# AI Data Centres and Water Security in India: A Regulatory Perspective

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**Abstract**
The exponential proliferation of Artificial Intelligence (AI) driven data centers across the globe has precipitated a crisis hitherto overlooked in legal and policy discourse: the systematic depletion of freshwater resources. This paper examines the intersection of AI infrastructure expansion, hydro-environmental degradation, and the conspicuous lacunae in Indian environmental jurisprudence governing data center operations. Drawing on the most current empirical data including the United Nations University 2026 report, peer-reviewed hydrological studies, and field evidence from India's major data center hubs this paper advances three arguments: first, that AI data centers constitute an emergent class of high-volume water consumers in water-stressed urban regions; second, that India's existing environmental legal framework, including the Environment (Protection) Act, 1986, the Water (Prevention and Control of Pollution) Act, 1974, and the National Green Tribunal Act, 2010, is structurally ill-equipped to regulate this sector's hydrological footprint; and third, that the absence of mandatory water-consumption disclosures and sector-specific regulation represents a justiciable governance failure. The paper comparatively weighs these environmental costs against India's legitimate aspirations for digital sovereignty, GDP growth ($6.8 trillion projected GDP contribution by 2047), and technology leadership, proposing a novel regulatory architecture grounded in constitutional environmental rights, international environmental law principles, and comparative best practices.

**Keywords**: AI Data Centers, Water Consumption, Environmental Law, India, Hydro-Environmental Law, Digital Infrastructure, EIA Notification 2006, National Green Tribunal, Water Governance, Cooling Infrastructure.

## I. Introduction: When the Cloud Runs Dry

In January 2026, Prime Minister Narendra Modi stood before the AI Impact Summit and declared: "Data centres will be a massive job creator for our youth we invite the whole world's data to reside in India." The ambition is not hyperbole. India's data center capacity has quadrupled from 0.4 gigawatts (GW) in 2020 to 1.5 GW by 2025, with projections of 8–10 GW by 2030 a twelve-fold surge within a decade. Against this backdrop of technological triumphalism, however, lies a resource reckoning that jurisprudential and policy frameworks have yet to confront in earnest: water.

The architecture of modern artificial intelligence is, at its material foundation, a thermal management problem. Training a single large language model such as GPT-4 or comparable systems consumes extraordinary computational resources, producing prodigious quantities of heat. Managing that heat requires cooling and cooling requires water. The International Energy Agency (IEA) estimated in 2024 that AI systems accounted for approximately 15% of total data center electricity demand globally, a share that climbed to an estimated 20% by end of 2024. Each kilowatt-hour of electricity consumed corresponds to water usage both on-site through evaporative cooling towers, and off-site through thermoelectric power generation.

This paper deals with the dual vantage point of a doctorate in law with specialization in environmental governance and technology regulation. The legal questions raised are not merely academic: they concern the constitutional right to water, the adequacy of India's statutory environmental architecture, the justiciability of corporate non-disclosure of water consumption, and the liability framework for environmental harm occasioned by digital infrastructure. These questions acquire acute urgency in a country that hosts 18% of the world's population but commands only 4% of its freshwater resources and where Bengaluru recently experienced its worst water crisis in 500 years, even as data centers continued to draw millions of liters daily from the same depleted supply.

## II. The Global Hydro-Environmental Footprint of AI Data Centers

### a) Mechanics of Water Consumption

The Data centers consume water through two principal vectors: on-site evaporative cooling and off-site electricity generation. The On-site cooling accounts for the most visible water use. Cooling towers the dominant thermal management technology dissipates heat through evaporation. For every megawatt of IT load, evaporative cooling systems may consume between 1.8 and 9.5 liters of water per kilowatt-hour, depending on ambient temperature, humidity, and cooling efficiency benchmarks (Power Usage Effectiveness or PUE). AI-optimized data centers, which deploy high-density GPU clusters running at sustained thermal outputs far exceeding standard server racks, operate at the more water-intensive end of this spectrum.

Off-site water use is less visible but quantitatively significant. Thermoelectric power plants which generate the bulk of India's electricity consume between 0.4 and 2.3 liters of water per kilowatt-hour for cooling. Because AI data centers are extraordinarily electricity-intensive, their "off-site" or "embodied" water footprint from grid-sourced power is substantial, often exceeding on-site consumption.

