

CNNC launches test platform to extract uranium from seawater

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China National Nuclear Corporation (CNNC) has commissioned a seawater uranium extraction test platform, said to be the largest such test platform to be built in the South China Sea.



The platform for extracting uranium for seawater (Image: CNNC)

CNNC noted that only a few institutes in China have carried out on-site tests of seawater uranium extraction. It said its new marine test platform has the ability to carry out material verification and amplification experiments in real ocean conditions.

The company added that, in the future, the test platform will form a "two centres, one platform" seawater uranium extraction scientific research base together with a research and test centre and an international exchange centre, construction of which has just got under way. These facilities, CNNC said, will create a "world-leading" seawater uranium extraction technology development centre.



The floating test platform (Image: CNNC)

Speaking at the 2023 Seawater Uranium Extraction Technology Innovation Alliance Council and Academic Exchange Conference on 17 May in Hainan, CNNC Deputy General Manager Cao Shudong said exploring unconventional uranium resource development technologies and promoting land and sea uranium resources are strategic choices to ensure the sustainable and steady development of China's nuclear energy industry.

Faced with the challenge of engineering application of seawater uranium extraction technology, CNNC joined with various alliance units to jointly tackle key problems and make important progress in various tasks, he told the conference.

Seawater contains naturally occurring uranium at a concentration of about 0.003 parts per million. Although this concentration is very low - the average abundance of uranium in the Earth's crust is about 2.7 parts per million and ore grades are many times greater than that - the oceans are estimated to contain some 4 billion tonnes of the metal. The total uranium resources in land-based ores recoverable at costs of up to USD130 per kilogram stands at around 3.7 million tonnes, so the oceans could be an important resource of uranium if it can be recovered economically.

"As the demand for natural uranium resources and the difficulty of development increase year by year, it will be an important strategic choice to explore and develop unconventional uranium resources while developing terrestrial uranium resources," CNNC said.

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