

Korean Experience on Alliance with Foreign Participants

May, 2019



Jae Young Yang,
Ph.D Nuclear Engineering



1. Sustainable Development of Korea w/ NPPs

- **Dramatic economic growth of Korea with NPPs**
 - ✓ GDP when Korea determined to import 1st NPP : **\$300**
 - ✓ GDP Now (25 NPPs in operation) : **\$30,000**
 - ✓ Cheap Electricity Price was a key for industrial competitiveness
 - ✓ Outstanding sustainable development case
- **Alliances with Foreign Participants during 1970's** (Korea was importing country)
 - ✓ **Turnkey**: Alliances weak & K-participation limited to Civil works
 - ✓ **Non-Turnkey**: K-part. extended to BOP as contracted, not technically strong bond
 - Foreign contractors cautious about expanding K-part. Not to jeopardize project
 - ✓ **NPPs stabilized energy supply and boosted Korean economy**



2. Real Alliances w/ Technology Transfer Contracts

- **Early 1980's, Technology Self-reliance (Localization) & Korean Standard NPP Development Plans established**
 - ✓ **Localization DORs in TS Plan**
 - **KHNP: Operation & PM**
 - **KEPCO-E&C: NPP Design & Owner Support**
 - **KNF: Fuel**
 - **Doosan : Major Equip Manufacture & Supply**
- **Select foreign contractors for Yonggwang 3&4 NPPs and Awarded **Construction & Technology Transfer (TT)Contracts****
 - ✓ **Intensive & comprehensive TT program lead to technically meaningful alliances**
- **TS DOR structure maintained for 3 decades**
 - ✓ **Lead & supported medium & small size equip. suppliers to buildup strong supply chain (Lower construction cost)**
 - ✓ **Key success factor of Team Korea in UAE**



3. Summary & Lessons Learned

- **Core success factor of Korean Case:**
 - ✓ National, comprehensive Technology Self-reliance (Localization) Plan with strong governmental support
- **Participation of local company is important for sustainable development but**
 - ✓ Not beyond the industrial capability of importing countries
 - Coordinated participation under national technology localization plan
 - ✓ Sustainable development implies project success as well

Thank You!

The background of the slide features a composite image. On the left, there is a tall, modern glass skyscraper. Below it and extending across the bottom is a large, modern building with a curved facade and illuminated interior. In the background, there are faint images of industrial structures, including what appears to be a nuclear reactor dome and various pipes and cranes, suggesting a focus on industrial technology and infrastructure.