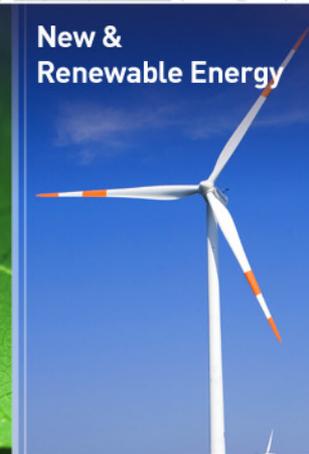


# Humaneering KEPCO E&C

We are trying to harmonize  
humanity, environment and engineering.



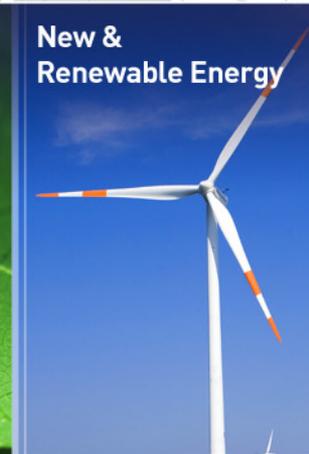
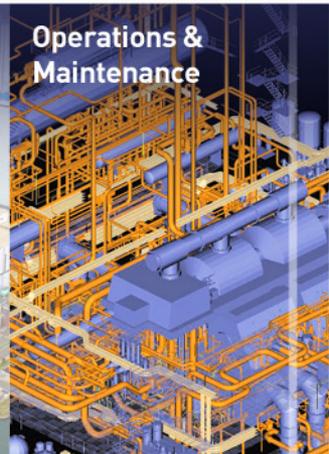
**KEPCO**  
E&C

KEPCO  
ENGINEERING & CONSTRUCTION  
COMPANY, INC.

# CONTENTS

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- 01 \_ Company Information
- 02 \_ Competitiveness
- 03 \_ Investment Highlights
- 04 \_ Our Performance





## Korea's Leading Power Plant Engineering Company

- Korea's leading provider of design and engineering for nuclear, thermal and hydro-electric plants with 35 years of experience
- Current 100% market share in nuclear power plant design in Korea
- The world's most competitive engineering company specialized in the two sectors: A/E and NSSS
- Expanding its business to energy-related business, environment-friendly business, etc.

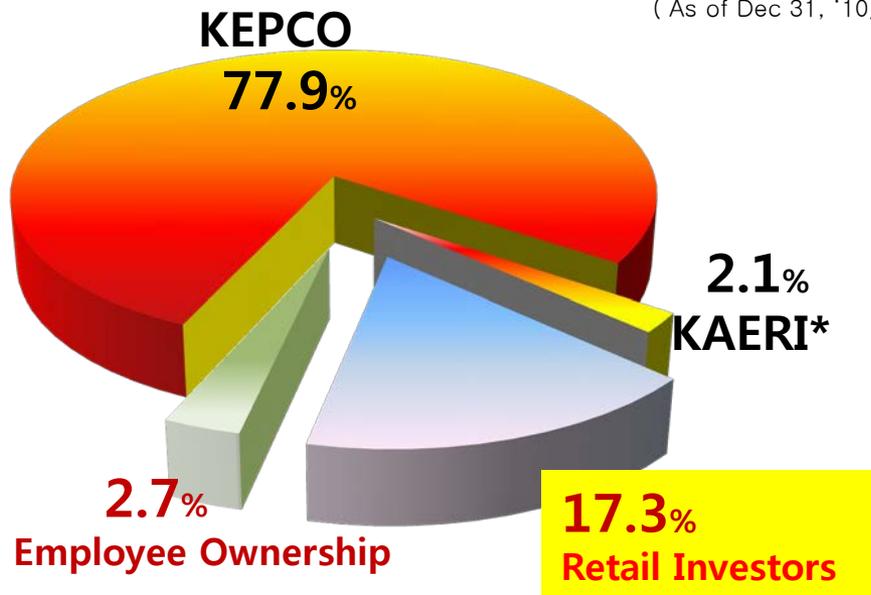
### Corporate Information

CEO & President	An, Seung Kyoo (Former Vice Chairman, Hyundai Engineering)	Employees	2,041 (As of Feb 9, '11 )
		Business Area	Power plant design & engineering, etc.
Foundation Date	October 1, 1975	Location	2354 Yonggudaero, Giheung-gu, Yongin-si, Gyeonggi-do, Korea
Listing Date	December 14, 2009	Homepage	www.kepco-enc.com



Listed on KRX [December 14, 2009]

## Ownership



\* Korea Atomic Energy Research Institute

## IPO Information

Shares Outstanding (Common shares 100%)	38,220,000
Listing Date	December 14, 2009
Offered Securities	7,644,000 (20%)

## Dividend

Year	2009	2010
Amount	₩1,081 /share	₩1,847 /share
Propensity to Dividend	50%	50%



## Business Areas

### Design & Engineering

- Nuclear Power Plant
- Thermal Power Plant
- Combined Cycle Power Plant
- Cogeneration Power Plant

### O&M (Operations & Maintenance)

- Technology & Engineering Support for Operating Nuclear Power Plants

### Environmentally-friendly Biz.

- FGD System / DeNOx System
- ESCO, Renewable Energy
- Water Pollution Control
- Wastewater Treatment Facilities

### PM/CM

- SOC
- Private SOC
- Power Plants
- International Plants





KEPCO E&C has designed almost 60% of all Korea's power plants in terms of the generated output.

