

# **Evaluations as a Risk Manager against Energy Crisis**

## **Korea's status and Challenges**

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# Contents

1. Korea's energy overview
2. Key issues of energy supplies in Korea
3. Energy efficiency initiatives
4. Energy plans with EE estimation and evaluation
5. Challenges for energy supply and demand

# 1. Korea's energy overview

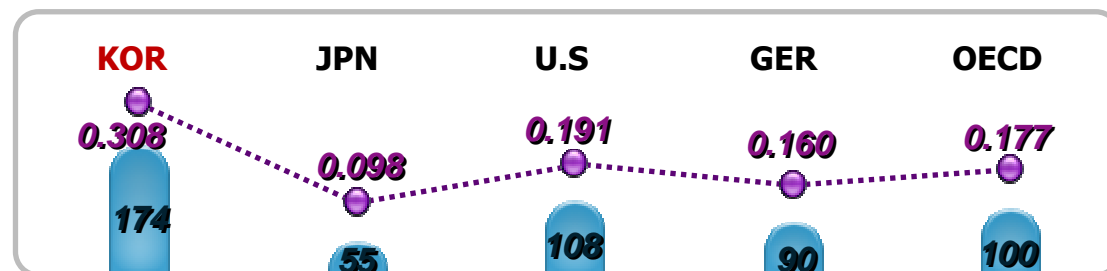
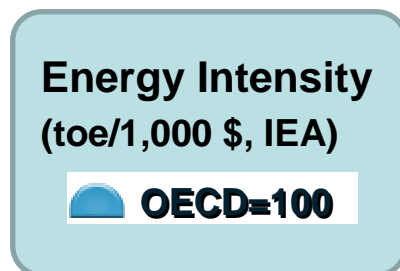
- Global position: Total Energy (10<sup>th</sup> 229Mtoe), Electricity (9<sup>th</sup> 438TWh)

< Growth rate of energy use and GDP('00~'10, IEA) >

	KOR	JPN	GER	U.S	OECD
Total Energy Consumption	2.7%	-0.5%	-0.2%	-0.2%	0.2%
Electricity Consumption	5.3%	0.2%	0.6%	0.7%	1.0%
GDP	4.1%	0.8%	0.9%	1.7%	0.5%

