Page 3622 - 3640 **DOI:** *https://doi.org/10.63108/IJLMH.13135*

INTERNATIONAL JOURNAL OF LAW MANAGEMENT & HUMANITIES

[ISSN 2581-5369]

Volume 9 | Issue 5

2026

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Nuclear Harm Without Remedy? Caps, Confidentiality and Conflict in International and Indian Law

PRITHIVI RAJ* AND SOUBHAGYA SUNDAR NANDA**

ABSTRACT

Nuclear law began as a regime protecting persons and property and has gradually absorbed environmental protection, public participation and compensation for environmental harm. Between December 2025 and October 2026 three developments tested that evolution. First, India enacted the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India Act 2025 (SHANTI Act), which repeals the Atomic Energy Act 1962 and the Civil Liability for Nuclear Damage Act 2010. Second, armed conflict repeatedly endangered operating nuclear facilities, at Zaporizhzhia and in and around Iran, while the 2026 NPT Review Conference ended without a consensus document. Third, the Supreme Court of India issued notice on a constitutional challenge to the Act that raises, among other questions, whether statutory liability caps can limit a constitutional court's power to award fair compensation. Using doctrinal analysis of primary legislation, treaty practice and official institutional statements, this paper asks whether the international and Indian regimes now secure environmental protection and adequate compensation for nuclear harm. It identifies three accountability gaps: a liability gap (capped, exclusion-prone and partly notification-dependent compensation, reached through a forum provision that may narrow available remedies), a transparency gap (statutory restriction of information against participation norms) and a conflict gap (non-binding protection of facilities in war). It concludes with legislative, regulatory and diplomatic recommendations for India. The study is purely doctrinal: statutory provisions are cited to the enacted text, but the Rules and Regulations remain in draft, and the Supreme Court proceedings, the Iran conflict and treaty-body practice rest largely on secondary reports.

Keywords: *nuclear liability, SHANTI Act 2025, environmental damage, Convention on Supplementary Compensation, armed conflict, public participation, India*

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I. INTRODUCTION

Nuclear law has evolved beyond its traditional focus on protecting human life and property to encompass environmental protection, particularly in the aftermath of the Chernobyl disaster. This evolution is reflected in instruments such as the Convention on Nuclear Safety 1994, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management 1997, the Espoo and Aarhus Conventions, and international nuclear liability regimes. Four developments now bear on any assessment of that framework. First, India's statutory framework governing nuclear energy has undergone a fundamental legislative restructuring through the Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India Act 2025 (SHANTI Act).[1] Second, the Convention on Supplementary Compensation for Nuclear Damage (CSC) entered into force on 15 April 2015, with India among its contracting parties.[2] Third, attacks on and military operations in the vicinity of nuclear facilities have emerged as recurring features of two contemporary armed conflicts, exposing vulnerabilities in the protection afforded to nuclear installations under international law.[3] Fourth, the multilateral non-proliferation process has encountered sustained institutional and diplomatic stagnation, raising concerns about the effectiveness of existing mechanisms for nuclear governance and international security.[4]

This paper asks to what extent the international and Indian regimes secure environmental protection and compensation for environmental harm from nuclear activity, and how the SHANTI Act and the geopolitical developments of 2026 have altered that assessment, including for India's international relations in the nuclear field. The study is doctrinal and states the position as at 23 October 2026.

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[1] Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India Act, 2025, No. 39, Acts of Parliament, 2025 (India), Gazette of India, Extraordinary, Part II, Sec. 1, No. 63 (Dec. 21, 2025), https://prsindia.org/files/bills_acts/bills_parliament/2025/The_SHANTI_Act_2025.pdf (last visited Oct. 23, 2026) [hereinafter SHANTI Act]; PRS LEGISLATIVE RESEARCH, *The Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India Bill, 2025*, https://prsindia.org/billtrack/the-sustainable-harnessing-and-advancementof-nuclear-energy-for-transforming-india-bill-2025 (last visited Oct. 23, 2026).

[2] IAEA, *Japan Joins the Convention on Supplementary Compensation for Nuclear Damage* (Jan. 2015), https://iaea.org/node/10981 (last visited Oct. 23, 2026); *India Joins Nuclear Liability Convention*, WORLD NUCLEAR NEWS, https://www.world-nuclear-news.org/Articles/India-joins-nuclear-liability-convention (last visited Oct. 23, 2026).

[3] IAEA, *Director General's Introductory Statement to the Board of Governors* (June 8, 2026), https://www.iaea.org/newscenter/statements/iaea-director-generals-introductory-statement-to-the-board-of-governors-8-june-2026 (last visited Oct. 23, 2026); AMERICAN NUCLEAR SOCIETY, *IAEA Provides Updates on Iran Nuclear Facilities*, NUCLEAR NEWSWIRE (Apr. 6, 2026), https://www.ans.org/news/2026-04-06/article-7911/iaea-provides-updates-on-iran-nuclear-facilities/ (last visited Oct. 23, 2026).

[4] *Review Conference Ends without Consensus Outcome amid Rising Nuclear Risks*, U.N. Meetings Coverage, U.N. Doc. DC/3912 (May 22, 2026), https://press.un.org/en/2026/dc3912.doc.htm (last visited Oct. 23, 2026).

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II. SUSTAINABLE DEVELOPMENT, INTERGENERATIONAL EQUITY AND RADIOACTIVE WASTE

The 1987 Brundtland formulation of sustainable development, meeting present needs without compromising future generations' ability to meet theirs,[5] remains the anchor concept. Its nuclear application is intergenerational: radioactive waste and decommissioning obligations outlast operators, regulators and, often, the statutes that created them.

Indian constitutional law supplies the domestic foundation. Articles 21, 48A and 51A(g) support a right to a healthy environment, and the Supreme Court has treated the precautionary and polluter-pays principles as part of Indian environmental law in *Vellore Citizens Welfare Forum v. Union of India*.[6] The absolute-liability doctrine in *M.C. Mehta v. Union of India* ties an enterprise's liability to its capacity and the hazard it creates,[7] a point that matters for the liability caps discussed in Part V.