## Project Experience

### Nuclear Power Plant

#### • OPR1000

Power Plant	Construction Period (First Concrete-Commercial Operation)	Status
Yonggwang 3,4	'89.12~'95.03 / '90.06~'96.01	In Operation
Ulchin 3,4	'93.07~'98.08 / '93.11~'99.12	In Operation
Yonggwang 5,6	'97.06~'02.05 / '97.11~'02.12	In Operation
Ulchin 5,6	'99.10~'04.07 / '00.10~'05.04	In Operation

#### • OPR1000+

Shin-Kori 1,2	'06.06~'10.12 / '07.06~'11.12	Under Construction
Shin-Wolsong 1,2	'07.12~'12.03 / '08.12~'13.01	Under Construction

#### • APR1400

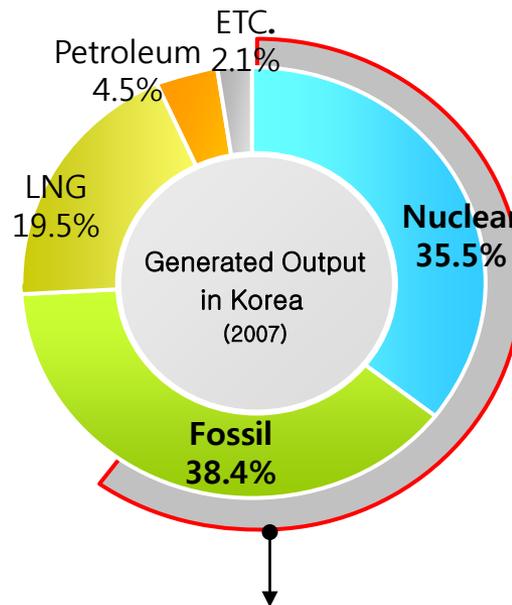
Shin-Kori 3,4	'08.10~'13.09 / '09.10~'14.09	Under Construction
Shin-Ulchin 1,2	'11.03~'15.12 / '12.03~'16.12	Under Construction
UAE 1,2	'12.11~'17.05 / '13.11~'18.05	Under Construction
UAE 3,4	'14.11~'19.05 / '15.11~'20.05	Under Construction

#### • CANDU (PHWR)

Wolsung 1,2,3,4	'77.10~'99.10	In Operation
-----------------	---------------	--------------

■ In Operation

■ Under Construction



60% Designed by  
KEPCO E&C

[Source: The Ministry of Knowledge Economy]

### Thermal Power Plant

#### • Standard Coal Fired Power Plants

- 500MW : 34 Units ■
- 800MW : 4 Units ■
- 1000MW : 6 Units ■ (Dangjin #9,10)  
(Shin-boryeong #1,2)  
(Tean #9,10)

#### • Large Scale CFB Coal Fired Power Plants

- 200MW : 2 Units ■
- 340MW : 1 Units ■ (Yosu #2)
- 1000MW : 2 Units ■ (Samchok Green #1,2)

