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THE SHANTI ACT, 2025 : A CRITICAL ANALYSIS OF INDIA'S NUCLEAR GOVERNANCE

~ Utkarsh Chaudhary

Abstract

The union government has recently enacted the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act, 2025, with the objective of liberalising India's nuclear energy governance framework. The article, titled "*The SHANTI Act, 2025: Critical Analysis of India's Nuclear Governance*" presents a comprehensive examination of the Act by critically analysing its key provisions and assessing their constitutional and policy implications. The study adopts a comprehensive approach by comparatively assessing the SHANTI Act alongside with the earlier Civil Liability for Nuclear Damage act, 2010, Atomic Energy Act, 1962, and as well as international guidelines by International Atomic Energy Agency. This article examines the acts impact on the privatisation of the nuclear power sector in India, its implications for India's federal structure, and revised liability regime in respect to both operators and the government. Is also analysis the changes introduced in the patent policy, opening gates for the private participation, and evaluates the establishment of a specialised appellate tribunal system for swift and efficient adjudication disputing in this crucial domain. This article concludes by emphasising the need for a balanced and participatory regulatory framework to ensure development of India's nuclear sector

The Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act, 2025 was passed by Lok Sabha on 17th December 2025 and by Rajya Sabha on 18th December 2025, making it a law after presidential assent on 20th December . This law has brought a significant shift in the nuclear policy of India. Since India became a nuclear nation, the government has tightly regulated the sector, leaving no space for private interest and investment in it . With the introduction of the SHANTI Act, 2025, the civil nuclear sector is expected to attract the private players. This article tries to explore the various aspects of the

law and how much they have deviated from and complied with the international standards and previous policies.

Privatisation

In chapter ii of the SHANTI Act section 3(e) states

"*any other person expressly permitted by the Central Government, by notification, to set up such facilities or undertake such activities*".

This particular section has been widely promoted by the government to highlight the major shift from previous policy. Since 1956 the government dominated the nuclear sector. The Atomic Energy Act, 1962 and Civil Nuclear Liability Act, 2010 governed the civil nuclear sector, barring the entry of private companies from entering the domain. Another aspect of privatisation under the SHANTI Act is that it only allows the companies incorporated in India . Section 2(9) states

"company shall have the same meaning as assigned to it in clause (20) of section 2 of the Companies Act, 2013, but does not include a company incorporated outside India"

Now, domestic policies in India increasingly favour the privatisation of nuclear energy generation; however, a pertinent question still remains: whether the private companies will be able to navigate the inherent complexities of this sector. The significant challenge that remains before the private corporations is the assurance of an undisrupted fuel supply. India is not a producer of uranium, the principal fuel for nuclear power plants, and therefore it relies heavily on uranium supplies through imports to meet its requirements . India generally sources its uranium supplies through long-term contracts with countries like Kazakhstan, Canada, Russia, and Australia to avoid market volatility. While these contracts provide a stable supply of uranium from the exporters they are not unsusceptible to the uncertainties of geopolitics. For instance, in 2023 the emergence of a military junta in Niger and its subsequent distancing from Western allies like France led to disruptions in supply for French power plants. Such developments in geopolitics underscore the fragility of global nuclear fuel supply chains. These uncertainties are compounded by the status of India as a not-signatory of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT).

To mitigate disruptions in uranium supply, the government must reduce its reliance on uranium and instead focus on developing thorium as an alternate nuclear fuel. Thorium is a radioactive

mineral which is abundantly available along the coastal regions of Kerala, Tamil Nadu and Odisha, making India the holder of the world's largest thorium reserves. However, the development of thorium as a nuclear fuel remains at a very nascent stage, and its commercial deployment may require considerable time. For the present, the critical issue lies in how effectively the government and private participants will navigate these constraints while ensuring an uninterrupted power supply.

Excessive centralisation

Since the inception of the Constitution, federalism and deliberative decision making have been to integral part to governance in India. The Constitution establishes a clear division of powers between the Union and the State governments, and decentralisation has consistently remained a core feature of Indian governance and administration. However, under SHANTI Act, 2025, the principle of federalism is sidelined as the authority to establish nuclear power plans is exclusively lies in the Central government. The act contains no provision mandating consultation with State government and local bodies. Consequently, a nuclear power plant may be established at a particular location without any meaningful dialogue with the local authorities or the inhabitants of the affected area.

The absence of a structured dialogue mechanism runs contrary to the guidelines issued by International Atomic Energy Agency. The IAEA, guidelines and recommendations[1] emphasise engagement with the local communities and stakeholder, highlighting the importance of transparency, mutual trust and effective communication. Its the therefore the responsibility of the government to engage in a transparent and inclusive dialogue with the local communities prior to establishment of a nuclear power plant.

Liability

Liability of operator

Under Civil Liability for Nuclear Damage Act, 2010, the maximum liability in the event of a civil nuclear incident was fixed at the rupees equivalent of 300 million Special Drawing Rights . The Act also empowers the Central Government to take appropriate measures where the damage exceeds the payable compensation. With respect to the operator's liability, the Act

[1] *Stakeholder engagement: Nuclear energy* (2016) *IAEA*. Available at: https://www.iaea.org/topics/stakeholder-engagement (Accessed: 12 January 2026).

classifies liability on basis of the size nuclear installations. Reactors with thermal power equal to or exceeding 10 Megawatts attract a liability of 1,500 crore rupees; accidents occurring at spent fuel reprocessing processing plant attract a liability of 300 crore rupees; and the operator are liable for 100 crore rupees in accidents involving reactors with a thermal power less than 10 megawatt and fuel cycle facilities other that spent fuel facilities, which are covered in section 6(2)(b) of CLND Act 2010. Critics argued that the liability framework under this Act is overly simplistic and fails to adequately address complexities of the contemporary nuclear power industry.

