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Leveraging India's Nuclear Energy Power: Taking Lessons from France

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'Energy power' is the ability of a state to use its advantages in energy output and technology to advance its global interests or undermine those of an adversary; [1] It offers political leverage which softer aspects of diplomacy don't seem to deliver. It is viewed as an intermediary approach between hard and soft power as it signals the seriousness of intent while avoiding the damage caused by military action. A classic case of the use of 'energy power' was when the US responded to Russia's incursions into Ukraine: The US sought to wean Europe off its dependence on Russian natural gas by providing it with American liquefied natural gas.

As many of the conventional sources of energy greatly contribute to global environmental damage, nuclear power offers a clean, sustainable and reliable source of energy. It produces no carbon during energy generation and operates at much higher capacity factors than any other sources of energy. It is increasingly being seen as a solution to, as well as a necessity in the coming times as traditional sources of energy would inevitably become costlier as they continue to deplete. In this context, countries that enjoy a competitive advantage in nuclear power and technology would certainly have a strategic edge.

This article makes a case for leveraging India's advantages in nuclear energy technologies to promote its diplomatic interests. It uses the experience of France to offer some recommendations to enhance India's civil nuclear commerce.

The French Experience

During the Oil Crises of 1973, the quadrupling of the price of oil by OPEC nations sent an 'oil shock' across the globe. France, during that time, made the decision to opt for nuclear power owing to the non-availability of indigenous oil or gas. Its coal resources too were inadequate then and are now nearly depleted.

French policymakers saw nuclear energy as the only way to achieve energy independence and thus decided to harness nuclear energy to

meet their energy demands. A popular French riposte to questions on its shift to nuclear energy in the earlier days was: "no oil, no gas, no coal, no choice." [2]In the course of the next fifteen years, the French government installed 56 nuclear reactors, and as of now, it derives over 75% of its energy needs through nuclear power.[3]

Domestically, France's nuclear energy programme has been quite popular and largely non-controversial. The reason being that first, many of the administrators and government officials, including those who manage France's nuclear energy programme are scientists and engineers. The French technocrats have a high status in society and enjoy the confidence of the French populace. Secondly, the French officials have worked hard to educate the population on not just the benefits of nuclear energy but also on its safe operations to make them feel secure. Most of the key positions in France's nuclear programme - from ministerial advisor to top industry executives are taken from Corps des Mines, which is a state division of engineers and is linked to the French Ministry of Economy and industry.

In the last decade, France exported up to 70 TWh net nuclear energy each year, with Spain, Italy, the U.K., Switzerland and Germany being its principal buyers.[4] As today, France is the world's largest net exporter of nuclear energy and gains over €3 billion per year from its exports.[5] Additionally, France has been exporting nuclear technology, including the designs of its 900 MWe PWR to China, South Korea, and South Africa; the French company AREVA operates fuel fabrication facilities in Belgium, Germany, and the U.S. It is also involved in reactor building projects in countries including China, Finland and India. France's civil nuclear programme is now a critical pillar of its strategic relations with these partner countries.

France has set up nuclear departments in its embassies in China, Japan, Russia, South Korea and the U.S. It has also placed Nuclear counsellors, who are representatives from France's CEA - which is its equivalent of Atomic Energy Commission, in its embassies in Finland, Germany, Hungary, India, U.K. The nuclear counsellors watch scientific and technological developments, and support cooperation programs between CEA and other French organisations and industrialists with their counterparts. Nuclear energy, thus, has come to form a crucial component of France's diplomacy and grand strategy.

What Can India Do?

India started its nuclear power programme in 1948. It is one of the few countries in the world that has nuclear power ambitions predating its development of nuclear weapons. The programme, however, faced several challenges owing to India's non-membership of the NPT. – These were even more acute when India conducted the peaceful nuclear explosion in 1974 and the five nuclear tests in1998 that

resulted in the imposition of several sanctions. The sanctions constrained India's nuclear commerce with the other countries. However, the Indo-US deal signed in 2008, that concluded a bilateral civil nuclear cooperation agreement between the two countries, enabled a grant of an exemption for India by the Nuclear Suppliers Group to engage with international trade in sensitive technology and material with the member states. At present, India has signed civil nuclear agreements with 14 countries, namely, Argentina, Australia, Canada, Czech Republic, France, Japan, Kazakhstan, Mongolia, Namibia, Russia, South Korea, United Kingdom, U.S. and Vietnam.

According to the International Atomic Energy Agency (IAEA), approximately 30 countries have evinced interest in building their first nuclear power plant. Many of these countries are emerging or developing economies, and therefore, would need to depend on strong international support.

At present, nuclear energy constitutes less than 3% of India's total energy generation. Notwithstanding, India has demonstrated remarkable success in developing indigenous developed Pressurised Heavy Water Reactor (PHWR). Indian PHWRs are cost-competitive and are based on proven technologies. India's record in the management of nuclear facilities has been positive. India could export or offer its services in developing such reactors in the new states interested in producing nuclear energy.

To expedite the commercialisation of PWHRs, India could take several lessons from France:

First, if India wants to leverage nuclear energy for strategic goals, it cannot do so without generating consensus among India's policymakers. Indian politicians and administrators need to be educated on various aspects of nuclear energy and the strategic relevance of such trade for India. Despite the grant of an exemption for India by the Nuclear Suppliers Group, no concrete dialogue on the prospects civil nuclear commerce seems to exist amongst India's policymaker as of today.

Secondly, similar to France's Corps des mines, India could do well by forming a technocratic division that's closely linked to the concerned ministries. In the case of civil nuclear commerce, India needs to build synergies between Nuclear Power Corporation of India Limited (NPCIL) – which is the Indian public sector undertaking responsible for the generation of nuclear power for electricity, the Ministry of Commerce and Industry, and the Ministry of External Affairs. This could take place by forming an inter-ministerial forum that deals with various aspects of civil nuclear commerce.

Thirdly, at present, India and France are in the process of finalising the deal for the development of the Jaitapur Nuclear Power Project. The French embassy in Delhi has set up a nuclear section which is responsible for the

follow up on Indo-French bilateral cooperation, negotiation of intergovernmental agreements, interagency agreements, as well as facilitating interaction Indian and French players in the nuclear field active in the sectors of industry, R&D, training. India could similarly use its missions and posts abroad to advocate India's achievements in nuclear energy, approach the states aspiring nuclear energy to offer its services, and facilitate further cooperation.

The use of 'energy power' derived from nuclear energy can be a potent tool to promote India's interests and strengthen its position; The experience of France is a viable example to gain lessons from.

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

Notes

[1] "Hard Power, Soft Power, and Energy Power." Foreign Affairs. Last modified August 14, 2019. https://foreignaffairs.com/articles/united-states/2015-03-03/hard-power-soft-power-and-energy-power.

[2] Olah, George A., Alain Goeppert, and G. K. Prakash. *Beyond Oil and Gas: The Methanol Economy*. Hoboken: John Wiley & Sons, 2011.

[3] "Nuclear Power in France | French Nuclear Energy." World Nuclear Association - World Nuclear Association. Accessed March 25, 2020. https://www.world-nuclear.org/information-library/country-profiles/countries-a-f/france.aspx.

[4] Ibid.

[5] Ibid.