#### • Combined Cycle & Cogeneration Power Plants

- 26 Projects ■
- 6 Projects ■



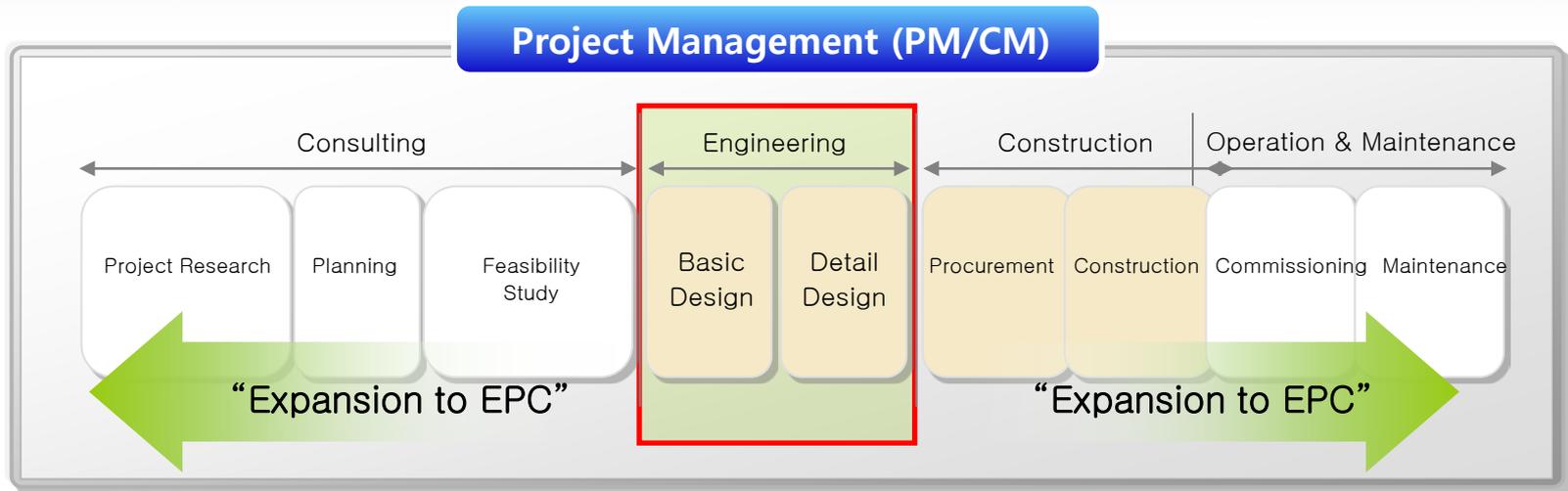
## Contribution to the Improvement of the Operating Power Plants' Operability, Efficiency and Safety



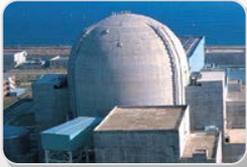


# Business Area – PM/CM

Management of the Entire or Parts of a Construction Project  
(Consulting, Engineering, Construction, O&M , etc. )



• Involved Projects

SOC		POWER PLANTS		PRIVATE SOC	
					
KTX Project	Incheon Int'l Airport	Nuclear	Thermal	Incheon Int'l Airport Rail	Bridge of Busan-Gejei

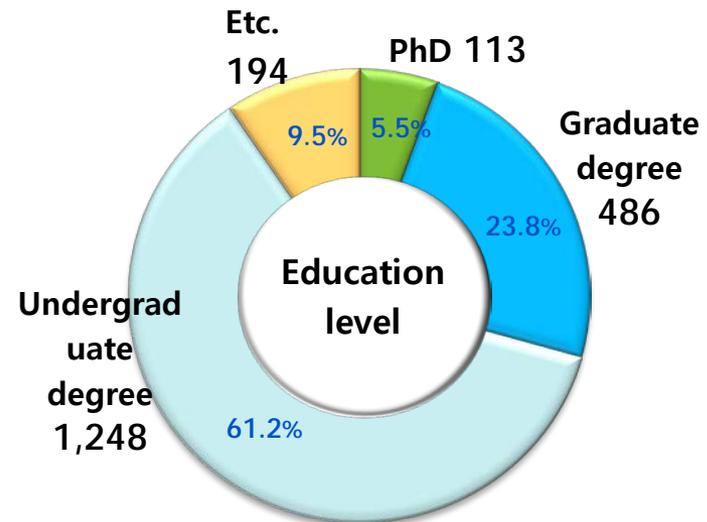
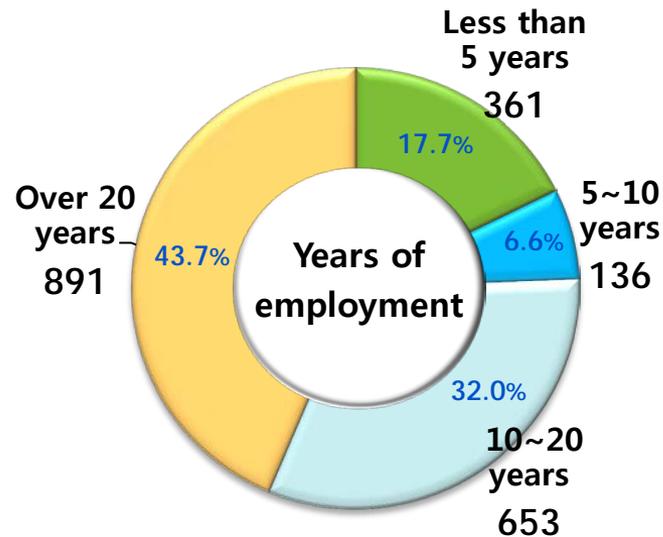