The SHANTI Act's preamble expressly invokes sustainable development goals, a closed fuel cycle and thorium utilisation.[8] Three features bear on intergenerational protection:

- Spent-fuel management, reprocessing and high-level waste management are reserved exclusively to the Central Government, and licensees must deliver spent fuel after a cooling period at their own cost.[9]
- Licensees must maintain financial security for safe disposal and decommissioning.[10] The draft rules propose a Nuclear Liability Fund financed by a levy on operators, and would require licensed facilities to plan financially for waste management, decommissioning and site remediation.[11]
- Compensation claims extinguish after ten years for property damage and twenty years for personal injury, counted from the date the incident is notified.[12]

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[5] WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE, at 43 (Oxford Univ. Press 1987).
[6] *Vellore Citizens Welfare Forum v. Union of India*, (1996) 5 SCC 647; AIR 1996 SC 2715.
[7] *M.C. Mehta v. Union of India*, (1987) 1 SCC 395; AIR 1987 SC 1086.
[8] SHANTI Act, *supra* note 1, pmbl.
[9] SHANTI Act, *supra* note 1, §§ 3(5)(b), 3(4)(b).
[10] SHANTI Act, *supra* note 1, § 10(3)(e).
[11] DEPARTMENT OF ATOMIC ENERGY, Draft Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Rules, 2026, rr. 107–108, 111–112 (Aug. 14, 2026), https://cdnbbsr.s3waas.gov.in/s35b8e4fd39d9786228649a8a8bec4e008/uploads/2026/08/2026081410571461 06.pdf (last visited Nov. 4, 2026) [hereinafter Draft SHANTI Rules]; *Nuclear Framework: Key Provisions of the Draft SHANTI Rules and Regulations, 2026*, POWER LINE (Sept. 11, 2026), https://powerline.net.in/2026/09/11/nuclear-framework-key-provisions-of-the-draft-shanti-rules-and-regulations-2026/ (last visited Oct. 23, 2026); *Draft SHANTI Rules 2026: Nuclear Liability, Insurance & Safety*, NEXTIAS (Aug. 19, 2026), https://www.nextias.com/ca/current-affairs/19-08-2026/draft-shanti-rules-2026 (last visited Oct. 23, 2026).
[12] SHANTI Act, *supra* note 1, § 67.

The long-stop periods deserve scrutiny. Whether twenty years adequately protects victims of latent radiation injury is an empirical question that the Act does not test; this paper treats it as a hypothesis for epidemiological review, not a finding.

III. From Accident to Conflict: The Contemporary Risk Landscape

The dominant source of nuclear-environmental risk in 2026 is not equipment failure but military action.

Zaporizhzhia. The IAEA reported on 20 August 2026 that the Russian-occupied plant lost all external power, days after a drone explosion affecting staff.[13] By 29 August it was relying on emergency diesel generators, and the IAEA warned of possible station blackout within roughly ten days absent restoration or fuel deliveries.[14] Power was restored in early September after an IAEA-negotiated local ceasefire, the seventh such arrangement for urgent safety work.[15] The Director General told the Board on 8 June 2026 that the plant had suffered its eighteenth off-site power outage since the war began.[16] The IAEA frames its response through Seven Indispensable Pillars and Five Concrete Principles, which are institutional guidance, not treaty obligations.[17]

Iran and the Gulf. As the American Nuclear Society summarises IAEA statements, strikes hit Iranian nuclear sites in June 2025 (Natanz, Esfahan, Fordow) and again in 2026, including projectile impacts near the Bushehr nuclear power plant on 18 March and 4 April and an attack on the Khondab heavy-water plant on 27 March; no radiation increase was reported at Bushehr.[18] The Director General has linked both wars to the safety of nuclear facilities, and the conflict in the Middle East to the safeguards regime.[19]

Legal consequence. Attacks of this kind engage three bodies of law whose combined protection is uneven: international humanitarian law (Additional Protocol I, Article 56, which protects nuclear electrical generating stations from attack, even where they are military objectives, if the

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[13] IAEA, *Update 363: IAEA Director General Statement on Situation in Ukraine* (Aug. 20, 2026), https://www.iaea.org/newscenter/pressreleases/update-363-iaea-director-general-statement-on-situation-in-ukraine (last visited Oct. 23, 2026), reproduced at https://www.globalsecurity.org/wmd/library/news/ukraine/2026/08/ukraine-260820-iaea01.htm.

[14] IAEA, *Update 364: IAEA Director General Statement on Situation in Ukraine* (Aug. 29, 2026), https://www.iaea.org/newscenter/pressreleases/update-364-iaea-director-general-statement-on-situation-in-ukraine (last visited Oct. 23, 2026).

[15] IAEA, *Update 366: IAEA Director General Statement on Situation in Ukraine* (Sept. 11, 2026), reproduced at https://www.globalsecurity.org/wmd/library/news/ukraine/2026/09/ukraine-260911-iaea01.htm (last visited Oct. 23, 2026).

[16] IAEA, *Introductory Statement*, *supra* note 3.

[17] IAEA, *Introductory Statement*, *supra* note 3; IAEA, *Update 366*, *supra* note 15.

[18] American Nuclear Society, *supra* note 3.

[19] IAEA, *Introductory Statement*, *supra* note 3.

attack may release dangerous forces and cause severe civilian losses, but ceases to protect a station that supplies electric power in regular, significant and direct support of military operations where attack is the only feasible way to end that support, and which binds only States party to it);[20] the general duty to prevent significant transboundary environmental harm;[21] and civil-liability regimes, which commonly exclude armed conflict from operator liability. The last point is examined for India in Part V.

IV. THE INTERNATIONAL LEGAL ARCHITECTURE

A. Non-proliferation

The eleventh NPT Review Conference (27 April to 22 May 2026) ended without a consensus outcome, the third consecutive Conference to fail, amid concerns about attacks on nuclear facilities, active conflicts and emerging technologies.[22] A draft outcome document circulated by the Conference President (Rev. 1, para. 41) strongly urged States parties to refrain from attacks or threats of attack on nuclear facilities devoted to peaceful purposes, but no consensus outcome was adopted.[23] The practical implication is that no fresh multilateral consensus exists on the protection of nuclear facilities in war; the IAEA's pillars and principles fill the vacuum without binding force.

B. Safety and security

The Convention on Nuclear Safety (in force since 24 October 1996) and the Joint Convention on spent fuel and radioactive waste (adopted 5 September 1997; in force 18 June 2001) are 'incentive' conventions: they rely on peer review and have no enforcement mechanism.[24] The

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[20] Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of International Armed Conflicts (Protocol I) art. 56, June 8, 1977, 1125 U.N.T.S. 3, https://ihl-databases.icrc.org/en/ihl-treaties/api-1977/article-56 (last visited Nov. 4, 2026); *see also* Lieber Institute West Point, *Attacking Dams – Part II: The 1977 Additional Protocols*, https://lieber.westpoint.edu/attacking-dams-part-ii-1977-additional-protocols/ (last visited Oct. 23, 2026).

