



Investor Relations

Global Power EPC Company

Disclaimer

This material has been produced to provide investors with various information in order for them to get more understanding about KEPCO E&C based on the objective facts as best as we can.

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Company Overview



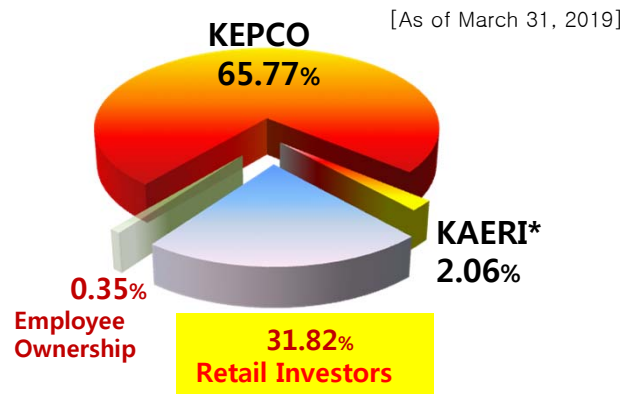
Korea's Leading Power Plant Engineering Company

- Korea's leading provider of design and engineering for nuclear, thermal and hydro-electric plants with over 40 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 Thermal EPC, energy-related business, environment-friendly business, etc.

Corporate Information

| | |
|-----------------|--|
| CEO & President | <p>Lee, Bae Soo</p> <ul style="list-style-type: none"> • Former vice president, KEPS • Former advisor, Samsung Engineering |
| Foundation Date | October 1, 1975 |
| Employees | 2,322 (As of March 31, 2019) |
| Business Area | Power plant design & engineering, etc. |

Ownership



IPO Information

| | |
|---|-------------------|
| Shares Outstanding *Common shares 100% | 38,220,000 |
| Listing Date | December 14, 2009 |
| Offered Securities | 7,644,000 |

Dividends

[Unit : KRW]

| FY | 2015 | 2016 | 2017 | 2018 |
|----------------------|------|------|------|------|
| Dividend Propensity* | 25% | 24% | 40% | 41% |
| Amount (per a share) | 200 | 110 | 220 | 140 |

* KAERI - Korea Atomic Energy Research Institute

* Dividend Propensity – Dividend/Net Income *100

Business Overview



Business Area

• Design & Engineering

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

• O&M (Operations & Maintenance)

- Technology & Engineering Support for Operating Power Plants



• Energy Solution Package

- Funding
- Consulting
- Procurement
- Post-management

• Environmentally-friendly Biz

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

• National Project

- Government's task

Business Area – Design & Engineering



- All of the local nuclear power plants have been independently designed by KEPCO E&C since 1993
- Experiences of Coal fired/ CFBC Coal fired/ Combined Cycle/ Cogeneration Design

Major Project Experience

• Nuclear power/Reactor

| Project | Project Period | Contract Amount (*) | Client |
|---------------------------------|--------------------|---------------------|----------------------|
| Shin-Kori #5,6 | Apr '14 ~ Mar '22 | 4,167 | KHNP |
| Shin-Hanul #3,4 | Mar '16 ~ Dec '23 | 4,247 | KHNP |
| UAE#1,2,3,4 | Mar '10 ~ Dec '20 | 7,509 | Kepeco |
| SMART PPE BOP | June '06 ~ Feb '19 | 581 | KAERI |
| Baraka Nuclear Power Plant LTEA | Jan '18 ~ Jan '31 | 3,400 | Nawah Energy Company |

Others

| Project | Project Period | Contract Amount (*) | Client |
|-----------------|-------------------|---------------------|--------|
| APR 1400 NRC DC | Apr '14 ~ Mar '23 | 793 | KHNP |

(*) Unit : 100 million won.

