



Your Best Partner, KHNP

EXPOPOWER 2018
International Power Engineering Fair
Poznan, Poland



April 23, 2018

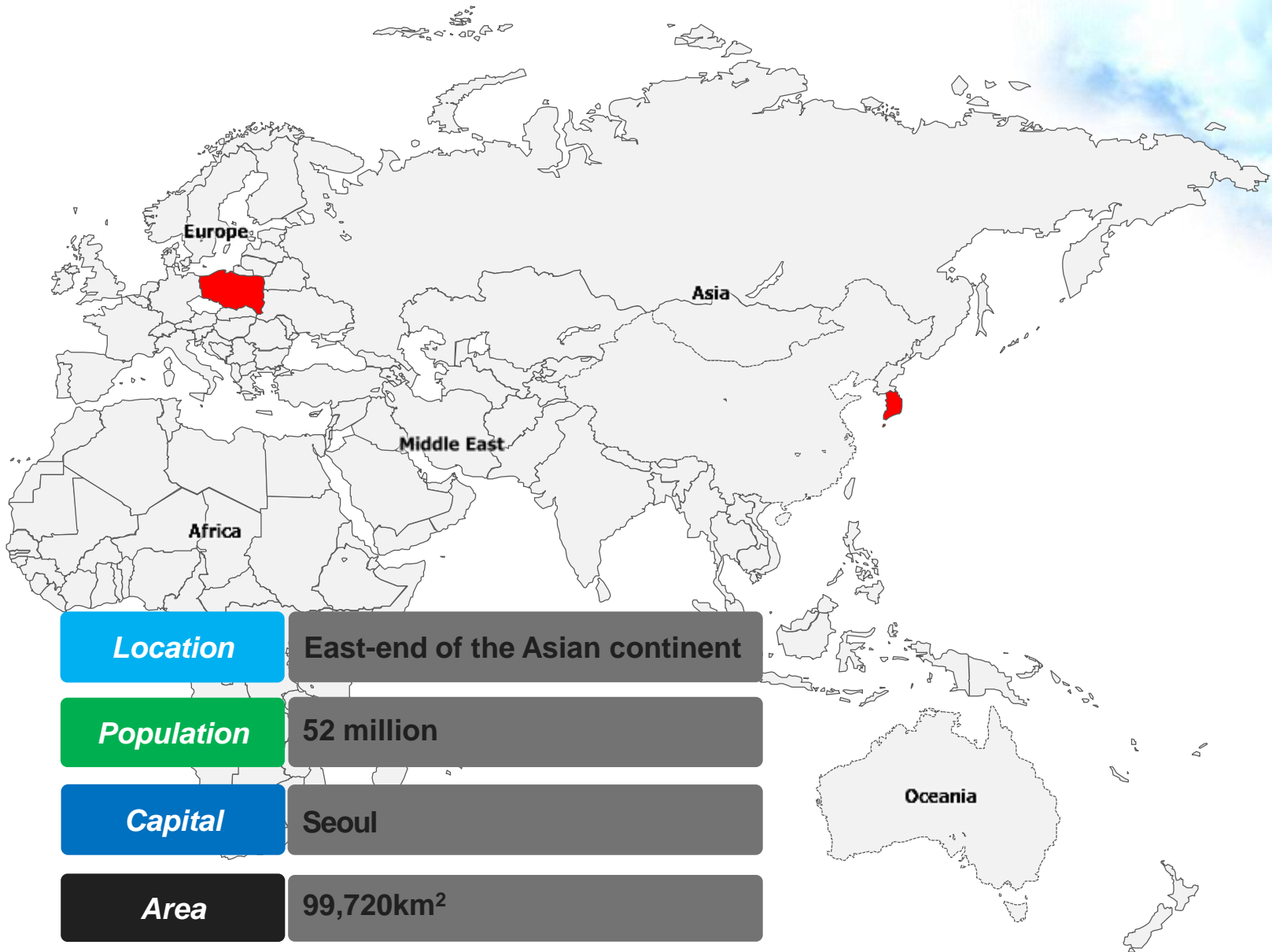


KHNP

KOREA HYDRO & NUCLEAR POWER CO., LTD

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Korea

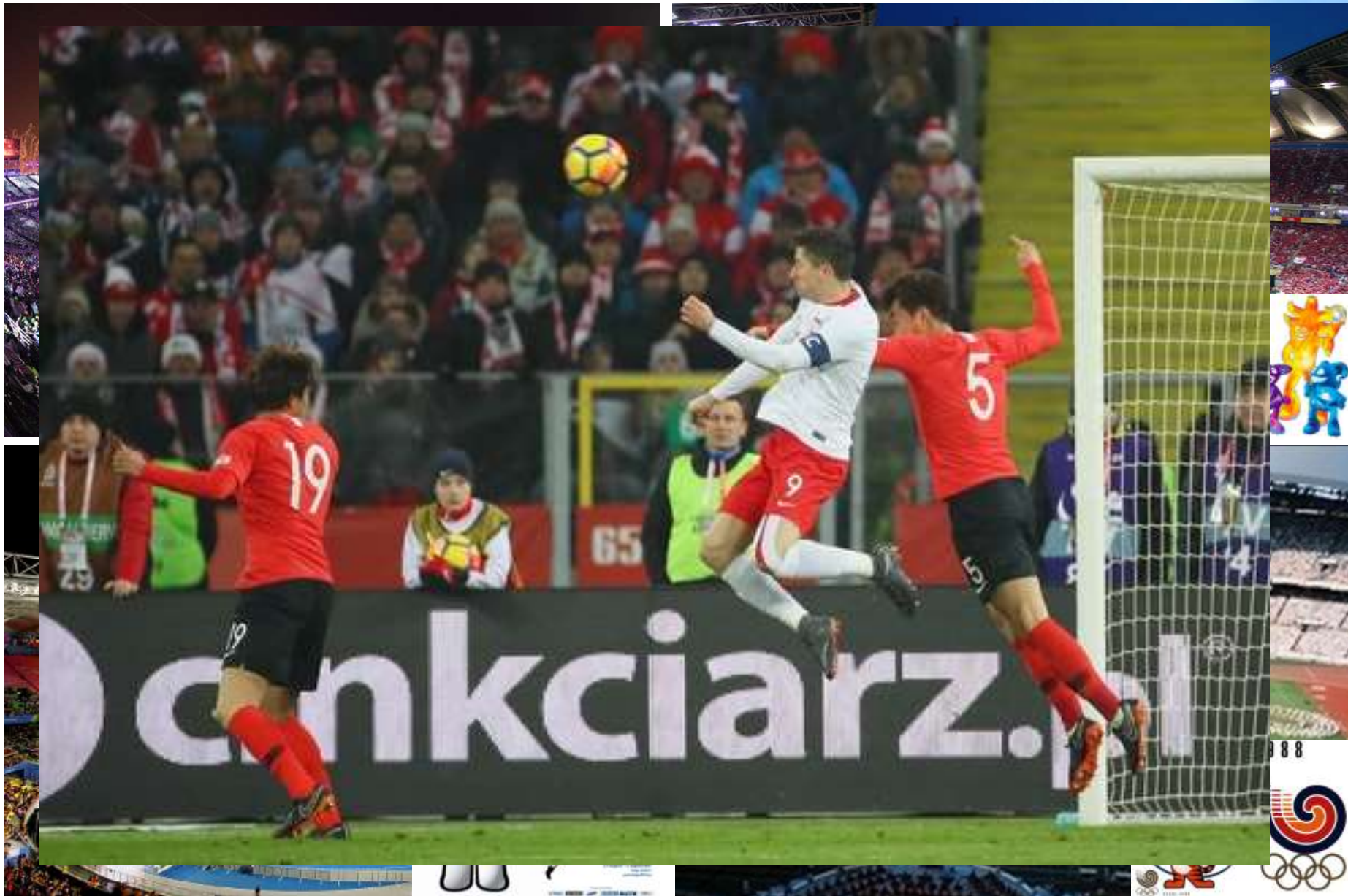




1950s

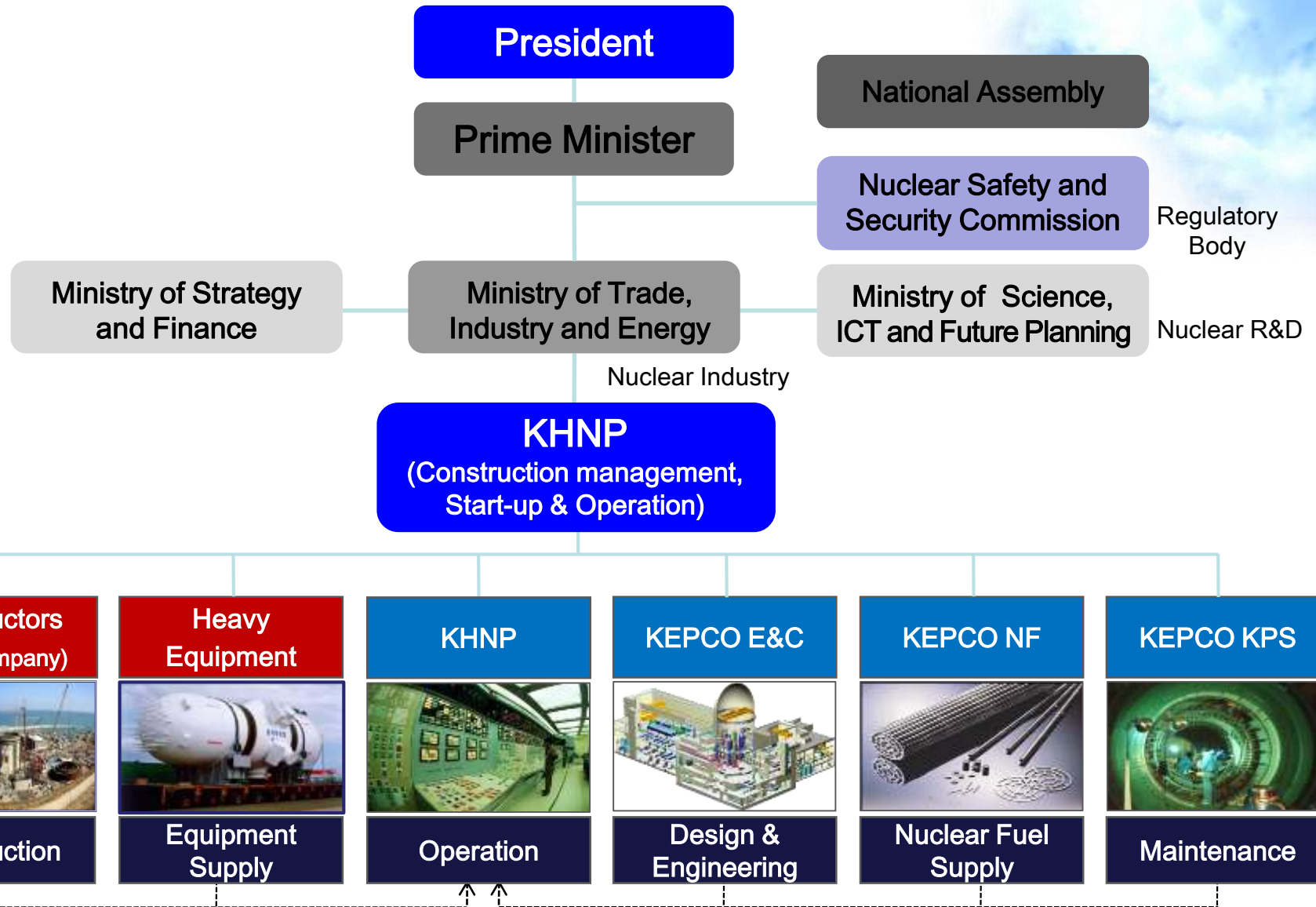
2010s



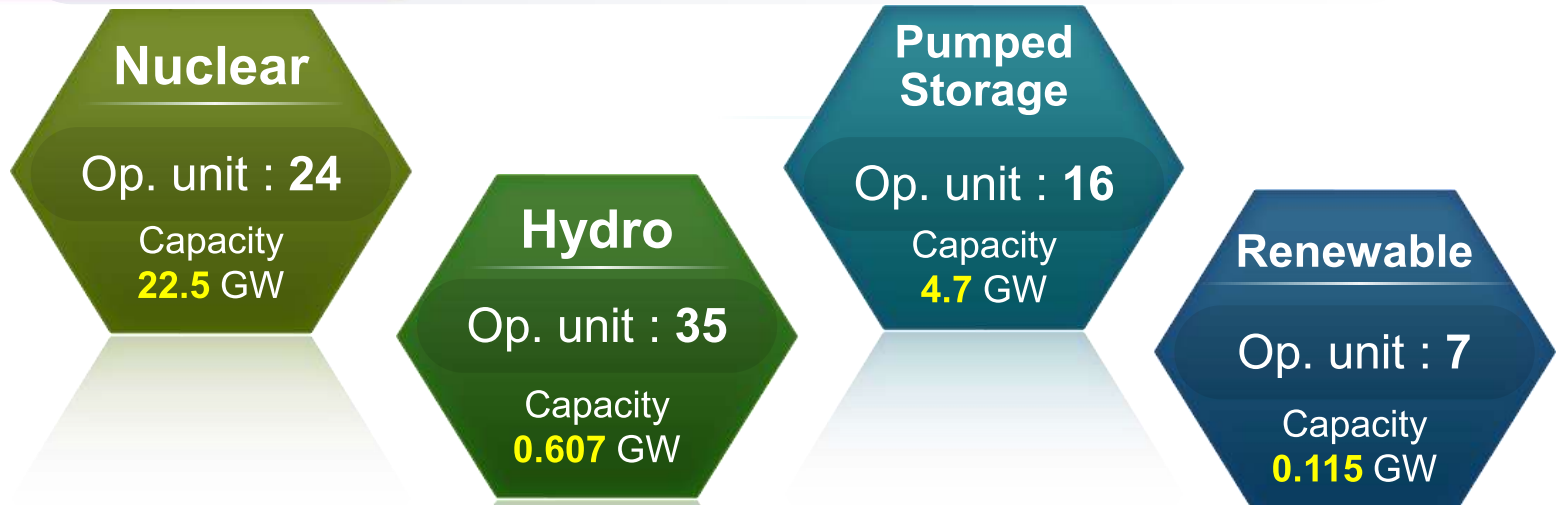


Korea in Poland

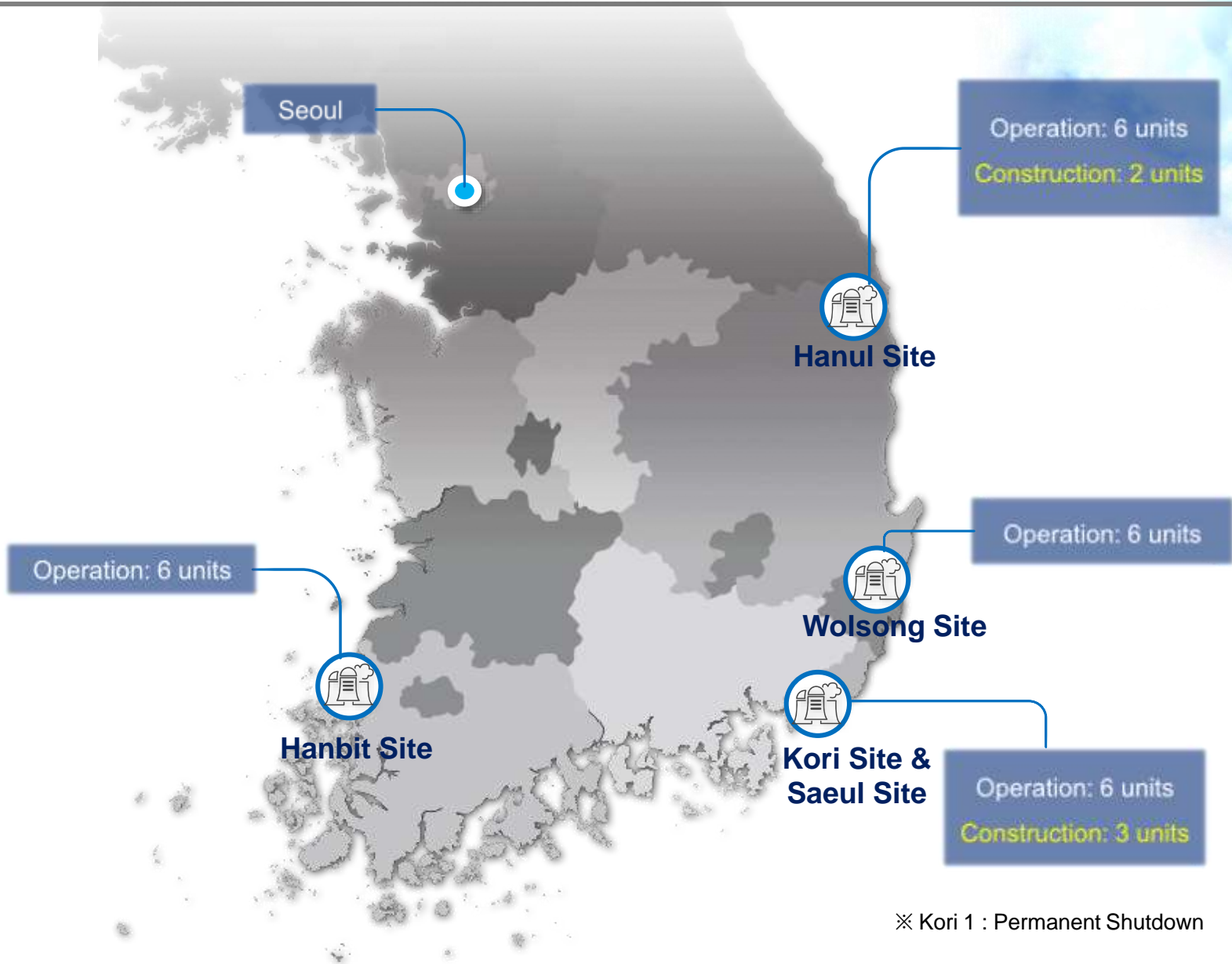




Establishment	April 2, 2001, spin-off from KEPCO
Business	Nuclear, Hydro, Pumped Storage, Renewables
Staff	12,306 Persons
Assets	41 Billion EUR
Revenue/Net Income	3.9 Billion EUR / 0.7 Billion EUR (1st Half 2017)