### b) Quantifying the Global Crisis: Current Data

The scale of AI data center water consumption, while previously underestimated, is now supported by a substantial and growing body of empirical evidence:

- A 2025 United Nations University report the most authoritative global study to date found that in 2025 alone, data centers consumed water equivalent to filling 1.8 million Olympic-sized swimming pools. This volume, the report noted, "could cover the annual basic domestic water needs of over 600 million people in Sub-Saharan Africa."
- By 2030, global data center water consumption is projected to reach 9.3 trillion liters, with data centers ranking sixth globally for electricity consumption if treated as a country consuming 189 million tonnes of CO2 equivalent annually.
- The water footprint of AI systems specifically is projected to reach between 312.5 and 764.6 billion liters in 2025 alone, according to peer-reviewed estimates published in Cell Reports Sustainability (2025).
- Research published by Li et al. (2023) estimated that training GPT-3 in Microsoft's U.S. data centers consumed approximately 5.4 million liters of water in total, including 700,000 liters of direct on-site cooling water.
- A study by the Houston Advanced Research Center (HARC) and the University of Houston found that data centers in Texas alone will consume 49 billion gallons of water in 2025 and as much as 399 billion gallons by 2030 equivalent to reducing the level of Lake Mead (the largest reservoir in the United States) by over 16 feet annually.
- Global AI-related water withdrawals could reach 4.2–6.6 billion cubic meters annually by 2027, equivalent to four to six times Denmark's annual freshwater consumption, or half that of the United Kingdom.

### c) The Cooling System Legal-Technical Nexus

The choice of cooling technology is not merely an engineering decision it carries direct legal and regulatory consequences. Three primary cooling paradigms are in use:

Air-cooled systems use ambient air for thermal dissipation, consuming minimal water but operating less efficiently and requiring more electricity. Evaporative (water-cooled) systems circulate water through cooling towers, consuming large volumes but offering better energy efficiency — making them the preferred choice of hyperscale operators. Liquid immersion cooling submerges server hardware in thermally conductive dielectric fluids, significantly reducing both water and energy consumption, though at higher capital cost.

The global liquid cooling market is projected to grow from $5.65 billion in 2024 to over $48 billion by 2034. This technological shift toward more water-efficient cooling is a relevant consideration for any legal framework that seeks to incentivize environmental compliance as it demonstrates that sustainable alternatives exist and that mandating their adoption is technically feasible.

## III. India's Data Center Expansion: A Hydro-Environmental Reckoning

### a) Scale and Trajectory of Indian Data Center Growth

India's data center sector is undergoing a transformation of infrastructural magnitude. The trajectory is steep and accelerating:

- India's total data center IT capacity quadrupled from 0.4 GW in 2020 to approximately 1.4–1.5 GW by early 2025. Jefferies projects this will multiply five-fold to 8 GW by 2030; Deloitte projects 8–10 GW; some industry estimates reach 17 GW.
- Nearly 70% of new capacity is being developed by hyper scale operators Google, Microsoft, Amazon Web Services, Meta who typically employ water-cooled systems rather than the air-cooled chillers used by Indian operators such as Yotta, CtrlS, and Equinix.
- In January 2024, the Adani Group signed a Rs. 50,000 crore Memorandum of Understanding (MoU) with the Maharashtra government to build 1 GW of hyperscale data center capacity across Mumbai, Navi Mumbai, and Pune. The Group has announced plans for a total $100 billion investment in data centers by 2035.
- Microsoft CEO Satya Nadella announced a $17.5 billion investment in Indian digital infrastructure in December 2025. The government has extended a 20-year tax holiday until 2047 for foreign cloud service providers using India-based data centers to serve global customers.