## Manpower with Years of Accumulated Experience and Expertise in Plant Design and Technology Development

### Experienced Workforce

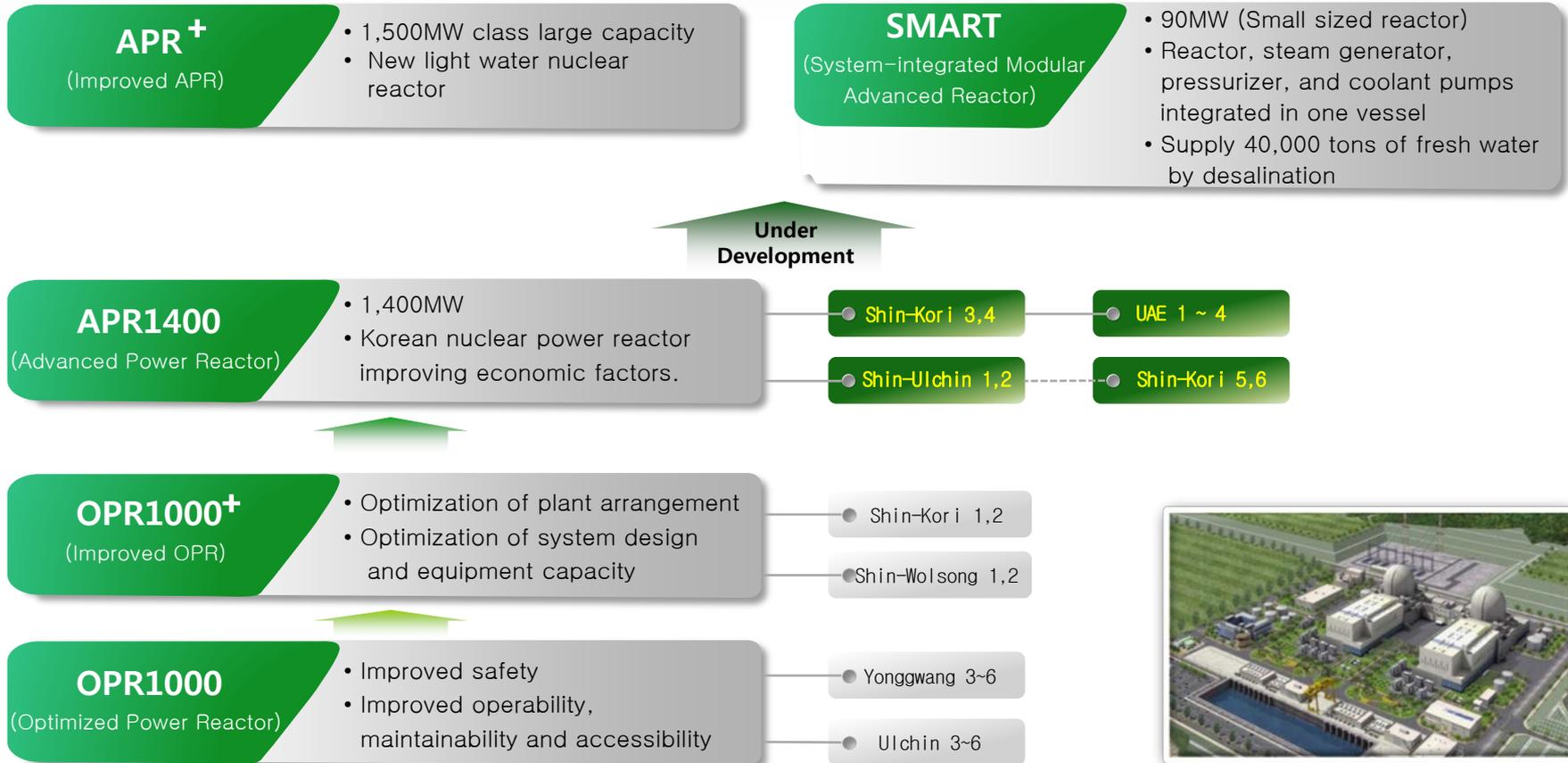
- 43.7% of the company's employees have performed various projects for over 20 years.
- In the past 20 years when the western countries reduced nuclear construction activities, we conducted nuclear power plant projects extensively and accumulated our technical know-how.

\* Total employees: 2,041 (As of Feb.9, '11)





## Reactor Design Development



Shin-Ulchin 1,2



## APR1400 - The best safety, economic efficiency and operability

OPR1000	
Capacity (MWe)	1,000
Design Life Time	40 Years
Seismic Design Basis	0.2g
Refueling Interval	12~18 Months
Construction Period	Over 60 Month
Construction cost	-

APR1400	
Capacity (MWe)	1,400
Design Life Time	60 Years
Seismic Design Basis	0.3g
Refueling Interval	18 Months
Construction Period	54 Months
Construction cost (\$/Kw)	2,300

EPR (France-Areva)	
Capacity (MWe)	1,600~1700
Design Life Time	60 Years
Seismic Design Basis	0.25g
Refueling Interval	18 Months
Construction Period	57 Months
Construction cost (\$/Kw)	2,900



OPR 1000

[Digital MMIS]