With introduction of SHANTI Act, the government has sought to establish a more comprehensive policy framework. The Act adopts a more nuanced classification and differentiated approach to the liability in cases of nuclear incident involving reactor. The liability cap has been enhanced to 3,000 crore rupees for incidents involving large reactors with thermal capacity exceeding 3,600 megawatts, while minimum liability of 100 crore rupees has been prescribed for accidents involving small reactors with thermal capacity below 150 megawatts, as well as for full-cycle facilities other than spent fuel reprocessing plants.

Sl. No.	Categories of nuclear installation Limit of operator's	liability (INR) in crore
(1)	(2)	(3)
1	Reactors having thermal power above 3600 MW	3000
2	Reactors having thermal power above 1500 MW and up to 3600 MW	1500
3	Reactors having thermal power above 750 MW and up to 1500 MW	750
4	Reactors having thermal power above 150 MW and up to 750 MW	300
5	Reactors having thermal power up to 150 MW, fuel cycle facilities other than spent fuel reprocessing plants	100

Liability of Government

Under SHANTI Act, 2025, the Central government is liable to pay compensation where the operator's liability exceeds the specified amount in the Second Schedule. This feature of the Act is significant and if founded on the principle of the State acting as insurer of the last resort. The interests of the victims must not be jeopardised due to the operator's incapacity to provide adequate compensation; accordingly, the Act ensures coverage even in cases of large-scale or catastrophic accidents, thereby fulfilling State's role in guaranteeing compensation beyond the operator's financial capacity. This framework also extends to situations where damage arises from grave and exceptional natural disaster that are unforeseeable, as well as from armed conflict, hostilities, civil war, insurrection, or acts of terrorism. If a nuclear installation is owned by the government making government itself it operator of that nuclear facility thus, burden of liability is borne by the government.

A significant departure from the earlier policy framework is evident in the creation of Nuclear Liability Fund. Earlier in CLND Act, 2010, the Liability Fund was established by the Central Government, with the financial burden ultimately borne by operator. In contrast, SHANTI Act, is silent on whether contributions to the Fund must be levied from the operators. The absence of clear obligation on operators may impose an additional financial burden on the government, constraining its capacity to discharge other essential functions.

Patents

With respect to patents, the government has adopted a more liberal approach and may grant patents for inventions, provided that the invention are intended for peaceful purposes. However, the Central Government continues to reserve exclusive rights over activities that are sensitive in nature or critical to the national security. This approach marks a departure from earlier policy, which barred the grant of patents for all categories of inventions relating to the nuclear and radiation technologies. Additionally, under section 20 of the CLND Act, it was also mandatory to disclose relevant information prior to filing the patent application abroad.

Appellate tribunal

Section 49 of the SHANTI Act, 2025, provides that Appellate Tribunal for Electricity, established under section 110 of Electricity Act, 2003, shall have jurisdiction over appeals filed under the SHANTI Act. The Tribunal is empowered to hear appeals against orders passed by Atomic Energy Redressal Advisory Council as well as against the penalty imposed by

Adjudicating Officer. The decisions of the Appellate Tribunal are not amenable challenge before Civil Courts or Hight courts; they may be challenged only before the Supreme Court writhing the period of 60 days.

Earlier, under existing legal framework, there was no clearly defined structure for dispute resolution, and were largely addressed through contractual arrangements and arbitration. This often resulted in inordinate delays in the adjudication, thereby contributing to an increased burden of pending cases.

Conclusion

With the introduction of this Act, The Central Government has sought to liberalise the the nuclear power sector in order to meet the nation's growing energy demands. The act also plays a significant role in attracting private participation; however, several bottlenecks persist in this process. Key concerns include the uncertainty surrounding the supply of reactor fuel, the reduction of the operator liability for the rector below 750 megawatts, and the transfer of financial burden of establishing the Nuclear liability Fund to the government. Another major shortcoming of the Act is the marginalisation of local communities, as it vests the government to set up a nuclear power plant without prior consultation. There Act contains no explicit provision mandating cooperation, dialogue, or stakeholder participation involving local communities.

This Act has also introduced several welcoming reforms. Notably, it provides a more comprehensiveness framework for defining the liability of the operator by specifying liability thresholds for accidents involving reactors of capacity upto 3,600 megawatts and by mandating insurance coverage for the operators. Another positive development is the departure from the government's earlier patent policy, as the Act permits private individuals and companies to apply for patents, subject to certain restrictions. This policy shift is likely to facilitate the expansion of nuclear technologies, which are critical for meeting the nations's ever increasing future energy demands. Furthermore, the establishment of dedicated redressal mechanism in highly specialised field, which requires significant domain expertise, is expected to contribute more efficient and fair adjudication of disputes.

SHANTI Act 2025 has introduced several welcome reforms; however, it continues to suffer from shortcomings . As India advances towards the goal of "Visit Bharat@2047", the demand

for power is expected to rise significantly. To effectively meet this growing demand, the government must address the limitations within the policy framework through careful deliberation and meaningful discussions with relevant stakeholders, thereby, unleashing the full potential of this critical sector.