**b) Water Consumption Data for India**

The hydrological implications of this expansion are severe and quantifiable:

- India's data centers collectively consumed approximately 150 billion litres of water in 2025. This figure is projected to more than double to approximately 358 billion litres by 2030.
- Bengaluru's data centers alone consume over 26 million litres per year. This is occurring in a city that experienced what experts described as its "worst water crisis in nearly five centuries" a crisis so acute that the Bangalore Water Supply and Sewerage Board (BWSSB) mandated a 20% water supply cut to bulk users in March 2024.
- Hyderabad faces a projected water deficit of 870 million litres per day by 2027, yet Amazon Web Services continues to expand its facilities in the city. Chennai, which experienced its own "Day Zero" in 2019 when main reservoirs ran completely dry, remains among the most actively sought destinations for new server farms.
- India hosts 18% of the world's population but controls only 4% of global freshwater resources (World Bank data), making it one of the most structurally water-stressed nations on earth. The hydrological paradox of building water-intensive digital infrastructure in India's most water-stressed cities represents a governance contradiction of the first order.

**c) Geographic Concentration and Differential Impact**

The geographic clustering of Indian data centers creates acutely localized water stress. Data center capacity concentrates overwhelmingly in five metropolitan hubs: Mumbai, Bengaluru, Chennai, Hyderabad, and Delhi-NCR. These cities are simultaneously India's most digitally advanced urban centres and its most environmentally pressured water markets.

This spatial concentration has a distributional justice dimension that has received insufficient attention in the legal literature. Water is, in Indian constitutional jurisprudence, a public resource held in trust. The preferential allocation of scarce municipal water supplies to data center operators at the expense of households, farmers, and marginalized communities raises substantive questions of equity and constitutional propriety. As the analyst writing for Reccessary (April 2026) observed: "The current trajectory of AI infrastructure investment in India is a deeply political allocation of a scarce common resource. How water is being shared is systematically disadvantaging society's most vulnerable."

**d) Specific Documented Incidents**

The adverse consequences are not merely projected they are already being documented:

- In Tusiana village, Greater Noida, the State-Level Expert Appraisal Committee (SEAC) approved environmental clearance for Yotta's 20-acre data center park with a water use limit of 120 Kiloliters per Day (KLD). Residents of the surrounding village, already facing acute groundwater depletion, have received minimal consultation or compensation.
- In Maharashtra, the Pollution Control Board has reportedly rejected at least three data center applications in the past year specifically on water-related grounds, including a proposed 15 MW facility near Pune indicating that regulatory pushback is beginning to emerge at the state level.
- Tech corridors in Bengaluru were reduced to sourcing water from private, unregulated water tankers during May 2024's severe shortage  a situation that simultaneously exposed corporate dependence on informal water markets and the total absence of legal accountability for that dependence.

## IV. The Legal Framework: Adequate Architecture or Regulatory Void?

**a) India's Core Environmental Statutes and Their Application to Data Centers**

**1. The Environment (Protection) Act, 1986**

The Environment (Protection) Act, 1986 (EPA) is the principal umbrella legislation for environmental governance in India. Enacted pursuant to the recommendations of the Stockholm Conference (1972), it empowers the Central Government to take measures to protect and improve environmental quality, prescribe environmental standards, and direct the closure or regulation of industries causing environmental harm.

The EPA's applicability to data centers is indirect. Data centers are not scheduled industries under the EPA's primary regulatory instruments. The EIA Notification, 2006 issued under the EPA mandates prior Environmental Impact Assessment for a specified list of project categories (Schedule I), which does not currently include data centers. This is a critical statutory gap. As Advocate Yashasvi Rathore, environmental and technology law specialist at Inductus Group and NASSCOM member, stated in a February 2026 interview: "The EIA Notification, 2006, under the Environment Protection Act, 1986, is the primary instrument; it mandates prior environmental clearance for scheduled project categories before any construction or expansion can begin. But data centres are not scheduled, so large, water-intensive AI facilities can be built without any mandatory prior environmental assessment at the national level."

**2. The Water (Prevention and Control of Pollution) Act, 1974**

The Water (Prevention and Control of Pollution) Act, 1974 (Water Act) India's first environmental legislation established the Central Pollution Control Board (CPCB) and State Pollution Control Boards (SPCBs) as the institutional framework for water pollution regulation. Under Section 25, no industry may discharge effluent without prior consent from the relevant SPCB.

