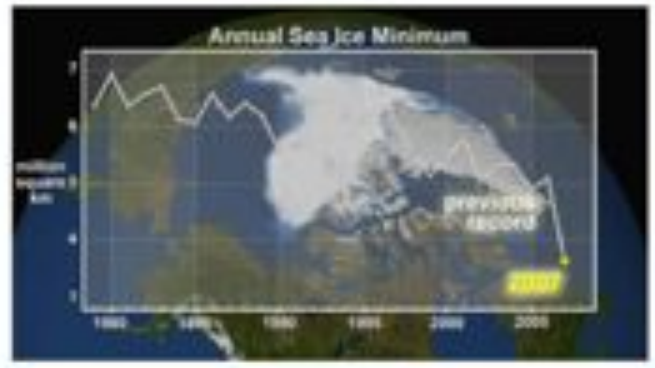
Ⅰ. The Emerge of Green Growth Era

I-1 Severe Climate Change Impact

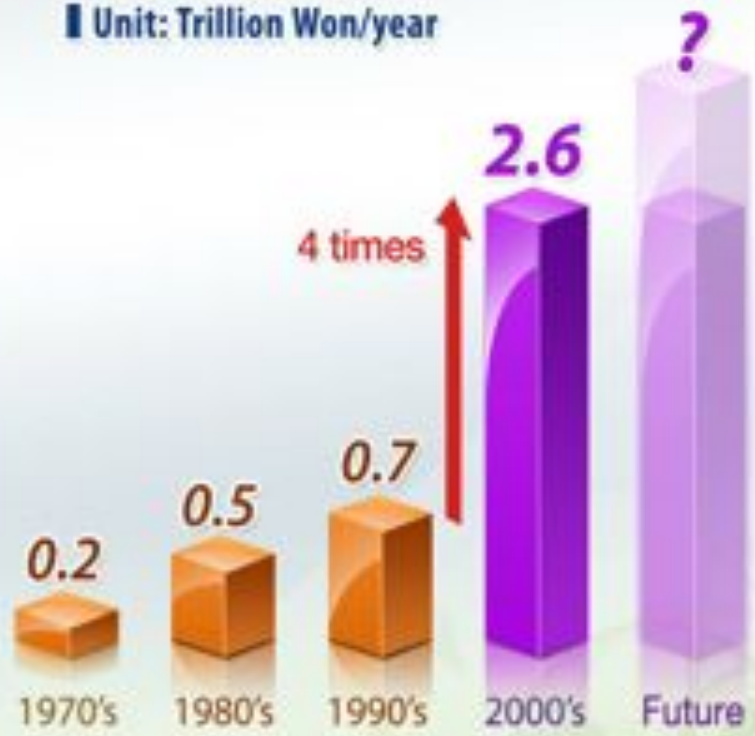
Facing a double challenge of Energy crisis and the Environmental crisis, climate change has become the Critical agenda in the global society

