

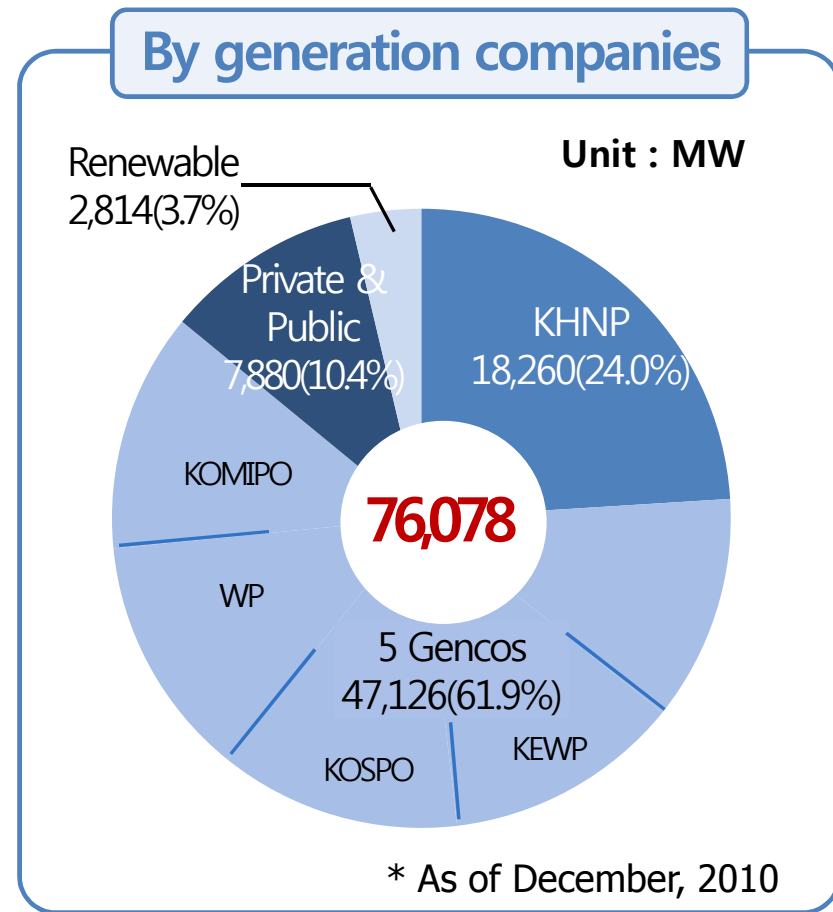
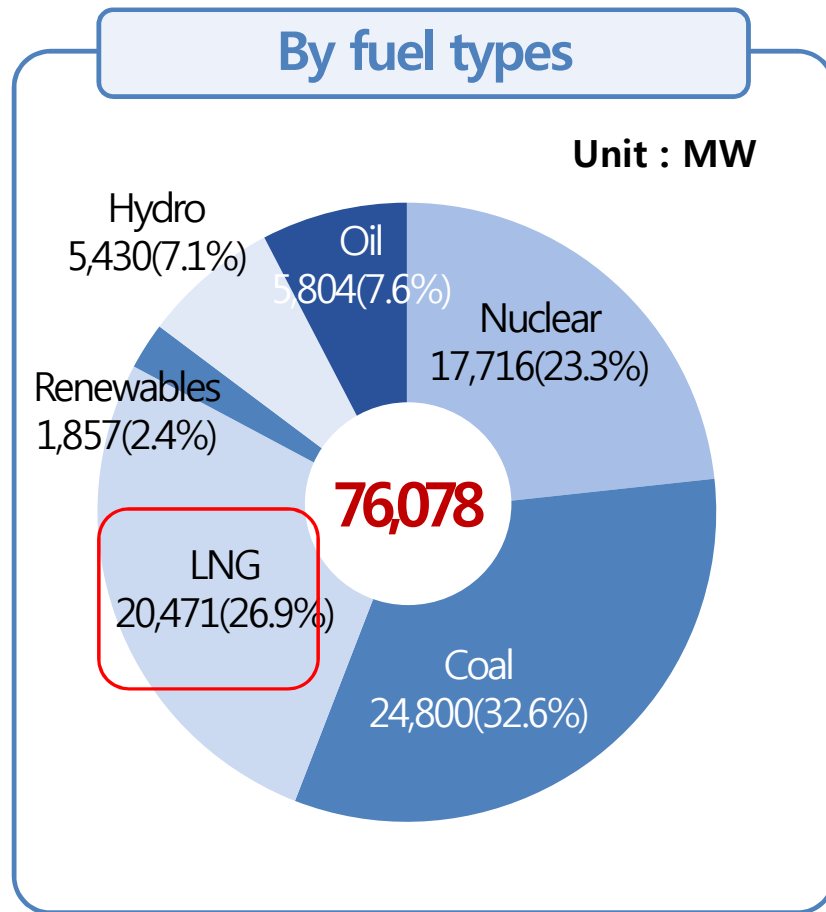
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# Smart Grid and Gas Industry in Korea

