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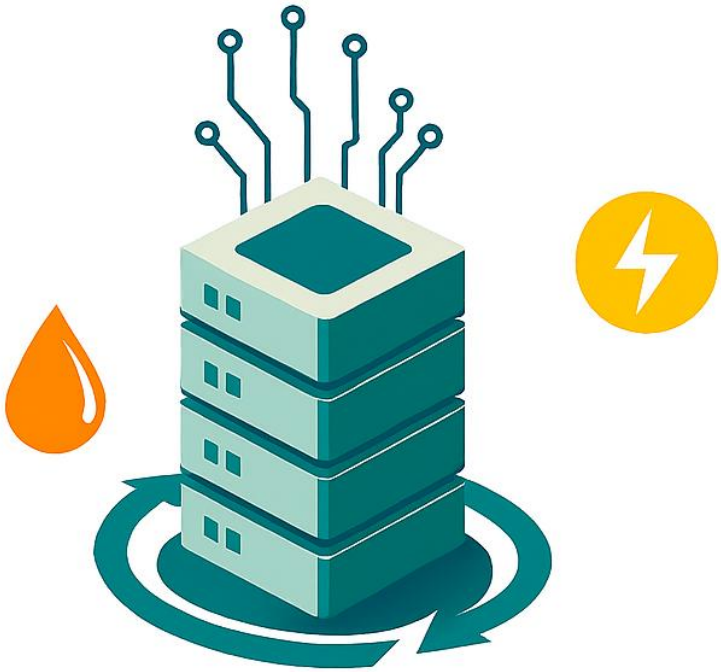

INDIA'S DATA CENTRE POLICY:

A CRITICAL EVALUATION OF INDIA'S 2020 DRAFT DATA CENTRE POLICY-WHAT WORKED, WHAT WAS LEFT UNFISHED AND WHAT THE NEW POLICY MUST FIX

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India's Data Centre Policy: A Critical Evaluation of India's 2020 Draft Data Centre Policy-What Worked, What Was Left Unfinished and What the New Policy Must Fix

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Abstract:

India's 2020 draft Data Centre Policy laid out a bold blueprint to transform the nation into a global data infrastructure powerhouse. It promised plug-and-play parks, streamlined approvals, clean energy, and domestic manufacturing — yet five years on, the journey remains incomplete. While state-level momentum and private investment have driven impressive growth, the absence of enforceable national standards, statutory guarantees, and sustainability frameworks has left India at a crossroads: fast-growing, but not yet world-class.

This editorial dissects the 2020 draft's ambitions, evaluates the progress made, and identifies persistent gaps — from power certainty and permitting delays to fiscal ambiguity and supply chain fragility. Drawing on global best practices, it presents a ten-point action plan for the upcoming national policy, complete with timelines and KPIs. The goal: to shift from fragmented growth to secure, green, scalable infrastructure — rewiring India's data centre future from vision to execution.

Keywords: Data Centre Infrastructure, Single-Window Clearance, Carbon-Free Energy (CFE), Sustainability KPIs, Digital Sovereignty, National Data Centre Policy, Green Finance & Circularity

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1. Introduction: The Urgency and Opportunity for Data Centre Policy Reform

India's digital economy is undergoing a tectonic shift. With over 850 million internet users, world-leading mobile data consumption, and exponential growth in cloud, AI, and fintech services, the country is generating unprecedented demand for data infrastructure. India's data centre (DC) capacity is projected to reach 1.3 GW by 2025,

driven by hyperscaler expansion, enterprise cloud adoption, and government-backed digital initiatives like Digital India, IndiaAI, and the National Language Translation Mission.

This surge is further amplified by policy levers such as the Data Protection Act (DPDP), mandatory data localization for sensitive sectors, and rising demand for sovereign compute. Yet, despite this momentum, India lacks a finalized national data centre policy. The Ministry of Electronics and Information Technology (MeitY) released a Draft Data Centre Policy in 2020, which proposed transformative reforms — including plug-and-play parks, infrastructure status, single-window clearance, and domestic manufacturing support. However, four years on, the draft remains unnotified, and execution is fragmented across states and agencies.

Meanwhile, state governments have stepped in with competitive DC policies — Telangana, Tamil Nadu, Gujarat, Uttar Pradesh, and Odisha among them — offering land, power, and stamp duty incentives to attract investment. Private players have responded with energy-efficient builds, AI-ready designs, and foreign partnerships. But without a harmonized federal framework, India risks falling short of its ambition to become a global data centre hub.