The Scientific Evidence of Global Warming





Economic losses from Climate Weird in Korea

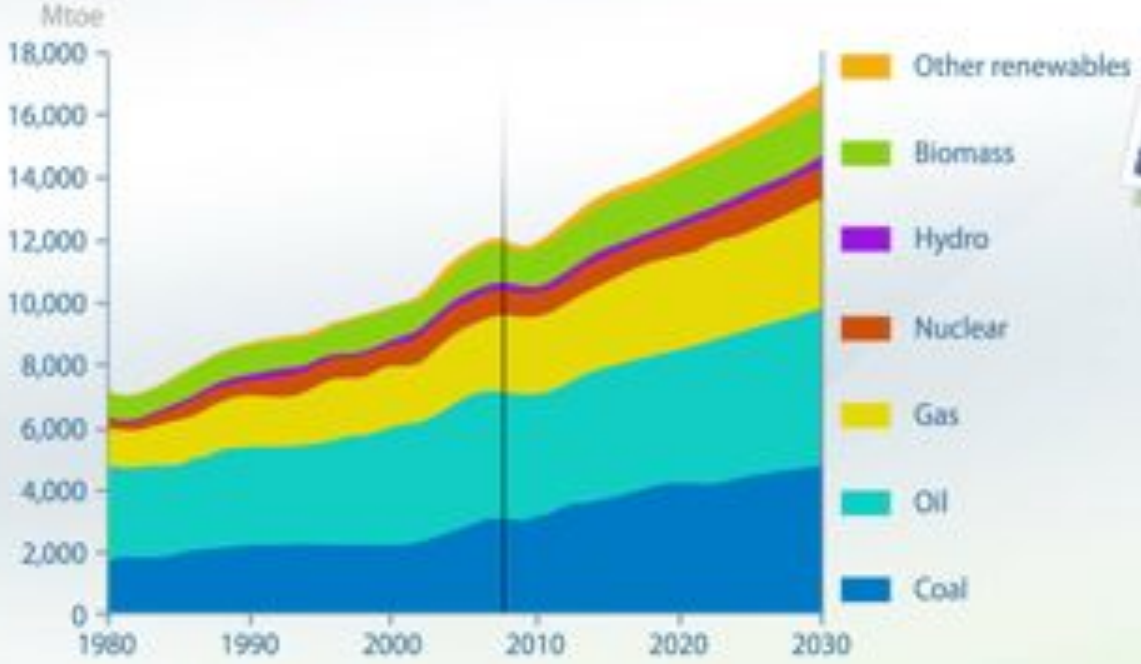


I-2 Causes of Climate Change

Climate change is derived from several causes such as massive fossil fuel consumption for industrialization, rapid population growth, increased energy use for convenience

World Primary Energy Demand by fuel in the Reference Scenario

- World energy supply will rise by 40% between 2007 and 2030



I-3 The Emerge of Green Growth Era

The world took its step for Green Growth Era

R&D Strategies in Major countries

America Advanced Energy Initiative ('06.2)

Japan Cool Earth Plan ('07.5)

EU Strategic Energy Technology Plan ('08.1)

China Renewable act ('06.1)

They need to create new investment opportunities by adopting a "carbon advantage" idea

If you jump halfway across a chasm you fall into the abyss

– Albert arnold Gore Jr. –

Any nation that's willing to join the cause of combating climate change will have an ally in the United States of America

– Barack Hussein Obama –

Green is neither buzzword nor Luxuries

– Thomas L. Frideman –

We are facing a third industrial revolution

– German Prime Minister, Angela Dorothea Merkel –

I-4 New Business Opportunity

Energy efficiency and Clean Energy, such as energy saving, LED, Smart Grid and renewables, create promising business opportunities

