

# BWRX300

The most economical SMR design available.\*

The BWRX-300 is a ~**300MWe** water-cooled, natural circulation Small Modular Reactor (SMR) with passive safety systems. The BWRX-300 is based in large part on the U.S. NRC licensed, 1520 MWe ESBWR design. The BWRX-300 is designed to provide clean, flexible baseload electricity generation that is **competitively priced with the lifecycle costs of the typical natural gas combined-cycle plant.**

The tenth evolution of the Boiling Water Reactor (BWR), the BWRX-300 represents the simplest, yet most innovative BWR design since GE began developing nuclear reactors in 1955. The result is a **dramatic reduction in scale and complexity** compared to large reactors, as well as other SMR designs. **BWRX-300 is projected to have up to 60% less capital cost per MW when compared with other typical water-cooled SMR and large nuclear designs in the market.** The BWRX-300 is designed for significant reductions in operating staff, maintenance cost, and security requirements.

The key BWRX-300 innovation is the elimination of **large Loss-of-Coolant Accidents (LOCAs)**. This innovation enables simpler passive safety systems and a more compact reactor building compared to prior Light Water Reactor (LWR) designs. A strong focus on design-to-cost has resulted in an innovative solution that limits plant volume, concrete & steel, while utilizing the ESBWR's design and licensing basis to the fullest extent. Traditional support system designs are simplified and scaled from the ESBWR.

The BWRX-300 utilizes natural circulation and passive cooling isolation condenser systems from the U.S. NRC-licensed ESBWR. Steam condensation and gravity allow the BWRX-300

**to passively cool itself for 7 days** without power or operator action during abnormal events including station blackout. Indefinite cooling is achieved by the simple action of water addition to the isolation condenser pools.

The reactor pressure vessel and other components can be manufactured in various countries. Components and piping are skid-mounted equipment and straight forward to install. The reactor building is modular and simple to construct. Turbine Building and Balance of Plant equipment is skid-mounted and utilizes 'off-the-shelf' combined cycle equipment.

**The BWRX-300 can be commercially deployed as early as 2030**, utilizing modular and open-top construction techniques proven in Japan. The BWRX-300 power plant is approximately 10% of the size and complexity of a large nuclear project; thereby, substantially reducing project risk and total capital cost requirements.



## Key advantages

- World class safety
- Designed to be cost-competitive with gas
- Up to 60% capital cost reduction per MW
- Scaled from the licensed ESBWR design
- No large LOCAs
- 7 days of passive standby cooling
- Utilizes common construction techniques
- Required only limited on-site staff and security



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Patents pending.

\*Compared to currently offered water-cooled SMRs

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