Internationally, countries like Singapore, Ireland, and the UAE have demonstrated that hyperscale success requires more than demand — it demands statutory permitting timelines, 24×7 Carbon-Free Energy (CFE) guarantees, sustainability-linked incentives, and robust public-private coordination. India must now move from vision to execution.

This paper provides a comprehensive, evidence-based evaluation of India's data centre policy journey. It begins by summarizing the 2020 draft's key proposals, then reviews national and state-level progress, including private-sector innovations. It then analyzes unresolved challenges — from clean energy integration and permitting delays to fiscal ambiguity and supply chain fragility. Drawing on global best practices and expert commentary, the article concludes with a ten-point action framework for the upcoming national policy, each backed by measurable KPIs and timelines. The goal: to convert India's digital momentum into secure, green, scalable infrastructure that anchors its AI and cloud future.

2. Overview of the 2020 Draft Data Centre Policy

The 2020 Draft Data Centre Policy was crafted as an ambitious framework to transform India's nascent data infrastructure landscape. Its vision was clear: to "make India a global data centre hub, promote investment in the sector, propel digital economy growth, and enable provisioning of trusted hosting infrastructure to fulfil the growing demand of the country".

Key Proposals and Strategic Pillars

a. Infrastructure Status and Ease of Doing Business

- **Infrastructure Status:** Data centres would receive official "infrastructure" status, putting them on par with sectors like railways and power. This promises easier access to long-term financing from both domestic and international lenders.
- **Single Window Clearances:** A commitment to simplify the notoriously complex approval processes via a "single-window, time-bound clearance system" for all permits needed by DC parks.
- **Demarcated Data Centre Zones:** The draft envisioned state governments demarcating zones with essential infrastructure (land, power, water, roads, connectivity) for "pre-provisioned data centre parks," paving the way for a "plug-and-play" deployment model. These may be similar to Solar Parks, RE Parks in India.

b. Fiscal and Non-fiscal Incentives

- **Tax Holidays:** The policy outlined the possibility of long-term tax holidays (now manifesting as a proposed 20-year exemption in the latest national draft) and GST credits to boost sector investment.
- **Input Tax Credits:** Input Tax Credit (ITC) on GST for capital assets, including construction materials, HVAC systems, and electrical equipment[8].
- **Subsidies and Support:** Direct and indirect incentives for domestic hardware, software, and equipment makers, alongside R&D, manufacturing, and testing ecosystem support.

c. Energy, Sustainability, and Connectivity

- **Uninterrupted, Cost-effective Power:** Emphasis on quality, affordable, and reliable power supply for DCs, with support for captive and dedicated renewable generation.
- **Renewable Integration:** Explicit encouragement for renewable procurement, both through open-access systems and specific collaboration with the Ministry of Power to facilitate green energy for DCs.
- **Advanced Connectivity:** Leveraged the National Digital Communications Policy (NDCP) for robust backhaul, dark fibre proliferation, and adoption of "Dial Before You Dig" for network integrity.

d. Data Sovereignty, Security, and Standardization

- **Essential Services Status:** Data centres to be notified as "essential services" under The Essential Services Maintenance Act, ensuring continuity even during crises.
- **National Building Code Category:** Recognizing DCs under a special category in the National Building Code to reflect their unique design and operational needs.
- **Localization Drive:** Alignment with RBI and CERT-In mandates on data localization, especially for BFSI, telecom, and regulated sectors.

e. Institutional Mechanisms

- **Data Centre Facilitation Unit (DCFU):** Set up as the nodal agency within MeitY to streamline stakeholder engagement, support project approvals, and monitor progress.
- **Empowered Committees:** An Inter-Ministerial Empowered Committee for policy execution and mid-term evaluations, and an independent Data Centre Industry Council as the government-industry interface.

These proposals set out a clear framework for turning India into a competitive international DC destination. However, their true test lay in implementation, robustness, and the ability to adapt to a rapidly evolving sector.

