

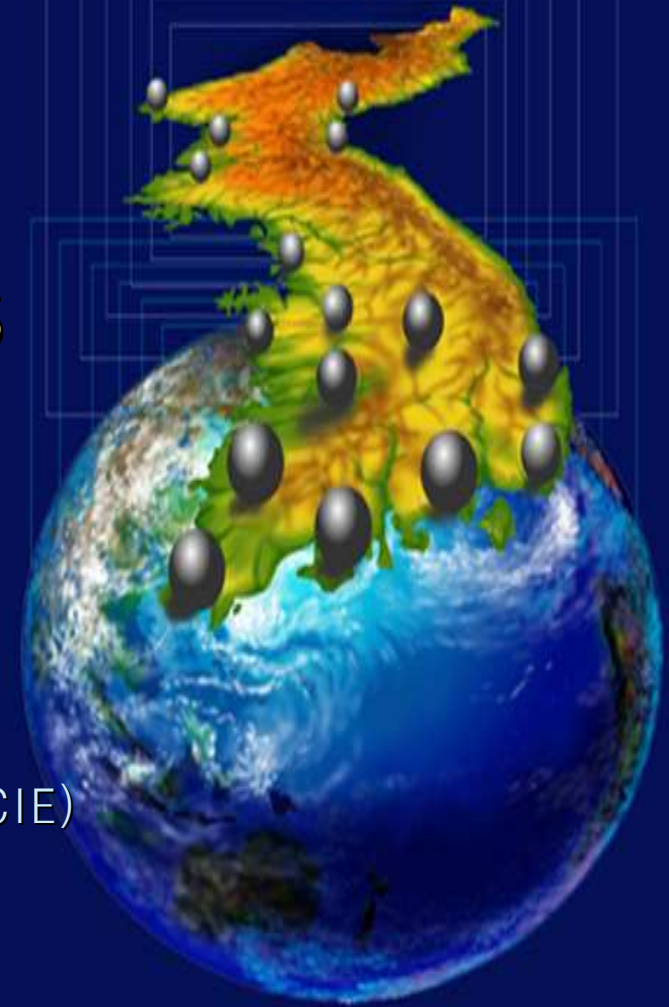
14th Northeast Asia Economic forum

Energy Market of Korea

September 20, 2005

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1. ENERGY STATUS



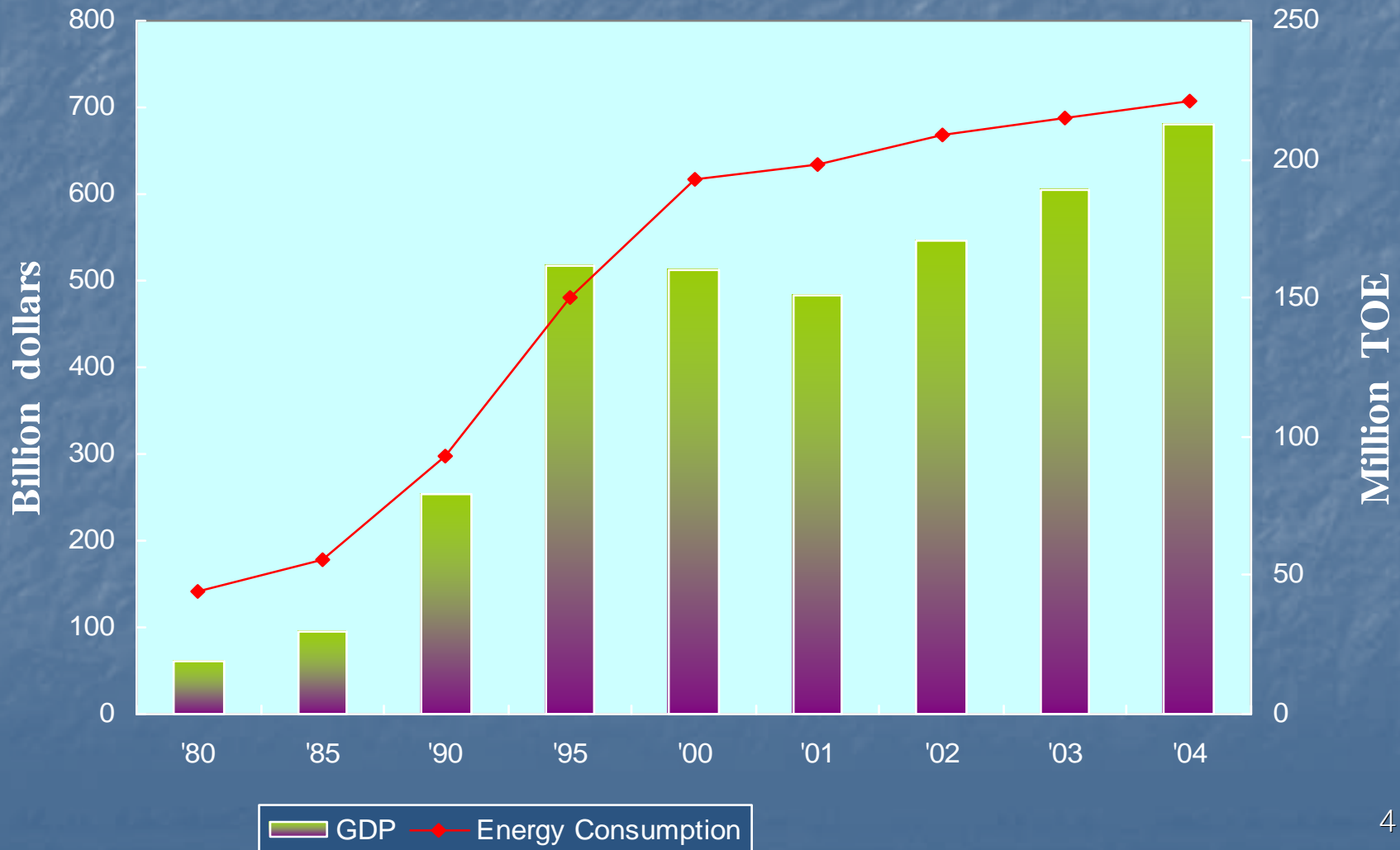
Korea at a Glance

Korea in the World (2004)

- Population ----- the 25th(48million)
- GDP ----- the 11th(680 billion dollars)
- TPES ----- the 10th(215 million TOE)
- Oil consumption ----- the 7th(2.3 million b/d)



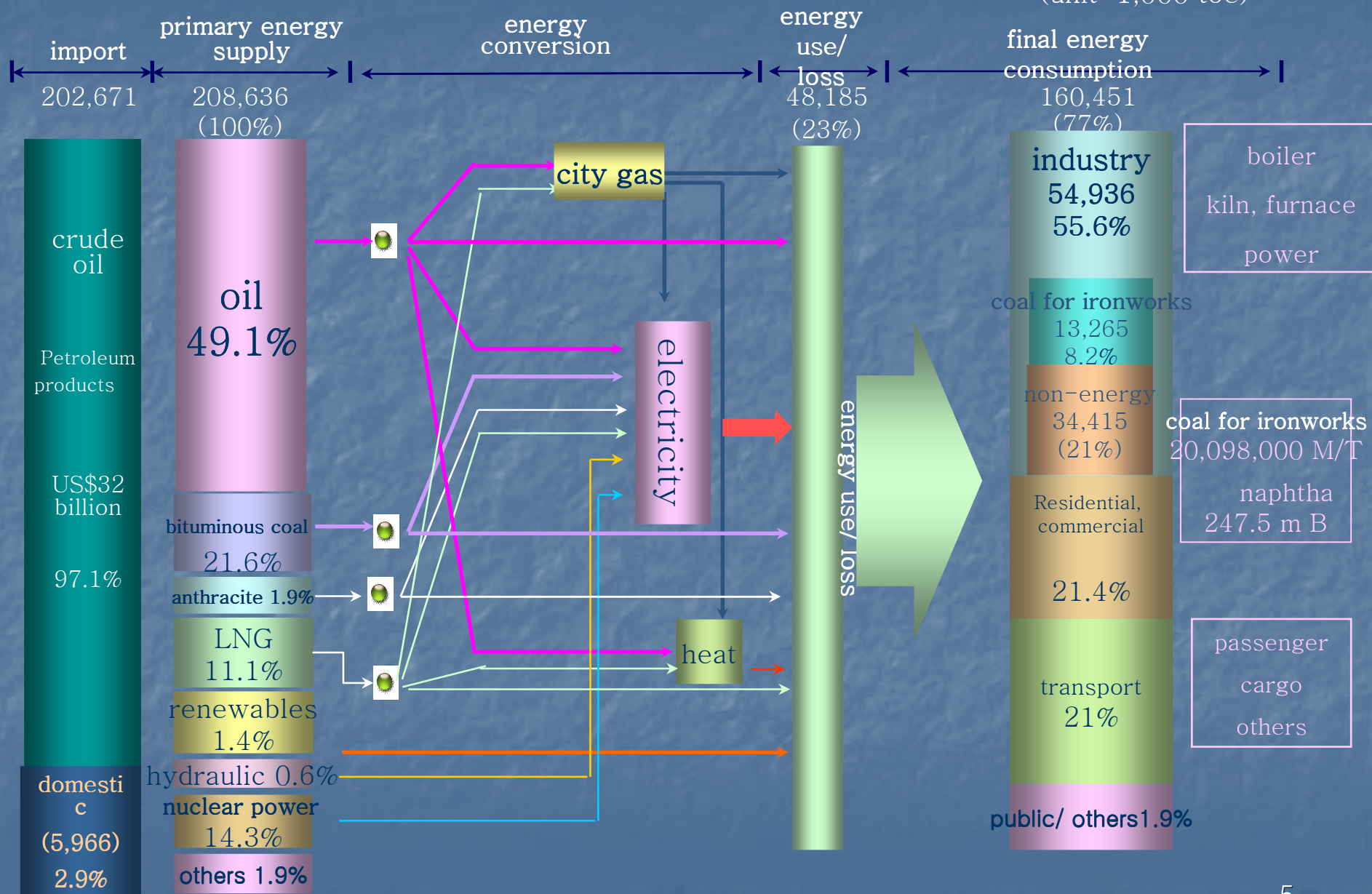
GDP Growth & Energy Consumption



Korea's Energy Balance Flow (As of 2002)