• Thermal power

| Project | Project Period | Contract Amount (*) | Client |
|--------------------------------------|-------------------|---------------------|-------------|
| Boryeong#4,5,6 Performance Improving | Nov '18~Mar '24 | 273 | KMP |
| Shin-seocheon | June '14~Dec '19 | 668 | KMP |
| Goseong Greenpower | May '14~Jan '22 | 884 | SK E&C |
| Gangneung Anin | Feb '14~Sep '20 | 960 | Samsung C&T |
| Taeon #9,10 | June '11~July '19 | 1,123 | KWP |

Services performed

- Site selection and feasibility survey
- Engineering and design
- Construction/Project management, licensing support, quality assurance and inspection
- Support for purchasing, owner support, education/training

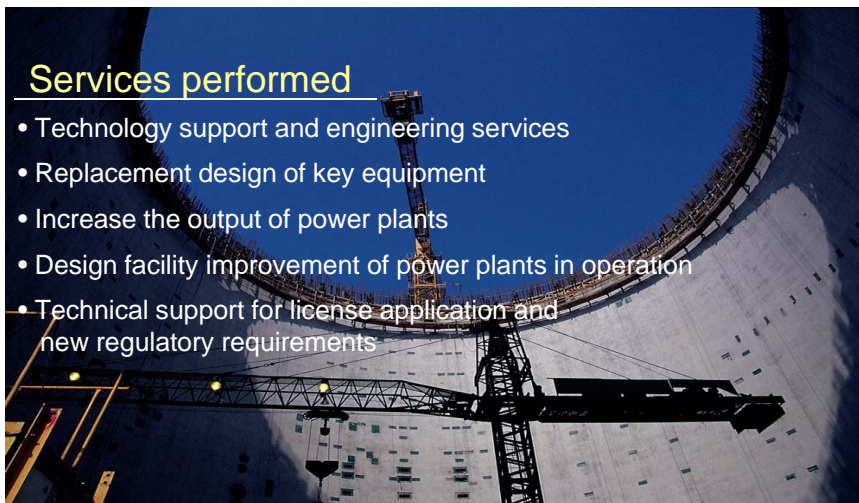
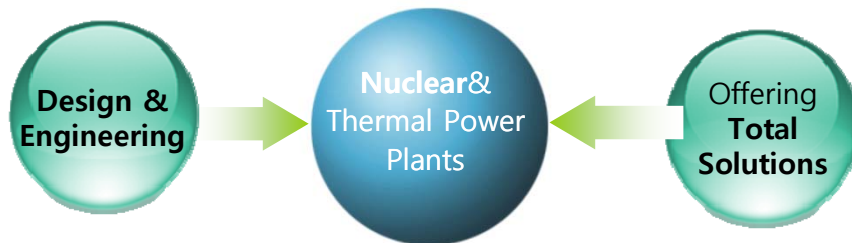


Business Area – O&M



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

• O&M (Operations & Maintenance)

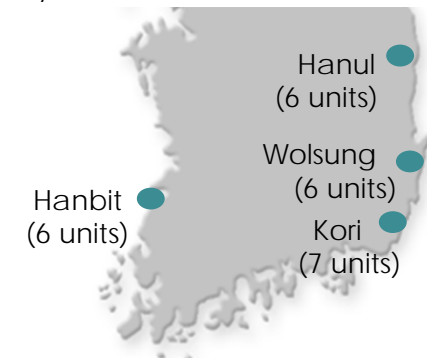


Services performed

- Technology support and engineering services
- Replacement design of key equipment
- Increase the output of power plants
- Design facility improvement of power plants in operation
- Technical support for license application and new regulatory requirements

• Nuclear Power Plants in Operation in Korea

| Reactor | Project | First Power | Design |
|-------------------|-------------------|-------------|------------------|
| APR 1400 | Shin-Kori #3 | 2016 | KEPCOE&C |
| OPR 1000+ | Shin-Wolsung #1,2 | 2012 / 2015 | KEPCOE&C |
| | Shin-Kori #1,2 | 2011 / 2012 | KEPCOE&C |
| OPR 1000 | Hanul #5,6 | 2004 / 2005 | KEPCOE&C |
| | Hanbit #5,6 | 2002 / 2002 | KEPCOE&C |
| | Hanul #3,4 | 1998 / 1999 | KEPCOE&C |
| | Hanbit #3,4 | 1995 / 1996 | KEPCOE&C-WEC |
| CANDU PHWR | Wolsung #3,4 | 1998 / 1999 | AECL-KEPCOE&C |
| | Wolsung #2 | 1997 | AECL-KEPCOE&C |
| | Wolsung #1 | 1983 | AECL-CANATOM |
| PWR | Hanul #1,2 | 1988 / 1989 | Framatome |
| | Hanbit #1,2 | 1986 / 1987 | Bechtel-KEPCOE&C |
| | Kori #3,4 | 1985 / 1985 | Bechtel-KEPCOE&C |
| | Kori #1,2 | 1978 / 1983 | WEC-Gilbert |