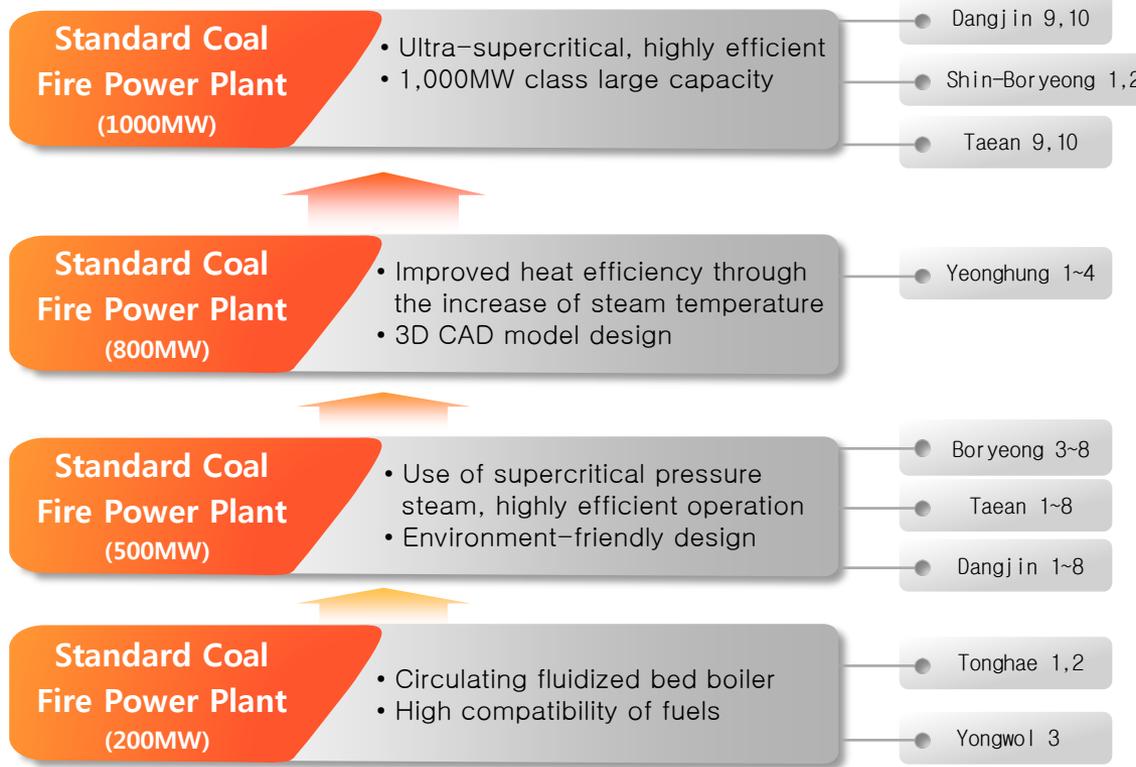


APR 1400

<Source : [www.apr1400.co.kr](http://www.apr1400.co.kr) : Comparison with other reactors>



## Coal-Fired Power Plant Design Development



• **Dangjin #1~4- World Best Project Awarded**  
<US, Power Engineering, 2001>



• **Boryeong #3,4 – World Best Project Awarded**  
<US, Electric Power International, 1996>



## Developing Overseas EPC Projects toward Global Top 5 Power EPC Leader

### Strategy 1





## Developing Overseas EPC Projects toward Global Top 5 Power EPC Leader

### Strategy 2

#### Green Business

##### Status

- Wind Power Plant Complex in Jeju under Way
- Wind Power Plant Complex in Central Asia under Way
- ESCO Projects in the existing NPPs under Positive Review

##### ESCO Project Status

- Youngdong 1 ESCO Project for Fuel Supply System (Feb. 2009 ~ Present)
- Bundang Combined Cycle Phase 2 ESCO Project (April 2009 ~ December )
- Ilsan Combined Thermal 1 ~ 6 HRSG ESCO for Heat Exchanger Installation (May 2009 ~ Present)

##### Renewable Energy Market Conditions

- Global \$77.3 billion ('07) → \$254.5 billion ('17)
- Korean KRW 1.9 trillion ('08) → KRW 6.4 trillion ('30)



#### O&M Market

##### Nuclear

- Additional Construction Orders Expected for the 20 NPPs in Operation in Korea for Continuous Operation and Replacement of Old Major Equipment
- 439 NPPs in Operation Overseas; O&M Market Expected to Grow

##### Thermal

- Increased Performance-improving Projects for Continuing Operation of the Existing Plants and Reducing the Cost
- Increasing Old Plant Facilities outside Korea