KHNP's Nuclear Fleets



KHNP's Nuclear Fleets - in operation



Kori 2,3,4 / Shin-Kori 1,2,3



Hanbit 1,2,3,4,5,6



Wolsong 1,2,3,4 / Shin-Wolsong 1,2



Hanul 1,2,3,4,5,6

KHNP's Nuclear Fleets - under construction



Shin-Kori 4



Shin-Hanul 1, 2



Shin-Kori 5, 6

Korean Nuclear Reactors - Technology

1970s



Introduction of Nuclear Power

- Turnkey Approach
- Led by foreign suppliers

1980s



Promotion of Localization

- Non-Turnkey Approach
- Joint implementation
- Localization plan

1990s



Technology Self-Reliance

- OPR1000
- Led by local suppliers

2000s



Technology Advancement

- APR1400
- Export to UAE

2010s



Technology Renovation

- Development of APR+, EU-APR, APR1000
- Design Certification in US and Europe

Korean Nuclear Reactors - Technology

US-APR



➤ NRC Design Certification in process

EU-APR



Type	PWR
Life	60 Years
Output	1,500 MWe
Seismic	SSE 0.3g

➤ EUR Certification

APR1400



Type	PWR
Life	60 Years
Output	1,400 MWe
Seismic	SSE 0.3g

OPR1000



Type	PWR
Life	40 Years
Output	1,000 MWe
Seismic	SSE 0.2g

APR1000



Type	PWR
Life	60 Years
Output	1,050 MWe
Seismic	SSE 0.3g

Korean Nuclear Reactors - Safety



EU-APR



US-APR



**EUROPEAN UTILITY REQUIREMENTS
FOR LWR NUCLEAR POWER PLANTS**



EUR Certification