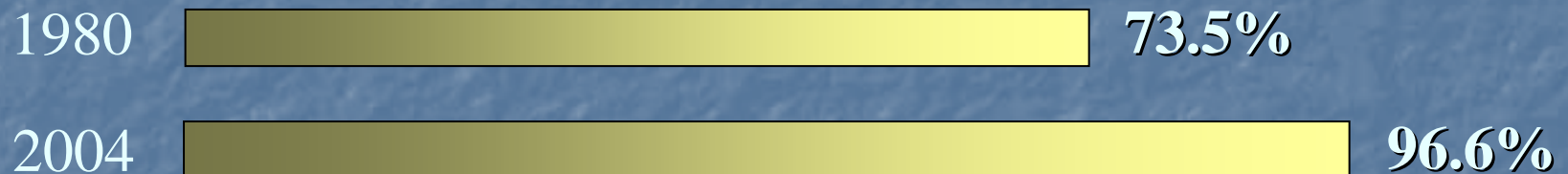
(unit: 1,000 toe)





Korea in World Energy Trade

- Overseas Energy Dependency



- Energy Imports

1980 US\$ 6.7 billion

2004 US\$ 49.6 billion

- Korea as Main Energy Importer

Oil : 4th, 826 M B (2004)

LNG : 2nd, 22 M T (2004)

Coal : 2nd, 62 M T (2004)

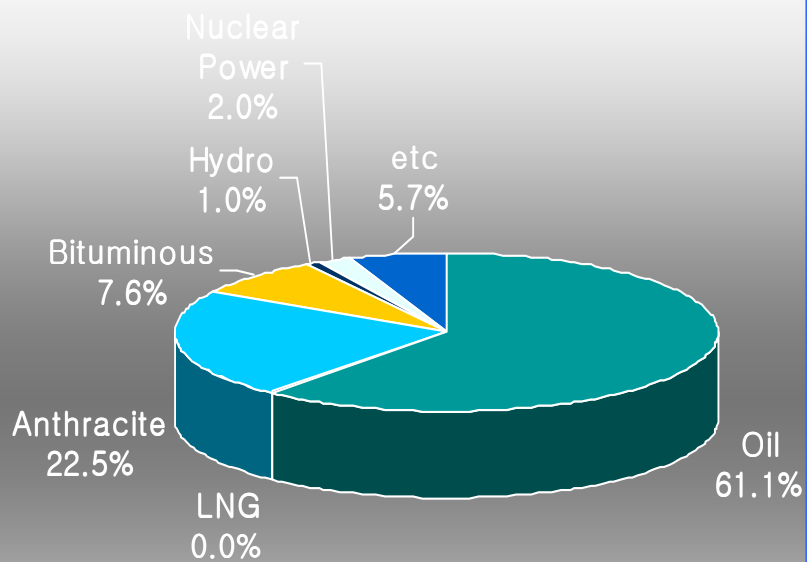




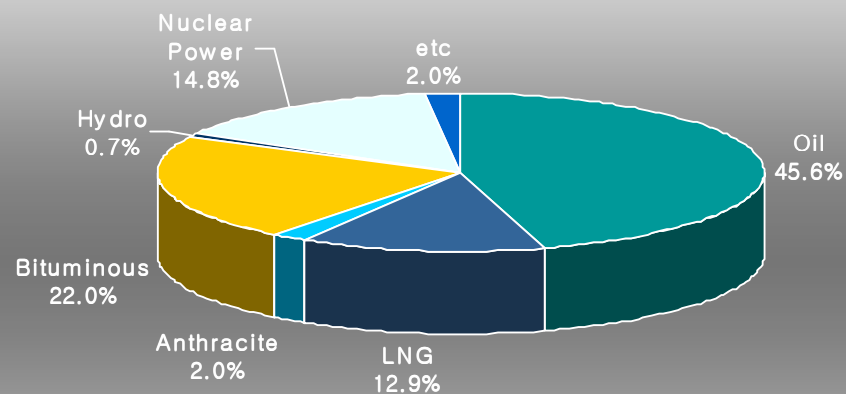
2. ENERGY CONSUMPTION



Energy Consumption by Source

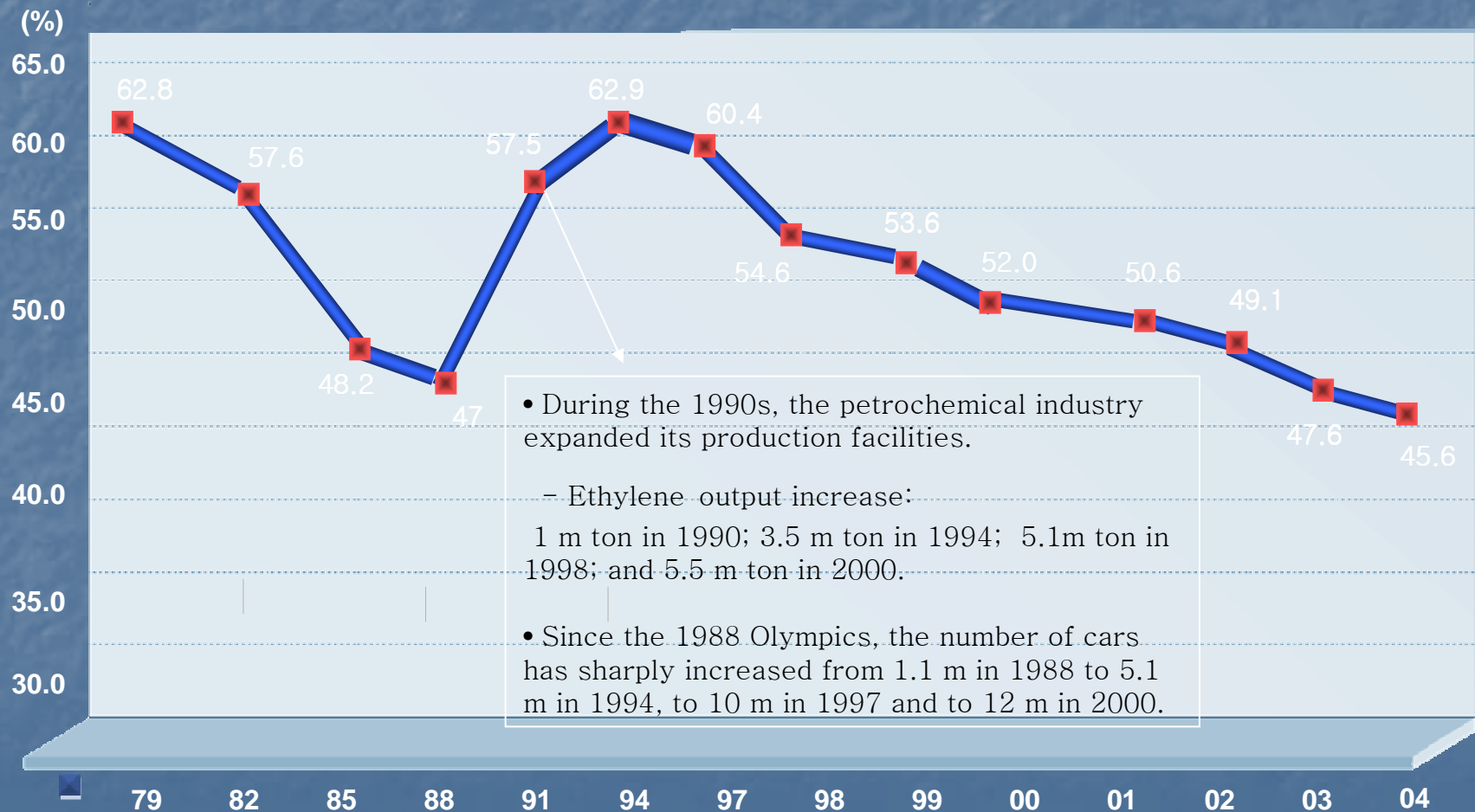


1980



2004

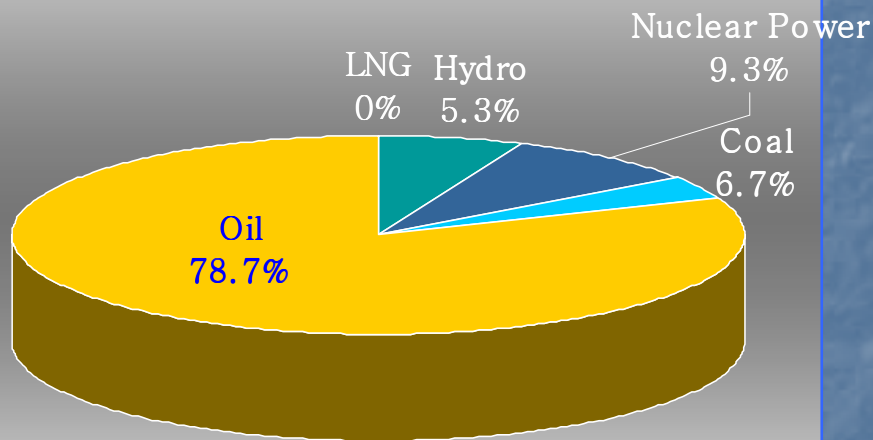
Trends of Oil Dependency ('79~'04)