[21] *Obligations of States in Respect of Climate Change*, Advisory Opinion, I.C.J. Gen. List No. 187, ¶¶ 134, 273 (July 23, 2025), https://www.icj-cij.org/sites/default/files/case-related/187/187-20250723-adv-01-00-en.pdf (last visited Oct. 23, 2026).

[22] U.N. Doc. DC/3912, *supra* note 4.

[23] ARMS CONTROL ASSOCIATION, *Into the Final Week: Can the NPT States Come Together on a Final Document?* (May 16, 2026), https://www.armscontrol.org/blog/2026-05-16/final-week-can-npt-states-come-together-final-document (last visited Oct. 23, 2026); U.N. Doc. DC/3912, *supra* note 4.

[24] Convention on Nuclear Safety, adopted June 17, 1994, IAEA Doc. INFCIRC/449, https://www.iaea.org/sites/default/files/infcirc449.pdf (last visited Nov. 4, 2026); Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, adopted Sept. 5, 1997, IAEA Doc. INFCIRC/546, https://www.iaea.org/sites/default/files/infcirc546.pdf (last visited Nov. 4, 2026); Gustavo Caruso, *IAEA's Nuclear Safety and Nuclear Security Worldwide*, in INTERNATIONAL COOPERATION FOR ENHANCING NUCLEAR SAFETY, SECURITY, SAFEGUARDS AND NON-PROLIFERATION: 60 YEARS OF IAEA AND EURATOM 7 (Luciano Maiani, Said Abousahl & Wolfango Plastino eds., Springer 2018), https://link.springer.com/chapter/10.1007/978-3-662-57366-2_2 (last visited Oct. 23, 2026); IAEA, *The IAEA Legal Framework for Nuclear Safety: At a Glance*, https://web.archive.org/web/20150605061513/https://www.iaea.org/sites/default/files/Legal%20Framework%20for%20Nuclear%20Safety.pdf (last visited Nov. 4, 2026); OECD NUCLEAR ENERGY AGENCY,

Convention on the Physical Protection of Nuclear Material (CPPNM) entered into force on 8 February 1987, and its 2005 Amendment on 8 May 2016.[25] These instruments set safety and security expectations; compensation for nuclear damage, including environmental damage, is the work of the separate liability instruments discussed next.

C. Liability

Japan's deposit in January 2015 satisfied the CSC's entry-into-force condition (at least five States with a minimum aggregate installed nuclear capacity), and the CSC entered into force 90 days later, on 15 April 2015.[26] India deposited its instrument of ratification with the IAEA on 4 February 2016, and the CSC entered into force for India on 4 May 2016.[27] The CSC requires the Installation State to ensure that at least 300 million SDRs are available and supplements national compensation with public funds contributed by Contracting Parties; a Contracting Party that is not party to the Paris or Vienna Convention must ensure that its national law complies with the CSC Annex.[28] Both the CSC and the 1997 Vienna Protocol define nuclear damage to include, besides death, personal injury and property loss, the costs of reinstating an impaired environment (unless the impairment is insignificant), loss of income from an economic interest in the use of the environment, and the costs of preventive measures.[29] That breadth is the benchmark against which the SHANTI Act's definition is assessed in Part V.

D. Environmental assessment and participation

The Espoo Convention and its Kyiv SEA Protocol, and the Aarhus Convention, remain the principal participation instruments. Their record in the nuclear field is best illustrated by Belarus's Ostrovets plant. The Espoo Implementation Committee found non-compliance in

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Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, https://oecd-nea.org/jcms/pl_29137/joint-convention-on-the-safety-of-spent-fuel-management-and-on-the-safety-of-radioactive-waste-management-joint-convention (last visited Oct. 23, 2026).

[25] AUSTRALIAN SAFEGUARDS AND NON-PROLIFERATION OFFICE, Annual Report 2019–20, § 2.2, https://www.dfat.gov.au/publications/international-relations/asno-annual-report-2019-20/report/html/section-2-2.html (last visited Oct. 23, 2026).

[26] Convention on Supplementary Compensation for Nuclear Damage, art. XX(1), Sept. 12, 1997, IAEA Doc. INFCIRC/567, https://www.iaea.org/sites/default/files/infcirc567.pdf (last visited Oct. 23, 2026) [hereinafter CSC]; *India Joins Nuclear Liability Convention*, *supra* note 2.

[27] *India Joins Nuclear Liability Convention*, *supra* note 2; PILLSBURY WINTHROP SHAW PITTMAN, *India Takes the Next Step in Forming Its Nuclear Liability Framework* (Feb. 11, 2016), https://pillsburylaw.com/en/news-and-insights/india-takes-the-next-step-in-forming-its-nuclear-liability.html (last visited Oct. 23, 2026).

[28] CSC, *supra* note 26, arts. II(1)(b), III–IV, XVIII(1); DEPARTMENT OF ATOMIC ENERGY, *FAQs Version 2.0 on CLND Act 2010*, https://dae.gov.in/faqs-version-2-0-on-clnd-act-2010/ (last visited Oct. 23, 2026).

[29] CSC, *supra* note 26, art. I(f)(iv)–(vi); Protocol to Amend the Vienna Convention on Civil Liability for Nuclear Damage, art. 2(2) (new art. I(1)(k)(iv)–(vi)), Sept. 12, 1997, IAEA Doc. INFCIRC/566, https://iaea.org/sites/default/files/infcirc566.pdf (last visited Oct. 23, 2026); in both instruments these heads apply "to the extent determined by the law of the competent court".

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April 2013,[30] and, as reported by the Lithuanian Ministry of Foreign Affairs, the Aarhus Meeting of the Parties, meeting in Maastricht about three years after the Compliance Committee's 2011 finding of breach, again called on Belarus to comply,[31] and on 11 December 2020 the Espoo Parties reaffirmed the non-compliance finding.[32] The Espoo Convention began as a UNECE regional instrument; an amendment in force since 26 August 2014 opens it to non-UNECE United Nations members, who may accede once the amendment is in force for all the States and organizations that were Parties on 27 February 2001.[33] This paper treats Espoo and Aarhus as comparative standards and as evidence of the direction of international norms; it does not suggest that they bind India.

E. The ICJ's 2025 advisory opinion

In its opinion of 23 July 2025 the ICJ held that customary international law requires States to act with due diligence to prevent significant harm to the environment, with a stringent standard in the climate context, and that this includes regulating private actors within their jurisdiction or control.[34] The opinion concerns the climate system. Its extension to radiological harm is an inference by analogy, but a strong one: the duty to prevent significant transboundary harm is long established in general international law, and the Court's emphasis on regulation and enforcement of private conduct maps directly onto licensing and supervising nuclear operators.