3. Progress Since 2020: National Achievements and Limitations

a. National-Level Developments

i. Policy Momentum and Infrastructure Status

Following sustained advocacy, infrastructure status was conferred on data centres with 5 MW or higher capacity in the Harmonized Master List in late 2022. This game-changing classification has improved access to financing and reduced the cost of capital for large-scale DC projects.

ii. Investment Surge and Market Expansion

India's DC market has seen an unprecedented investment surge-from both domestic players and international hyperscalers. Between 2019 and 2024, investment commitments rose to over $60 billion, and are projected to surpass $100 billion by 2027. Live IT load has jumped from 350 MW (2019) to 1,263 MW (April 2025), with pipeline capacity exceeding 1.5 GW. Capacity is expected to reach 3 GW by 2030, with forecasts of over 4.5 GW by the same year.

- **Geographic Clustering:** Mumbai, Chennai, and Hyderabad currently account for nearly 80% of total capacity, driven by their access to submarine cables, reliable power, talent, and existing IT/industrial clusters.
- **Occupancy and Throughput:** Occupancy rates in top markets (e.g., Mumbai, Delhi NCR, Bengaluru) range between 75-81%, supporting robust revenue growth (CAGR of over 24% since 2019).

iii. Digital Economy Growth and New Use Cases

Rapid growth in digital payments (UPI), e-commerce, video streaming, generative AI, and cloud adoption have created new and unpredictable demand for DC capacities. India now has the world's highest per-capita mobile data usage, and the sector is racing to keep up with this foundational shift.

b. Limitations and What Remains Unfinished

Despite impressive numbers, several national-level targets and policy mechanisms envisioned in 2020 have not been fully realized:

- **Single-Window Clearances:** The envisioned one-stop approval platforms remain fragmented. In practice, DC developers may still need over 30 separate approvals

from land, power, environment, safety, telecom, and local authorities, often leading to significant and unpredictable delays.

- **Lack of a Finalized National Policy:** While elements of the 2020 draft have been partially implemented or adopted (especially by progressive states), a comprehensive, binding national policy with clear, enforceable timelines and fiscal commitments is yet to be enacted. MeitY relaunched consultations in 2025 to address these gaps, seeking to update the policy for present-day realities.
- **Fragmented Regulatory Environment:** Each state implements its own incentives, zoning rules, and process timelines, causing confusion and inefficiency for operators active in multiple regions.
- **Renewable Energy Mandates:** Strong encouragement for clean energy exists, but there is no national-level legal requirement or minimum threshold for renewable usage in data centre operations.

4. State-Level Policy Innovation and Leadership

a. Pioneering States: Tamil Nadu, Maharashtra, Uttar Pradesh, Telangana, Karnataka

States like Tamil Nadu, Maharashtra, Telangana, Uttar Pradesh, West Bengal, Karnataka, and Odisha have delivered policy frameworks that often set the de facto ground rules for market growth[16][17][18].

i. Tamil Nadu: A Case Study in State-Level Excellence

- **Policy Overview:** Tamil Nadu's 2021 DC Policy stands out for its aggressive incentives and infrastructure support. The state provides power at competitive rates, robust dual grid supply, capital and land subsidies (up to 50% for land in certain districts), stamp duty waivers, and MSME support. Specialized building regulations, single-window clearances, and dedicated DC parks reinforce the business case.
- **Renewable Leadership:** The policy explicitly requires ≥30% renewable energy sourcing for eligibility for several benefits, and offers open access and concessional green power procurement. Tamil Nadu has over 19 GW of installed renewable capacity, leading the country in wind, and boasts a reliable, decarbonizing grid.

- **Hub Status:** With over 178 MW of installed capacity in 2024 and rapid progress toward a 500 MW target, Tamil Nadu is positioned as India's second-largest DC hub after Mumbai, and is a preferred location for hyperscalers like CtrlS, Yotta Infrastructure, and Adani.

ii. Maharashtra, Karnataka, Telangana, Odisha, Uttar Pradesh

Each of these states has tailored policies enabling:

- Land at subsidized rates or with capital assistance.
- Stamp duty and electricity duty exemptions.
- Transmission and wheeling charge subsidies, especially for green energy.
- Special building codes; zoning exemptions.
- MSME and training subsidies.
- Fast-track and single-window clearances, although implementation often remains a work-in-progress.