**US NRC
Design Certification**



UAE Barakah Project



Owner

ENEC

Contract Date

Dec. 27, 2009

Scope

**APR1400 x 4 Unit (5,600MW)
Nuclear Fuel (3 Cycles)
Operating Support Service**

Ref. Model

Shin-Kori 3&4



UAE Barakah Project





حظر العمل وقت الظهيرة
Mid Day Break



UAE Barakah Project



Financing



 **Korea Eximbank**
THE EXPORT-IMPORT BANK OF KOREA

**ksure**
KOREA TRADE INSURANCE CORPORATION



Localization by Phased Approach

**Before
Selecting
Supplier**

- Preliminary Localization Plan
- Supply Chain Survey

**Contracting/
Investment
Decision**

- Completion of Localization Plan
- Supply Chain Establishment

**Project
Execution
(1st Unit)**

- Utilizing Local Resources
- Preparing for Further Localization

**Project
Execution
(2nd Unit)**

- Increasing Localization Level
- Possible Export to 3rd Country



Examples of Purchase Package for BOP

Classification	Description of Package
Electric	Power Transformer
	Distribution Transformer
	Medium Voltage Metal-clad Switchgears
	Motor Control Centers with Local Control Station
	Isolated Phase Bus Ducts
	Power Cables, Control Cables, Instrument Cables, etc.
I&C	Solenoid Valves, Instrument Valves, Butterfly Valves, etc.
Mechanical	Centrifugal Pumps, Vertical Sump Pumps, etc.
	Polar Crane

Your Trusted Partner, KHNP



Thank you!

