

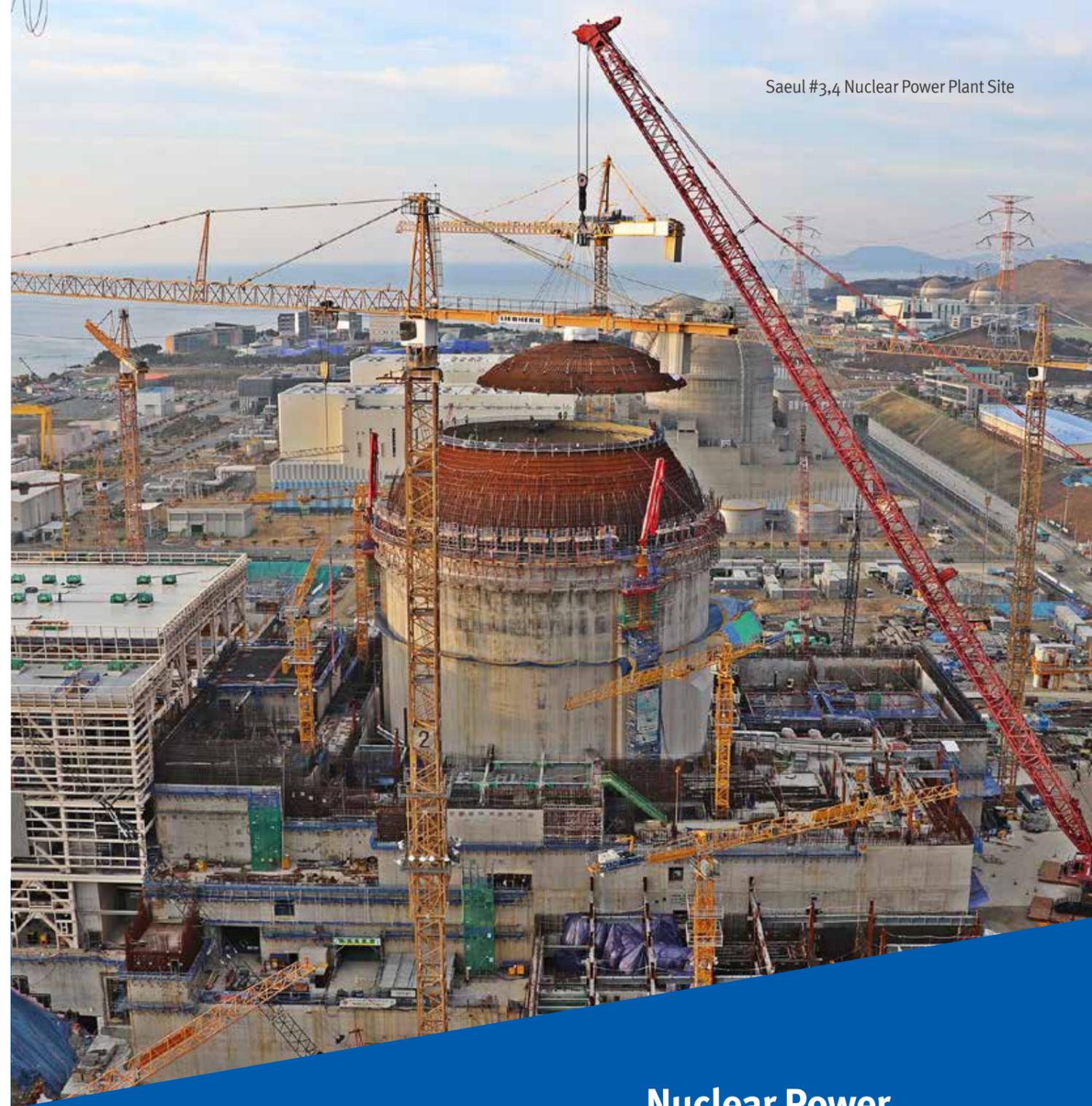


**Your Most Trusted Partner!**

**DOOSAN**

**Doosan Enerbility**

Plant EPC Nuclear Sales/Proposal Team  
155, Jeongjail-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Korea (13557)  
[www.doosanenerbility.com](http://www.doosanenerbility.com)



Saeul #3,4 Nuclear Power Plant Site

**Nuclear Power  
Plant Construction**

Energy toward Sustainability  
**Doosan Enerbility**

**DOOSAN**

# History & Vision

## Nuclear Power Plant Footprints

Doosan began its history of large-scale nuclear power plant(NPP) construction in 1982 with Hanul units 1 & 2. Since then, we have completed the construction of Hanul units 3, 4, 5, and 6 successfully. In 2008, we started the construction of Saeul units 1 & 2(previously known as Shin-Kori units 3 & 4) and completed in 2018. Therefore, we delivered a total of 8 nuclear power plant units in domestic. (Total of 8,700MW)

Doosan has profound experience in the entire process of nuclear power plant construction which range from civil engineering foundation work to architecture, mechanical installation, piping, electrical & instrumentation and commissioning support. We also have experience of various types of nuclear reactors operating around the world such as FRAMATOME, OPR 1000, and APR 1400. All these experiences are our strong point of NPP construction capability, and we are proud of this fact.

