**Using Nuclear Technology for Peace**

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Pakistan has been facing an immense energy crisis for quite a long time. According to a World Bank report, electricity shortage is a bigger obstacle to business as compared to corruption. To fulfil, or at least shorten, its energy shortage, Pakistan and China are working in close collaboration. Some states like India have been questioning Pakistan’s nuclear cooperation for peaceful purposes. However, all business related to nuclear is according to the IAEA regulations and safety mechanism. This article looks at China-Pakistan cooperation in the peaceful nuclear energy sector and how they are taking care of the obligations of the IAEA and other nuclear regulatory agencies.

Peaceful use of nuclear technology has significantly increased in modern times where other sources are expensive as well as environmental pollution. Nuclear technology is significant in several fields: agriculture, energy production, medical, pharmaceuticals, scientific research, and industries. Nuclear technology is not only economic but also environment-friendly. Hence, Pakistan has been looking to seek collaboration in the nuclear energy sector under the non-proliferation regulations. Being a close ally, Pakistan is actively engaged with China for collaboration in the nuclear energy sector for peaceful uses.

China has been assisting Pakistan in developing nuclear power plants to provide for Pakistan’s nuclear energy requirements in addition to improvement in a number of sectors i.e., food processing and agriculture. However, Pakistan’s supply and demand gap are a serious issue at the moment, which is being prioritised by bilateral cooperation. The nuclear cooperation demonstrates strong progressive ties between Beijing and Islamabad.

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On September 8, 2021, China and Pakistan inked a nuclear deal aimed at nuclear energy cooperation. The agreement valid for ten years was signed between Pakistan Atomic Energy Commission and China Zhongyuan Engineering Cooperation. Moreover, the agreement includes Uranium processing, nuclear fuel supply, transfer of nuclear technology and establishing reactors. The main aim of the agreement is comprehensive nuclear cooperation to construct and maintain nuclear power projects in Pakistan.

Earlier, China has constructed a number of nuclear projects in Pakistan. A brief detail of Chashma Nuclear Power Complex (CHASHMA) and Karachi Nuclear Power Complex (KANUPP) is given below:

CHASHMA I was the second unit constructed by China in Pakistan in 2000 under the complete guidelines of the International Atomic Energy Agency (IAEA) protocols. . Its capacity is 300 megawatts. The life of the plant is 40 years. Later on, with the Chinese funding, Pakistan upgraded CHASHMA I in 2005 and named it CHASHMA II. This project too was under the guidelines of the IAEA. Likewise in March 2020, the government of Pakistan agreed with the Chinese company for CHASHMA units 3 and 4. China provided 82 per cent of the whole cost of the project. This plant life is also 40 years.

Moreover, the PAEC (Pakistan Atomic Energy Commission) in February 2013 entered into an agreement with the CNNC (Chinese National Nuclear Corporation) in November 2010. The Chinese Government constructed and developed the fifth power plant of the CHASHMA nuclear complex. The power capability of this unit is 1000 MW. Similarly, Karachi Nuclear power Complex was another nuclear cooperation between Beijing and Islamabad. KANUPP-1 and KANUPP-2, 3, and 4 are the civilian nuclear powers plants that produce 1,000 MW of electricity in Karachi, Sindh. This nuclear complex is under the protection and inspection of the IAEA. The construction plant was under the PAEC, and it was funded by the International Atomic Energy Agency, China National Nuclear Corporation, the China Atomic Energy Authority, and China’s Guangdong Nuclear Power Group.

Hence, China-Pakistan nuclear cooperation for decades is a sign of their deep friendship and trust. It is pertinent to mention all the agreements between both the countries and projects are according to the IAEA protocols and principles. Pakistan needs further nuclear agreements for the peaceful production of energy to cater for the growing needs of the energy sector in the country.

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