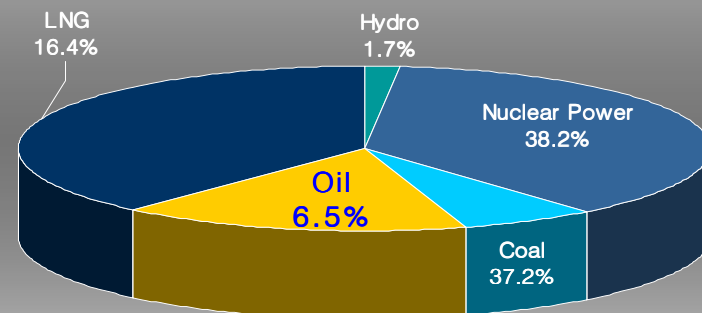
Power Generation by Source

The share of oil is **78.7%** in 1980



35,600GWh

The share of oil is **6.5%** in 2004



342,200GWh

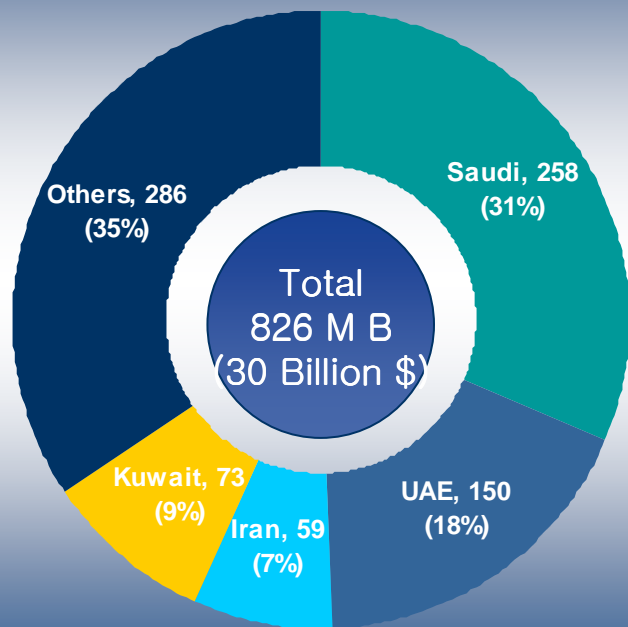


3. ENERGY INDUSTRY

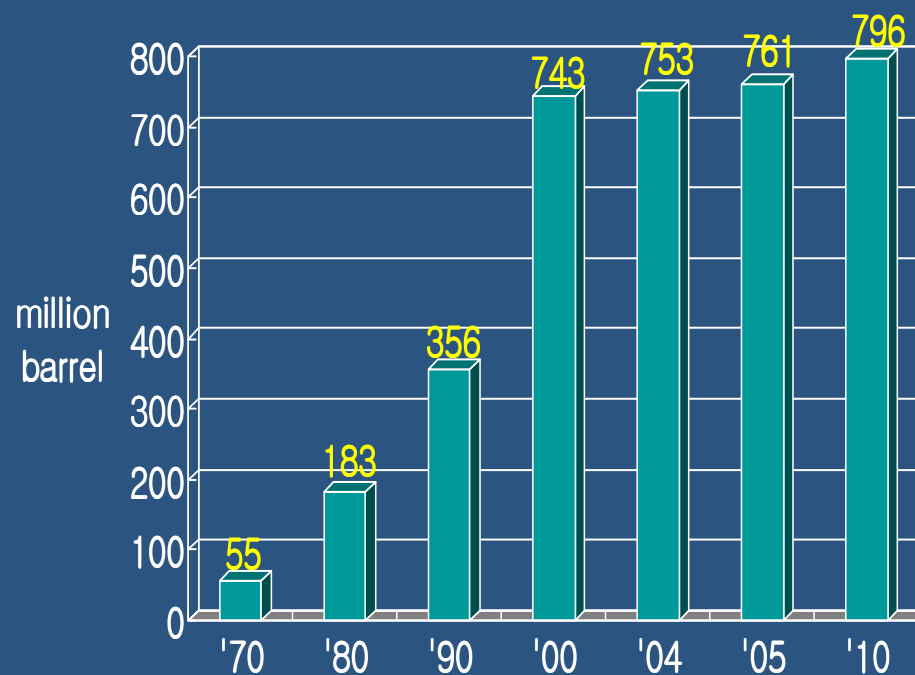


Petroleum Industry

OIL IMPORT('04) : 826 million barrel
approx. 30 billion \$

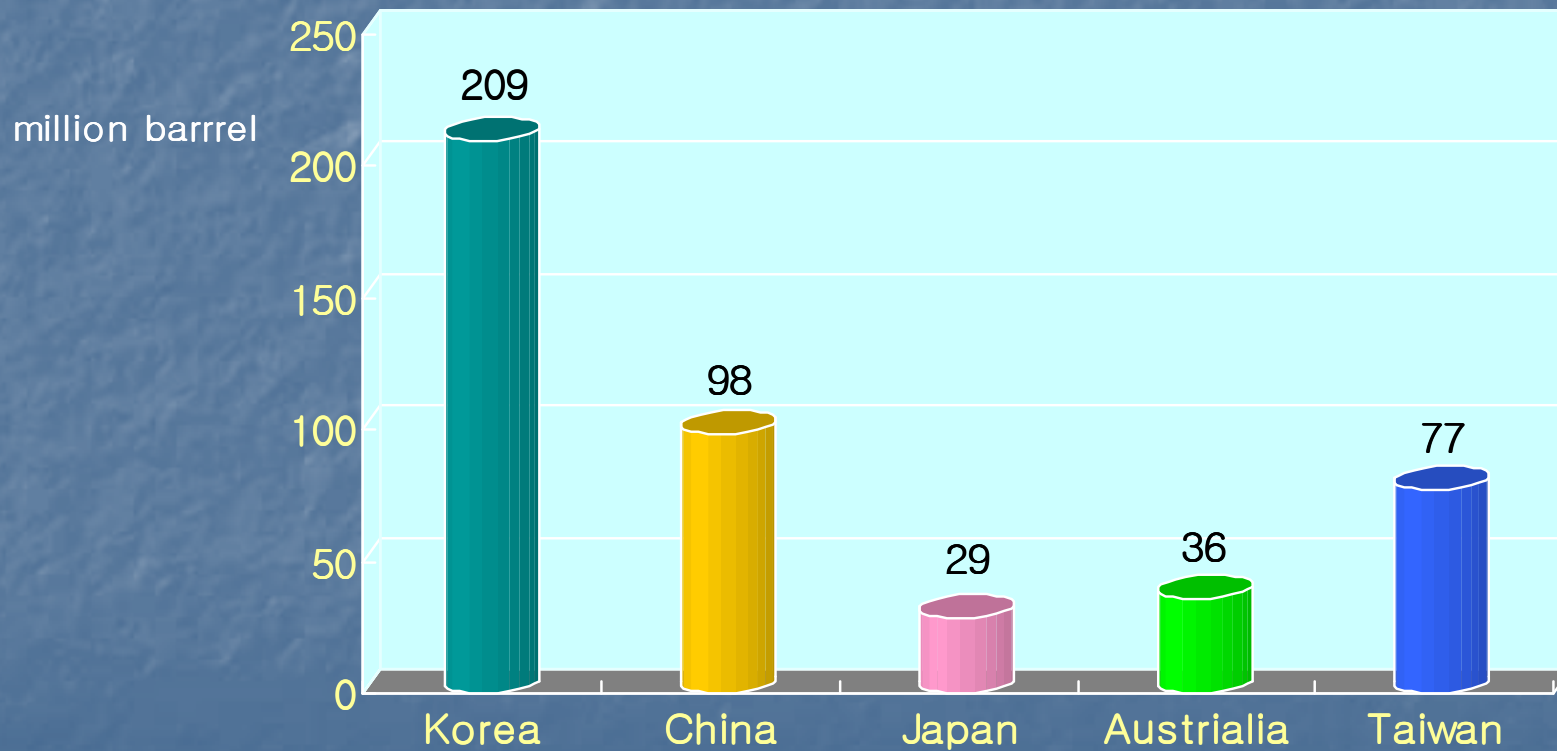


OIL CONSUMPTION Status & Prospect



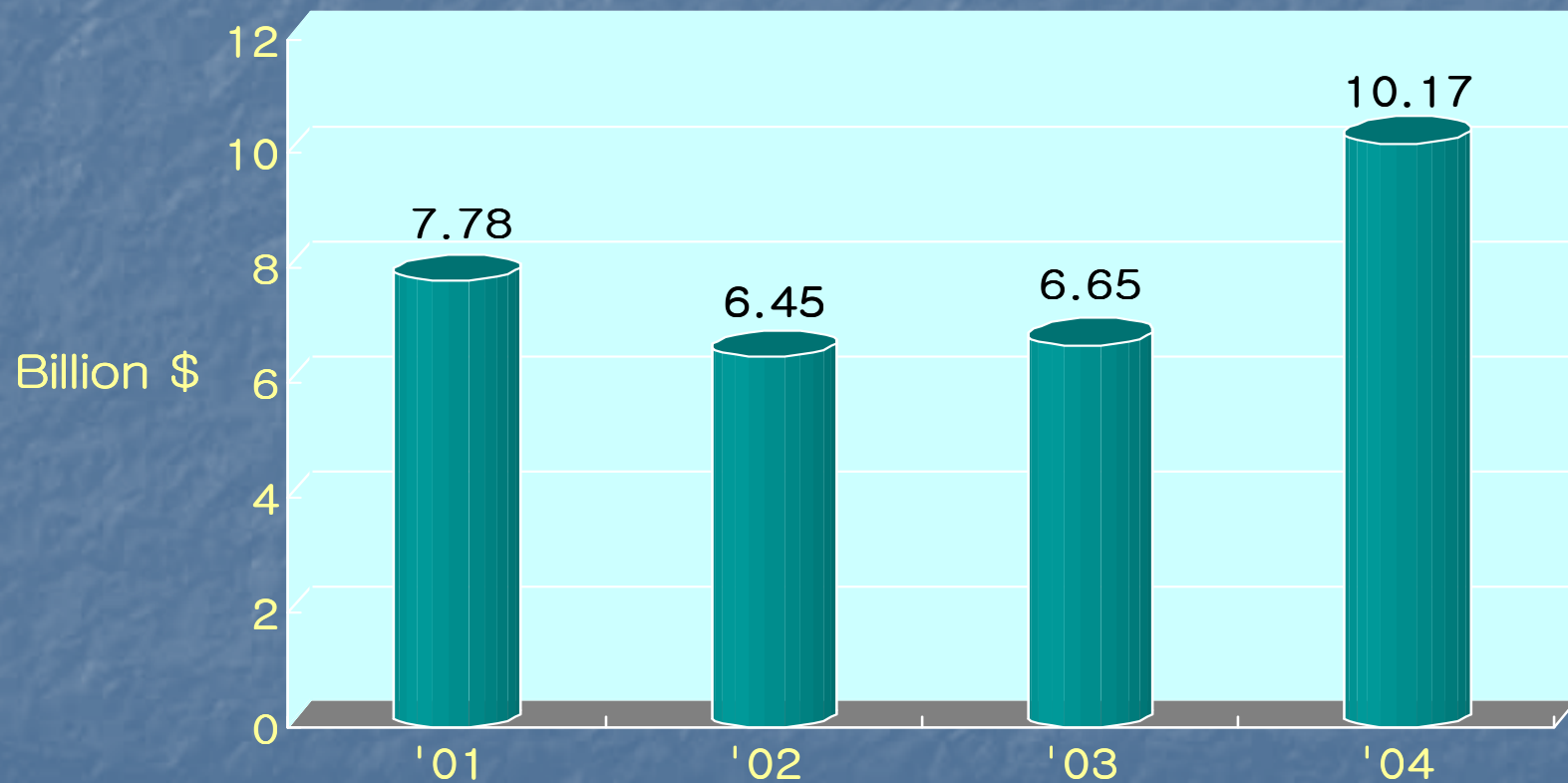