*The Uljin was renamed Hanul

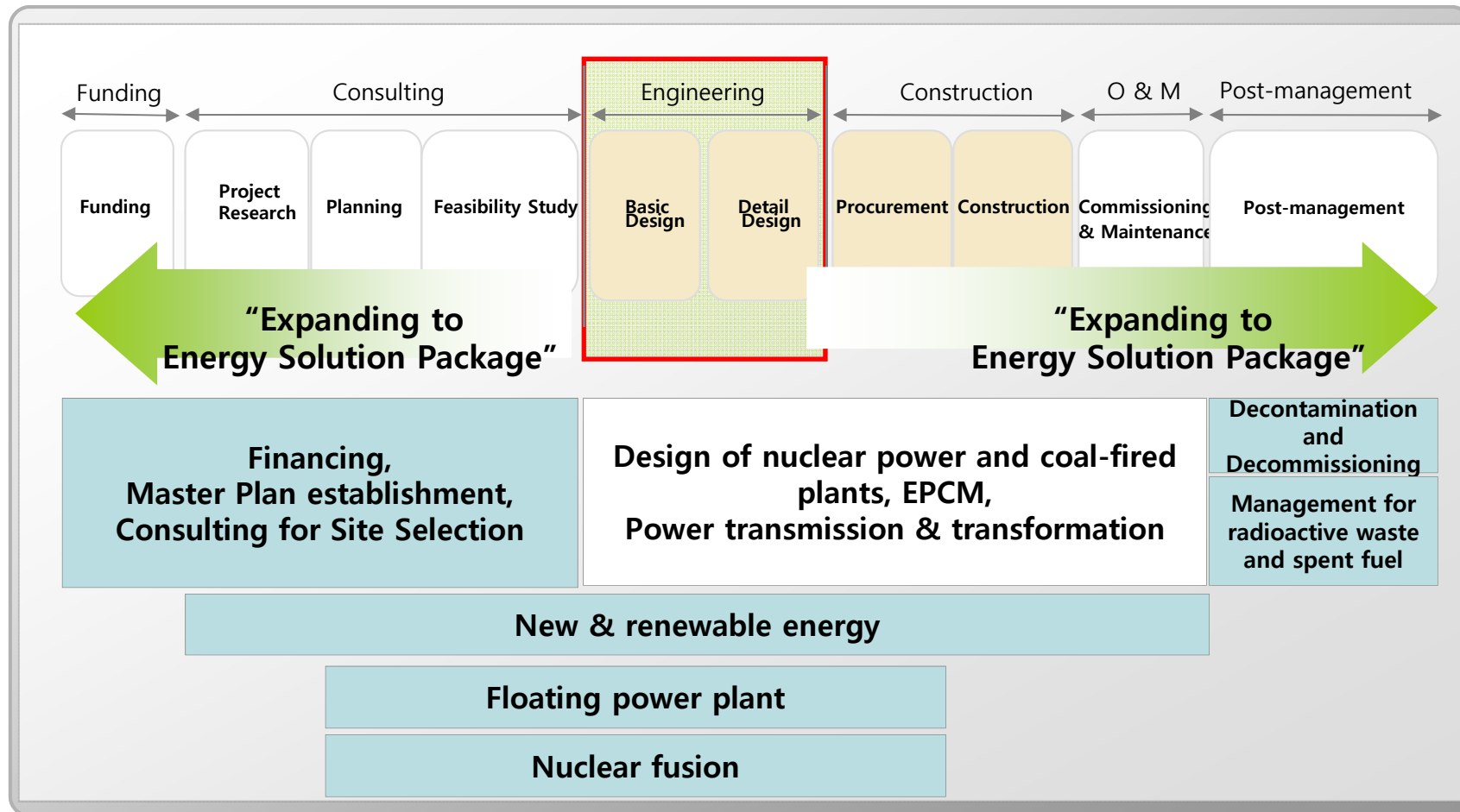
*WEC – WestingHouse Electric.