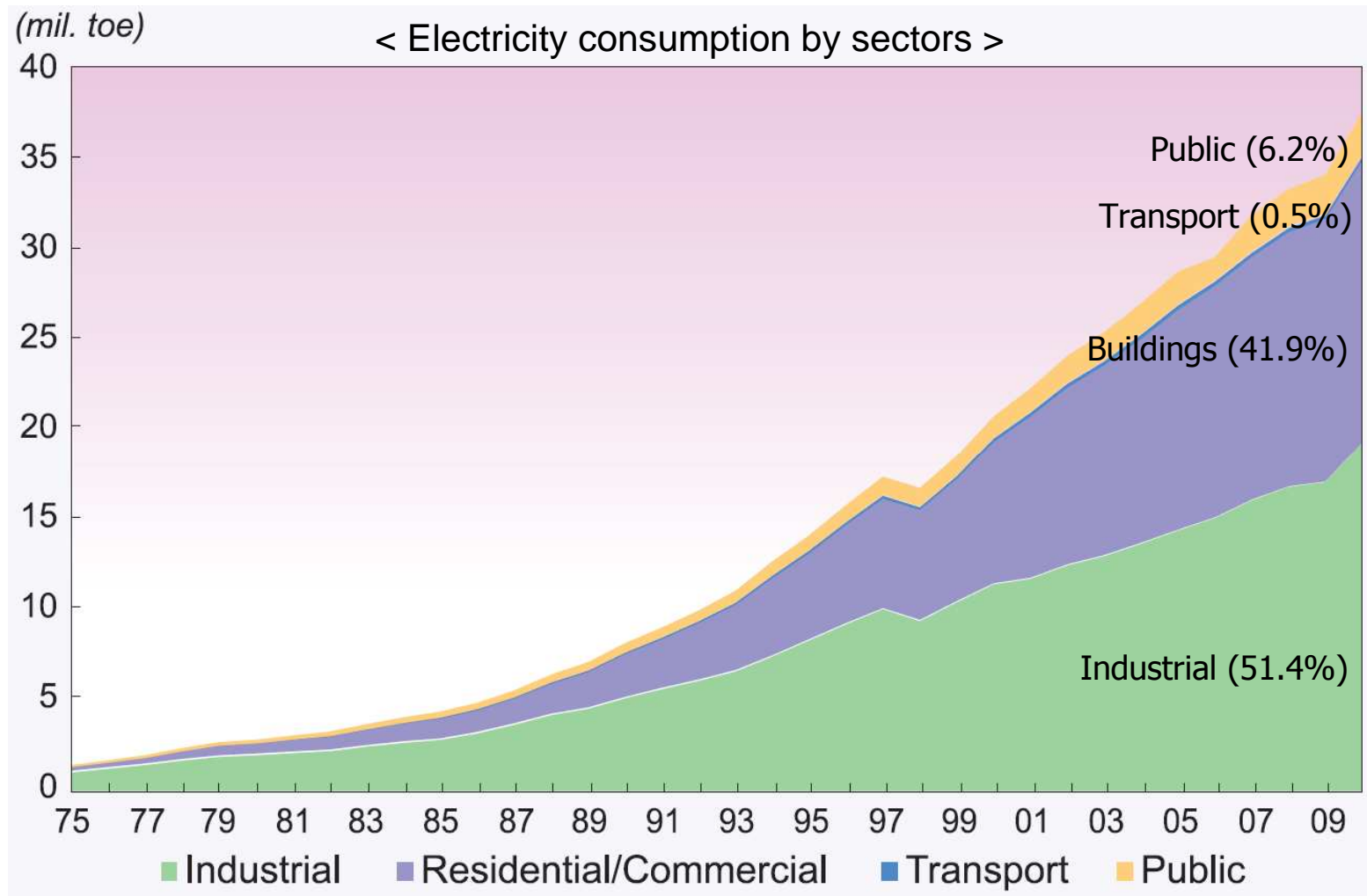
- Dependence on energy imports: 96% (fossil fuels 85%)

- Economy depending on energy-intensive industries (Iron & steel, petrochemical, etc.)