Exports of petroleum products by Country (As of 2003)





Trends of exports of petroleum products('01~'04)

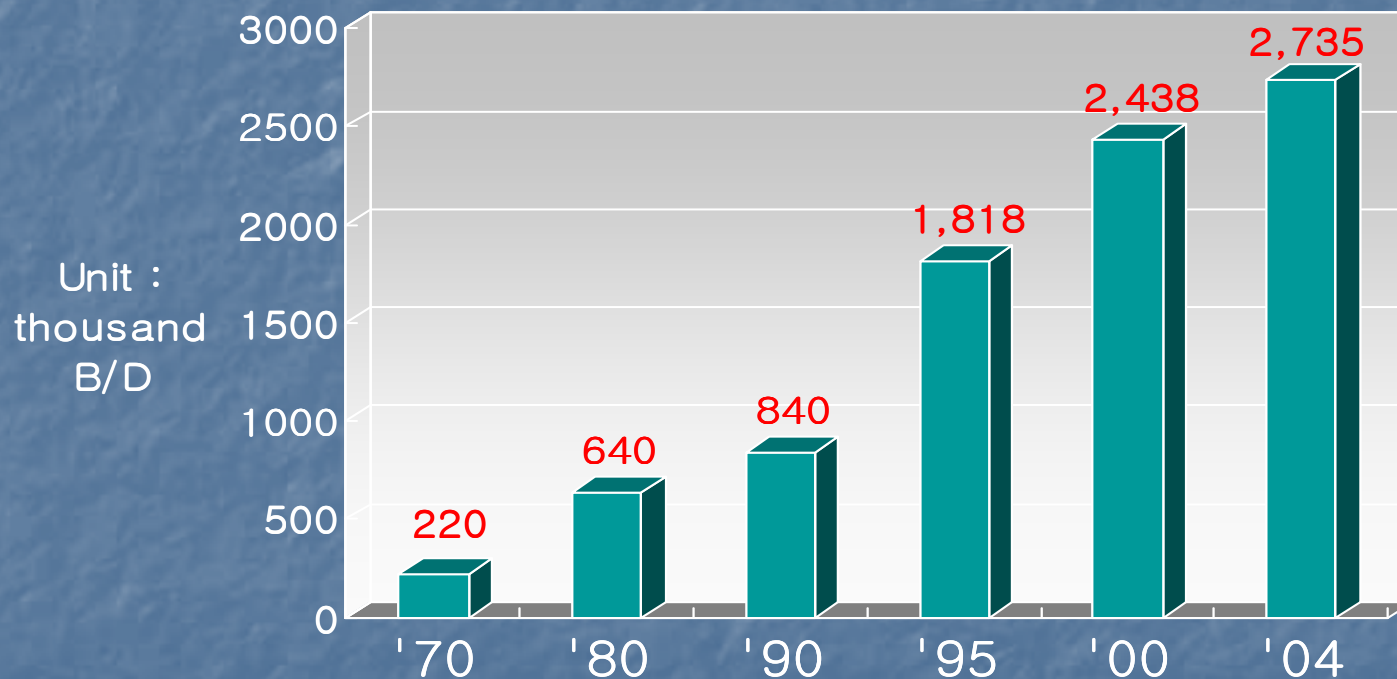




Oil Refining

- Refining Capa. : 2.7 million B/D

* the 5th in the world : USA>Russia>Japan>China>Korea



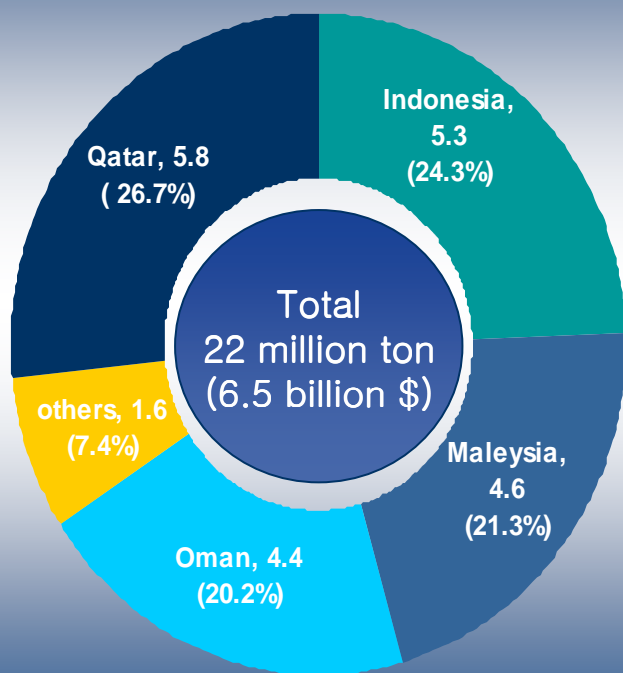
- Rate of Highly Advanced Facility : 22.5%(615 thousand B/D),

* the 8th in the world (USA>Italy>Swiss>UK>Japan>China>Taiwan>Korea)

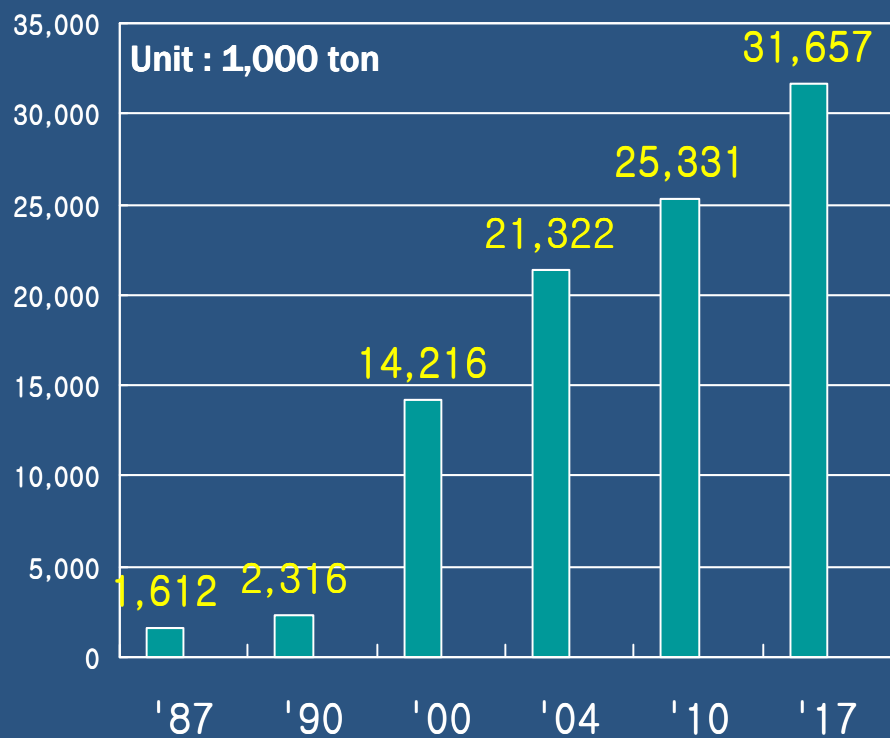


Gas Industry(LNG)