The Water Act's critical limitation in the data center context is that it regulates discharge, not consumption. A data center that draws millions of liters of freshwater from municipal supplies for cooling and evaporates most of it, returning does not "discharge" effluent in any meaningful sense. It is therefore almost entirely outside the Water Act's regulatory perimeter. The statutory architecture was designed for an industrial era in which environmental harm

manifested primarily as pollution (discharge), not as depletion (withdrawal). One legal commentary noted: "Laws regulate discharge, not consumption. There is also no mandatory reporting of water use."

**3. The National Green Tribunal Act, 2010**

The National Green Tribunal (NGT), established under the NGT Act, 2010, is a specialized court with jurisdiction over "substantial questions relating to the environment" involving multi-disciplinary issues. The NGT has demonstrated significant institutional capacity and willingness to exercise suo motu jurisdiction in matters of environmental concern including water scarcity, groundwater depletion, and industrial water misuse.

The NGT represents the most immediately available forum for litigating data center water issues. However, two limitations are noteworthy. First, the NGT's jurisdiction is triggered by established violations of existing environmental laws and where those laws do not explicitly cover data center water consumption, the jurisdictional hook may be tenuous. Second, NGT orders, while legally binding, have historically suffered from variable compliance rates, particularly against large corporations with political and economic leverage.

**4. The Information Technology Act, 2000 and Its Silence on Sustainability**

The Information Technology Act, 2000 (IT Act) is the primary statute governing digital infrastructure in India. It addresses data processing, cyber security, electronic governance, and intermediary liability but contains no provisions whatsoever concerning the environmental sustainability of digital infrastructure. The Digital Personal Data Protection (DPDP) Act, 2023, while a significant development in data governance, similarly contains no environmental provisions.

This statutory bifurcation between the laws governing digital infrastructure (IT Act, DPDP Act) and the laws governing environmental resources (EPA, Water Act) means that the sector that is emerging as one of India's most water-intensive industries operates at the precise intersection of two legal regimes that do not speak to each other.

**b) State-Level Regulatory Innovations and Their Limits**

In the absence of comprehensive national regulation, some states have moved to fill the vacuum. Maharashtra, which hosts one of the densest concentrations of data centers in India, now requires water impact assessments for IT loads exceeding 5 MW. These assessments must model facility water consumption over a 20-year operational period and demonstrate that local aquifers can sustain the demand.

This state-level initiative is constitutionally permissible under India's federal structure  water is a concurrent subject under the Constitution's Seventh Schedule and represents a meaningful step toward hydrological accountability. However, its geographic limitation and the absence of national harmonization create compliance arbitrage: operators may simply seek approval in less regulated states, channeling India's digital infrastructure expansion away from environmentally conscious jurisdictions toward regulatory voids.

**c) Constitutional Dimensions: Articles 21 and 48A**

India's Supreme Court has, through a series of landmark judgments, interpreted Article 21 of the Constitution (right to life) to encompass the right to a clean environment and the right to safe drinking water. In Subhash Kumar v. State of Bihar (1991), the Court held that the right to life includes the right to the enjoyment of pollution-free water and air. In M.C. Mehta v. Kamal Nath (1997), the Court articulated the public trust doctrine holding that the state holds natural resources including water in trust for the public and cannot alienate them for private benefit.

These constitutional principles are directly relevant to data center water allocation. Where state governments grant preferential water access to data center operators in water-stressed cities without adequate public consultation, environmental assessment, or safeguards for community water security they may be acting in violation of their constitutional duty as trustees of a public resource. This represents a potentially powerful avenue for public interest litigation.

Article 48A further mandates that the State shall endeavor to protect and improve the environment and to safeguard forests and wildlife. Read with the Directive Principles of State Policy, this provision creates an affirmative constitutional obligation of environmental stewardship that extends to the governance of water-intensive industries.

**d) The Enforcement Deficit**

Even where regulatory instruments do exist, enforcement is systemically inadequate. State Pollution Control Boards the front-line institutions of environmental regulation lacks technical capacity, funding, and independence to monitor large, complex data center operations. Mandatory environmental disclosures are inconsistent. An Advocate Rathore observed: "Even existing standards suffer from weak enforcement. State Pollution Control Boards lack the capacity to monitor and regulate large, complex data centre operations at scale."