V. India's new legal architecture: the SHANTI Act 2025

A. Enactment and status

The Bill was introduced in the Lok Sabha on 15 December 2025, passed by it on 17 December and by the Rajya Sabha on 18 December; the President assented on 20 December 2025.[35] The

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[30] Ministry of Foreign Affairs of Lithuania, *The Espoo Convention's Implementation Committee Finds that Belarus Breached the International Convention*, https://nl.mfa.lt/en/news/84/the-espoo-conventions-implementation-committee-finds-that-belarus-breached-the-international-convention:730 (last visited Oct. 23, 2026); *The EIA Process of the Belarus Nuclear Power Plant: A Fact-Sheet*, at 1–2 (Nov. 21, 2014) (citing U.N. Doc. ECE/MP.EIA/IC/2013/2), https://www.occrp.org/documents/watchdogs_cite_shortcuts/Espoo2014BelarusConclusion.pdf (last visited Nov. 4, 2026).

[31] Ministry of Foreign Affairs of Lithuania, *Belarus Is Again Called to Build Its NPP in Compliance with International Obligations*, https://ca.mfa.lt/en/news/71/belarus-is-again-called-to-build-its-npp-in-compliance-with-international-obligations:971 (last visited Oct. 23, 2026).

[32] Ministry of Foreign Affairs of Lithuania, *Parties to the Espoo Convention Reaffirmed that Belarus Had Failed to Comply*, https://mfa.lt/en/news/928/parties-to-the-espoo-convention-reaffirmed-that-belarus-had-failed-to-comply-with-the-convention-in-developing-the-ostrovets-npp-project:34421 (last visited Oct. 23, 2026).

[33] Meeting of the Parties to the Espoo Convention, Decision II/14, Amendment to the Espoo Convention, para. (b) (new art. 17(3)) (Feb. 27, 2001), https://cil.nus.edu.sg/wp-content/uploads/2019/02/2001-First-Amendment-to-the-Espoo-Convention-1.pdf (last visited Nov. 4, 2026); *Espoo Convention Open to Non-UNECE States*, IISD SDG Knowledge Hub (Aug. 27, 2014), https://sdg.iisd.org/?p=736448 (last visited Oct. 23, 2026).

[34] *Obligations of States in Respect of Climate Change*, *supra* note 21, ¶¶ 138, 273, 280, 428.

[35] MP-IDSA, *SHANTI Act and India's Nuclear Energy Governance Framework* (Issue Brief), https://idsa.in/publisher/issuebrief/shanti-act-and-indias-nuclear-energy-governance-framework (last visited Oct. 23, 2026); PRS Legislative Research, *supra* note 1.

Act was published in the Gazette on 21 December 2025 as Act 39 of 2025[36] and repeals the Atomic Energy Act 1962 and the Civil Liability for Nuclear Damage Act 2010 (CLNDA).[37] Section 1(2) provides that the Act comes into force on a date notified by the Central Government, and different dates may be appointed for different provisions; the Atomic Energy Redressal Advisory Council, for example, is to be established with effect from a notified date.[38] Practitioner and think-tank commentary nonetheless describes the Act as already in force, the law firms dating this from 21 December 2025.[39] This paper analyses the Act as enacted, and its conclusions do not depend on the commencement date of any particular provision. The Department of Atomic Energy and the AERB released draft SHANTI Rules and Regulations for public consultation on 14 August 2026;[40] the draft Rules would supersede several older rules, including the Atomic Energy (Radiation Protection) Rules 2004 and the Civil Liability for Nuclear Damage Rules 2011,[41] while the Act itself saves existing rules and regulatory documents until they are superseded.[42] At the time of writing, the Rules remain in draft.

The Act's scale of ambition is stated in official materials: nuclear capacity of 8.78 GW at present and an objective of 100 GW by 2047.[43]

B. Structure

Licensing. The Central Government may license Government departments and corporations, Government companies, any other company, joint ventures and persons expressly permitted; 'company' excludes companies incorporated outside India.[44] Foreign vendors therefore participate through Indian entities or joint ventures.

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[36] SHANTI Act, *supra* note 1.
[37] SHANTI Act, *supra* note 1, § 91(1); *President Droupadi Murmu Grants Assent to SHANTI Bill Passed by Parliament during Winter Session*, PRASAR BHARATI NEWS SERVICES (Dec. 22, 2025), https://www.newsonair.gov.in/president-murmu-gives-assent-to-shanti-bill (last visited Oct. 23, 2026).
[38] SHANTI Act, *supra* note 1, §§ 1(2), 47(1).
[39] AZB & PARTNERS, *Nuclear Power Sector in India – Opening Up*, https://www.azbpartners.com/bank/nuclear-power-sector-in-india-opening-up/ (last visited Oct. 23, 2026); NORTON ROSE FULBRIGHT, *SHANTI Act 2025: Rewiring India's Nuclear Liability and Regulatory Architecture* (Dec. 2025), https://www.nortonrosefulbright.com/en-in/knowledge/publications/dbff80e4/shanti-act-2025-rewiring-india-s-nuclear-liability-and-regulatory-architecture (last visited Oct. 23, 2026); MP-IDSA, *supra* note 35.
[40] DEPARTMENT OF ATOMIC ENERGY, *Public Consultation on Draft SHANTI Rules and Draft SHANTI Regulations*, https://dae.gov.in/public-consultation-on-draft-shanti-rules-and-draft-shanti-regulations/ (last visited Nov. 4, 2026); Draft SHANTI Rules, *supra* note 11; ATOMIC ENERGY REGULATORY BOARD, Draft Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Regulations, 2026 (Aug. 14, 2026), https://cdnbbsr.s3waas.gov.in/s35b8e4fd39d9786228649a8a8bec4e008/uploads/2026/08/2026081414629490 70.pdf (last visited Oct. 23, 2026); *Nuclear Framework*, *supra* note 11.
[41] Draft SHANTI Rules, *supra* note 11, pmbl.; *Draft SHANTI Rules 2026 on Nuclear Liability*, GKTODAY, https://www.gktoday.in/draft-shanti-rules-2026-on-nuclear-liability/ (last visited Oct. 23, 2026).
[42] SHANTI Act, *supra* note 1, § 91(3).
[43] *President Droupadi Murmu Grants Assent*, *supra* note 37.
[44] SHANTI Act, *supra* note 1, §§ 3(1), 2(9).