LNG IMPORT('04) : 22 million ton
approx. 6.5 billion \$



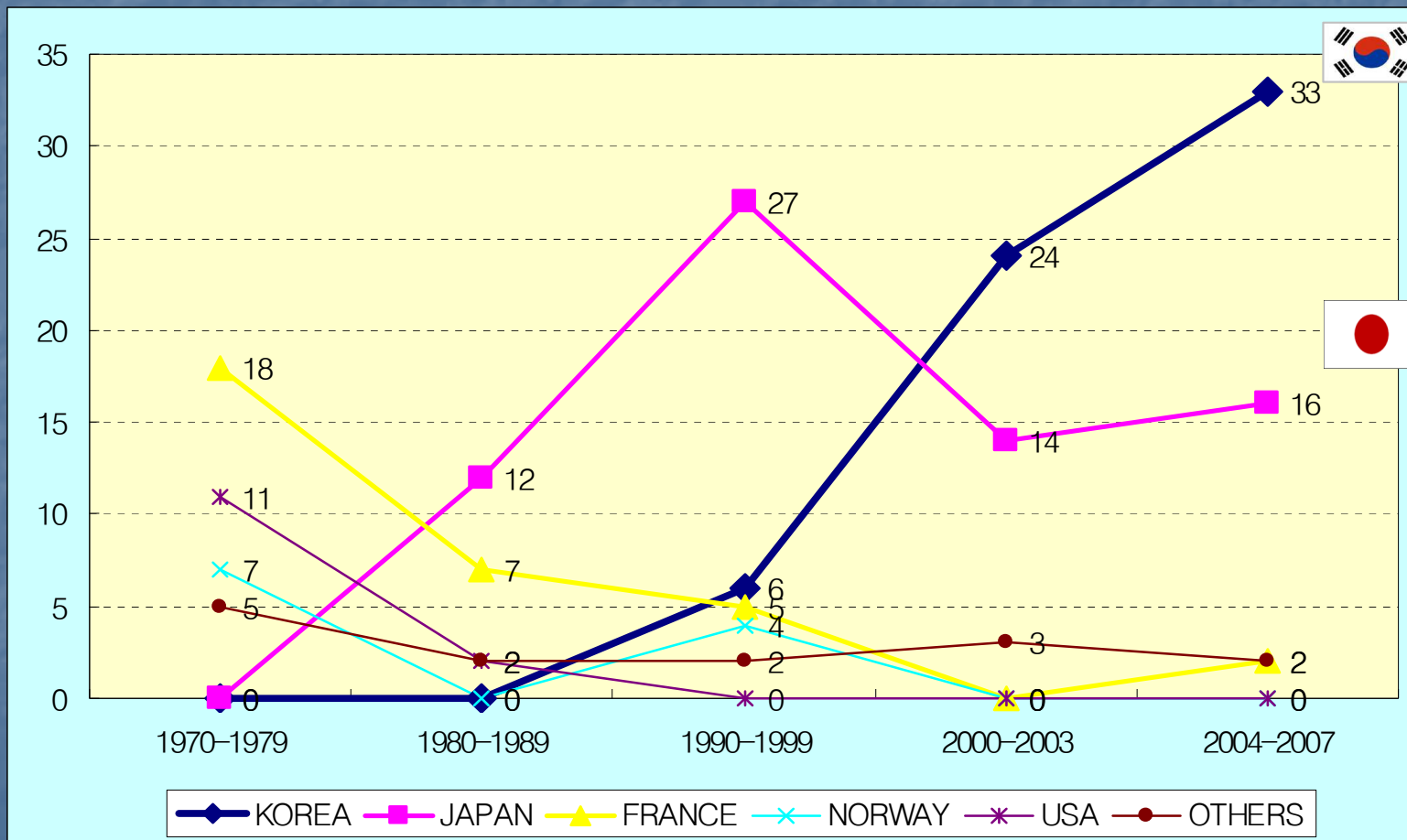
LNG CONSUMPTION Status & Prospect





LNG Ship Building

- About 73% market share in the world

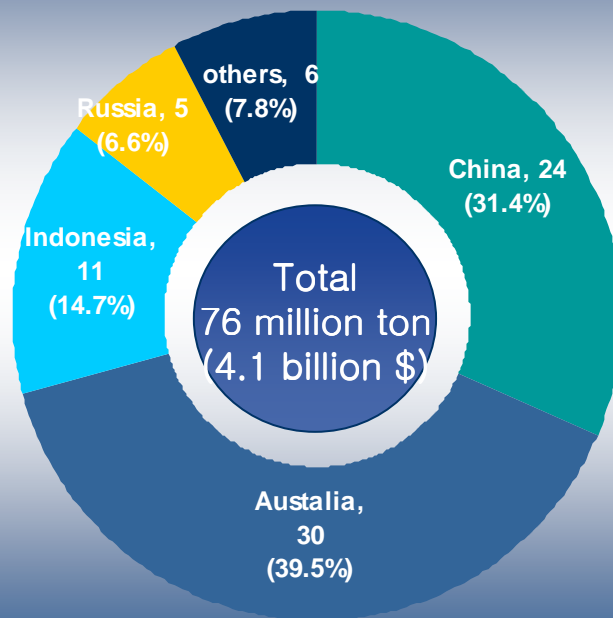




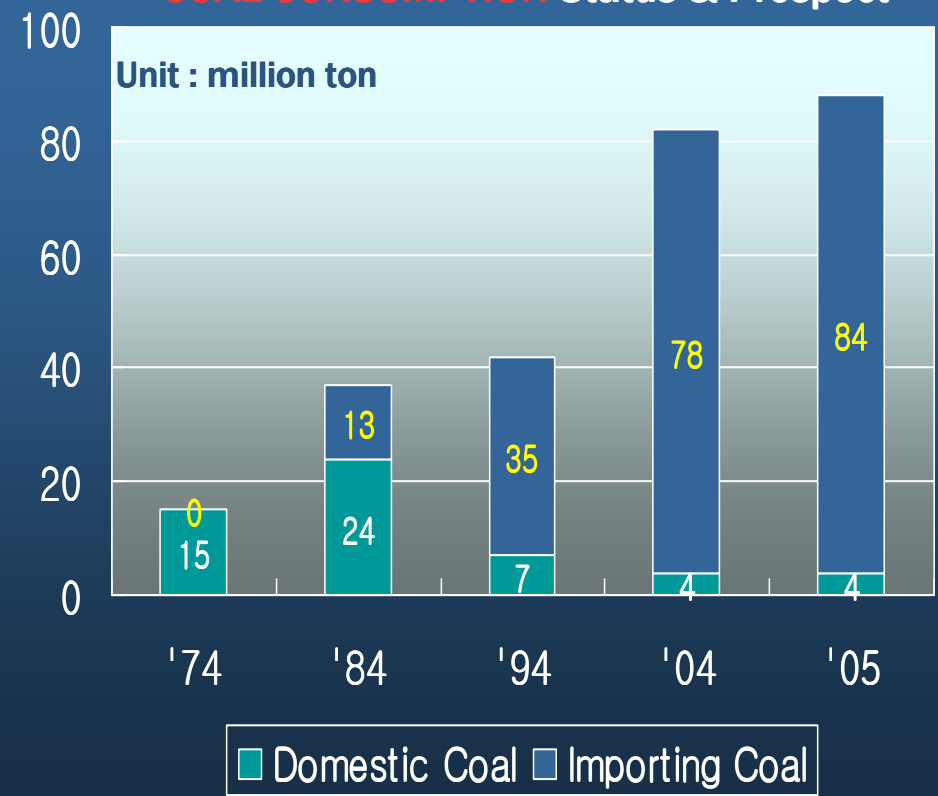
Coal Industry

- **Coal Import('04) : 76 million ton, the 2nd largest Import**
* Japan is the largest importing country
- **Import Source : * Australia 30 million ton(40%), China 24 million ton(31.4%)**

Import by Source(unit : million ton)

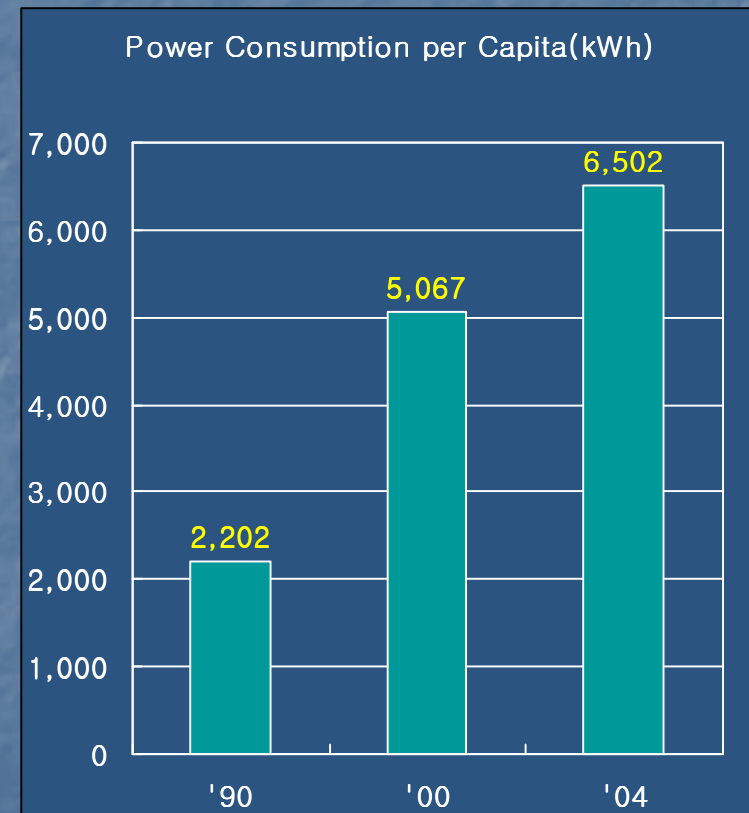
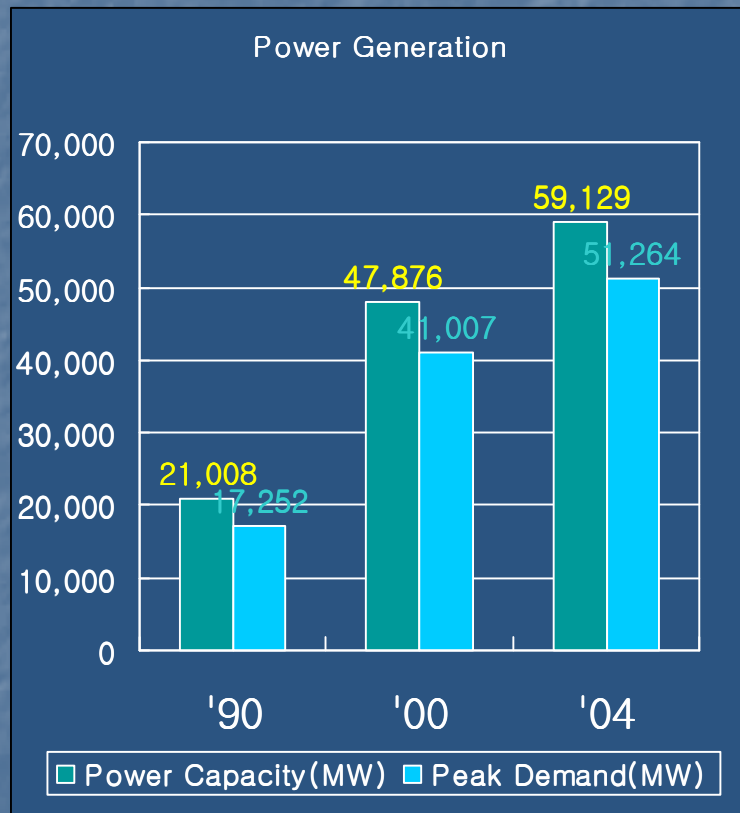