iii. Policy Features: A Comparative Snapshot

India's data centre landscape is increasingly shaped by state-level policy competition, with governments offering differentiated packages to attract hyperscalers and colocation players. Tamil Nadu has positioned itself as a frontrunner with up to 50% land subsidy, dual-grid connectivity, and a green open access mandate requiring ≥30% renewable energy usage for eligibility. Maharashtra offers subsidized land and duty exemptions, though its single-window clearance system remains under development, and green energy adoption is encouraged rather than mandated.Karnataka provides targeted incentives outside Bengaluru, including industrial tariffs, capital subsidies, and land rebates, with green energy mandates tied to incentive eligibility (≥30–50%). Odisha has rolled out one of the most aggressive packages, combining concessional land, 100% duty exemption, and 20% capex support, alongside a 30% electricity bill subsidy and SGST reimbursements. Uttar Pradesh balances 25–50% land subsidy with dual-grid access and fiscal incentives (up to 7% capex and interest subsidies), though it has not mandated renewable energy usage.

These policies, often reviewed and updated annually, have created intense federal competition, with states vying to position themselves as preferred hubs for digital infrastructure. While this has accelerated investment flows, it has also led to fragmentation in standards and sustainability requirements, underscoring the need for a harmonized national framework.

State	Land Subsidy	Power Incentive	Fiscal Incentive	Single Window	Green Energy Mandate
Tamil Nadu	Up to 50%	Dual grid, green open access	Stamp duty, training, R&D	Yes	≥30% for eligibility
Maharashtra	Subsidized	Duty exemption, open access	Stamp/stamp duty exemption	Under way	Encouraged
Karnataka	10% outside Bangalore	Industrial tariff, green incentives	7% capital, 10% land	Yes	≥30-50% for incentives
Odisha	Concessional	100% duty exemption, 30% bill subsidy	20% capex, 25% SGST	Yes	Incentivized
Uttar Pradesh	25-50%	Dual grid, open access	Up to 7% capex, interest	Yes	Not mandated

5. Private Sector Innovations and Investments

The private sector has responded vigorously to India's market signals and local policies.

a. Investment Pipelines

- **Pipeline Capacity:** By March 2027, operational DC capacity across India is expected to reach 2.0-2.1 GW, with a planned 3-3.5 GW of additional capacity within the next decade. This will entail investment commitments of ₹2.0-2.3 lakh crore rupees, reflecting robust confidence in policy momentum and digital demand[14]. However, the investment from various investor communities projected 10 GW capacity by 2030 in India.
- **Top Players:** The top five operators account for 75-80% of capacity and industry revenues, including CtrlS, Sify, NTT, Yotta, and AdaniConneX. They continue to

break ground on hyperscale campuses featuring AI-ready hardware and sustainable, high-density cooling.

b. Hyperscaler and Edge Facility Growth

- **AI-Driven Expansion:** India's generative AI market-which will need new compute infrastructure-drives additional demand. Facilities are evolving with higher rack densities, liquid cooling, and edge DCs to support latency-sensitive applications.
- **State Distribution:** While Mumbai and Chennai remain dominant, there is a strategic shift toward Tier II/III cities, supporting the inclusive, decentralized vision of policy makers.

c. Local Manufacturing and Supply Chain Integration

- **Domestic Push:** Encouraged by state and national incentives, companies like Modine (Chennai) and Nidec (Hubballi) have established manufacturing units for data centre cooling and power backup equipment, with high local content and job creation commitments. Spanish firm Submer is setting up an Asia-facing DC solutions hub in India, signaling global trust in Indian supply chains.
- **Wind and Solar Mandates Impacting Data Localisation:** New renewable regulatory mandates require data generated by critical infrastructure (e.g., wind turbines) to be stored within India, further boosting DC demand and security.

6. Policy Gaps and Systemic Challenges

Despite undeniable progress, critical and persistent bottlenecks continue to constrain India's journey to global DC leadership.

a. Clean Energy Guarantees and Renewable Integration

- **No Binding National Mandate:** While India has added a record 29.52 GW of renewables in FY 2024-25 and now has 242 GW of renewable capacity, there is still no legal requirement for data centres to procure a minimum percentage of renewable energy-unlike the telecom sector's earlier green mandates or the binding standards evolving in the EU or Singapore.