Reserved activities. Enrichment and isotopic separation (unless notified otherwise), spent-fuel management including reprocessing and high-level waste, and heavy-water production remain with the Central Government.[45] Uranium and thorium mining is limited to Government bodies.[46]

Security vetting. No licence may issue to a company the Government believes is controlled by entities inimical to defence and national security or public health and safety.[47]

Regulator. The AERB, constituted under the 1962 Act, is deemed constituted under the new Act; members are appointed by the Central Government on the recommendation of a search-cum-selection committee constituted by the Atomic Energy Commission.[48] The Board's budget is submitted to the Atomic Energy Commission.[49]

Dispute forum. Review applications go to an Atomic Energy Redressal Advisory Council chaired by the Atomic Energy Commission's Chairperson, with the BARC Director, the AERB Chairperson and the Central Electricity Authority Chairperson as members; appeals lie to the Appellate Tribunal for Electricity and then the Supreme Court.[50]

C. The liability design compared

Feature	CLNDA 2010 (repealed)	SHANTI Act 2025
Who may operate	Government departments, authorities, corporations and Government companies (under the 1962 Act).[51]	Government entities, Indian companies, joint ventures, permitted persons.[52]
Operator cap	₹1,500 crore.[53]	Graded from ₹100 crore (reactors of up to 150 MW thermal power, fuel-cycle facilities other than spent-fuel reprocessing plants, and transport of nuclear materials) to ₹3,000 crore (reactors above 3,600 MW thermal power).[54]

[45] SHANTI Act, *supra* note 1, § 3(5).
[46] SHANTI Act, *supra* note 1, § 5(2).
[47] SHANTI Act, *supra* note 1, § 7(4).
[48] SHANTI Act, *supra* note 1, § 17(1), (4).
[49] SHANTI Act, *supra* note 1, § 77(2).
[50] SHANTI Act, *supra* note 1, §§ 47–52.
[51] MP-IDSA, *supra* note 35.
[52] SHANTI Act, *supra* note 1, § 3.
[53] CENTRAL ELECTRICITY AUTHORITY, *SHANTI Act 2025: Overview and Legal Framework* (presentation), https://intranet.cea.gov.in/gallery/public/uploads/pdf/SHANTI%20ACT%202025,%20OVERVIEW%20AND%20LEGAL%20FRAMEWORK.pdf (last visited Oct. 23, 2026); *FAQs Version 2.0 on CLND Act 2010*, *supra* note 28.
[54] SHANTI Act, *supra* note 1, § 13(2), sched. II; CENTRAL ELECTRICITY AUTHORITY, *supra* note 53; MP-IDSA, *supra* note 35.

Feature	CLNDA 2010 (repealed)	SHANTI Act 2025
Overall cap	Central Government liable above ₹1,500 crore up to the rupee equivalent of 300 million SDR (about ₹3,600 crore in a presentation on the Central Electricity Authority's website), then CSC funds.[55]	Rupee equivalent of 300 million SDR or a higher notified amount; State may seek CSC funds.[56]
Supplier recourse	Included recourse for supplier defects or sub-standard services (section 17(b)); section 46 preserved claims under other laws.[57]	Only where a written contract provides, or where an individual acted with intent to cause damage.[58]
Foreign-territory damage	Not compared here.	Claims allowed for damage in a foreign State that has no nuclear installation or is party to a nuclear liability convention.[59]
Regulator status	Created by executive order in 1983.[60]	Statutory body by deeming provision.[61]

Table 1: The liability design compared, CLNDA 2010 and SHANTI Act 2025

D. Critical analysis

i. Capped liability and constitutional compensation

The Act channels liability to the operator subject to the Second Schedule limits and makes the Central Government liable above them.[62] In *E.A.S. Sarma v. Union of India*, a public interest litigation by a former Secretary to the Government of India, represented by Prashant Bhushan, the petitioners challenge sections 11, 12, 13, 14, 16, 17, 19, 39, 44, 67, 81 and 87 under Articles 14, 19 and 21, invoking absolute liability and the polluter-pays principle and attacking the exclusion of supplier liability, section 39 and the independence of the AERB.[63] On 17 August 2026 the Supreme Court issued notice to the Union and the AERB for the limited purpose of

[55] CENTRAL ELECTRICITY AUTHORITY, *supra* note 53.
[56] SHANTI Act, *supra* note 1, § 13(1), (3).
[57] MP-IDSA, *supra* note 35; PRESS INFORMATION BUREAU, *Parliament Question: Impact of Indo-US Nuclear Agreement* (Apr. 2, 2026), reproduced at https://www.globalsecurity.org/wmd/library/news/india/2026/india-260402-india-pib05.htm (last visited Oct. 23, 2026).
[58] SHANTI Act, *supra* note 1, § 16.
[59] SHANTI Act, *supra* note 1, § 53(d).
[60] MP-IDSA, *supra* note 35.
[61] SHANTI Act, *supra* note 1, § 17.
[62] SHANTI Act, *supra* note 1, §§ 11, 13, 14.
[63] SUPREME COURT OBSERVER, *Challenge to Provisions of the SHANTI Act, 2025* (*E.A.S. Sarma v. Union of India*, W.P.(C) No. 240/2026), https://www.scobserver.in/cases/challenge-to-provisions-of-the-shanti-act-2025/ (last visited Oct. 23, 2026); *Are Courts Precluded from Granting Fair, Just Compensation in Nuclear Accident: SC Asks Centre*, ASIA INSURANCE POST, https://asiainsurancepost.com/archives/83043 (last visited Oct. 23, 2026); *Supreme Court Clarifies Constitutional Courts Can Award Fair Compensation Despite Nuclear Liability Caps under SHANTI Act*, INDIA LEGAL (Aug. 17, 2026), https://indialegallive.com/constitutional-law-news/courts-news/supreme-court-clarifies-constitutional-courts-can-award-fair-compensation-despite-nuclear-liability-caps-under-shanti-act/ (last visited Oct. 23, 2026).

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clarifying whether anything would preclude a constitutional court from determining fair and just compensation for a nuclear accident, and directed that section 17(4) be suitably clarified.[64] Reports state that the Court has neither struck down nor upheld any provision.[65] The doctrinal question is whether capped statutory liability can co-exist with the absolute-liability principle[66] and with Article 21. The provisional view taken here is that the cap is defensible as an allocation of statutory liability between operator and State, but weaker if read to exclude constitutional-remedy damages; the Court's notice is framed around that distinction.[67]

ii. Environmental damage depends on executive notification

Section 2(21) defines nuclear damage as loss of life or personal injury (including long-term health impact) and property damage; costs of restoring an impaired environment, loss of income from environmental use, preventive-measure costs and economic loss appear only under a residual limb, 'as may be notified by the Central Government'.[68] The statutory text therefore does not itself guarantee compensation for environmental restoration, the core of the environmental-law turn that this paper traces. By contrast, the CSC and the 1997 Vienna Protocol place these heads in the treaty definition itself.[69] This paper recommends moving them into the primary definition.

iii. Exoneration for disaster and war

The operator is not liable for damage from a grave natural disaster of an exceptional character or from armed conflict, hostility, civil war, insurrection or terrorism.[70] The Central Government is liable in those cases,[71] but the Nuclear Liability Fund that would finance that liability is permissive: the Government 'may' establish it.[72] A Fukushima-type or Zaporizhzhia-type scenario would thus leave victims dependent on a State liability that is statutory but whose funding mechanism is discretionary.

