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# China Deploys Floating Nuclear Power Plant to South China Sea

by [Debalina Ghoshal](#)

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- A nuclear power plant on the sea would ensure a continuous supply of water as coolant — a necessity for any reactor.
- China's motive for building the nuclear reactors is clear : to exert its dominance and influence throughout the area.

In April 2016, reports began coming in that [China has plans](#) to build floating nuclear power plants in the South China Sea. A floating nuclear power plant consists of one or more nuclear reactors, located on a platform at sea. China apparently [plans to](#) "speed up the commercial development" of the South China Sea and views the nuclear power plants as part of that plan. [\[1\]](#)

Final assembly of the reactor [is reported](#) to start in coastal city of Huludao, in Liaoning province, and will be built by Bohai Shipbuilding Heavy Industry Co Ltd, a unit of China Shipbuilding Industry Corp (CSIC).[\[2\]](#)

China's [2016 nuclear plan](#), a component of the China's 13th five-year plan, is evidently to complete 58 nuclear reactors by 2020 and build another 100 gigawatt-sized reactors by 2030. These would make China the largest nuclear power producer in the world. China's floating nuclear reactor initiative seems to be a component of this nuclear plan.

## Reasons for such reactors

China's stated reasons for venturing into such technologies include providing an inexpensive source of electricity and fresh water for both military and economic gains, as well as ensuring China's strategic dominance in the South China Sea. Nuclear power plants could not only provide cheap electricity to defense facilities but also to desalination plants. Normally, the defense facilities such as airports and harbors depend on oil or coal for power generation. A nuclear power plant on the sea

would ensure a continuous supply of water as coolant — a necessity for any reactor.

A 60 MWe reactor is said to be beneficial for supplying electricity, heat and desalination, and could be used on islands and on coastal areas or for offshore oil and gas exploration.



A scale-model of a Russian floating nuclear power plant. (Image source : Felix/Flickr)

A common theme in the narrative about floating nuclear power plants is that they would provide energy and freshwater to the disputed Spratly Islands and also to China's artificial islands in the South China Sea, such as Woody Island. Beijing, however, is [entangled in territorial disputes](#) with Japan, the Philippines, Malaysia, and Vietnam, to name a few in the region.

China is already [building man-made islands](#) in the South China Sea by shifting sediment from the sea floor to the reefs. It is also building ports, airstrips and radar facilities. In 2016, reports also stated that China has [deployed HQ-9 surface-to-air missiles](#) in the Woody Island, close to the [Paracel Islands](#) in South China Sea. China has also deployed a HQ-9 and shorter ranged HQ-6 air defence system at the Paracel Islands.

At the [Hainan base](#), China operates guided missile-destroyers : *Yinchuan*, *Hefei*, *Kunming*, and the *Changsha*. The DF-21D "carrier killer" anti-ship ballistic missile (ASBM) is also an added asset for China.

China has, as well, unilaterally established an Air Defense Identification Zone (ADIZ) [in the East China Sea](#) and stated that it had the right to establish similar [zones in the South China Sea](#).

As China flexes its muscles in the South China Sea, building a floating nuclear reactor is yet another step toward strengthening this regional dominance.

All these man-made islands have limited amounts of fresh water. A key part of aircraft maintenance to avoid corrosion when operating in a salt water environment is washing the planes down with fresh water or chemical solvents. While desalination is an option, nuclear energy might facilitate that. China already has [experience in nuclear desalination](#), with China General Nuclear Power commissioning a sea-water desalination plant that uses waste heat to provide cooling water at the Hongyanhe project

at Dalian, in Liaoning province.

The U.S. Energy Information Administration estimates that there are 11 billion barrels of oil and 190 trillion cubic feet of natural gas in the seabed. Geopolitical and energy security analyst Jeremy Maxie [writes](#) :

"Most of the gas in the SCS is located in offshore deep-water fields (defined as 400-1,200 meters) that is more technologically challenging and costly to develop than shallow-water or onshore fields. In order to monetize any potential deep-water gas discoveries, subsea pipelines would need to be built to onshore processing facilities."

This plan that may or may not be politically conceivable. Maritime nuclear floating reactors would apparently provide an advantage for offshore gas exploration.

The South China Sea is crucial for states vying to gain influence in the Persian Gulf and the Middle East, as well as for maritime commerce. The South China Sea is also rich in hydrocarbons and fish in a region where the staple diet is fish.

In addition, with proven oil reserves, the South China Sea would [yield 130 billion barrels of oil](#), according to Chinese estimates. Moreover, 80 percent of the China's energy requirements [pass through the Malacca Strait](#) into the South China Sea ; China is therefore largely dependent on the Malacca Strait and the South China Sea, a circumstance termed by then-Chinese President Hu Jintao as the "Malacca Dilemma."

Building nuclear reactors in the South China Sea would enable Beijing to exert its assertiveness at every turn.

## **Hazards**

Constructing such reactors in a region prone to typhoons is, as can be imagined, hazardous, resulting in accidents and meltdowns. Radioactive waste would spread to neighboring countries and cause catastrophic damage to sea-currents as well as maritime flora and fauna. Moreover, the capacity of maritime reactors to produce power is far less than for land-based reactors. China's motive for building the nuclear reactors, however, is clear : to exert its dominance and influence throughout the area.

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