The Bureau of Energy Efficiency (BEE) has published Green Data Centre guidelines establishing Power Usage Effectiveness (PUE) benchmarks. The Ministry of Electronics and Information Technology (MeitY) issued Green Data Centre guidelines in 2023. The Indian Green Building Council (IGBC) provides voluntary green data center certification. These instruments are useful but insufficient: they are voluntary, non-exhaustive, focused primarily on energy rather than water, and lack enforcement mechanisms.

## V. The Case for Data Centers: Economic and Technological Benefits

### a) Macroeconomic Significance

A balanced analysis must engage seriously with the genuine and substantial benefits that AI data center infrastructure promises India. These benefits are not trivial, and a regulatory framework that fails to account for them will lack political legitimacy and economic rationality.

The Access Partnership report, released at the NASSCOM Technology and Leadership Forum in February 2025, estimated that investment in five AI Data Cities could contribute a cumulative $6.8 trillion in value to India's GDP between 2027 and 2047, supporting more than 39 million jobs with approximately 75% of this benefit stemming from cloud and AI-enabled productivity gains across sectors. To contextualize this figure: it represents a contribution equivalent to roughly twice India's current annual GDP, distributed over twenty years.

At the sectoral level, AI in healthcare alone is projected to contribute Rs. 2.6 lakh crore ($30 billion) to India's GDP by 2025 (Deloitte, 2025). NITI Aayog has targeted the technology services sector to contribute 7–8% of GDP ($750–850 billion) by 2035 as part of the Viksit Bharat vision.

### b) National Digital Sovereignty and Strategic Imperatives

India's data center ambitions are not solely economic they reflect a strategic assertion of digital sovereignty. The Digital Personal Data Protection Act, 2023, empowers the government to restrict cross-border data transfers to designated countries, creating regulatory pressure on multinational corporations to establish Indian data infrastructure. India's aspiration to be a "rule-setter rather than merely a rule-taker" in global AI governance as demonstrated by hosting the high-profile AI Governance Summit in early 2026 depends materially on having sovereign AI infrastructure.

Data centers are increasingly analogous to 20th-century power grids: foundational infrastructure whose absence precludes broader economic development. India's 900 million internet users, Aadhaar-based identity ecosystem, UPI payment infrastructure, e-governance platforms (DigiLocker, ONDC), and 5G rollout all generate data volumes that require domestic computation capacity. The alternative dependence on data centers located in the United States, Singapore, or Europe carries its own risks of technological subordination and data insecurity.

### c) Employment and Industrial Development

The data center sector generates employment both directly and through significant multiplier effects. India's first AI Data Center Park in Nava Raipur, Chhattisgarh Rs. 2,000 crore investments is projected to generate 500 direct and 1,500 indirect jobs in its first phase. Scaled across India's projected 8–10 GW expansion, the employment multiplier effects are potentially transformative for secondary cities and tier-2 industrial corridors.

Hyperscale data centers also catalyze adjacent economic activity: renewable energy development (to power them), high-end manufacturing (for servers and cooling equipment), engineering talent development, and logistics infrastructure all of which contribute to India's industrial policy objectives.

### d) AI for Social Good: Healthcare, Agriculture, and Public Services

The social benefits of India-hosted AI infrastructure extend beyond macroeconomic metrics. AI systems trained and run on Indian data center infrastructure are increasingly deployed in healthcare (diagnostic imaging, drug discovery, and disease surveillance), agriculture (precision farming, crop yield prediction, and water management), education (personalized learning), disaster management, and climate modeling. These applications have genuine transformative potential for a country of India's population and development profile.

It would be analytically incoherent to propose that environmental concerns about data center water use should simply terminate this development trajectory. The legal and policy question is not whether data centers should exist in India, but under what environmental governance conditions they should operate.

## VI. Comparative Cost-Benefit Analysis: Balancing the Scales of Law

### a) The Framework: Sustainable Development as Legal Principle

The principle of sustainable development formalized in the Rio Declaration (1992) and the Brundtland Commission's definition as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" is not merely aspirational in Indian law. The Supreme Court of India recognized sustainable development as a legal principle in *Vellore Citizens' Welfare Forum v. Union of India* (1996), holding it binding on Indian courts and authorities. The precautionary principle a corollary of sustainable development requiring that where there are credible threats of serious or irreversible environmental harm, precautionary measures be taken even in the absence of scientific certainty was similarly recognized.