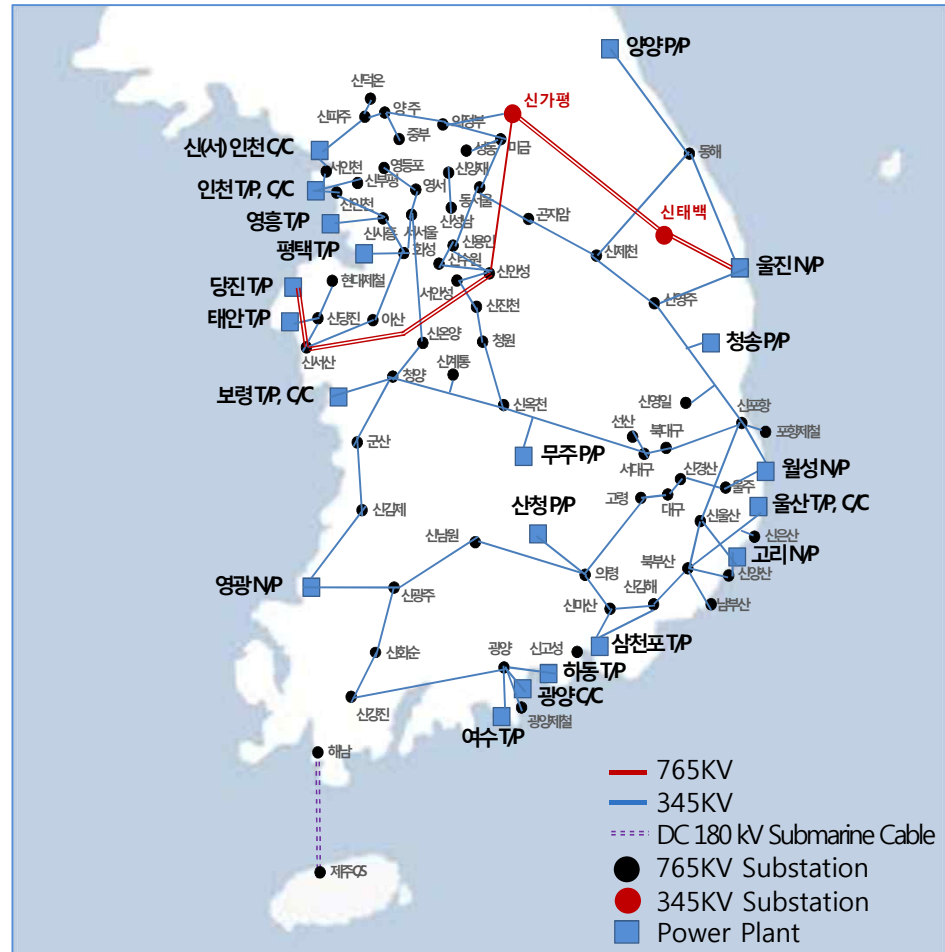
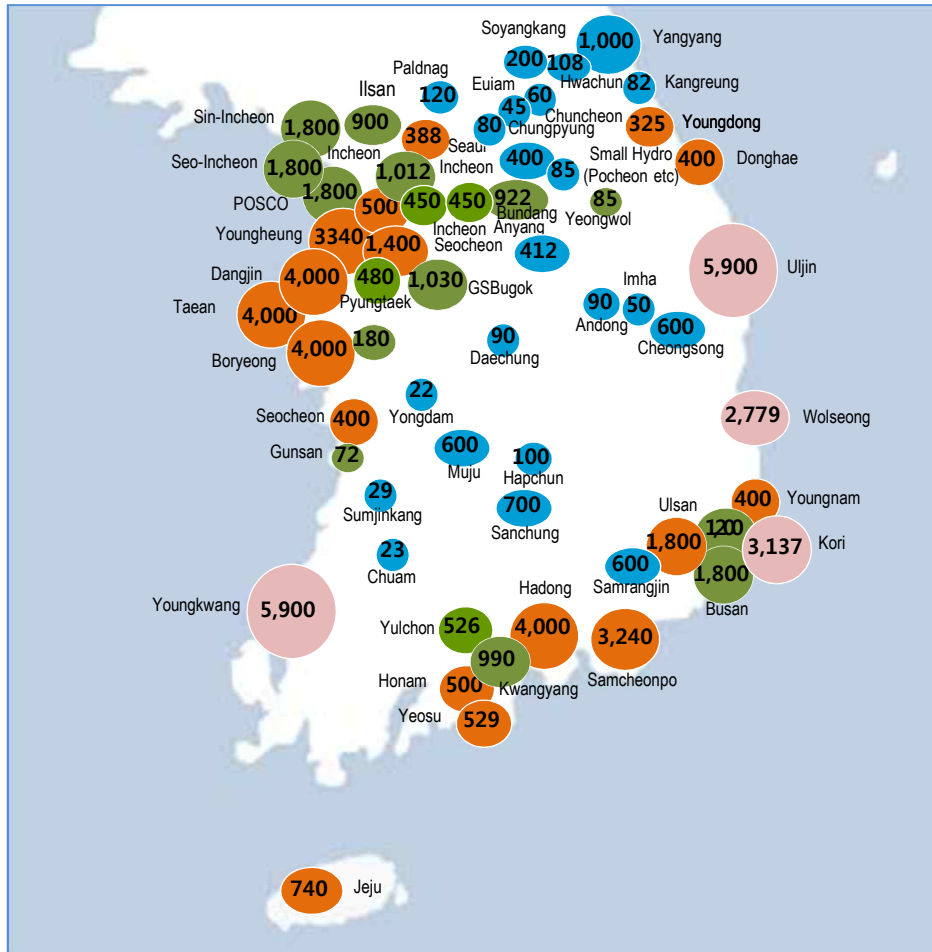
**Yeoungjin Chae**  
**Korea Power Exchange**