- **Carbon Intensity Concerns:** In high-DC states like Maharashtra and Delhi NCR, up to 78-90% of DC electricity still comes from coal, making the sector a potential liability for national climate targets. DC sector emissions could triple to 19.4 million tonnes CO2 by 2030 without intervention.
- **Industry Pushback:** MeitY's attempt to set a PUE (power usage effectiveness) benchmark of <1.35 has been resisted as too costly or technically difficult in India's climatic conditions, illustrating the challenge of balancing cost, competitiveness, and sustainability.
- **Best Practices Missing:** Global peers-such as Singapore (PUE and carbon benchmarks), Germany (100% renewables in new facilities), and the EU (mandatory sustainability metrics and annual reporting)-offer lessons for credible, enforceable mandates.

b. Permitting Delays and Regulatory Fragmentation

- **30+ Approvals Still Required:** Developers often encounter a maze of national, state, and municipal requirements-environmental, power safety, fire, telecom, zoning, building, and labor clearances-causing unpredictable delays and increased costs.
- **Inconsistent Implementation:** While single-window systems are theoretically available in progressive states, practical execution is inconsistent. Approval timelines can extend from a planned 30-90 days to over 6-12 months for larger (>20 MW) facilities, undermining global competitiveness.
- **Best-in-Class Models Not Replicated:** State-level best practices such as Telangana's TS-iPASS (guaranteed timelines and deemed approvals) or Odisha's automatic green open access are still exceptions, not the rule.

c. Fiscal Incentives and Subsidy Complexity

- **Generous but Uneven:** While some states offer long-term tax holidays (Tamil Nadu: up to 20 years for GST/SGST, others for ten years), stamp duty and capex subsidies, national incentives are only partially implemented. Consistency across

states-especially for land, electricity, and GST benefits-remains a challenge for investors operating nationwide.

- **Conditionality and Compliance:** Eligibility for many incentives hinges on high up-front investment thresholds or green energy use, making it difficult for smaller or edge DCs to avail themselves of benefits.

d. Supply Chain and Local Manufacturing

- **Import Dependency:** Despite PLI and other policies, over 70% of specialized data centre equipment (large-scale transformers, chillers, high-density servers) remains import-dependent. Tariff and certification bottlenecks can stretch lead time by 6-12 months, slowing project execution.
- **Domestic Manufacturing Uptick:** Major new investments signal momentum, but capacity remains fragmented. The synergy between local DC demand and greenfield manufacturing must be strategically planned and supported.

e. Water, Cooling, and Climate Resilience

- **Water Scarcity and Cooling:** The ascent of AI-optimized, high-density data centers has tripled cooling requirements. In regions facing water stress (e.g., Chennai, Mumbai), reliance on fresh water for cooling is a major sustainability risk. Integrated planning for recycled wastewater or liquid cooling is just beginning.
- **Lack of Disaster Recovery Mandates:** Extreme weather events and sea-level rise, especially for coastal DCs, call for climate-resilient designs. Existing policy provides limited detailed guidance on this front.

f. Skilled Workforce and Talent Pipelines

- **Workers Needed:** By 2033, up to 100,000 specialized workers will be needed, but current talent pipelines are insufficient. Industry-academia-government collaboration for project-linked upskilling is essential for sustained expansion[1021].

7. International Best Practices: Lessons for India

Comparative analysis reveals global benchmarks for efficient, sustainable data centre policy and operations.

a. EU: Binding Sustainability Metrics and Reporting

- **Mandatory KPIs:** From 2024, all large EU DCs must report on standardized KPIs including energy consumption (PUE), water usage (WUE), renewable energy use (REF), and heat reuse (ERF) annually to a central database.
- **Energy Use Cap and Resource Efficiency:** EU's Energy Efficiency Directive and "Digital Decade" strategy enforce progressive climate and efficiency norms. These are tied to incentives, fast-track permitting, and public accountability.

b. Singapore: PUE Thresholds and Green DC Standards

- **Resource Efficiency Grants:** Grants to facilitate sub-1.3 PUE new builds.
- **Moratorium on New Builds:** Pending demonstration of sustainable water and energy use for new projects.

c. US Federal/State: DCOI and Tax Incentives

- **Data Center Optimization Initiative (DCOI):** Strict consolidation, energy use, and virtualization targets for government DCs; crosses PUE of 1.5, virtualization, and floor optimization targets.
- **Targeted Incentives:** Tax breaks tied to employment, energy efficiency and location diversification (e.g., Virginia's investments in power and talent pipelines).

d. GCC, UK, and Germany: Renewable Power and Strategic Location

- **Germany:** 100% renewable power requirements for new builds; funding for research and sustainable operations.
- **Latin America:** Mega-campuses with multi-pronged resilience and compliance strategies.