*AECL – Atomic Energy of Canada Limited

Business Area – Energy Solution Package



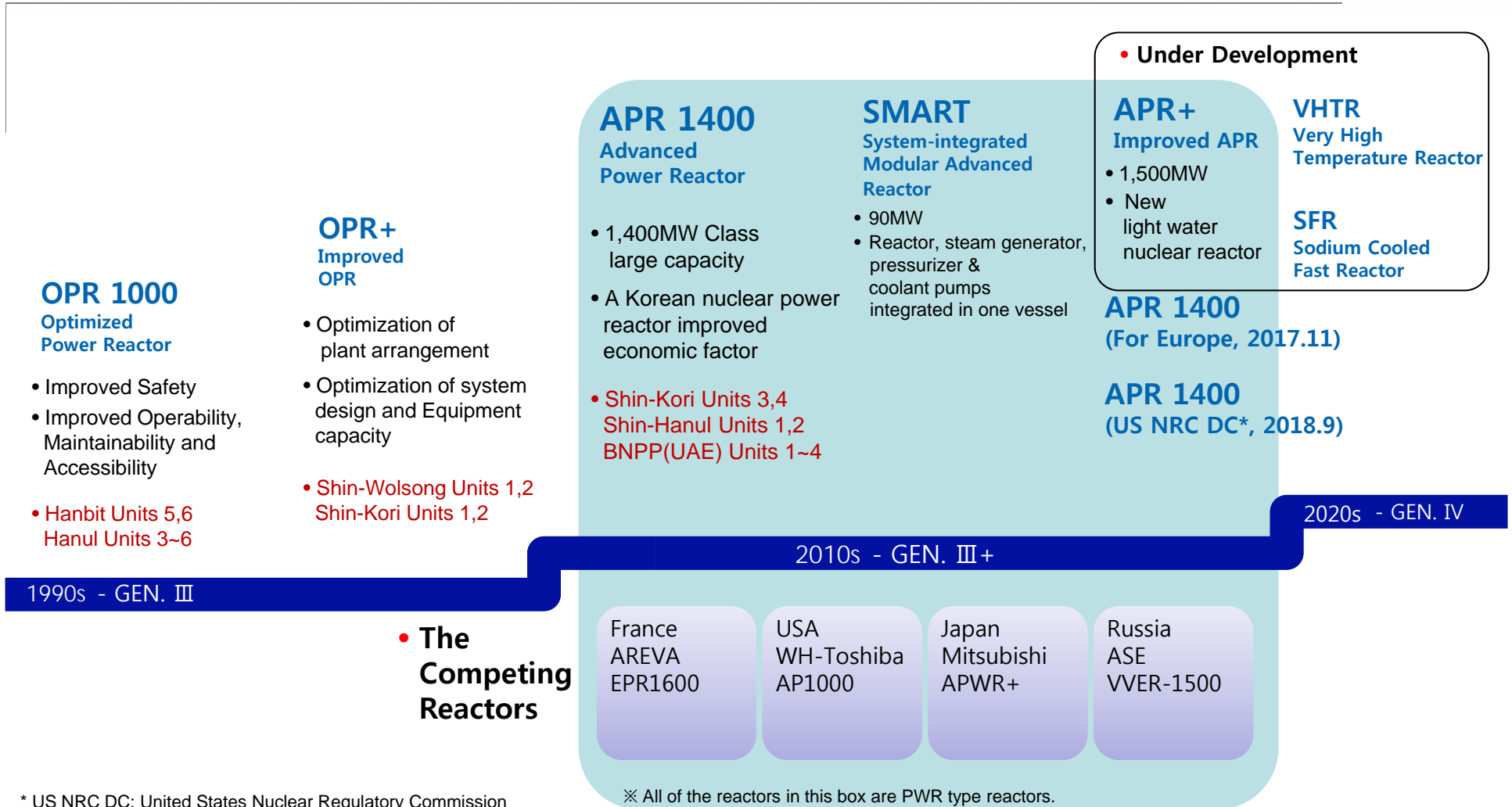
Expanding its business areas to the overall value chain, including pre- and post-management of power plants