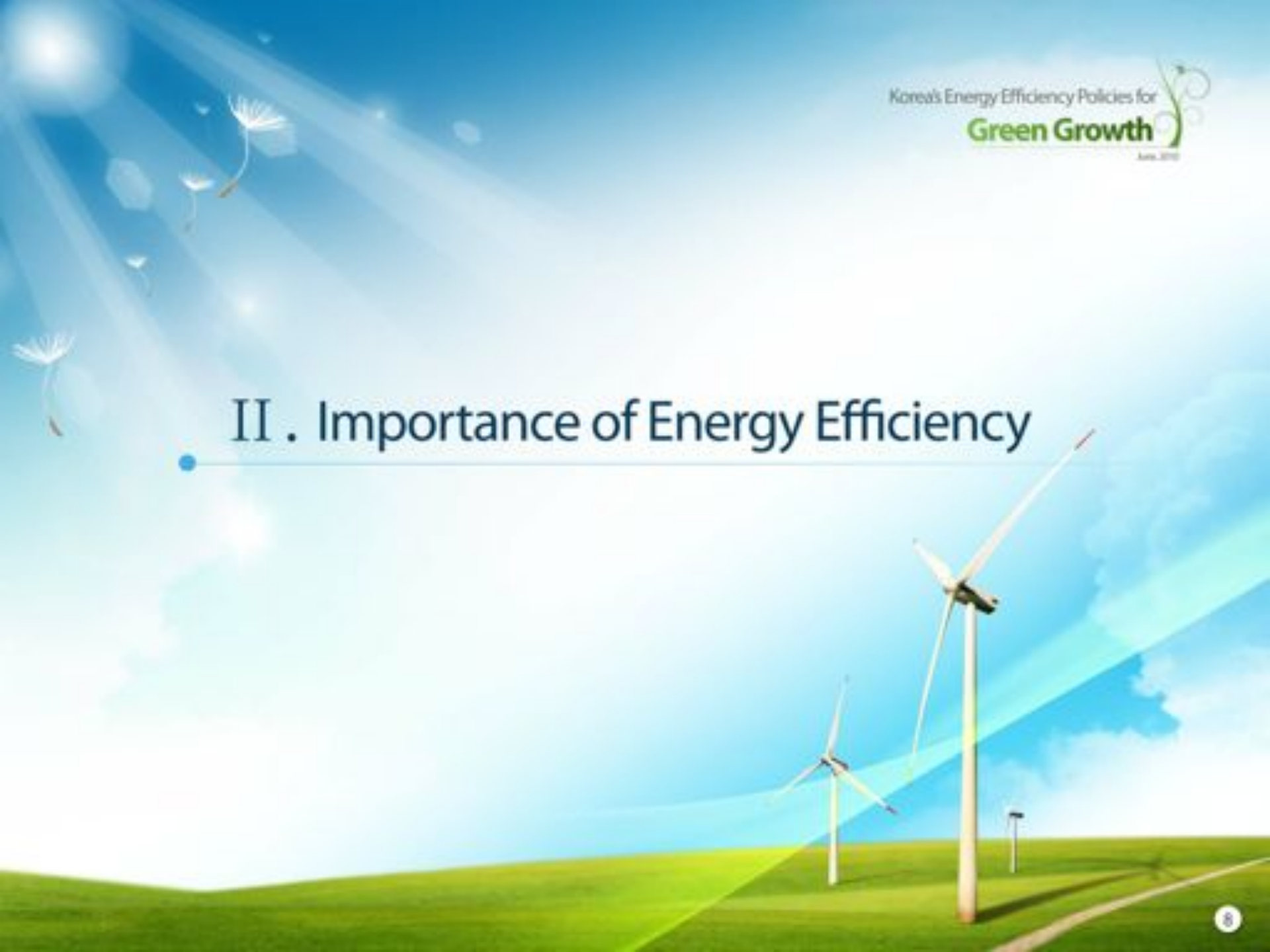
	Market perspective	
ESCO	$0.16billion/year (2009)	$8.3billion/year (2015)
LED	$21billion (2008)	$150billion (2018)
Smart Grid	Beginning (2010)	$870billion (2030)
Renewabls	$116billion (2008)	$315billion (2018)

Case study

<LED lights at governmental offices>

< coal-to-gasification plant >

II. Importance of Energy Efficiency



II-1 The Key to the Green Growth: Energy Efficiency

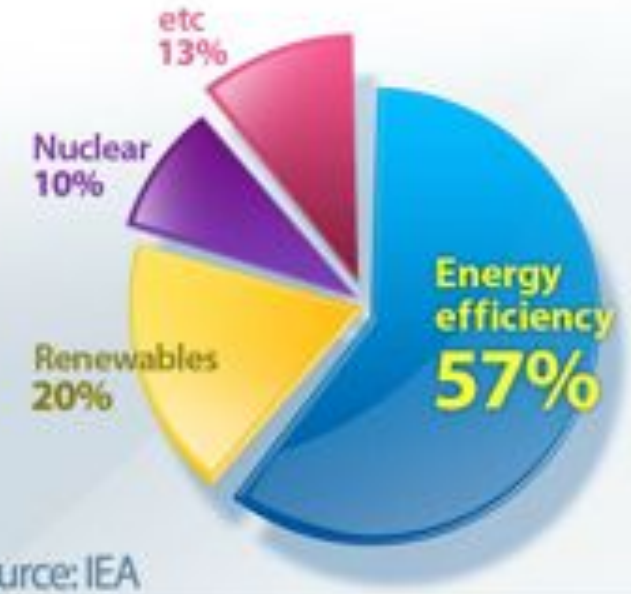
Energy efficiency is called "the fifth fuel" and a key measure for Green Growth