These mature policy frameworks establish a direct link between incentive disbursement, sustainability compliance, and streamlined, transparent approvals.

8. Prioritized Actions for the New National Data Centre Policy

Drawing on domestic stakeholder feedback, global best practices, and up-to-date market realities, the following top ten actions are recommended for the new national data centre policy.

Summary Table: Ten Priority Actions, Timelines, and KPIs

Action Priority	Key Performance Indicator (KPI)	Timeline
1. Clean Energy Mandate: 50% Renewable by 2030	% of DC electricity from renewables; annual emission cuts	By 2030, phased-5% annual increase from 2025
2. National Single-Window Permitting System	Median days for DC permitting (target: ≤45 days)	Platform live by Q2 2026; 80% permits <45 days by 2027
3. 20-Year Tax Holiday for DCs, Linked to Output & Jobs	Number of DCs receiving incentive; MW added; jobs created	Roll out Q3 2025; review mechanism annually
4. Minimum 30% Local Equipment Content by 2028	% of new DC builds using local content/components	2028 for new builds; reporting to begin 2026
5. Annual Sustainability Reporting & Ratings	100% of >5 MW DCs reporting PUE, WUE, REF	By 2027 (align with EU, Singapore)
6. Disaster Recovery and Water Stress Mandates for New DCs	% of DCs above risk threshold with climate adaptation plans	100% by 2027 for new builds

7. Policy for BESS and Green Hydrogen Integration	Number of DCs using on-site storage/hydrogen solutions	At least 30% of new builds by 2028
8. Incentive Linked Directly to Green Job Creation	Number of DC-related certified workers trained per year	25,000 annual trainees by 2027
9. Data Localisation Guidelines (Harmonized, Science-Based)	% of regulated workloads stored within Indian DCs	95% by 2026 for BFSI/telecom; 80% for others by 2028
10. Investment Facilitation Cell and "India Green DC" Branding	Investment inflows, international ranking, "Green DC" label	Framework live by 2026

9. Detailed Recommendations and Implementation Strategy

1. Clean Energy Mandate for Data Centres

What: Mandate a minimum 50% renewable energy usage for all new and existing DCs by 2030, with a phased annual increase and enforceable via project approvals and reporting.

Why: To align the sector with India's national climate targets and create a viable base for ESG-conscious investors and operators; echoing best practices in the EU, US, and Singapore.

How: Leverage open access, virtual/corporate PPAs, and foster collaboration between DCs and RE generators. Provide initial fiscal incentives (tax rebates, Viability Gap Funding for BESS/green hydrogen) in return for compliance.

KPI: Annual sectoral renewable share; direct emission reductions (Mt CO2e/year).

Timeline: Announce 2025; first compliance threshold (25%) in 2027; full 50% by 2030.

2. Streamlined, Digital National Single-Window Permitting

What: National-level integration of approvals (land, power, environment, telecom, safety, labor, and local) under one online platform. Mandate processing timelines (target: 45 days for most cases).

Why: Remove costly delays that erode global competitiveness; reduce uncertainty.

How: Strengthen and unify existing state portals; assign empowered national facilitators at DCFU (within MeitY) to resolve bottlenecks.

KPI: Median approval time in days; % permits processed within target; operator satisfaction rates.

Timeline: Pilot in 2025; platform live nationwide by Q2 2026; 80% of permits within 45 days by 2027.

3. Tax Holidays and Direct Output-Linked Incentives

What: 20-year conditional income tax holidays and GST credits for DCs tied to capacity addition, power efficiency/BESS integration, and job creation.

Why: Lower the cost of capital, equalize global playing field, and drive new green builds.

How: Central and state mechanisms must be harmonized; eligibility tied to verified annual reporting and compliance with sustainability/KPIs.

KPI: MW of new capacity per year; number of operational DCs qualifying; jobs created per facility.

Timeline: Roll out by Q3 2025, with annual performance review and phased sunset until 2045.

4. Domestic Equipment and Supply Chain Development

What: Mandate ≥30% local content in new builds (by value) and incentivize local R&D, testing, and assembly partnerships.

Why: Reduce import risks, decrease lead times, create jobs, and position India as an export hub.

How: Combine PLI extensions for DC hardware, targeted customs and GST waivers, technical standards development, and infrastructure for local testing/labs.

KPI: Reported % local content; jobs created; time to project commissioning.