Technology – Nuclear Power Plant

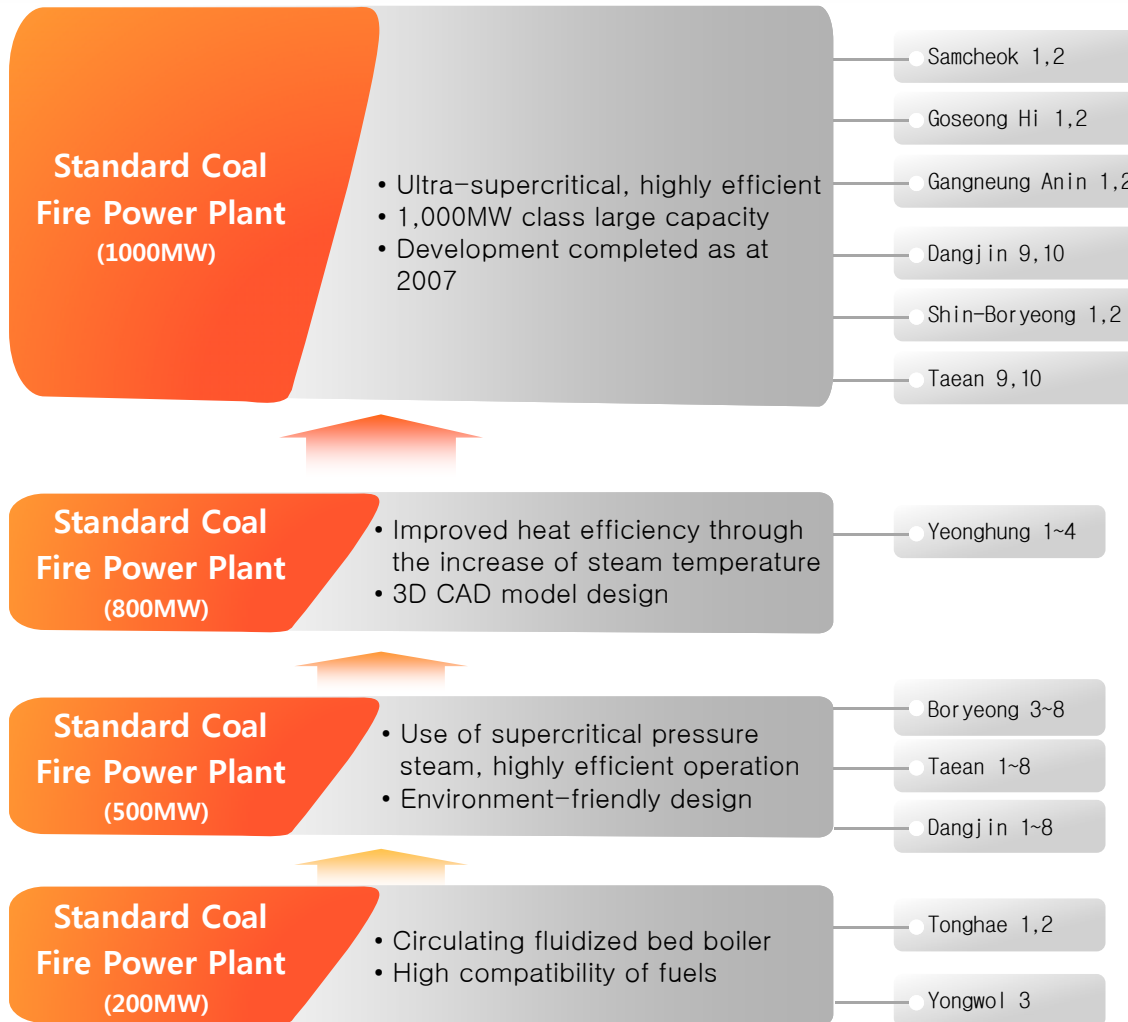


Korean Nuclear Power Plant Design Development



Technology – Thermal Power Plant

Coal-Fired Power Plant Design Development



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

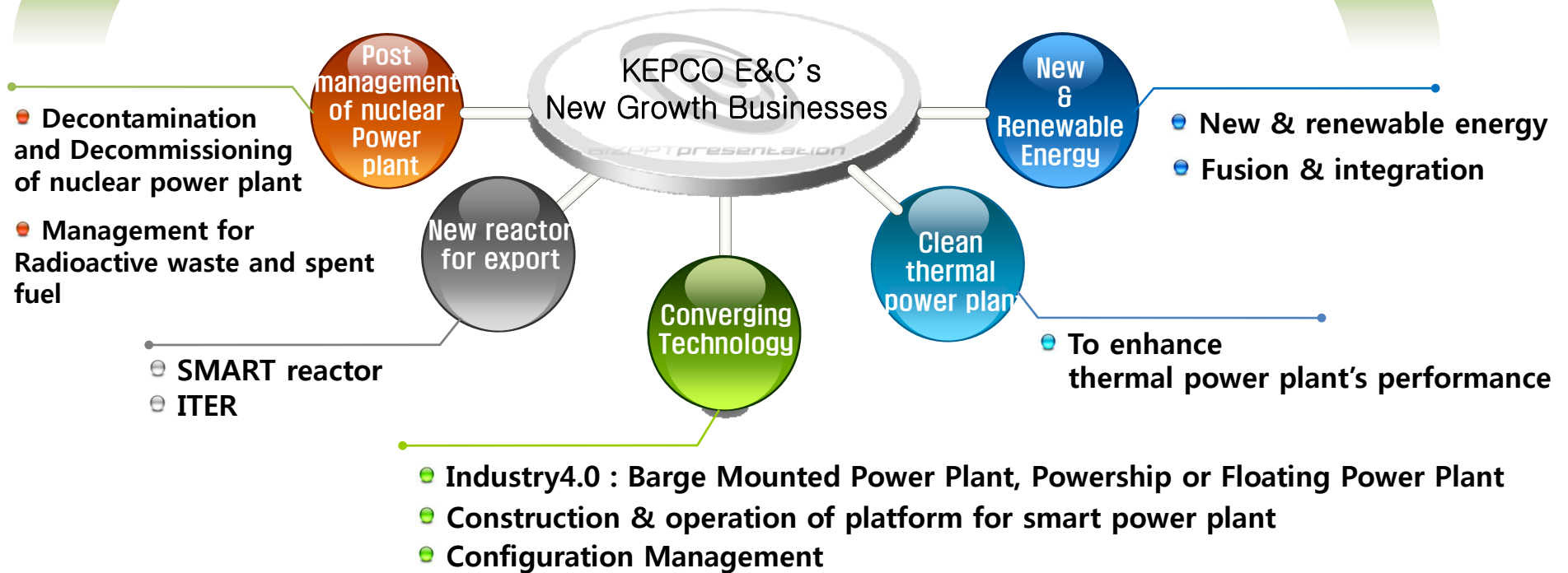


• **Boryeong #3,4 – World Best Project Awarded**
 <US, Electric Power International, 1996>

Focus on 10 core businesses in 5 areas



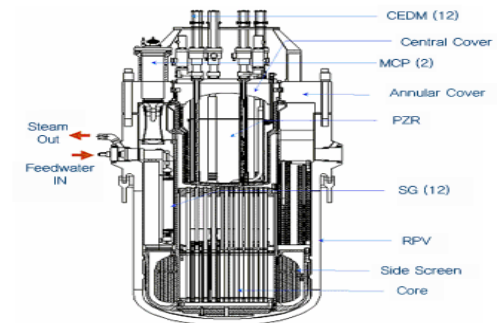
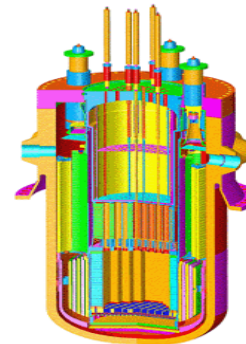
New Growth Businesses for KEPCO E&C



Nuclear power plans – Small Units & Others

• SMART export plan

- **SMART - Integral type reactor**
 - steam generator, pressurizer, and coolant pump are all integrated into one vessel.
- 90MW of electricity output, 40,000ton/day of desalination capacity
 - can supply a city with a population of 100,000
- Year 2012 : Acquired SDA(standard design approval) in Korea. (the first SDA as integral type reactor in the world)
- Year 2013 : Cooperation agreement with Saudi Arabia on the introduction of SMART in Saudi Arabia
- Year 2015 : Signed a deal to jointly invest in studying the prospect of building at least two SMART in Saudi Arabia
- Year 2017 : Performing PPE(Pre-Project Engineering) to build two SMARTs in Saudi Arabia