Share of GHGs Emissions

Main cause of GHGs emissions is energy consumption

GHGs Reduction Contribution

Energy Efficiency is the largest contributor to world CO2 emissions abatement in 2030



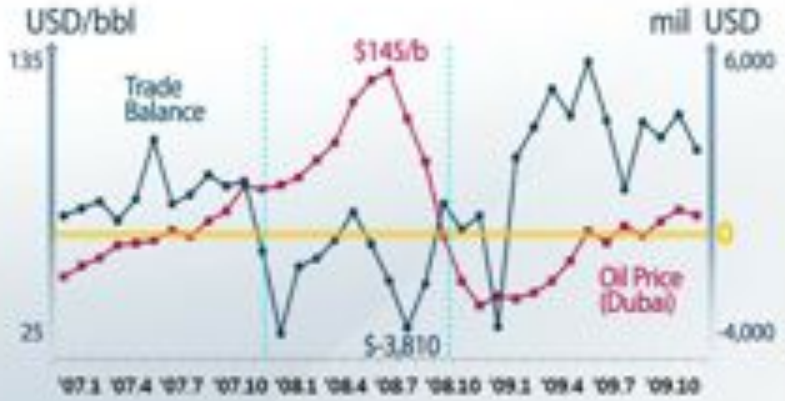
Source: IEA

II-2 The Role of Energy Efficiency in Korea

To achieve the national GHG reduction target, energy saving became a national agenda in Korea to stabilize national economy and act against climate change