Doosan is currently executing the construction of Saeul units 3 & 4(previously known as Shin-Kori units 5 & 6), to which the latest safety technology is applied, and we are doing our best to successfully complete and provide maximum customer satisfaction based on quality & safety control while also including cost management.

Doosan has accumulated extensive know-how as a specialist in nuclear power plant construction over the past 40 years. As a result, we recently obtained an order for the construction of Turbine Island for a NPP in Egypt.

Based on expansive experience and exceptional achievements, we are continuously participating in new large-scale NPP projects at home and abroad. We are utilizing our global No. 1 power plant EPC business capabilities to discover fresh opportunities in Nuclear Turbine Island EPC projects and are planning to participate in the next-generation Nuclear Power, SMR(Small Modular Reactor) projects.

**1982 ~ 2005**

- 1982. 03 Hanul units 1 & 2, Commencement of work (Doosan's 1st NPP construction project)
- 1992. 05 Hanul units 3 & 4, Commencement of work
- 1998. 09 Hanul units 5 & 6, Commencement of work

**2008 ~ 2023**

- 2008. 01 Saeul units 1 & 2, Commencement of work (Doosan's 1st APR 1400 construction project)
- 2016. 06 Saeul units 3 & 4, Commencement of work (State of the Art NPP in Domestic)
- 2023. 03 Turbine Island for El-Dabaa NPP, NTP Issued

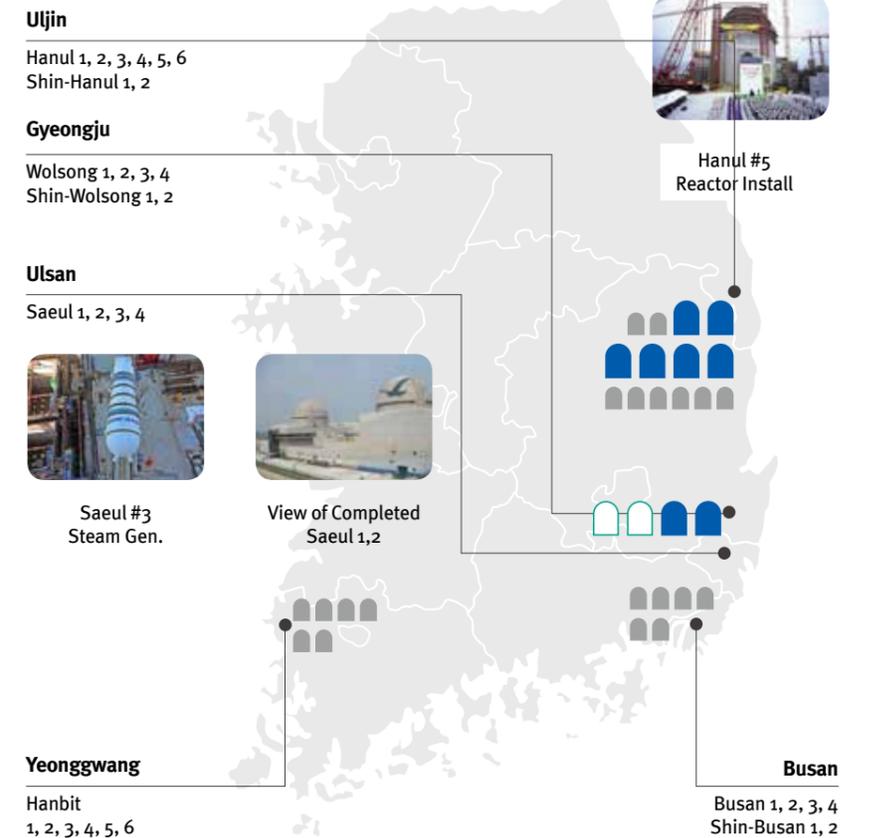
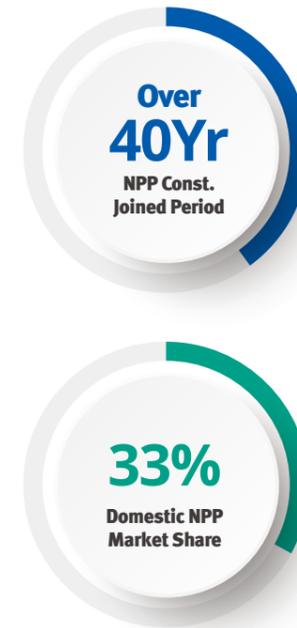
**Our Vision**