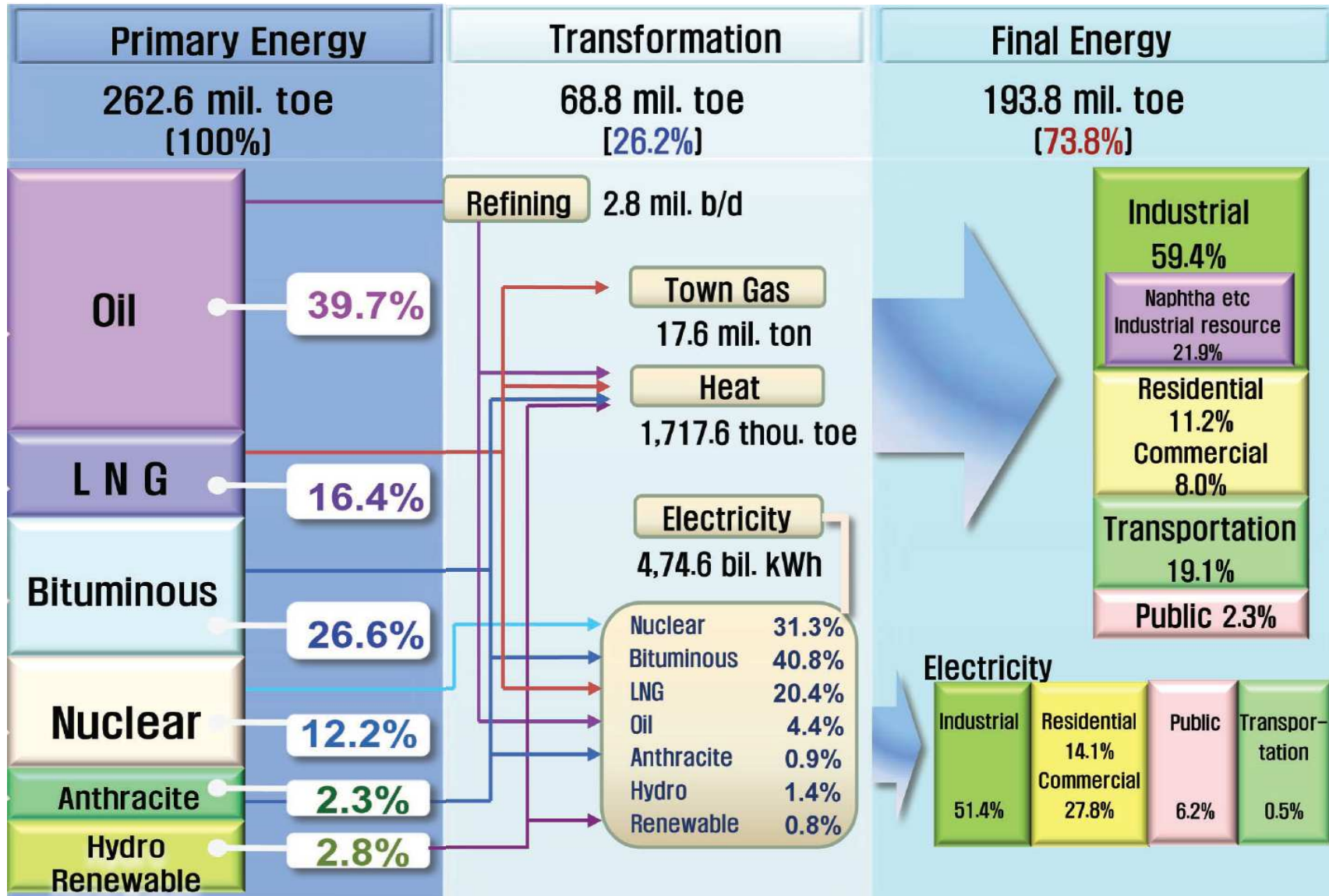
## 2. Key issues in energy supplies

- Soaring electricity demands under limited expansion of power plants
  - Increased uncertainties of electricity use → Threats to the national power supply systems





# Korea's Energy Balance Flow (2010)



Source: 2011 Energy Info. Korea (KEEI)

# 3. Energy Efficiency Initiatives

## ■ Main drivers for energy efficiency policies

- Energy Basic Plan(2008~2030) under the Act of Low Carbon Green Growth
- Mid-term GHG reduction target of 30% from 2020 BAU