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[64] SUPREME COURT OBSERVER, *supra* note 63; Debby Jain, *Are Courts Limited By SHANTI Act In Determining Nuclear Accident Compensation? Supreme Court Asks Union*, LIVELAW (Aug. 17, 2026), https://www.livelaw.in/top-stories/supreme-court-seeks-clarification-from-union-on-shanti-act-provisions-power-of-constitutional-courts-to-fix-compensation-for-nuclear-accidents-546099 (last visited Oct. 23, 2026).

[65] *Parliament's Liability Cap Does Not Bar Courts From Granting Fair Compensation To Nuclear Accident Victims*, FREE PRESS JOURNAL, https://www.freepressjournal.in/india/parliaments-liability-cap-does-not-bar-courts-from-granting-fair-compensation-to-nuclear-accident-victims-sc-on-shanti-act (last visited Oct. 23, 2026).

[66] *M.C. Mehta*, *supra* note 7.

[67] SUPREME COURT OBSERVER, *supra* note 63.

[68] SHANTI Act, *supra* note 1, § 2(21).

[69] CSC, *supra* note 26, art. I(f)(iv)–(vi).

[70] SHANTI Act, *supra* note 1, § 12(1).

[71] SHANTI Act, *supra* note 1, § 14(1)(c).

[72] SHANTI Act, *supra* note 1, § 14(2).

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iv. Information and participation

The Central Government may declare information 'restricted', including submissions that the applicant has declared confidential for business purposes, and restricted information is excluded from the Right to Information Act 2005.[73] The AERB may pursue public outreach and engagement only without disclosing restricted information.[74] By contrast, participation norms (Rio Principle 10,[75] Aarhus, Espoo) treat environmental information as presumptively disclosable. A public-interest override for environmental and radiological-release data, and mandatory publication of environmental impact assessments, would narrow the gap.

v. Forum design and ouster

Section 81 bars civil courts from matters within the authorities' competence and bars injunctions by 'any court or other authority' against action under the Act; section 82 grants good-faith immunity.[76] Constitutional writ jurisdiction is not displaced by statute, but the interaction of section 81 with the National Green Tribunal's jurisdiction is an open question. The Council that reviews AERB decisions is chaired by the head of the Atomic Energy Commission, the promotional body to which the AERB's budget is submitted; that structure sits uneasily with regulatory independence.[77]

vi. Penalties and corporate responsibility

Non-grave breaches attract adjudicated penalties, including up to ₹25,000 per day for continuing contraventions;[78] grave or knowing breaches and operating without a licence carry imprisonment up to five years;[79] company officers are liable under a 'directly in charge' model with a due-diligence defence.[80] Offences are compoundable except specified serious ones.[81] Whether these sanctions deter at the scale of nuclear risk, and whether the in-charge model captures decision-making that is distributed or technology-mediated, are questions for further research.

[73] SHANTI Act, *supra* note 1, § 39(1)(v), (4).
[74] SHANTI Act, *supra* note 1, § 24(3)(h).
[75] Rio Declaration on Environment and Development, princ. 10, U.N. Doc. A/CONF.151/26 (Vol. I) (1992).
[76] SHANTI Act, *supra* note 1, §§ 81–82.
[77] SHANTI Act, *supra* note 1, §§ 47, 77(2).
[78] SHANTI Act, *supra* note 1, § 70.
[79] SHANTI Act, *supra* note 1, § 71.
[80] SHANTI Act, *supra* note 1, § 72.
[81] SHANTI Act, *supra* note 1, § 76.

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vii. Strengths

The Act consolidates fragmented rules, gives the regulator statutory footing, creates an expedited claims machinery (Claims Commissioners, a Claims Commission, three-month adjudication targets), and extends compensation to certain foreign victims.[82]

VI. India's Nuclear Diplomacy and International Relations

A. Liability harmonisation as foreign policy

For roughly fifteen years the CLNDA's supplier-recourse provision was treated by foreign vendors and their governments as the obstacle to commercial nuclear cooperation with India. The Government itself told Parliament in April 2026 that liability issues had delayed commercial agreements for Jaitapur in Maharashtra (with France) and Kovvada in Andhra Pradesh (with the United States), and that the SHANTI Act aligns the civil-liability provisions with the international framework.[83] The claim is partly borne out. Exclusive channelling of liability to the operator, and a right of recourse confined to contractual provision or intentional damage,[84] follow the CSC Annex (Articles 3 and 10), the point at which CLNDA sections 17(b) and 46 had departed from the international framework on the Government's own account.[85] The claim is weaker on two points identified in Part V: the notification-dependent treatment of environmental damage and the exoneration of operators for terrorism, which CSC Annex Article 3(5) does not list, although it does exonerate them for armed conflict, hostilities, civil war, insurrection and, unless national law provides otherwise, grave natural disaster. International instruments set a floor for compensation and a model for channelling; conformity with that floor does not establish that victims are adequately protected. The distinction between treaty alignment and victim adequacy is the central analytical point of this paper.

B. Commercial diplomacy and the investor channel

The liability reform has operated as a diplomatic instrument. A United States nuclear-industry delegation was reported to be preparing a visit to India after the reform.[86] The 2026–27 Budget's customs-duty exemption for nuclear-plant inputs until 2035 is a further market signal.[87] Commercial agreements with foreign vendors remain to be concluded: the Government told

[82] SHANTI Act, *supra* note 1, §§ 53–66.
[83] Press Information Bureau, *supra* note 57.
[84] SHANTI Act, *supra* note 1, § 16.
[85] CSC, *supra* note 26, annex arts. 3, 10; MP-IDSA, *supra* note 35; Press Information Bureau, *supra* note 57.
[86] *US Nuclear Industry Delegation to Visit India After SHANTI Act Reforms*, Daily Pioneer, https://dailypioneer.com/news/us-official-briefs-nuclear-industry-delegation-ahead-of-india-visit (last visited Oct. 23, 2026).
[87] MP-IDSA, *supra* note 35.