# Capacity by fuel type & Genco

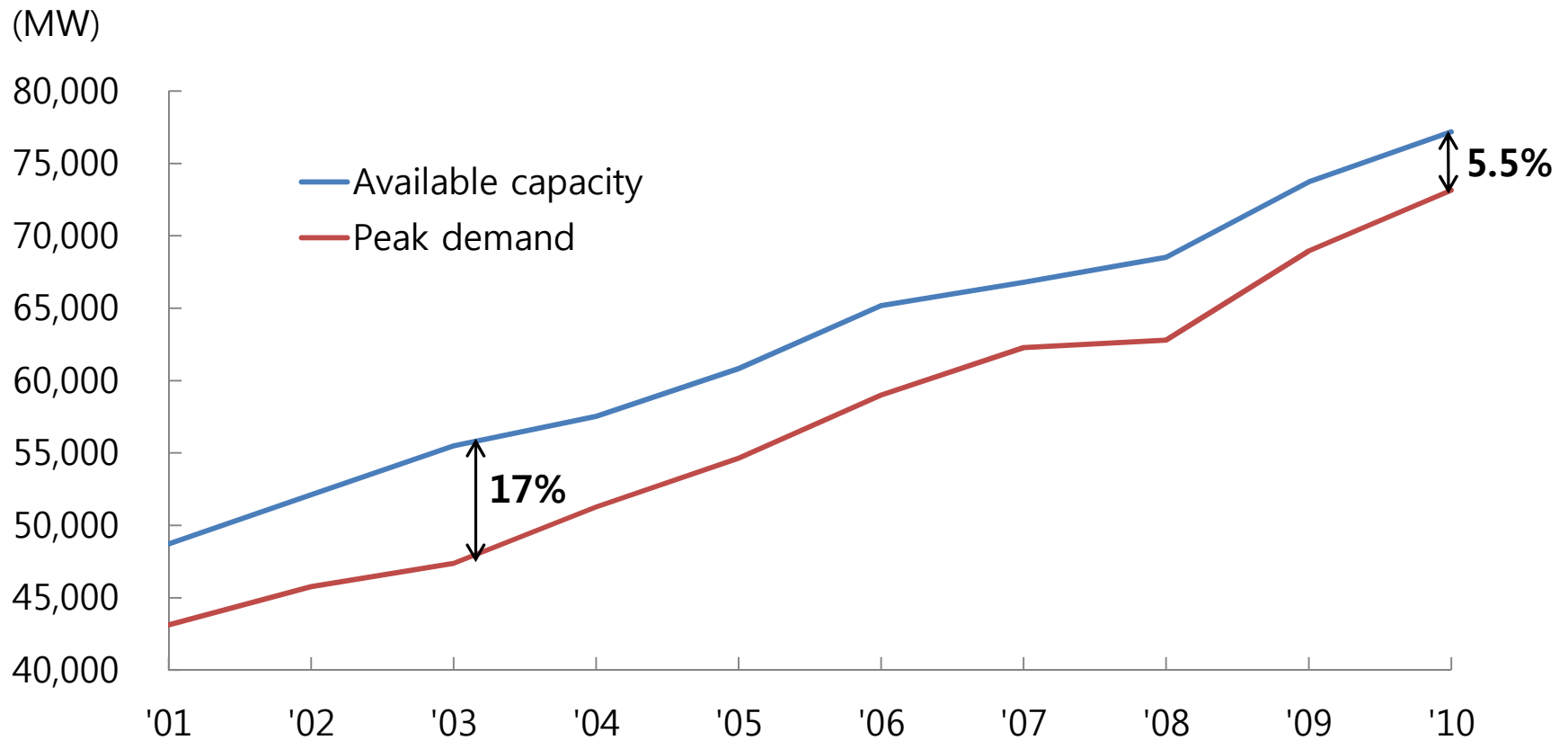
**"Generation capacity : 76,080MW"**



# Power plants and Power system

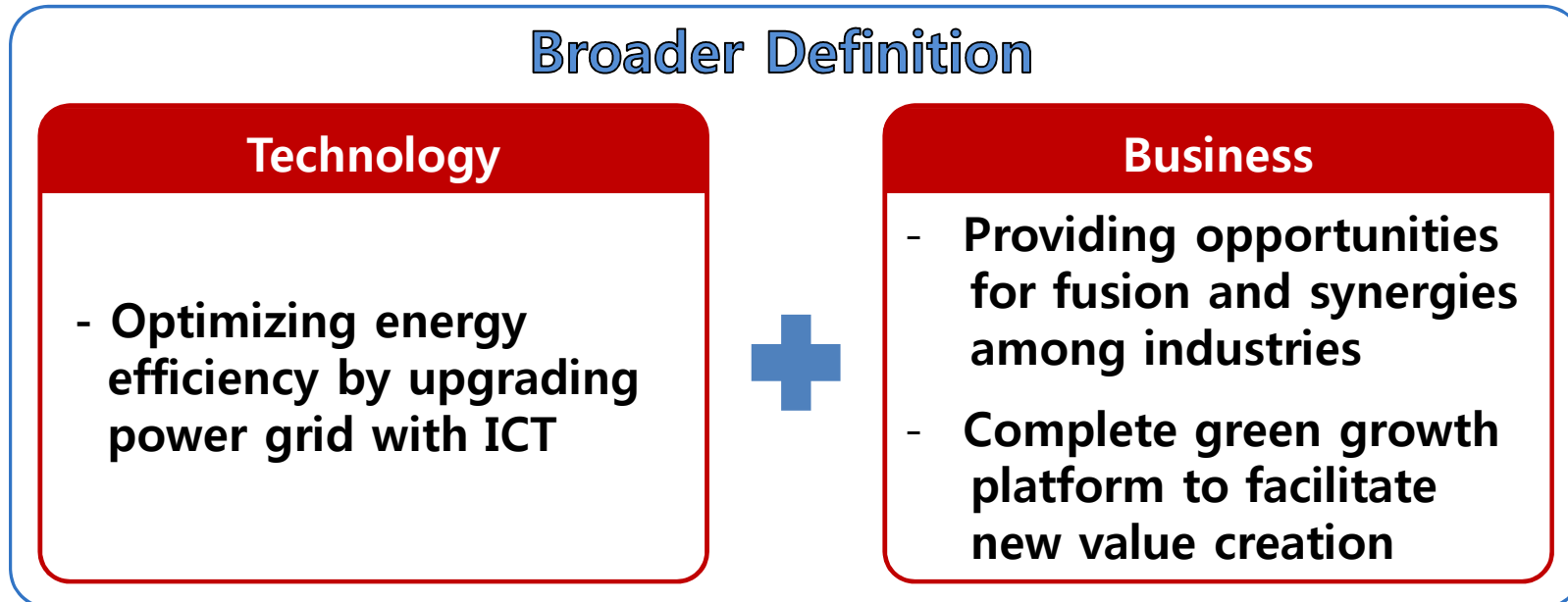


# Recent power supply and demand



# Smart grid in Korea











- Not just limited to build intelligent grid,
- But also expands into new value creation from the national business perspective.



## Smart Grid in Korea

# Jeju test-bed

(Million dollar)

Sector	Leads	Participating Companies	Investment	
			Govt.	Private
Smart Place	 SK telecom	Samsung electronics, Korea Cable TV, Jeju broadcast etc (29)	5	25
