**China powers up the nuclear Sun**

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December 7, 2020

In what is supposed to be the first such milestone event in human history, China has powered up an artificial sun. This puts China ahead of its global competition when it comes to building nuclear power research capabilities. According to reports, the HL-2M Tokamak reactor is the largest nuclear fusion experimental research device in China. With its advanced systems, scientists are anticipating that such a breakthrough will harness them with a powerful clean energy source. According to the People’s Daily report, the Tokamak reactor is powered by a magnetic field that fuses hot plasma. The reaction can create a temperature of more than 150 million degrees Celsius. This is nearly ten times hotter than the Sun’s core. The artificial sun is located in Sichuan province. The People’s Daily reported that &quot;The development of nuclear fusion energy is not only a way to solve China&#39;s strategic energy needs, but also has great significance for the future sustainable development of China&#39;s energy and national economy.&quot; Scientists in China have been trying to develop smaller versions of the nuclear reactor since 2006. This shows the immense research and development China has been pursuing in nuclear technology. If the smaller versions of the fusion reactor are developed and are a success, they can reshape consumer lifestyle, business, trade, and commerce, as we know it. Chinese scientists are also envisioning working in collaboration with the scientists in France, who are working on the International Thermonuclear Experimental Reactor. It is the world’s largest nuclear fusion research project.

China’s quest for clean energy by using controlled nuclear fusion will bring innovation when it comes to pursuing alternative energy objectives. If the plans work accordingly, China will be able to produce limitless clean energy. This idea seems to be productive while keeping in mind that humans have been utilizing Earth’s natural resources. It is also a frightening reality that humans – in the coming decades or so – will not be dependent on the Sun anymore. Such a thought brings to mind new possibilities where humans can survive without nature’s blessing and create a world of their own.

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However, such a mega project does not come cheap. The costs are huge and the expenses are beyond one’s imagination. This is why China has collaborated with the European Union, Japan, the Republic of Korea, Russia, the United States, and India.

Song Yuntao of the Institute of Plasma Physics in Hefei said, “China had a relatively late start in nuclear fusion development, but given our local government and central government’s high level of attention in innovation, especially as our domestic processing and manufacturing sectors developed, it accelerated some of our processes. Fusion is not something that can be accomplished by one country, just like ITER (International Thermonuclear Experimental Reactor), which needs people around the world to work together to make it.”

Over the last several years, China’s nuclear reactor has achieved some milestones. In 2017, it was the first such facility to maintain suitable conditions for nuclear fusion. Furthermore, in November 2019, the nuclear reactor touched the 100 million degrees Celsius mark, which is six times hotter than the core of the Sun.

Chinese scientists are hopeful that the reactor will be fully operational by 2050. They also plan to build a reactor that could produce fusion power for commercial use. This will be a game-changer in the energy sector of the world. The consumers will end their dependency on buying electricity from utility companies.

Nuclear fusion is perhaps the most appropriate alternative of energy for humans. Moreover, deuterium and tritium, the two main raw materials needed for such a process are available in the oceans. There are also no such side effects of nuclear fusion. It does not produce radioactive waste and is considered an environment-friendly source of clean energy.

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