CENTRE FOR AIR POWER STUDIES

In Focus

New Delhi

CAPS InFocus: 32/2023

22 May 2023

All Eyes on FDI in Nuclear Energy

Rishika Singh

Associate Fellow, Centre for Air Power Studies

Keywords: FDI, Nuclear Energy, NITI Aayog, Department of Atomic Energy, Energy Transition

Source: Shutterstock/Representational Image

On May 5, 2023, a NITI Aayog panel recommended to the Government of India to allow Foreign Direct Investment (FDI) into India's atomic sector. India is an attractive destination for FDI, and the total FDI inflow in the country in FY 2022 (April-December) was US $55.27 billion. The top emerging investors have been Singapore, the USA, Mauritius, the Netherlands, and Switzerland.[1] The Consolidated FDI Policy of the Government of India prohibits foreign investment in the atomic energy sector. In contrast, there is no restriction on FDI in the industry for manufacturing nuclear equipment and parts for nuclear power plants and other related facilities.[2] The subject of 'nuclear energy' is governed by India's Atomic Energy Act 1962, and the Government of India plays a pivotal role in the development, operation, and decommissioning of nuclear facilities. Currently, the role of domestic private companies is restricted to the supply of equipment components and assistance in construction.

There is a rapid expansion aspired for nuclear energy, as India plans to generate nine per cent of its electricity from nuclear energy by 2047, according to a statement by Union Minister Jitendra Singh in April 2023.[3] At the same time, the Indian government has repeatedly expressed its intention to push the pedal on the clean energy transition on various global platforms. India's national statement at 27th Conference of Parties (COP27) of the United Nations Climate Change Conference highlighted its "long-term low-emissions growth strategy with low carbon transition pathways in key economic sectors."[4] Previously, at COP26, PM Narendra Modi had committed to reaching net zero emissions by 2070. In Bali, at the G20 meeting, PM Modi pledged that half of India's electricity would be generated by renewable energy by 2030. India has paved its decarbonisation strategy by prioritising the adoption of reliable and clean technologies consisting of renewable and nuclear energy.

The recommendation by the NITI Aayog panel enables domestic and foreign private companies to complement and increase nuclear power generation. Nuclear power has zero carbon emissions and can support a developing India's baseload power demand. The Department of Atomic Energy (DAE) said that foreign companies such as Westinghouse Electric, GE-Hitachi, Electricite de France, and Rosatom had expressed interest in India's nuclear power projects as technology partners, suppliers, contractors, and service providers.

The question of allowing FDI into the atomic energy sector was previously raised in Parliament in February 2020[5] and February 2023.[6] But the government rejected the idea. Presently, the only foreign collaboration in building nuclear power plants is with Russia. But this is an Inter-Government Agreement (IGA) to build Kudankulam Nuclear Power Plant (NPP), which is not

categorised as an FDI.[7] India has such IGAs for cooperation in peaceful uses of nuclear energy with seventeen countries.[8]

Several new developments, however, have been taking place in India's nuclear energy sector. For example, in November 2022, Union Minister Dr. Jitendra Singh called upon the private sector and start-ups for critical technology development of small modular reactors with up to 300MW capacity to realise India's clean energy transition. Another significant development took place on May 1, 2023, when National Thermal Power Corporation (NTPC) and Nuclear Power Corporation of India Ltd. (NPCIL) signed a supplementary Joint Venture (JV) agreement to develop two of the ten fleet-mode NPPs in Chutka, Madhya Pradesh, and Mahi Banswara, Rajasthan. In addition, the government amended the Atomic Energy Act 1962 in 2015 to enable the JV of Public Sector Enterprises to set up nuclear power projects to boost domestic investment.[9] These developments are in line with India's clean energy commitments to achieve a net zero emission target by 2070. They are also indicative of the government's eagerness to accelerate the nuclear power programme. Moreover, they highlight the policy push by the government to move the nuclear energy sector from an 'exclusive to inclusive' approach, with the proposed inclusion of the private sector, foreign companies, and JV agreements.

Against this backdrop, it is imperative to evaluate the complexities and possible challenges that can emerge from permitting FDI in the nuclear energy sector in India. Firstly, the perceived complexity of the Civil Liability for Nuclear Damage Act 2010 would need further clarification by the international nuclear community, including the application of the liability regime to emerging nuclear technologies like small modular reactors and advanced reactors.

Secondly, the Indian NPPs are owned, operated, and managed exclusively by Nuclear Power Corporation of India Ltd. (NPCIL) and Bharatiya Nabhikiya Vidyut Nigam (BHAVINI), which are government owned companies under the administrative control of the Department of Atomic Energy (DAE). Therefore, thorough deliberation is required to assess the roles of domestic private companies and foreign companies as NPP operators. While such a scenario of a private entity as an NPP operator is widely practised in the West, it will require India to develop new protocols and processes, including on the regulatory and licensing fronts.

While the two developments that have taken place this month might take time to be implemented, they do show a renewed focus on nuclear energy as part of the clean energy transition.

NOTES:

[1] "FDI in India: Foreign Direct Investment Policy of India", *Invest India*, https://www.investindia.gov.in/foreign-direct-investment#:~:text=Total%20FDI%20inflows%20in%20the%20country%20in%20the%20FY%202022,into%20India%20FY%202021%2D22. Accessed on May 11, 2023.

[2] "Investment in Atomic Energy", *Department of Atomic Energy*, September 16, 2020. https://www.pib.gov.in/PressReleasePage.aspx?PRID=1655136#:~:text=The%20equity%20part%20is%20funded,the%20list%20of%20prohibited%20sectors. Accessed on April 09, 2023.

[3] "9 per cent of India's electricity to come from nuclear sources by 2047: Jitendra Singh" *Economic Times*, April 09, 2023. https://economictimes.indiatimes.com/news/india/9-per-cent-of-indias-electricity-to-come-from-nuclear-sources-by-2047-jitendra-singh/articleshow/99361312.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst. Accessed on May 11, 2023.

[4] "India Submits its Long-Term Low Emission Development Strategy to UNFCCC", *Press Information Bureau*, November 12, 2022. https://pib.gov.in/PressReleasePage.aspx?PRID=1875816. Accessed on May 09, 2023.

[5] "Government of India, DAE, Rajya Sabha, Unstarred Question No. 482", *Department of Atomic Energy*, https://dae.gov.in/writereaddata/rsusq_482.pdf. Accessed on May 09, 2023.

[6] "Government of India, DAE, Rajya Sabha, Unstarred Question No. 10", *Department of Atomic Energy*, https://dae.gov.in/writereaddata/rs%20usq%2010.pdf. Accessed on May 09, 2023.

[7] "India and Russia Inter- Governemntal Agreement on Cooperation in the Construction of Additional Nuclear Power Plant Units at Kudankulam", *Ministry of External Affairs*, December 05, 2008. https://www.mea.gov.in/Portal/LegalTreatiesDoc/RU08B2341.pdf. Accessed on May 09, 2023.

[8] "Cooperation in Developing Atomic Energy", Press Information Bureau, August 09, 2018. https://pib.gov.in/newsite/PrintRelease.aspx?relid=181708. Accessed on May 09, 2023.

[9] "Government of India, DAE, Lok Sabha, Unstarred Question No. 3474", *Department of Atomic Energy*, https://dae.gov.in/writereaddata/ls usq 3471.pdf. Accessed on May 09, 2023.