	 olleh kt	Samsung SDS, Samsung Trade, Rootech etc (14)	4.7	30
	 LG Electronics	LG U+, GS pure cell, GS construction etc (15)	4.7	17.5
	 KEPCO	Samsung electronics, Taihan Electric, Nuri Telecom etc (38)	-	10
Smart Transport	 KEPCO	Samsung SDI, Lotte data communication, P&E Solution etc (22)	4.5	14
	 SK energy	SK Network, Iljin Electrics, Ientech etc (13)	4.5	13
	 GS Caltex	LG CNS, ABB Korea, NexCon Take etc (7)	4	8
Smart Renewable	 KEPCO	KOSPO, Hyosung, LSIS etc (16)	4.7	15.3
	 HYUNDAI HEAVY INDUSTRIES CO., LTD.	Maxcom, Icellkorea etc (6)	4.7	7
	 POSCO ICT	LG Chem, Woojin Industrial System etc(6)	-	9

※ ( ) : No. of participating companies

# Current Status

- Phase II of Jeju Test-bed started in June
- New test area includes other parts of Jeju
- More dynamic pilot tariff will be introduced
- Pilot DR programs will begin this year
- Smart Grid Act was enacted

# The SMP and LNG

# of hours and percentage where the SMPs were set by LNG generators during 2002-2010

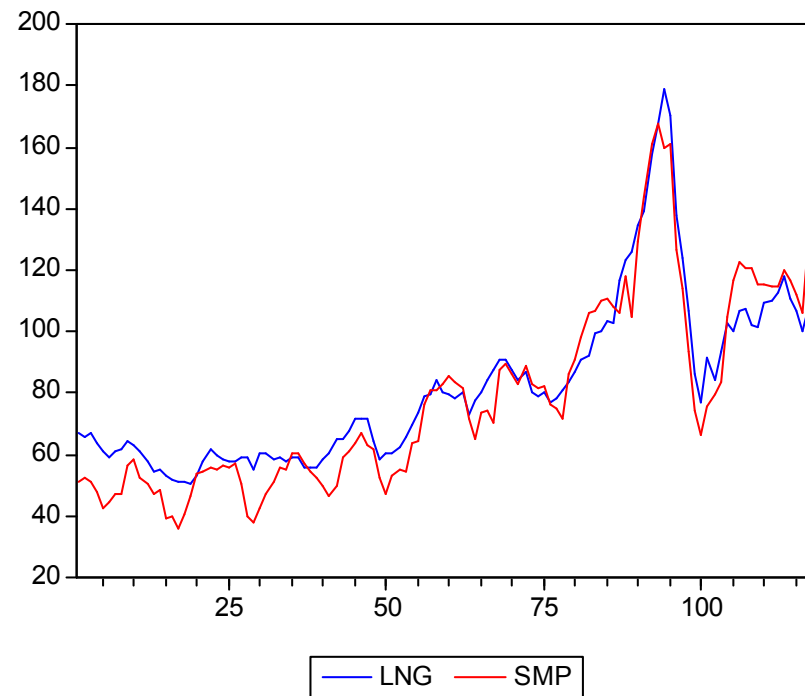
구분	2002	2003	2004	2005	2006	2007	2008	2009	2010
SMP Hours Set by LNG	5,048	5,369	5,792	6,256	6,715	6,182	6,861	6,282	6,970
% (yearly)	57	61	66	71	76	70	78	71	79