##### Status

Steady Movement from Conventional Engineering into EPC

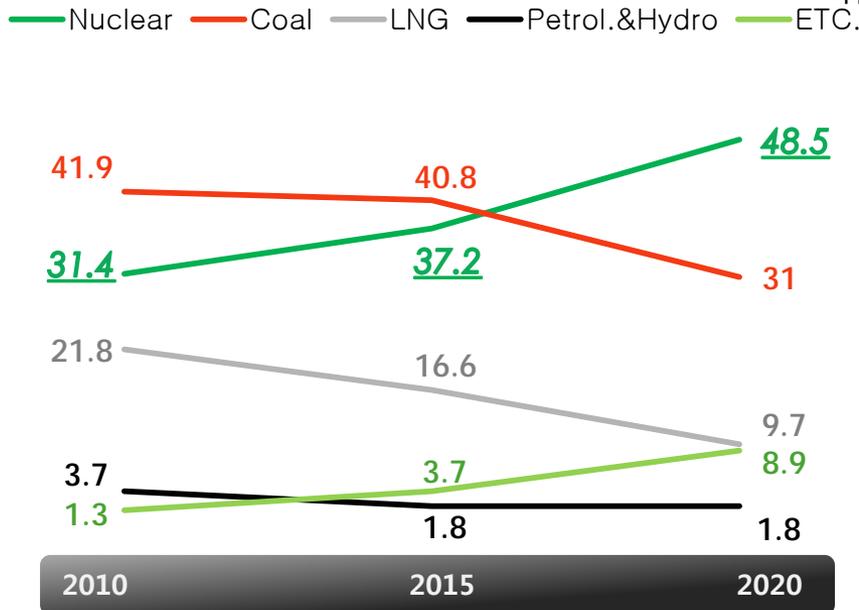
# Domestic Market Opportunities

## Korean Government's Focus on Nuclear Energy

### The 5<sup>th</sup> Basic Plan of Long-term Electricity Supply

#### Outlook of Generated Output

(Unit : % of total electricity supply in Korea )



#### Timeline for Completion of nuclear power plant construction ('13 ~'24)

Year	Project [capacity (MW)]
2013	Shin-Kori #3 [1400]
2014	Shin-Kori #4 [1400]
2016	Shin-Ulchin #1 [1400]
2017	Shin-Ulchin #2 [1400]
2018	Shin-Kori #5 [1400]
2019	Shin-Kori #6 [1400]
2020	Shin-Ulchin #3 [1400]
2021	Shin-Ulchin #4 [1400]
2022	Shin-Kori #7 [1500]
2023	Shin-Kori #8 [1500]

[Source: The Ministry of Knowledge Economy, "The 5<sup>th</sup> Basic Plan of Long-term Electricity Supply" , 2010.12.28]

The O&M market is growing  
due to the old operating nuclear power plants.

**Domestic Operating Nuclear Power Plants (20 units)**

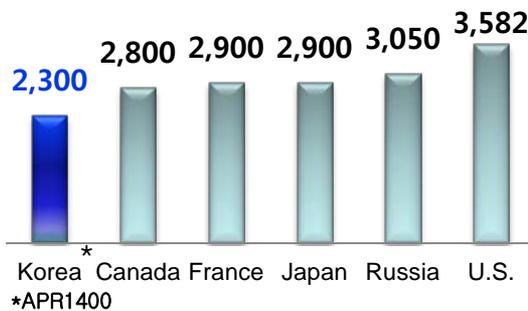
Plant		Capacity (MW)	Commercial Date	NSSS Supplier	Plant A/E	Model
Kori	#1	587	78.04.29	WEC	Gilbert	
	#2	650	83.07.25	WEC	Gilbert	
	#3	950	85.09.30	WEC	Bechtel/KEPCO E&C	
	#4	950	85.04.29	WEC	Bechtel/KEPCO E&C	
Wolsung	#1	679	83.04.22	AECL	AECL	
	#2	700	98.07.01	AECL/DOOSAN	AECL/KEPCO E&C	
	#3	700	98.07.01	AECL/DOOSAN	AECL/KEPCO E&C	
	#4	700	99.10.01	AECL/DOOSAN	AECL/KEPCO E&C	
Yonggwang	#1	950	86.08.25	WEC	Bechtel/KEPCO E&C	
	#2	950	87.06.10	WEC	Bechtel/KEPCO E&C	
	#3	1,000	95.03.31	DOOSAN	KEPCO E&C	OPR1000
	#4	1,000	96.01.01	DOOSAN	KEPCO E&C	OPR1000
	#5	1,000	02.05.21	DOOSAN	KEPCO E&C	OPR1000
	#6	1,000	02.12.24	DOOSAN	KEPCO E&C	OPR1000
Ulchin	#1	950	89.09.10	Framatome	Framatome	
	#2	950	88.09.30	Framatome	Framatome	
	#3	1,000	98.08.11	DOOSAN	KEPCO E&C	OPR1000
	#4	1,000	99.12.31	DOOSAN	KEPCO E&C	OPR1000
	#5	1,000	04.07.29	DOOSAN	KEPCO E&C	OPR1000
	#6	1,000	05.04.22	DOOSAN	KEPCO E&C	OPR1000



## Why APR1400?

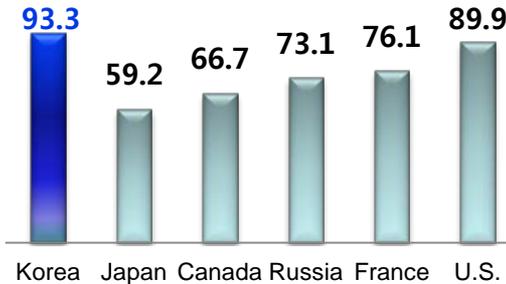
### The World's Most Economical and the Safest Reactor