These principles provide the jurisprudential architecture for balancing the economic benefits of AI data center expansion against its environmental costs.

### b) Points of Balance: Where Law Must Draw Lines

The legal analysis suggests the following points of equilibrium:

- Location siting must be decoupled from water stress. There is no legal or policy rationale compelling the concentration of water-intensive data centers in Bengaluru, Chennai, or Hyderabad cities already experiencing acute water scarcity. The economics of proximity to talent pools, existing infrastructure, and low-latency connectivity can be addressed through purpose-built data center corridors in water-rich, energy-accessible geographies (as the AI Data Cities concept proposes). This is a siting regulation question amenable to direct legislative intervention.

- Water consumption disclosure must be mandated as a matter of environmental transparency. India's constitutional right to information, read with the right to a clean environment under Article 21, supports the proposition that affected communities are entitled to know how much water data centers in their vicinity consume. Currently, no such mandatory disclosure exists. The legal fix is straightforward: amend the Environmental Clearance process to require water consumption reporting for all data centers above a threshold IT load.
- The precautionary principle requires that expansions in water-stressed zones be subject to prior hydrological assessment. The Maharashtra model requiring 20-year water consumption modeling for data centers above 5 MW in IT load should be nationalized through a central EIA Notification amendment that adds data centers to the scheduled list of regulated projects.
- Economic incentive structures must be redesigned to internalize water costs. Tax holidays, capital subsidies, and electricity duty exemptions offered to data center operators do not currently incorporate water cost accounting. A legal mandate requiring operators to pay for water at rates that reflect its true scarcity value or to fund community water infrastructure as a condition of operating licenses would internalize these externalities without prohibiting development.

**c) Comparative International Perspectives**

India's legal challenge is not unique, though its severity is heightened by its structural water scarcity. Other jurisdictions offer instructive comparators:

The European Union, through the Energy Efficiency Directive (recast, 2023), requires large data centers to report water consumption data to national authorities. The Netherlands has imposed outright moratoria on data center construction in water-stressed provinces of Noord-Holland. Singapore suspended new data center approvals from 2019 to 2022 pending sustainability assessment, subsequently introducing a Green Lane approval process with explicit energy and water efficiency requirements.

The United States presents a more fragmented picture: while federal disclosure requirements remain weak, state-level actions are accelerating. Google's South Carolina facility was required to shift from groundwater to surface water after sustained regulatory opposition. Environmental groups in Minnesota have successfully demanded water reuse mandates and compensation for potable water use by data center operators.

India's legal and institutional capacity its Constitution's robust environmental jurisprudence, the NGT's broad jurisdiction, and the political legitimacy of water as a governance issue arguably positions it to move more decisively than many comparable jurisdictions if the political will exists.

**d) The Technology Dividend: Cooling Efficiency as Legal Obligation**

The emergence of water-efficient cooling technologies including liquid immersion cooling, direct liquid cooling (DLC), and advanced adiabatic systems means that the false choice between AI development and water conservation is increasingly obsolete from a technical standpoint. The global liquid cooling market's projected growth from $5.65 billion to $48 billion by 2034 reflects accelerating industry adoption.

a. A legally mandated minimum cooling efficiency standard perhaps expressed as a maximum Water Usage Effectiveness (WUE) ratio (liters of water per kilowatt-hour of IT output) would operationalize the precautionary principle in a technically grounded and industry-actionable form. Such a standard would simultaneously incentivize technology innovation and protect water resources. BEE's existing mandate makes it the natural institutional home for such a standard.

## VII. Proposed Regulatory Architecture & Recommendations

**a) Legislative Amendments**

The following statutory amendments are proposed:

- Amendment of the EIA Notification, 2006, to include data centers with IT loads exceeding 5 MW as Schedule B Category II projects, mandating prior Environmental Clearance with specific assessment of water consumption, aquifer impact, and availability of recycled water alternatives.
- Amendment of the Water (Prevention and Control of Pollution) Act, 1974, to regulate not only discharge but also high-volume water withdrawal for non-consumptive uses, including evaporative cooling by industrial and commercial facilities, by extending the Section 25 consent mechanism to cover water extraction above a prescribed threshold.
- Enactment of a dedicated Digital Infrastructure Sustainability Act mandating:

(a) quarterly public disclosure of water consumption metrics disaggregated by facility; (b) mandatory Water Usage Effectiveness (WUE) benchmarks for new facilities;

(c) prohibition of potable water uses for non-emergency cooling in water-stressed designated zones;

(d) compulsory community water offset funds proportional to consumption.