• Participation in the international project – ITER

- International Thermonuclear Experimental Reactor(ITER) Project
- 7 countries that run the project – EU, U.S., Russia, China, Japan, India and South Korea
- Total amount of orders KEPCO E&C has received : 57.3 KRW bn. (expecting more orders)

Nuclear power plans – Decommissioning



• Decommissioning

▫ The oldest reactors in Korea

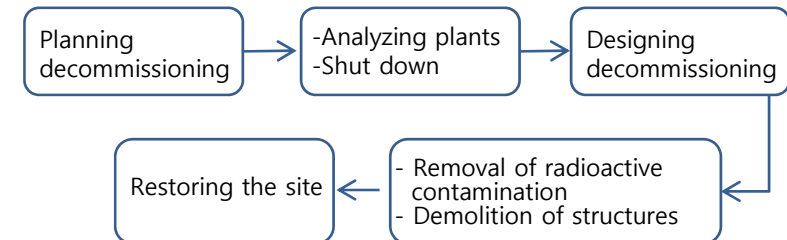
| Plant | Commercial operation | Planned close | |
|------------|----------------------|---------------|------------------------------|
| KORI #1 | 1978 | 2017 | license extended 2007 → 2017 |
| Wolsung #1 | 1983 | 2012 | license extended 2012 → 2022 |
| KORI #2 | 1983 | 2023 | |
| KORI #3 | 1985 | 2024 | |
| KORI #4 | 1986 | 2025 | |

- Kori-1, the first nuclear power plant in Korea, is scheduled to become the first reactor to go dormant.
 - it had 30-year lifespan expired in 2007, but gained approval of additional 10-year operation.
- The Korean government announced in June, 2015 that the development of the 17 decommissioning techniques that have yet to be finished would be completed by 2021.

• Decommissioning?

- series of various follow-up processes upon the completion of operation regarding nuclear power plant facilities.
- Minimization of radioactive contamination from facilities after decontamination and decommissioning.
- Republic of Korea and UK have strengthen cooperation in the research on nuclear decommissioning.

• Decommissioning Flow

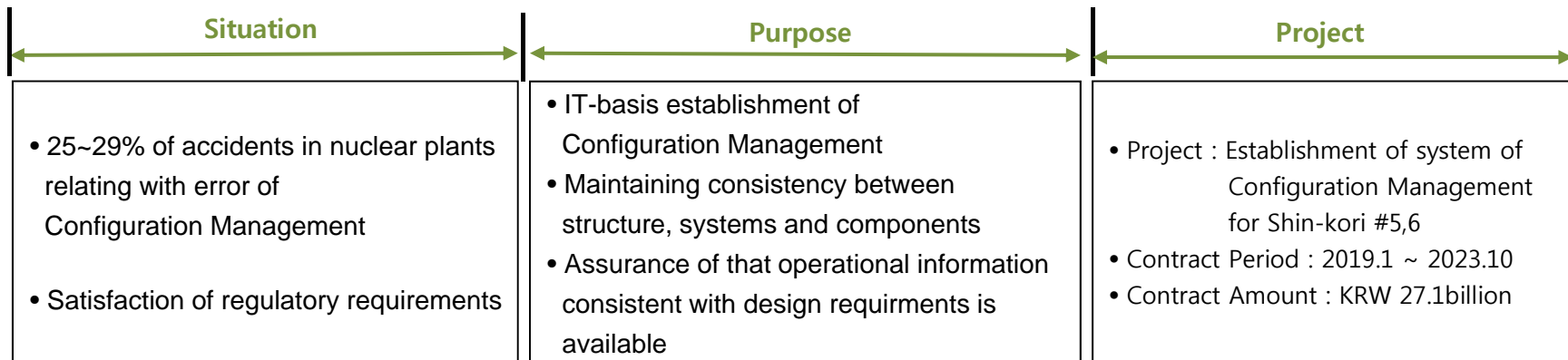


Nuclear power plans – Configuration Management



Application of Configuration Management

• Need of Configuration Management for prevention of critical accident



• Definition

Configuration Management

Definition. The process of identifying and documenting the characteristics of a facility's structure, systems and components (SSCs) **(including computer systems and software)** and of ensuring that **consistency is maintained between the design requirements, physical configuration and facility configuration and documentation.**