- **Large Scale NPP**  
Continuous participation in home and abroad
- **Turbine Island EPC of NPP**  
Exploring fresh opportunities with internal capabilities
- **SMR & New Generation NPP**  
Seeking new business opportunities for the future

# Domestic Track Record

## Status of Overall NPP in Domestic

- Total Number of NPP in Domestic : 30 Units\*
- Total Number of NPP by Doosan : 10 Units\*
- (\* Including NPP under construction)



- By Doosan
- By Doosan (Ongoing)
- By Others

## Track Record of Doosan NPP

Project Name	Capacity (MW)	Reactor Type	Scope of Work	Construction Period
Hanul #1, 2	950 X 2	FRAMATOME	Main Equipment, E&I	1982.3 ~ 1989.9
Hanul #3, 4	1,000 X 2	OPR 1000	Main Equipment, E&I	1992.5 ~ 1999.12
Hanul #5, 6	1,000 X 2	OPR 1000	All Construction	1998.9 ~ 2005.5
Saeul #1, 2	1,400 X 2	APR 1400	All Construction	2008.1 ~ 2018.9
Saeul #3, 4 (Ongoing)	1,400 X 2	APR 1400	All Construction	2016.6 ~ 2025.10

# Promotion Project

## Expected Orders for New NPP Worldwide



## Expanding Doosan's NPP Construction

Based on more than 40 years of experience in domestic NPP construction, Doosan became the first Korean company that won an opportunity to join the construction of a new NPP on the African continent in 2023.

Currently, we are actively working on the acquisition of additional overseas NPP orders. For example, our company has been selected as the construction partner of Team Korea for a new project in Czech / Poland / Kazakhstan.

In particular, in order to win the project for the NPP in the Czech Republic, we are investing our maximum capabilities, such as dispatching manpower for Team Korea work and strengthening local networking by holding a Korea-Czech Nuclear Construction Forum in 2019.

In efforts to win the NPP project in Poland, we participated in the APR 1400 symposium to show NPP construction capabilities of Korea and conducted pre-interviews with local companies to establish cooperative relationship in advance. Currently, we are performing a F/S(Feasibility Study) to provide further support for owners.

In addition, we are closely monitoring the status of orders for new NPPs in the UK, Uzbekistan, Turkey, Saudi Arabia, and Shin-Hanul Units 3 and 4 in Korea and will actively work for additional contracts.

# Details of On-going Projects

## Saeul NPP Units 3 & 4

### Site Photo View & PJT Summary

<b>Project Name</b>	Saeul #3, 4
<b>Owner</b>	KHNP (Korea Hydro & Nuclear Power)
<b>Site Place</b>	Seosaeng-myeon, Ulju-gun, Ulsan Metropolitan City
<b>Reactor Type</b>	APR 1400 (PWR)
<b>Capacity(MW)</b>	1,400 X 2



### The meaning of Saeul Units 3 & 4

Doosan won the Saeul units 3 & 4 in 2016 and the project is currently in the final stages of construction.

Saeul units 3 & 4 are the 9th and 10th APR 1400 following Saeul units 1 & 2, UAE Barakah units 1, 2, 3, 4 and Shin-hanul units 1 & 2.

In particular, Saeul units 3 & 4 are state-of-the-art NPP, where numerous safety related technological improvements, which have been developed by prior NPP experiences in Korea, abroad, and Fukushima nuclear accident, are reflected in their design.

For the successful completion of such state-of- the-art NPP, our construction engineers are doing their best to complete the project with top priority on quality, safety, schedule, and cost management.

## El-Dabaa NPP

### Site Bird's Eye View & PJT Summary

<b>Project Name</b>	The El-Dabaa NPP
<b>Owner</b>	NPPA (Nuclear Power Plant Authority)
<b>Site Place</b>	El-Dabaa (300km from Cairo)
<b>Reactor Type</b>	VVER 1200 (PWR)
<b>Capacity(MW)</b>	1,200 X 4
<b>Scope of Work</b>	Turbine Island Construction.