Parliament that liability issues had delayed agreements for Jaitapur and Kovvada and that it expects the new law to address them.[88]

Two structural features limit foreign participation. Foreign-incorporated companies cannot hold licences, so foreign capital and technology enter through Indian companies or joint ventures.[89] And the fuel-cycle front and back ends stay with the State.[90] The resulting design is a domestic-ownership, state-controlled-fuel-cycle liberalisation, not an open-market one. A normative concern follows: where liability limits are tuned to vendor and insurer risk appetite, regulatory competition for investment can erode victim protection. The pending Supreme Court challenge[91] is, in that sense, a domestic test of a diplomatic bargain.

C. Fuel-cycle control, safeguards and the non-proliferation context

India's civil nuclear cooperation rests on the 2008 India–US Civil Nuclear Agreement and the NSG waiver, with reactors under IAEA safeguards.[92] The Act places safeguards obligations on licensees, requires licences for the export or import of technology and software usable for prescribed substances, and requires spent fuel to be delivered to the Central Government or repatriated to the country of origin after cooling.[93] For the closed fuel cycle, the Department of Atomic Energy announced that the 500 MWe Prototype Fast Breeder Reactor attained first criticality on 6 April 2026.[94]

Section 25 raises a further environmental-accountability issue. The Central Government may exempt defence and security activities and associated premises from the Board's authority and constitute separate regulatory bodies by order; those bodies report releases above authorised limits to the Central Government only.[95] Civil-military separation is common in nuclear States, but here it leaves environmental releases from exempted facilities outside both the statutory regulator and public reporting. In the wider arena, the failure of the 2026 NPT Review Conference[96] leaves fuel-cycle and safeguards questions without a fresh multilateral consensus, and India's own standards will be read against that backdrop.

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[88] PRESS INFORMATION BUREAU, *supra* note 57.
[89] SHANTI Act, *supra* note 1, § 2(9).
[90] SHANTI Act, *supra* note 1, § 3(5).
[91] SUPREME COURT OBSERVER, *supra* note 63; Jain, *supra* note 64.
[92] PRESS INFORMATION BUREAU, *supra* note 57.
[93] SHANTI Act, *supra* note 1, §§ 3(4)(a)–(b), 3(2)(f).
[94] DEPARTMENT OF ATOMIC ENERGY, *Prototype Fast Breeder Reactor at Kalpakkam, Tamil Nadu Attains First Criticality* (Apr. 7, 2026), https://dae.gov.in/prototype-fast-breeder-reactor-at-kalpakkam-tamil-nadu-attains-first-criticality (last visited Oct. 23, 2026).
[95] SHANTI Act, *supra* note 1, § 25(1)–(3).
[96] U.N. Doc. DC/3912, *supra* note 4.

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D. Conflict, emergency powers and safety diplomacy

The 2026 incidents at Zaporizhzhia and in Iran[97] expose a gap that no national statute can close. At home, the Central Government may assume control of nuclear and radiation facilities during an Article 352 national emergency, with compensation under section 36.[98] That is a wartime control power, not a wartime protection of the environment. Externally, India has an interest in codifying the IAEA's Seven Pillars because its own operators are exonerated from liability for armed conflict,[99] which makes prevention, not compensation, the only effective protection for neighbours and victims.

E. The extraterritoriality question

A further question is whether international law can empower a national government to enforce its environmental laws against nuclear activities carried out in another country.[100] The answer has three parts.

- **Enforcement.** As a general rule, enforcement jurisdiction is territorial. A State may prescribe rules for its nationals and for effects on its territory, but it may not enforce them on another State's territory without consent. International law does not empower a State to police foreign nuclear activities directly.
- **Substantive duties.** What international law does provide is a duty on the State of origin. Under general international law that State must use due diligence to prevent significant harm from activities within its jurisdiction or control, and must carry out an environmental impact assessment where there is a risk that a proposed activity may have a significant adverse transboundary impact.[101] The ICJ's 2025 opinion treats the duty to prevent significant environmental harm as customary, subject to a stringent due-diligence standard in the climate context, and as including a duty to regulate the conduct of private actors within a State's jurisdiction or control.[102] Affected States can therefore invoke State responsibility, not national enforcement.
- **Compensation reach.** Section 53(d) of the SHANTI Act extends access to Indian compensation to damage in certain foreign States, namely those with no nuclear

[97] IAEA, *Introductory Statement*, *supra* note 3; IAEA, *Update 363*, *supra* note 13; AMERICAN NUCLEAR SOCIETY, *supra* note 3.
[98] SHANTI Act, *supra* note 1, § 46.
[99] SHANTI Act, *supra* note 1, § 12(1)(b).
[100] *See* Prithivi Raj, Bhavana Sharma & Soubhagya Sundar Nanda, *Sustainable Development in Global Nuclear Safety Governance with Legal Frameworks for Environmental Protection and Liability*, 5(2) J. INFORMATICS EDUC. & RSCH. 1811 (2025), https://doi.org/10.52783/jier.v5i2.2632.
[101] *Pulp Mills on the River Uruguay* (Arg. v. Uru.), Judgment, 2010 I.C.J. 14, ¶¶ 101, 204 (Apr. 20), https://www.icj-cij.org/index.php/node/103232 (last visited Oct. 23, 2026).
[102] *Obligations of States in Respect of Climate Change*, *supra* note 21, ¶¶ 138, 273, 280, 428.

installation or those party to a nuclear liability convention.[103] That is a unilateral extension of victim access with a reciprocity condition, not an extension of enforcement. Treaty-body processes under Espoo and Aarhus[104] show the realistic multilateral technique: compliance review and political pressure, not coercive enforcement.

F. A regime-complex reading

The governance of nuclear environmental risk is a regime complex: safety, security, safeguards, liability and environmental-participation regimes have different memberships, enforcement logics and treaty bodies. India participates selectively. It adheres to the CSC[105] and, on the Government's own account, relied on national-law conformity with the CSC Annex rather than on membership of the Paris or Vienna Convention.[106] The consequence is that Indian nuclear-environmental accountability rests mainly on domestic law and constitutional adjudication, which is why the design flaws identified in Part V matter more than they would in a densely treaty-bound State.

VII. FINDINGS: A THREE-GAP FRAMEWORK

The regimes secure environmental protection only partly. The SHANTI Act consolidates and modernises the Indian framework and aligns it with the liability architecture, but it widens executive discretion on the very points where environmental protection is decided, and the 2026 conflicts show that the international layer offers no binding protection when facilities are attacked.