Economic Impact

- Higher oil prices can adversely affect Korea's trade balance



- 10% increase in oil prices
  : GDP 0.2↓, consumption 0.1~0.2%↓

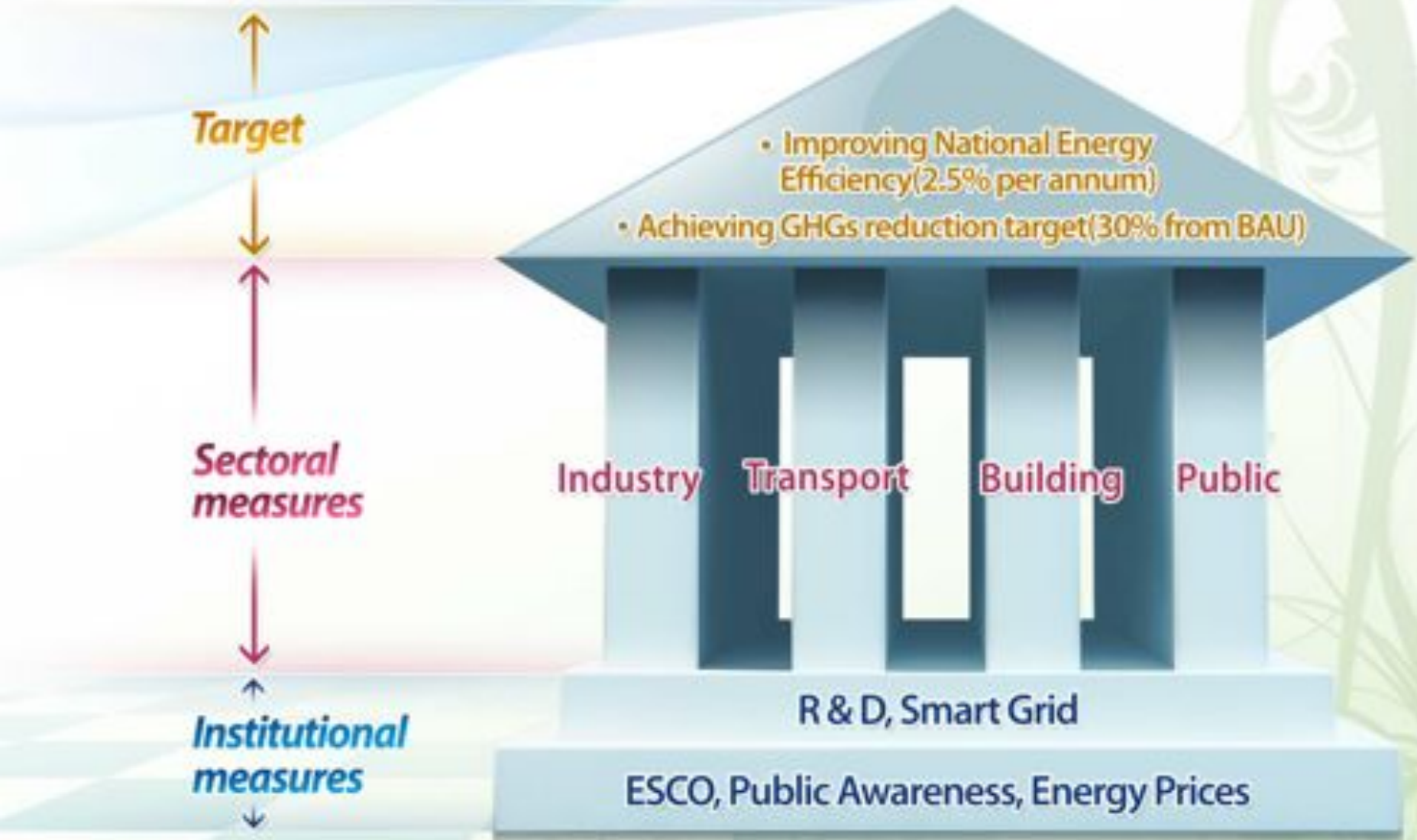
National Initiative for GHG reduction

<Reduction Target>

- Korea: 30% from the BAU by 2020
- US: 17% from the level of 2005 by 2020
- Japan: 25% from the level of 1990 by 2020
- EU: 20~30% from the level of 1990 by 2020