COAL CONSUMPTION Status & Prospect





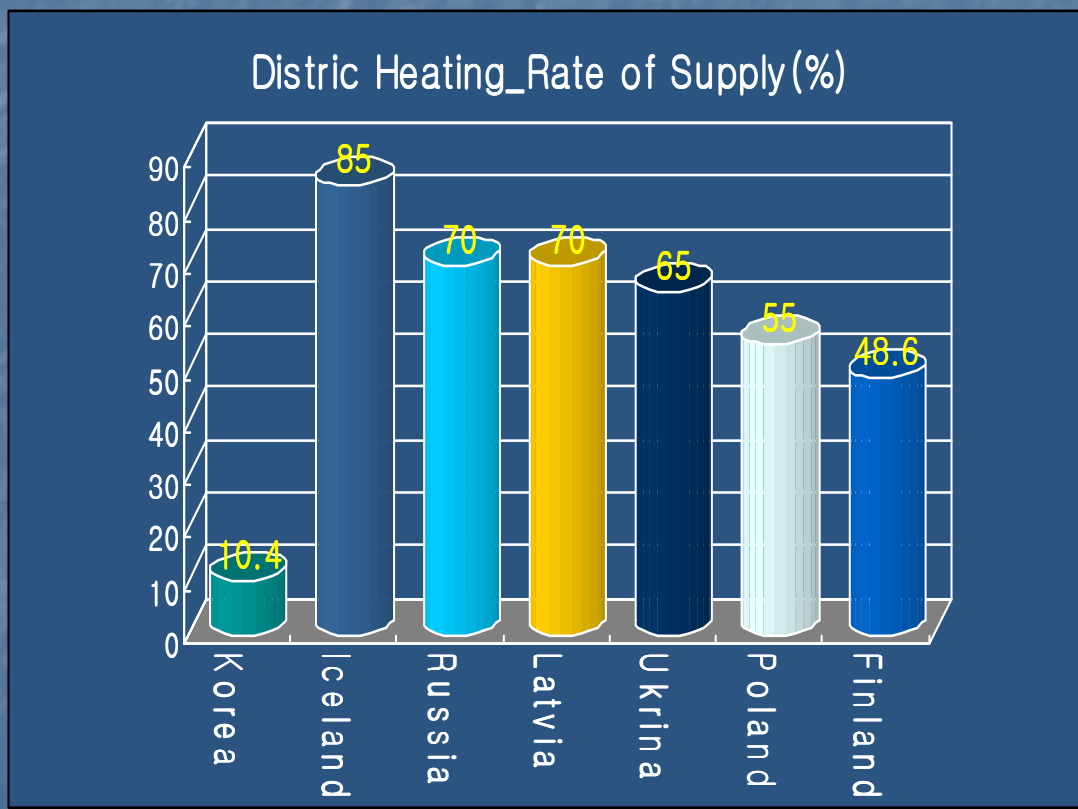
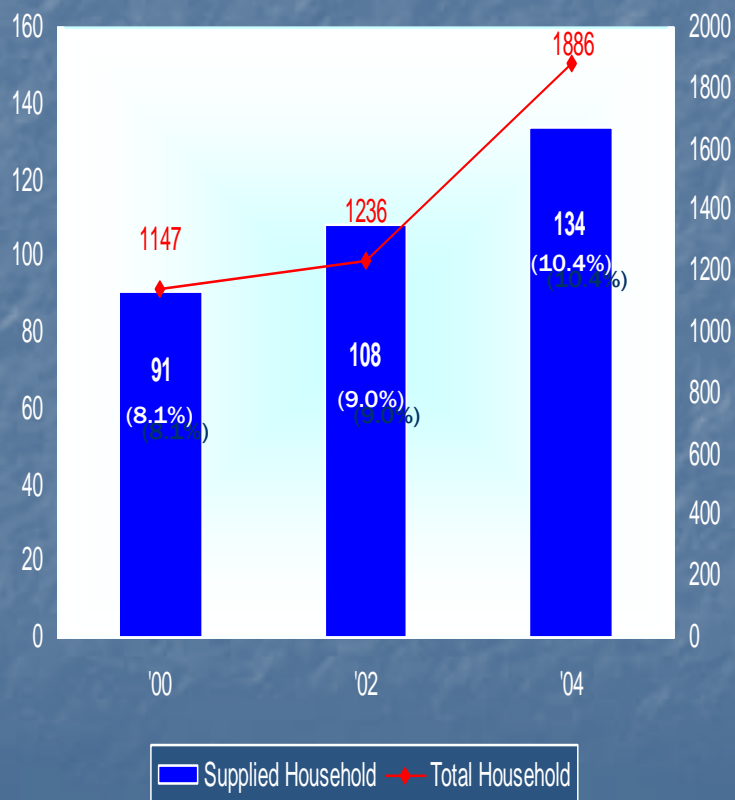
Electric Power Industry