**b) Institutional Reforms**

Legislative reform without institutional capacity is unavailing. The following institutional measures are recommended:

- Establishment of a Digital Infrastructure Environmental Monitoring Cell within the Ministry of Environment, Forest and Climate Change (MoEFCC), staffed with technical experts in computing infrastructure, hydrology, and environmental law, with supervisory authority over state-level data center compliance.

- Empowerment of the CPCB to issue binding Water Consumption Guidelines for data centers, with authority to conduct audits and impose penalties calibrated to the commercial scale of violations, ensuring that fines constitute a genuine deterrent rather than a negligible compliance cost.
- Establishment of a fast-track NGT bench for Digital Infrastructure Environmental disputes, with power to grant interim relief, including construction stays and operational restrictions pending full hydrological assessment.

**c) Zoning and Siting Mandates**

A national Data Center Siting Policy should establish:

- A Water Stress Overlay Map, developed jointly by MoEFCC and the Central Ground Water Board, designating water-stressed zones in which new data centers above 10 MW IT load are subject to enhanced regulatory scrutiny and conditions.
- Positive incentives for siting in non-water-stressed zones: enhanced capital subsidies, accelerated environmental clearances, and preferential grid access for renewable power, to redirect investment away from vulnerable water markets.
- Community water rights agreements as a mandatory license condition for facilities in semi-urban and peri-urban locations, guaranteeing that data center operations do not reduce groundwater availability or municipal supply for surrounding communities.

**d) International Law Alignment**

India's regulatory framework should be designed in alignment with its international environmental law obligations, including the UN Sustainable Development Goals (particularly SDG 6: Clean Water and Sanitation, and SDG 9: Industry, Innovation and Infrastructure), the Paris Agreement's sustainability dimensions, and the emerging international consensus on AI governance and responsible digital infrastructure.

India's aspiration to be a global AI governance rule-setter creates a strategic opportunity: by developing gold-standard domestic regulation of AI data center water use, India could position itself as the leading voice for environmentally responsible AI infrastructure in the Global South, a form of environmental leadership that would complement rather than contradict its digital ambitions.

## VIII. Conclusion

The proliferation of AI data centers in India presents one of the most consequential environmental governance challenges of the current decade. The empirical evidence is unambiguous: data centers are water-intensive operations that, at the scale India envisions by 2030, will consume hundreds of billions of liters of freshwater annually in a country that cannot afford such depletion. The environmental costs are not hypothetical futures; they are present realities, documented in Bengaluru's tanker-dependent tech corridors, Hyderabad's water deficit projections, and the voices of Tusiana village residents watching water tables fall outside a gleaming server farm.

India's existing legal framework, the Environment Protection Act, 1986; the Water (Prevention and Control of Pollution) Act, 1974; and the EIA Notification, 2006, was designed for an industrial economy, not a digital one. Its structural gaps are not mere technicalities; they constitute a governance failure with constitutional dimensions. The public trust doctrine, the right to a clean environment under Article 21, and the precautionary principle collectively demand a legal response adequate to the scale of the threat.

At the same time, the economic and strategic case for India's data center expansion is genuine and compelling. A $6.8 trillion GDP contribution projection, 39 million jobs by 2047, and the imperatives of digital sovereignty are not to be dismissed in the name of environmental absolutism. The question is not whether India builds data centers, but whether it builds them wisely.

The answer lies in an evolved legal architecture that does three things: mandates environmental transparency through compulsory water consumption disclosure; operationalizes the precautionary principle through mandatory prior hydrological assessment in water-stressed zones; and redesigns economic incentives to channel investment toward water-efficient technologies and geographies. Such a framework would not retard India's digital transformation, it would make that transformation sustainable.

The cloud, after all, runs on water. Indian law must catch up to that reality before the wells run dry.

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