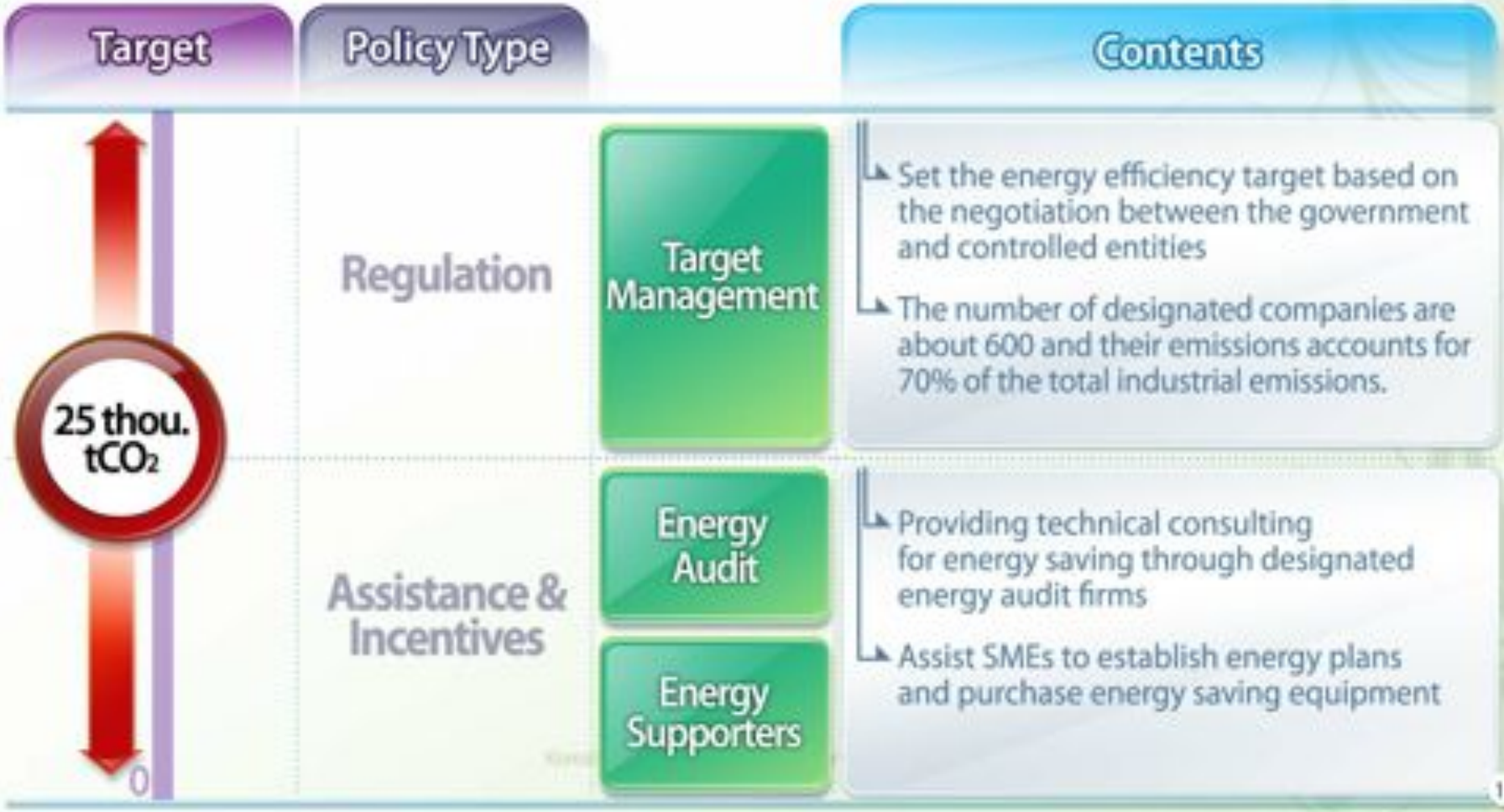
Ⅲ. Strategies for Improving Energy Efficiency

III-1 Policy Structure and Long-term Target



III-2 Industry: stronger regulation

Stronger and direct regulations will be applied to energy-intensive companies while assistance and incentives provided for small and medium sized enterprises(SMEs)



III-3 Transportation: Fuel Economy and Eco-driving

Improve energy efficiency for cars and driving habits

Fuel economy

- (2015) Fuel economy 17km/ℓ
  CO_2 140g/km
- (After2015) More stringent standard

Eco-driving

H/W

- Eco-driving Package:
  Eco-driving guidance, tire pressure Monitoring system, Idle Stop & GO

- Eco-driving Package : 8% improvement

S/W

- No Driving Day once a week
- Smart phone application

III-4 Building: Regulations to Improve Energy Efficiency(1)

Setup and manage the energy saving target for energy intensive buildings, deploy energy-efficient buildings

Pilot Projects of energy saving target Program for buildings

Targets : 12 major buildings

Schedule : Target setting (June 2010)

↓

Energy saving Investment (Dec 2010)

↓

Performance Certification (Mar 2011)

Goal : 2~5% energy saving

Building Energy Efficiency Certification Program

	As-Is	To-Be
Grade	3 grades	5 grades
Target	New Construction	Existing + New
Coverage	Heating	Heating, Cooling, Ventilation Lighting, etc

