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NUCLEAR FUSION REACTOR TO BE BUILT

HEFEI: An experimental device that aims to generate clean energy using nuclear fusion will be built in the next few months in Hefei, capital city of East China's Anhui Province.

Experiments with the advanced new Tokamak device, a doughnut-shaped reactor, will start in July or August.

If the experiments prove successful, China will become the first country in the world to build a fully-functioning Tokamak fusion device, experts said.

Nuclear fusion aims to join together atomic nuclei. This process, similar to the chemical reactions that take place on the sun, releases energy. This China project, dubbed EAST (experimental advanced superconducting Tokamak), is being undertaken by the Hefei-based Institute of Plasma Physics under the Chinese Academy of Sciences.

It will require a total investment of nearly 300 million yuan (US\$37 million), only one-15th to one-20th the cost of similar devices being developed in the other parts of the world.

The new device will be an upgrade of China's first superconducting Tokamak device, dubbed HT-7, which was also built by the plasma physics institute, in partnership with Russia, in the early 1990s.

HT-7 made China the fourth country in the world, after Russia, France and Japan, to have such a device.

"The EAST project research results will be significant for the International Thermonuclear Experiment Reactor, or ITER, in terms of basic research both in engineering technology and physics," said Wan Yuanxi, who is in charge of the project.

The ITER programme, still in its initial stages, involves Russia, Japan, the United States, the European Union, China and the Republic of Korea.

Controlled nuclear fusion is seen as an efficient way for people to generate infinite amounts of clean energy to offset the reducing amounts of fossil fuels, such as oil and coal.

Scientists believe that deuterium, extracted from seawater, can be used to produce enormous amounts of energy from a deuterium-tritium fusion reaction under huge temperatures of 100 million C. After nuclear fusion, the deuterium extracted from one litre of seawater will produce energy equivalent to 300 litres of gasoline.