## ■ Action plan for rational energy utilization (2008~2017)

- Improve the national energy intensity by 11.3% up to 2012

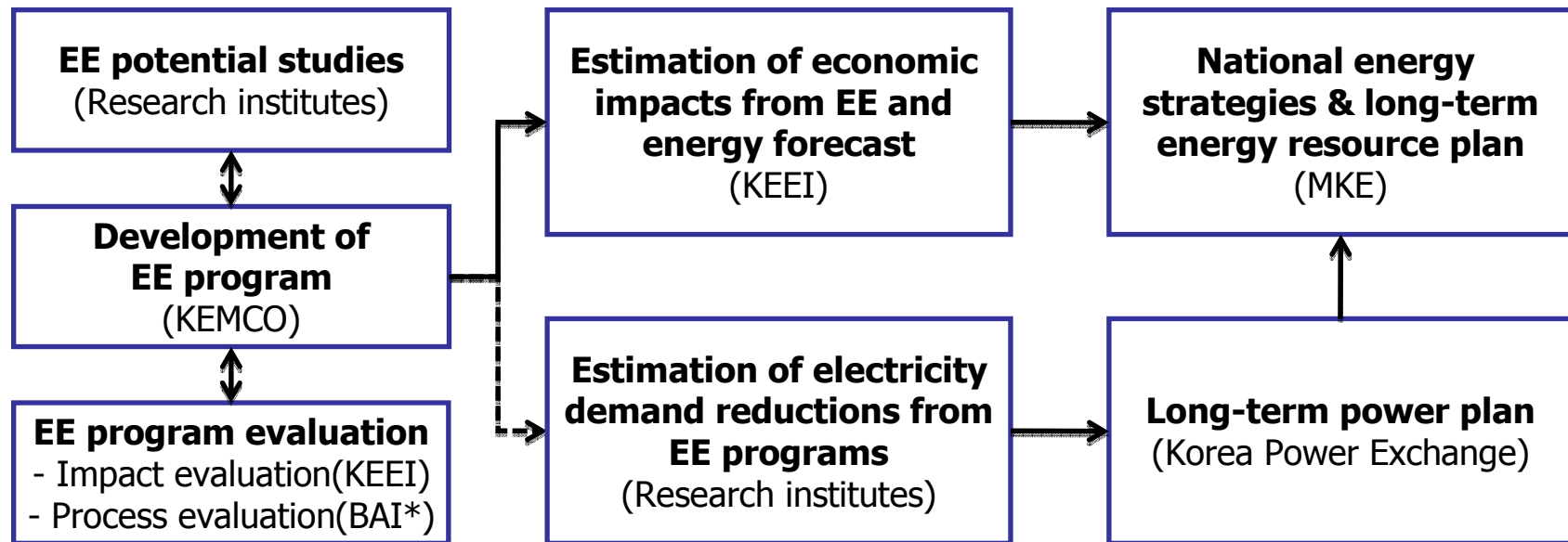
< Energy efficiency potential (unit: Mtoe, tCO<sub>2</sub>) >

	2012		2017	
	Energy savings	CO <sub>2</sub> reductions	Energy savings	CO <sub>2</sub> reductions
Industry	14.3	29.0	34.4	69.7
Buildings	6.4	13.0	15.5	31.4
Transport	5.2	10.5	12.3	24.9
Total	25.9	52.5	62.2	126.0

Source: 4<sup>th</sup> Action plan for rational energy utilization

## 4. Energy plans with EE estimation and evaluation

< Flow of energy planning with EE estimation and evaluation >



\* Board of Audit & Inspection

- **EE policy Administrator** (MKE, Ministry of Knowledge and Economy): Establish the national energy strategies and long-term energy plan (at least for 20 years)
- **Program Administrator** (KEMCO, Korea Energy Management Corp.): Implement and develop sectoral energy efficiency programs and institutional measures
- **Research Institute** (KEEI, Korea Energy Economics Institute): Conduct studies on economic impacts from EE and forecast energy demand using simulation tools

## 5. Challenges for energy supply and demand

### ■ Gradually increasing uncertainties over power supply and demand

- Demand side: demand forecast errors and excessive management targets causing the future power shortage (a series of partial blackout caused by power shortage last year)
- Supply side: construction delays (difficulties in securing available sites, civil complaints, etc.)

### ■ Lack of coordination between the program administrator and the power planner (decreasing the credibility of EE potential estimation)

→ **Need more studies on methodology development and close coordination with related organizations**

### □ Efforts to respond to the energy risks

- ✓ Annual EE policies evaluations and reporting to the cabinet council as of 2010
- ✓ Long-term power plan will be revised biannually in order to minimize the uncertainties.
- ✓ Establishment of contingency plans for energy crisis (power shortage & high oil price)

Demand Restrained Measures	<ul style="list-style-type: none"><li>- Lowering temperatures in buildings (public &amp; private sector)</li><li>- Turning off exterior lightings for restaurants, gas stations, etc</li><li>- Restriction of electricity use for energy-intensive companies</li><li>- Reduction of use of elevators</li><li>- Driving restriction(public sector), etc.</li></ul>
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