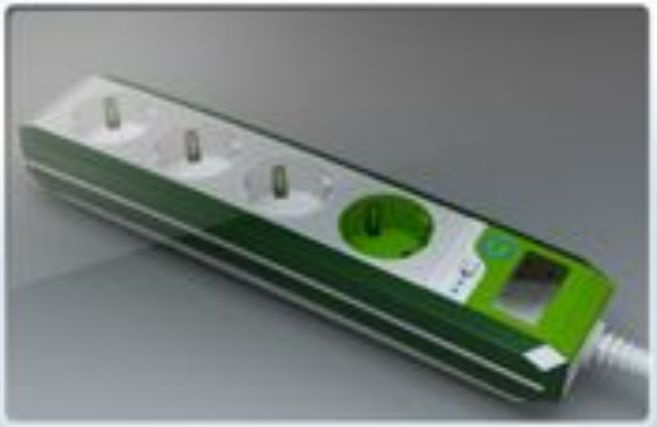
III-4 Building: Strengthen energy efficiency regulation (2)

Deployment of Green Homes

- Insulation improvement (passive), renewable installation (active) can save up to 93% of heating costs, 50% of cooling costs compared to conventional homes
- Participants are to be provided with governmental subsidy and tax incentives

	'04~'07	'08~'20	'13~'20	Total
Deployment target (households)	17,400	94,150	913,000	1,024,550
Subsidy (100 mil. Won)	2,280	13,300	137,530	153,080

Cutoff standby power



III-5 Public: Strong Energy Saving Initiative

Government acknowledged responsibility to show leadership on the energy saving, reducing 10% of energy use annually in public sector

Improve EE in public buildings

New construction

- Obligation of achieving 1st Grade
- Window area is limited to 50% of the surface of a wall
- Stanby power cutoff device

Existing

- Semi-annual inspection and announcement
- Install Standby Power cutoff S/W and maintain proper temperature

✔ *6,500 public buildings' energy consumption decreased by 8.8% in the first quarter compared to 2009*

Energy saving target management by each ministry

- **Concept** : Set up the energy saving target & action plan and evaluate the performance
- **Targets** : 10 ministry with energy saving
- **Schedule** : Pilot project('10) ➡ Main project('11)

III-6 Institutional Measures (1)

Set up infrastructure promoting R&D and Smart Grid for energy saving

R & D

Green Car

- Produce PHEVs (Plug in Hybrid Electric Vehicles) by 2013
- Provide 1,300 Million USD to support the development of Smart Green Car by 2015

EE R&D

- EE R&D Goal : Securing additional Energy saving potentials by 5% of TPES by 2015
- Investment plan('06~'15): 1.7 billion USD

Smart Grid

III-6 Institutional Measures (2)

Create new growth engine by promoting ESCO and related business

III-6 Institutional Measures (3)

Offer the information of electric charge to improve the awareness for energy savings and promote Smart Lifestyle

Indication of Electric Charge

Contents: Energy efficiency grade label with electricity bill declared (effective in July)

Targets

- current : 13 items(Refrigerator, Vacuum cleaner, Air conditioner, etc)
- 2011 : Water purifier, chiller & heater, gas boiler

Campaigns for Smart Lifestyle

- **Seasonal Campaign**
  - Spring : Green Sports
  - Summer : Optimal temperature for good health by air conditioning
  - Autumn : Good-bye Standby Power
  - Winter : Optimal temperature for study by heating
- **Target Campaign**
  - Elderly : Newspaper
  - Housewife : TV
  - Youth : On-line
    - ➡ reinforce infotainment

Green Growth

"This is not a matter of choice, it is where we should go and what we are already undertaking"

(President Lee Myoung-bak's remark at the extended Secretary Meeting, August 29, 2008)

It is the strategy of change that jumps over the chasm and it is a concept of creative that open all possibilities.

Thank you!

MKE Ministry of Knowledge Economy