Cost of Building Nuclear Power Plant (\$/Kw)



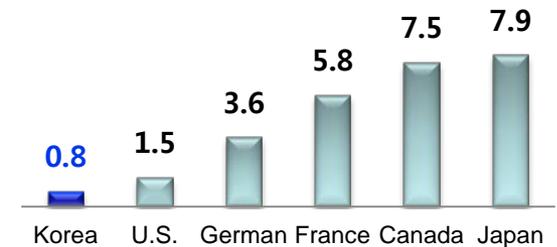
※ *World Nuclear News*  
(World Nuclear Association, 2008)

Using Rate of Nuclear Power Plant (%)



※ *Nucleonics Week*, March 2009

Unplanned Capacity Loss Factor (%)



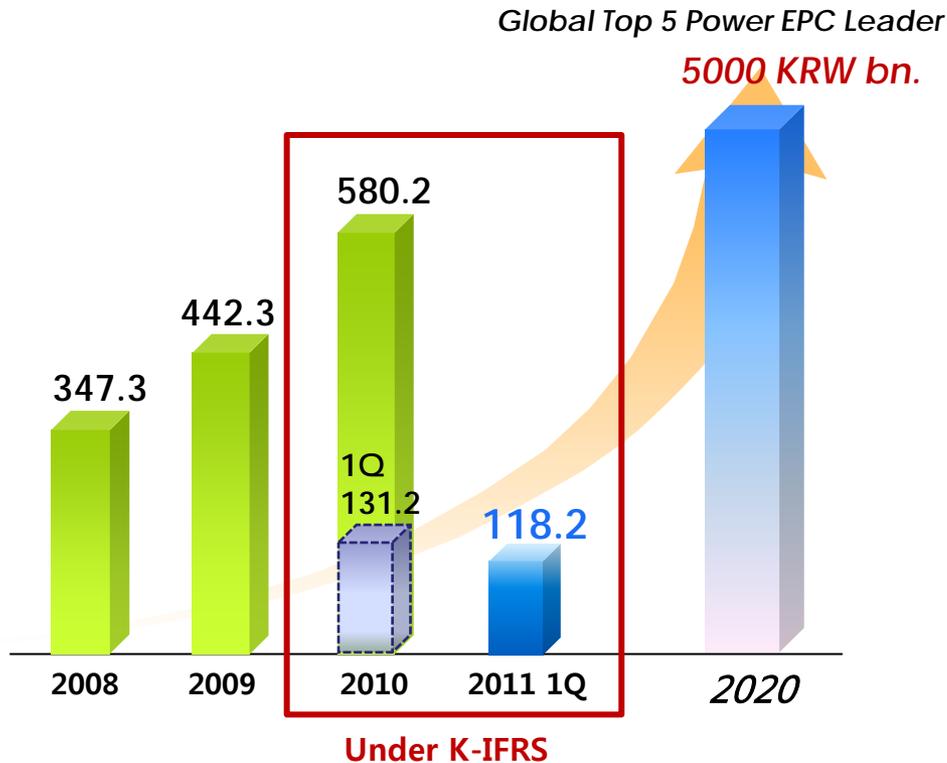
※ *IAEA Power Reactor Information System*,  
March 2009



## 2011 1Q Sales

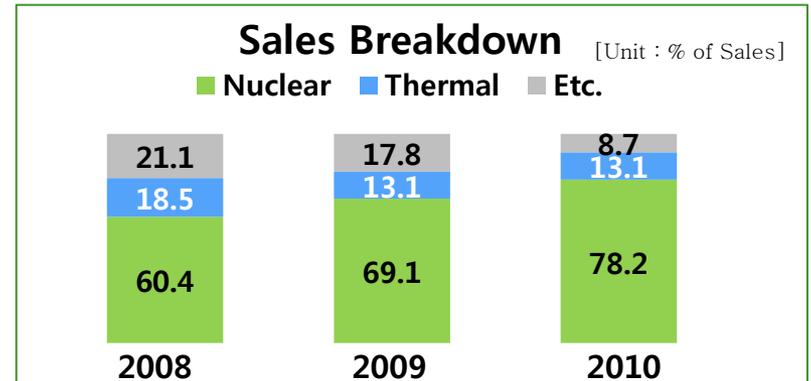
### Sales

[Unit: KRW bn.]