District Heating Industry

- The First Supply : 1987
 - Rate of Supply('04) : 10.4%, 1.34 million Household



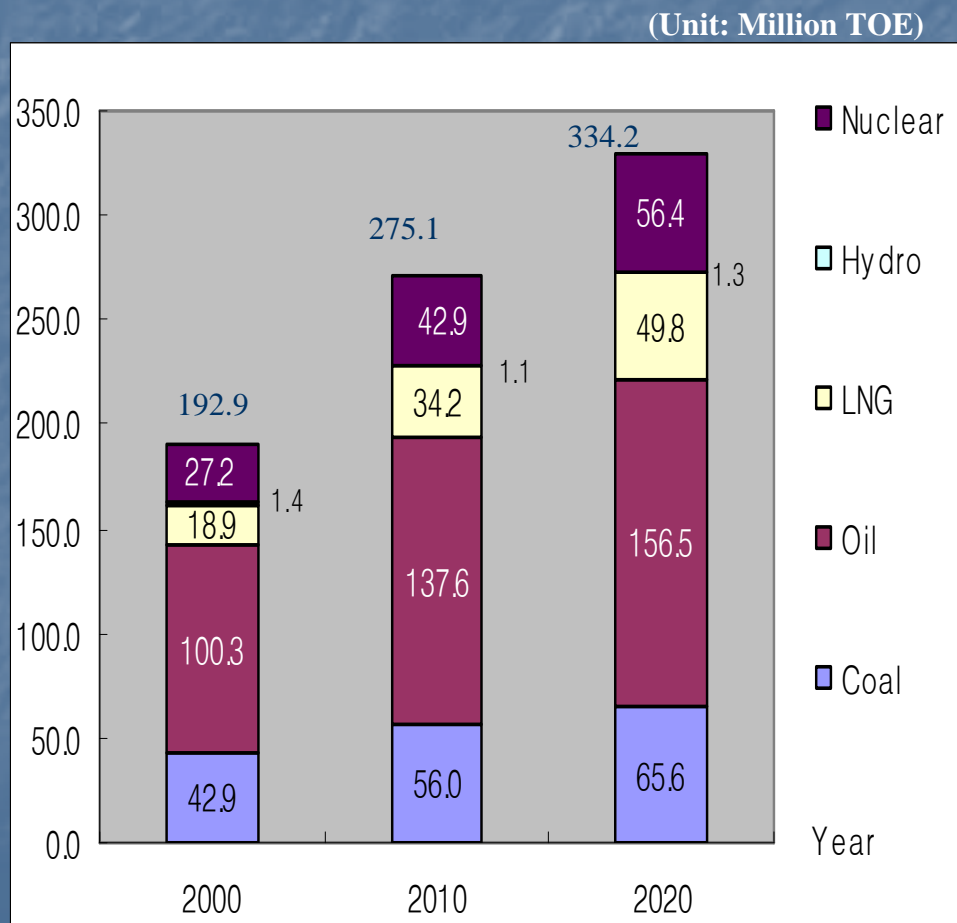


4. Long-Term ENERGY DEMAND FORECAST



Long-term Demand Forecast

● Energy demand by fuel



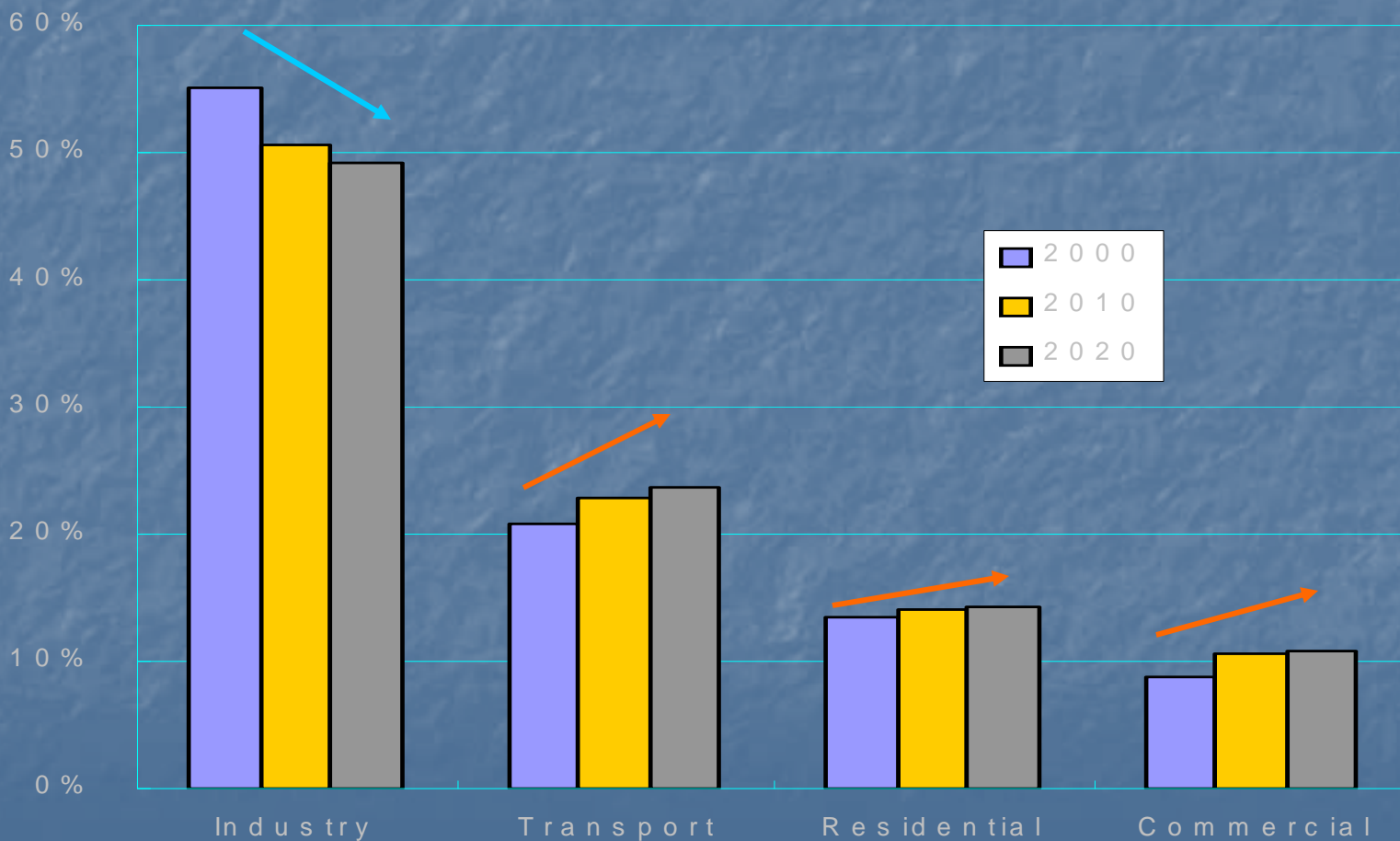
Source: KEEI, May 2001

- Oil dependency is declining, but oil will remain the primary fuel.
- Demand for LNG is projected to grow by 5% per year, the highest growth rate.
- Coal and nuclear energy is projected to grow steadily together with increasing demand of electricity.

Long-term Demand Forecast



- Energy demand by sector





5. ENERGY POLICY

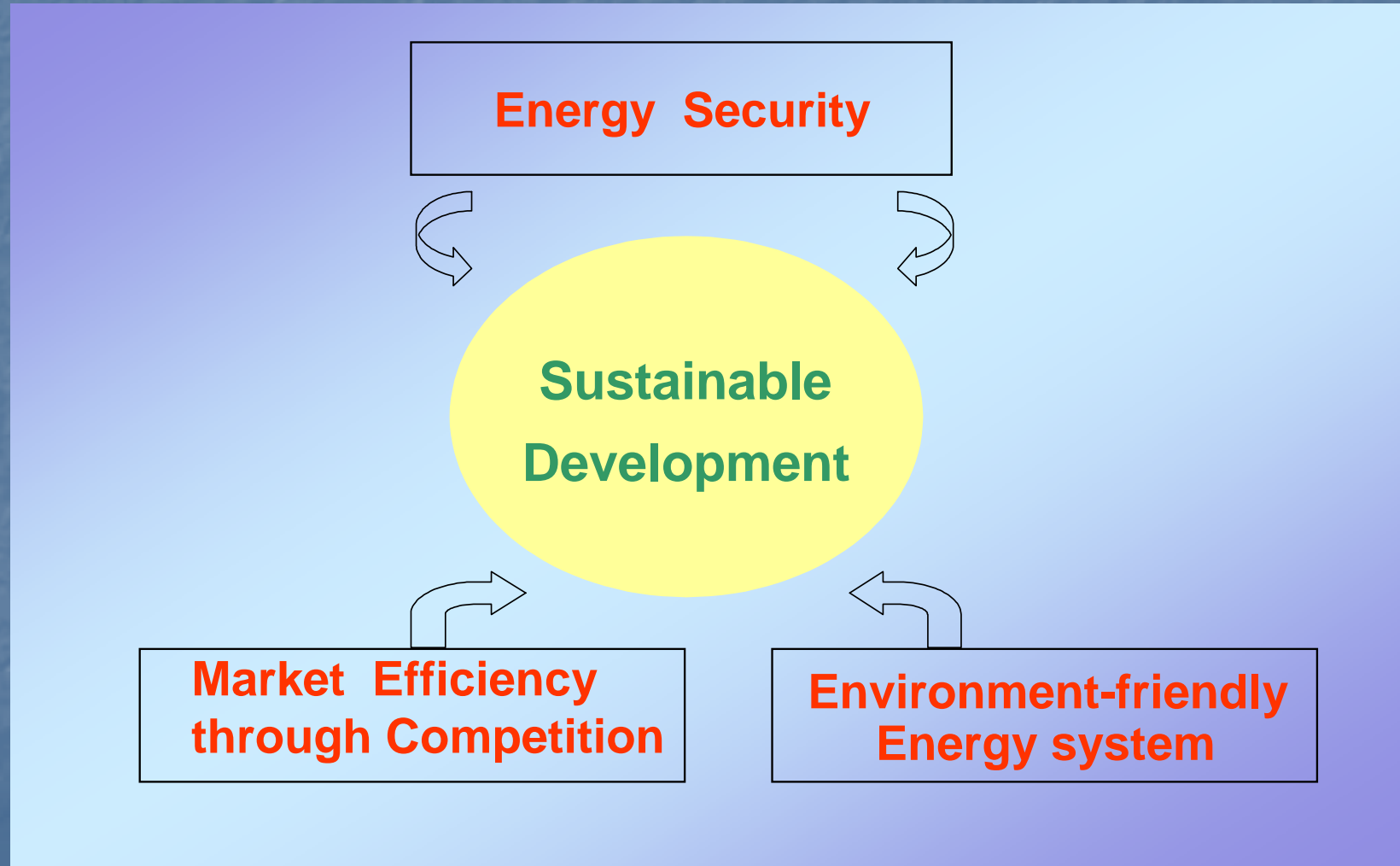


Developments in Korea's Energy Policy

- **70's: To secure oil supply**
 - Oil was cheap and easily accessible. After the two oil shocks, however, energy supply became an important policy issue.
- **80's: To establish a stable supply system**
 - Energy source diversification, and expansion of energy supply infrastructure
- **90's: To strengthen market functions**
 - In the late 90's, structural reform was undertaken to introduce competition
 - Deregulation: oil price liberalization, elimination of entry barriers to oil industry, rationalization of coal industry



Goal and Direction of Korea's Energy Policy





(1) Energy Security

- **Energy Diversification Policy**
 - Diversification of import sources
- **Overseas Resources Development**
- **Oil Stockpiling**
 - 113 Days of Emergency Stocks (as of Dec. 2004)
- **International Cooperation**
- **Expanding Energy Supply Infrastructure**