Gap	Domestic locus	International reference point	Direction of reform
Liability gap	Operator caps by category; environmental heads dependent on notification; permissive Nuclear Liability Fund; 10/20-year long-stops.[107]	CSC floor and channelling;[108] ICJ due-diligence duty.[109]	Statutory environmental heads; mandatory, funded Liability Fund; epidemiological review of long-stops.

[103] SHANTI Act, *supra* note 1, § 53(d).
[104] *The EIA Process of the Belarus Nuclear Power Plant*, *supra* note 30; *Belarus Is Again Called*, *supra* note 31; *Parties to the Espoo Convention Reaffirmed*, *supra* note 32.
[105] *India Joins Nuclear Liability Convention*, *supra* note 2.
[106] *FAQs Version 2.0 on CLND Act 2010*, *supra* note 28.
[107] SHANTI Act, *supra* note 1, §§ 2(21)(iii), 13, 14(2), 67.
[108] IAEA, *Japan Joins the Convention*, *supra* note 2; *India Joins Nuclear Liability Convention*, *supra* note 2.
[109] *Obligations of States in Respect of Climate Change*, *supra* note 21, ¶¶ 273, 280.

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Gap	Domestic locus	International reference point	Direction of reform
Transparency gap	Restricted-information regime and RTI exclusion; AERB outreach limited by it; section 25 reporting to Government only.[110]	Participation norms in Espoo and Aarhus, with Belarus compliance record.[111]	Public-interest override; publish EIAs and release data; narrow business-confidentiality.
Conflict gap	Operator exoneration for armed conflict and terrorism; wartime control power.[112]	IAEA Seven Pillars (non-binding);[113] failed NPT outcome;[114] Additional Protocol I, Article 56.[115]	Funded State liability; diplomatic push to codify protection of facilities.

Table 2: The three accountability gaps

The gaps interlock. A capped, exclusion-prone compensation scheme (liability) is harder to challenge where information is restricted (transparency), and both matter most in the scenarios, conflict and disaster, in which the operator is exonerated.

VIII. Recommendations

A. For India: legislative and regulatory

1. Move restoration of impaired environment, preventive-measure costs, environmental income loss and economic loss into the primary definition in section 2(21), leaving notification only for additions.
2. Convert the permissive Nuclear Liability Fund (section 14(2)) into a mandatory, ring-fenced fund with levy rates fixed in the Rules; the draft rules already contemplate a levy on operators.[116]
3. Make review of the Second Schedule limits periodic and public: the draft rules propose an expert group every five years;[117] require publication of its report and public consultation before any notification under section 83(1), noting that notified amendments are already laid before Parliament under section 83(2).[118]

[110] SHANTI Act, *supra* note 1, §§ 39, 24(3)(h), 25.
[111] *The EIA Process of the Belarus Nuclear Power Plant*, *supra* note 30; *Belarus Is Again Called*, *supra* note 31; *Parties to the Espoo Convention Reaffirmed*, *supra* note 32.
[112] SHANTI Act, *supra* note 1, §§ 12(1), 46.
[113] IAEA, *Introductory Statement*, *supra* note 3; IAEA, *Update 366*, *supra* note 15.
[114] U.N. Doc. DC/3912, *supra* note 4.
[115] Additional Protocol I, *supra* note 20.
[116] Draft SHANTI Rules, *supra* note 11, rr. 107–108; *Nuclear Framework*, *supra* note 11.
[117] Draft SHANTI Rules, *supra* note 11, r. 78; *Nuclear Framework*, *supra* note 11; *Draft SHANTI Rules 2026 on Nuclear Liability*, *supra* note 41.
[118] SHANTI Act, *supra* note 1, § 83(2).

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4. Introduce a public-interest override in section 39, a duty to publish environmental impact assessments and radiological-release data, and a narrow definition of business-confidential submissions (section 39(1)(v)).
5. Strengthen regulatory independence: remove the Atomic Energy Commission Chairperson from the Council that reviews AERB decisions; submit the Board's budget to Parliament through the Ministry rather than to the Atomic Energy Commission (section 77(2)), alongside the existing CAG audit (section 78(2)); fix non-renewable terms.
6. Clarify by amendment or rule that section 81 does not oust the National Green Tribunal or constitutional remedies.
7. Calibrate penalties (section 70) to gain avoided and risk created, and examine organisational-failure liability alongside the in-charge model (section 72).
8. Revisit the 10/20-year limitation periods (section 67) on epidemiological advice, with a latent-injury discovery rule.
9. Require reporting of radioactive releases from section 25 exempted facilities to an independent body, with aggregated public disclosure.

B. For India: international

1. Pursue, through the IAEA General Conference and the Convention on Nuclear Safety review process, a binding or at least politically agreed codification of the Seven Pillars.
2. Seek guidance among CSC Contracting Parties on the treatment of environmental damage and armed-conflict exclusions.
3. Include environmental-liability, transparency and emergency-notification clauses in bilateral cooperation agreements and in project agreements with foreign partners.
4. Adopt administrative equivalents of transboundary notification and consultation for border-proximate projects, without prejudice to any decision on accession to Espoo or Aarhus.

IX. LIMITATIONS AND FUTURE RESEARCH

This is a doctrinal study with no empirical component. Several limits qualify its conclusions. No commencement notification under section 1(2) was located; the Rules and Regulations are in draft; the Supreme Court proceedings are known only through press and legal-news reports; and the Iran conflict, commercial arrangements and treaty-body practice are cited largely to

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secondary sources. Future research should include: a comparative study of national liability amounts and environmental-damage definitions; epidemiological testing of the limitation periods; case-law analysis of section 81 against NGT and writ jurisdiction once the Act is litigated; and an empirical study of public access to nuclear environmental data in India.

X. Conclusion

Environmental protection has long been treated as an emerging objective of nuclear law. The events of 2025–2026 show it to be an objective whose realisation depends on design details: who defines environmental damage, who funds State liability, who sees the data and who protects facilities in war. India's SHANTI Act is a significant institutional advance and a calibrated response to a long diplomatic and commercial impasse, but its liability, transparency and forum provisions leave accountability gaps that treaty alignment does not close. The Supreme Court's pending examination, the final Rules and the diplomacy of nuclear safety in conflict will determine whether the framework delivers sustainable development in a sense that includes future generations and affected neighbours. A related question is whether one State may enforce its environmental law on another's nuclear activities. International law does not authorise this; it requires each State to prevent harm and to answer for failure, and domestic statutes should be drafted so that this duty can be met in practice.

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