<Source : [www.kpx.or.kr/epsis](http://www.kpx.or.kr/epsis)>



# The SMP and LNG

The trend of monthly average SMP and LNG fuel price, 2002-2010



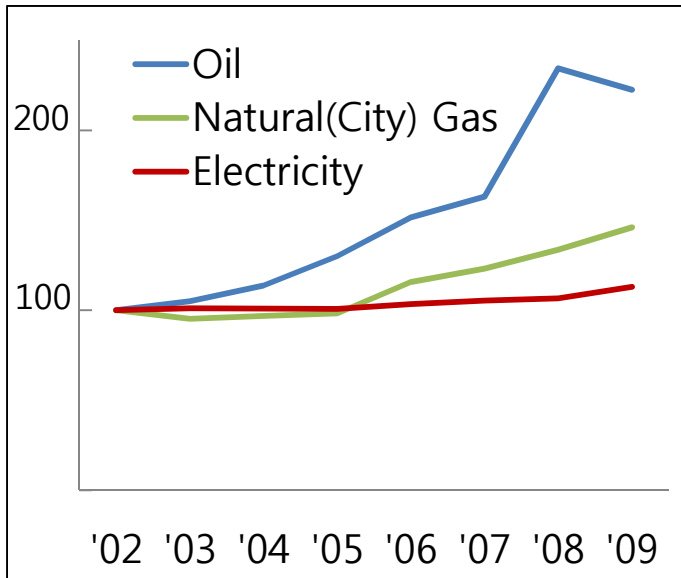
<Source : [www.kpx.or.kr/epsis](http://www.kpx.or.kr/epsis)>

# Storage and LNG Generation

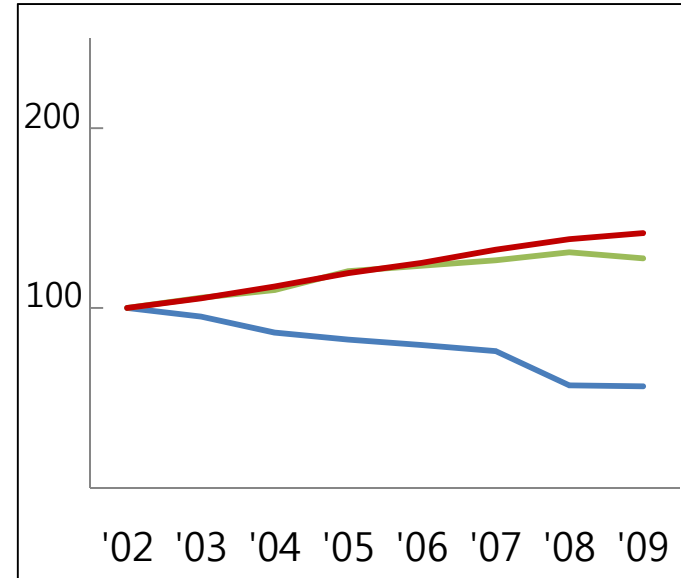
- **Assumption**
  - **Coal & Nuclear will be delayed**
  - **Availability of natural gas will increase**
  - **However, the price of LNG could be more volatile**
- **Then, we'll need more of storage capacities**

# Energy Price Reform

- Energy Prices and Consumption Trend('02-'09)



**Energy Price Trend**



**Consumption Trend**

Oil 123%	↑↑↑
Natural Gas 46%	↑↑
Electricity 13%	↑

Oil 43%	↓↓↓
Natural Gas 28%	↑
Electricity 42%	↑↑

# Smart Gas Grid is Possible?

- Yes,
  - However, we need to consider the interaction with smart grid including CHP, cogeneration, etc.
- Smart gas grid and smart grid could complement each other(fuel supply system, peak management)
- On the retail side,
  - A single energy service provider might be possible

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# Thank You for Your Listening