### The meaning of El-Dabaa NPP

The El-Dabaa NPP is Doosan's first overseas NPP construction project. Doosan is the first Korean company to win a large-scale NPP construction project in the last 13 years after the Barakah NPP, and the El-Dabaa NPP is the first case of entering the African continent.

The El-Dabaa NPP is the first project to be built in Egypt. 4 units of VVER 1200 reactors from Rosatom of Russia will be supplied. Rosatom has been performing multiple projects in multiple locations. And Rosatom was searching a company which is well organized and experienced for a NPP project work.

Rosatom has been finding that Doosan is excellent in NPP construction scheduling and cost management, the final decision was made on cooperation for this project after elongated negotiations.

For Doosan, the El-Dabaa NPP is the perfect opportunity to showcase our ability as an independent leading company. We will do our best to show that Doosan is the best partner for success by achieving quality, safety, on-time delivery, cost management, and much more.

# Quality Management for NPP Construction

Doosan has secured world-class engineering, construction, and manufacturing capabilities through continuous quality innovation activities, all the while maximizing customer satisfaction based on the quality of NPP construction.

## ASME



## ISO



## KEPIC



# Our Vision for the Future

## Turbine Island EPC for NPP

Doosan has been engaging in power generation business EPC works for more than 60 years with internal capabilities. Doosan seeks opportunities to pioneer a new market with clients in Nuclear Turbine Island EPC field.

## Total Solution Provider



## More than 60 Turbine Island EPC Track Record

- 50Hz
- 60Hz



- Kazakhstan**  
Karabatur  
CCPP 310MW(GT2+ST1)
- Turkistan  
CCGT 1,050MW(GT4+ST2)
- Qatar**  
Qatalum  
CCPP 1,250MW(GT4+ST2)
- Jordan**  
Rehab  
CCPP 300MW
- UAE**  
Taweelah A10  
COGEN 216MW(GT2)
- Jebel Ali M  
CCPP 2,000MW(GT6+ST3)
- Amman East Power  
CCPP 370MW
- Pakistan**  
Daharki  
CCPP 177MW(GT1+ST1)
- Oman**  
Sohar  
IWPP 640MW + RO

- Barka Phase 2  
IWPP 685MW + RO
- India**  
Mundra UMPP  
TPP 800MW X 5 Units
- Raipur Chhattisgarh  
TPP 685MW X 2 Units
- Kudgi  
TPP 800MW X 3 Units
- Lara  
TPP 800MW X 2 Units
- Obra C  
TPP 660MW X 2 Units
- Jawaharpur  
TPP 660MW X 2 Units
- Indonesia**  
Cirebon  
TPP 660MW X 1 Unit
- Grati #2 Add-on  
CCPP 150MW(HRSG3 + ST1)
- Muara Tawar #2,3&4 Add-on  
CCPP 650MW(HRSG8 + ST3)
- Jawa 9&10  
TPP 1,000MW X 2 Unit

- Thailand**  
Gheco-One  
TPP 660MW X 1 Unit
- Vietnam**  
Mong Duong Phase 2  
TPP 560MW X 2 Units
- Nghi Son 2  
TPP 665MW X 2 Units
- Vinh Tan 4  
TPP 600MW X 2 Units
- Vinh Tan 4 Extension  
TPP 600MW X 1 Unit
- Song Hau 1  
TPP 600MW X 2 Units
- Van Phong 1  
TPP 660MW X 2 Units
- Vung Ang 2  
TPP 600MW X 2 Units
- Saudi Arabia**  
Rabigh Power Plant 2  
TPP 700MW X 4 Units
- Qurayyah Add-on  
CCPP 1,238MW(HRSG15+ST5)
- Fadhili  
CCPP 1,519MW(GT5+ST2)

- Jafurah  
COGEN 320MW(GT1+ST1)
- Japan**  
Sodegaura  
Biomass 75MW
- South Korea**  
Saemangeum CFB  
TPP 151.5MW X 2 Units
- Hwasung Dongtan 2  
CCPP 400MW X 2 Units
- Samcheok  
TPP 1,050MW X 2 Units
- Taiwan**  
Hsinta  
TPP 500MW X 2 Units
- Philippines**  
Cebu CFB  
TPP 103MW X 2 Units
- GUAM**  
Ukudu  
CCPP 198MW(GT3+ST1)

## SMR (Small Modular Reactor)

With the goal of achieving carbon neutrality by 2050, it is expected that the SMR market, which is excellent in safety, economy, and usability, will expand as a key means for the transition to carbon-free energy. Doosan is actively preparing and participating the construction sector as well as supplying main equipment of SMR on belief that it is the main energy transition business of our company.