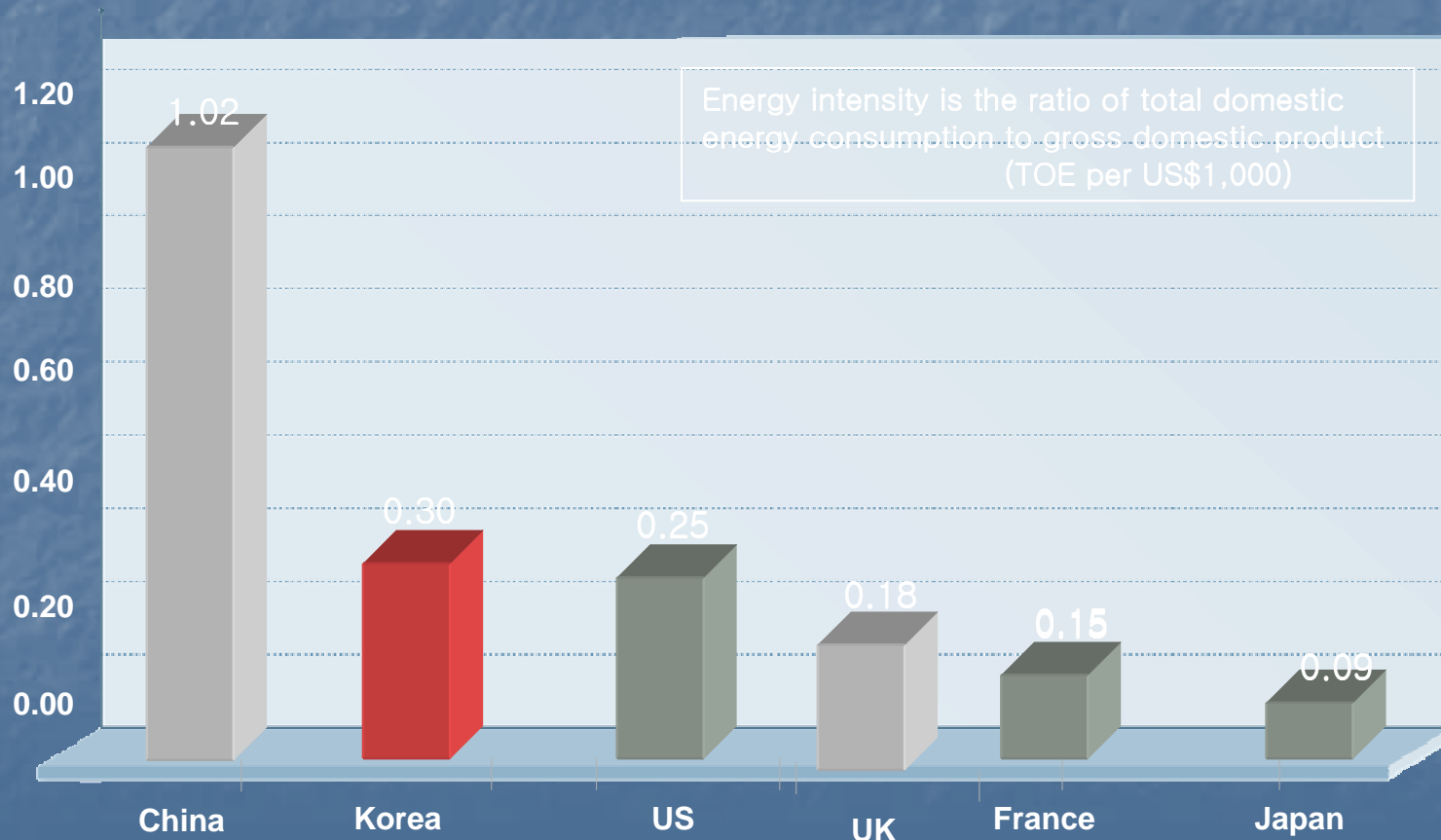
(2) Market Efficiency through Competition

- **Restructuring the Electricity Industry**
 - Currently, competition in generation sector is well underway
 - Next step: introducing competition into distribution sector
- **Restructuring the Gas Industry**
 - Restructuring plan announced in November 1999
 - Decisions to be made on import and wholesale sector:
 - Whether to spin off KOGAS into several companies
 - Or keep KOGAS and introduce a new player.



Energy Efficiency of Korean Industries

Korea's energy intensity compared with developed countries



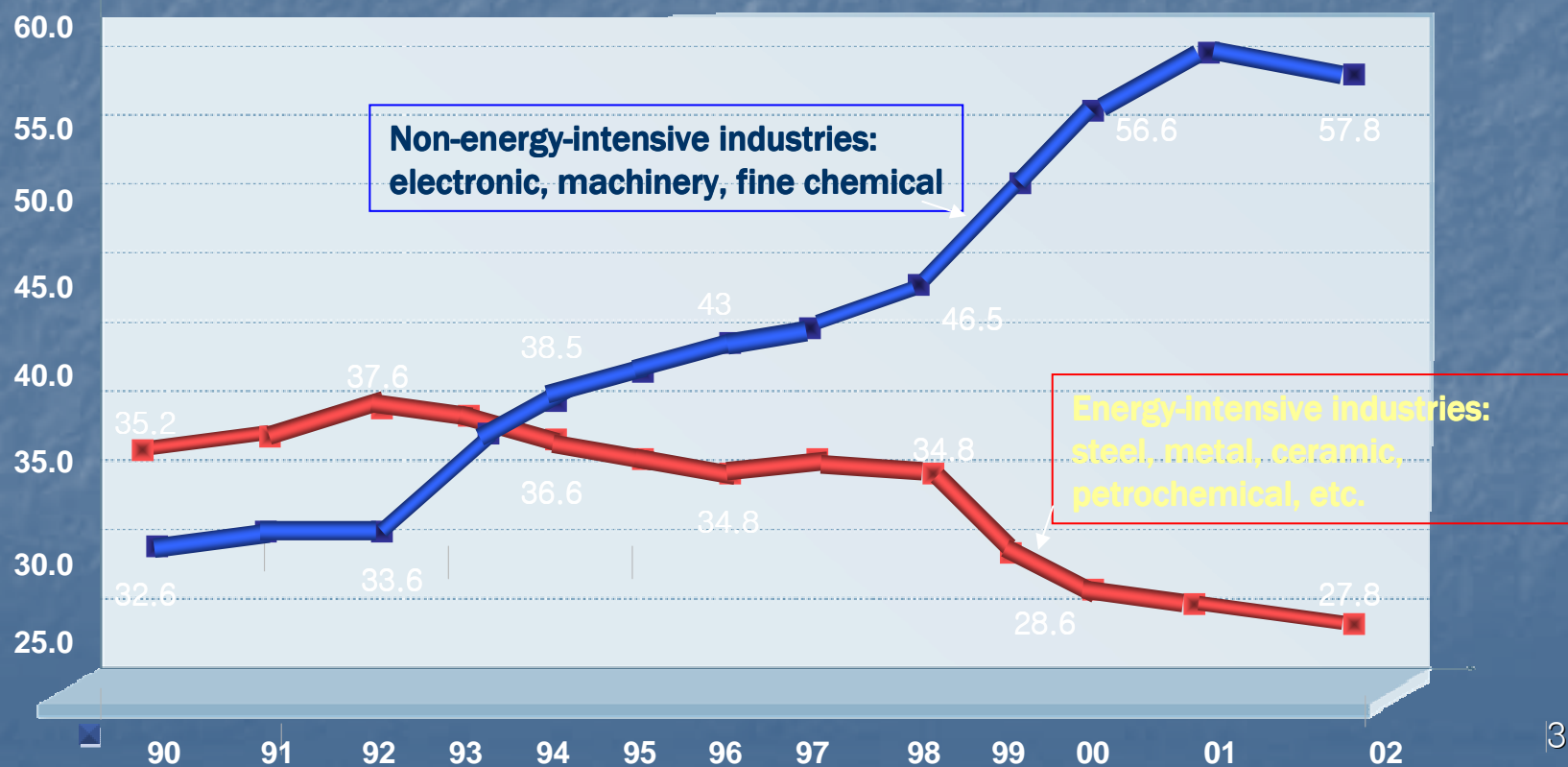
Sources: Energy Balance of OECD Countries 2003 Edition(IEA/OECD),
Energy Statistics of Non-OECD Countries 2003 Edition



Energy Efficiency of Korean Industries

Higher energy intensity does not necessarily mean Korean industries are inefficient

- Energy-intensive industries account for a larger proportion of value added in Korea
- Energy-intensive industries create lower value-added with the same energy input





Energy Efficiency of Korean Industries

Industrial energy efficiency: Korea vs. Japan

- Korea's energy efficiency is at the same level as that of advanced countries
- Due to Korea's dependence on low-end production, however, value-added in Korea is relatively lower than in its developed counterparts

Industry (Item)	Energy Intensity (Mcal/ton)		
	Korea	(Japan=100)	Japan
steel (billets, electricity intensity)	420kWh	(82)	515kWh
petrochemical (ethylene)	4,425	(92)	4,800
textile (acrylic fiber)	12,124	(95)	12,780
ceramic (cement)	263	(110)	239
paper (newspaper)	4,442	(108)	4,107

Sources: Industry Performance Under Voluntary Agreements (MOCIE, KEMCO, 2002)



Energy Efficiency of Korean Industries

Energy efficiency by country: the power generation industry

- As of 2003, thermal efficiency in Korea's power generation was 39.94%, which is among the highest in the world

Country	Korea		US	France	Italy	UK	Japan	Taiwan
	'01	'03						
thermal efficiency of power generation* (%)	39.6	39.94	36.9	37.6	33.9	35.7	40.8	35.3



(3) Environment-Friendly Energy System

- **Addressing Climate Change**
 - Transition to low-carbon economy
- **Infrastructure of Kyoto Mechanism**
 - Classified as Non-Annex I in the UNFCCC
 - Studies on Introducing Domestic Emissions Trading
- **Clean Energy Supply System**
 - New and renewable energy supply



Korea's renewable energy sources

- In renewable energy sources, Korea has a lower share
 - However, Carbon Intensity is lower than that of most OECD countries

< Renewable energy supply and CO₂ emission among major economies >

	Korea	Denmark	France	U.S.A	Germany	Japan
Supply rate (%)	1.4	10.4	6.8	4.4	2.6	3.1
Carbon Intensity (t-CO ₂ /toe)	2.22	2.59	1.42	2.47	2.42	2.33

Note: Data on renewable energy supply is as of 2001 and CO₂ emission is as of 2002



Thank you !