### Sales Analysis

- **The Decrease in the Major Nuclear Projects Progress**
  - The decrease in the progress in the major nuclear design projects led to the sales decline
- **Adoption of K-IFRS**
  - According to the K-IFRS Accounting rule, the cost of sales follows the progress of the each projects and it made a decrease in operating profit

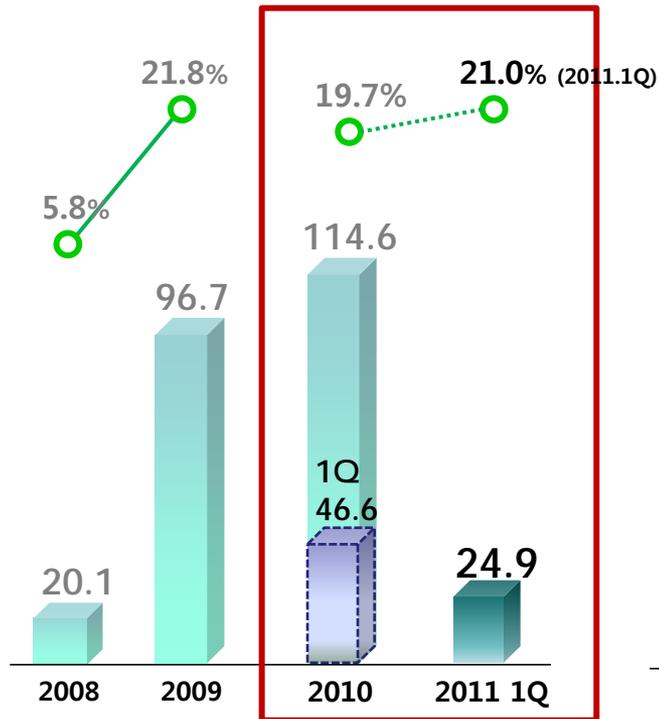




## 2011 1Q Summary

### Operating Profit / Margin

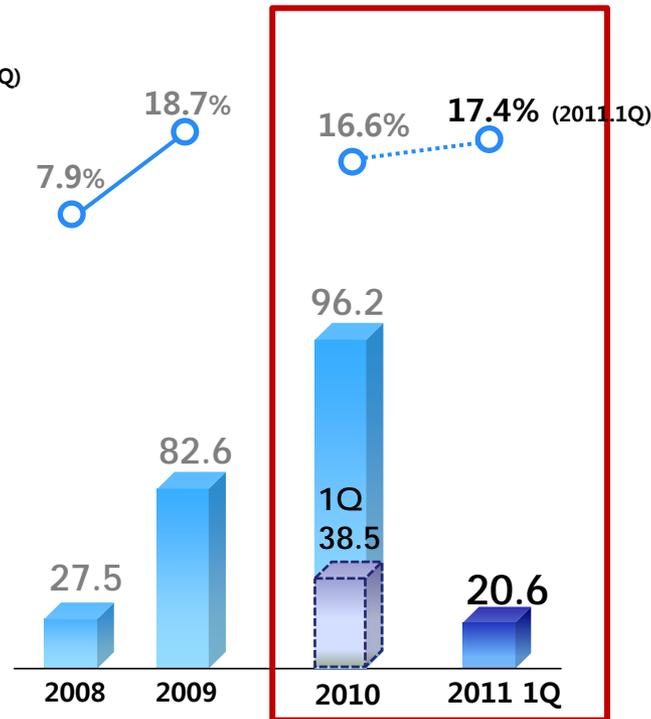
[Unit : KRW bn.]



Under K-IFRS

### Net Income / Margin

[Unit : KRW bn.]



Under K-IFRS

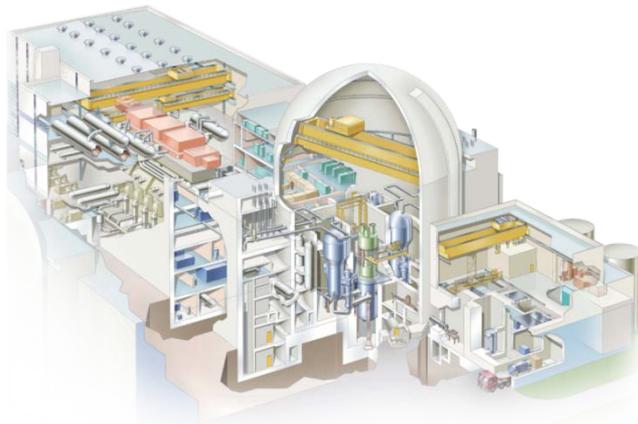
### 2011 1Q Overview

[Unit : KRW bn.]

	2011 1Q	2010 1Q	2010
Revenue	118.2	131.2	580.2
Operating Income	24.9	46.6	114.6
Net Income	20.6	38.5	96.2



# Vision 2020 – Global TOP 5 Power EPC Leader



200MW CFBC Power Plant Cutaway



- Site plan key
- A. Boiler & Ashes
  - B. Turbine Building
  - C. Control Building
  - D. Auxiliary Water Treatment
  - E. Electrostatic Precipitator
  - F. Stack
  - G. TD Fan
  - H. Ventilation



2354 Yonggudaero, Giheung-gu, Yongin-si  
Gyeonggi-do, South Korea 446-713  
Tel : +82-31-289-5852  
E-mail : yeop8@kepc0-enc.com  
<http://www.kepc0-enc.com>