Timeline: New rule for projects sanctioned from 2026 onward; enforcement and ramp up by 2028.

5. Annual Sustainability Reporting and Energy-Use Ratings

What: Require all DCs >5 MW to annually report standardized metrics: PUE, WUE, Renewable Energy Factor, and Energy Reuse.

Why: Transparency supports investor, customer, and regulator trust. Aligns with global norms (EU, Singapore) and permits evidence-based, tiered incentive structure.

How: Adopt the EU's 2024/1364 delegation as a model; data uploaded to a national portal.

KPI: % of DCs reporting; year-on-year improvement in median sector PUE/WUE.

Timeline: Commence reporting in 2026; full compliance by Q2 2027.

6. Disaster Resilience and Climate-Smart Siting

What: Make disaster risk assessments and climate adaptation plans mandatory for all new builds above 10 MW (e.g., flood, heat, sea-level, water stress).

Why: Mitigate the rising risk from extreme events and water scarcity, especially in high-growth urban clusters.

How: Require Environmental Impact Assessments to include disaster/climate components as approval prerequisite; prioritize recycled water/cooling technologies.

KPI: % of new large DCs above risk threshold certified as climate-smart/resilient.

Timeline: Mandatory from 2026 for new approvals; grandfather for legacy facilities until 2029.

7. Integration of Battery Energy Storage (BESS) and Green Hydrogen

What: Incentivize on-site storage and hydrogen backup for DCs, especially those targeting 24/7 green operations.

Why: Storage smooths renewable intermittency, supports round-the-clock reliability, decarbonizes backup power.

How: Fiscal sops for upfront BESS/hydrogen CAPEX; linking capital subsidies and GST holidays to adoption.

KPI: % of new DCs using advanced storage or hydrogen; MWh of grid/battery-backed load.

Timeline: 30% of new builds by 2028; policy, pilot, and standards work to commence immediately.

8. Skilling, Certification, and Incentivized Job Creation

What: Tie a portion of DC fiscal incentives to certified skilling outcomes and diversity hiring in partnership with national skills programs (e.g., NSDC, state IT/ICT missions).

Why: Close looming workforce gaps, align skills pipeline with market needs, support inclusive jobs growth.

How: Subsidies and incentives paid against verified academic/industry certification, with targets for women, marginalized groups, and digital-divide geographies.

KPI: Annual certified DC trainees hired; % women/diversity in new hiring.

Timeline: 25,000 annual DC trainees by 2027.

9. Harmonized Data Localization Policies

What: Streamline and clarify localization requirements across sectors, balancing regulatory mandates with global cloud and AI workload needs.

Why: Ensure security, compliance, and investment in domestic DCs without stifling innovation.

How: National harmonization, periodic review with sectoral regulators, and best-science backing; reporting and audit trails to be embedded.

KPI: % of regulated sector data hosted in Indian DCs; compliance audit pass rates.

Timeline: 95% compliance in BFSI/telecom by 2026; 80% for other regulated data by 2028.

10. National "Green DC India" Branding & Investment Facilitation

What: Establish a recognizable, secure label for compliant, sustainable Indian DCs, alongside a centralized investment facilitation cell.

Why: Attract global investors and customers seeking sustainable solutions; simplify pathways for FDI and technology collaboration.

How: Implement third-party audits, branding standards, and a national investment facilitation desk for international outreach and project support.

KPI: Investment inflow tracked; "Green DC India" certified facilities (number, MW); ranking in global DC competitiveness indices.

Timeline: Brand and facilitation cell launched by mid-2026.

10. Future Outlook: Building Sustainable and Cost-Effective Data Centres

Transmission Corridors: Expand high-capacity transmission lines to connect renewable energy–rich states with data centre hubs, reducing procurement and infrastructure costs.

Renewable Energy Zoning: Establish dedicated Data Centre Zones in states with abundant solar and wind resources, ensuring low-cost, carbon-free power supply.

Distributed Data Centres: Promote modular, distributed data centres near user/load centres — modeled on PM-KUSUM and Solar Park schemes — to cut land costs, minimize transmission losses, and bring compute closer to demand.

Coastal Hubs: Develop coastal DC clusters integrated with transmission networks to leverage port connectivity, renewable imports, and lower overall power procurement costs.

Carbon Credit Integration: Enable data centres to offset emissions by partnering with farmers and communities deploying decentralized solar, creating a win–win for rural incomes and corporate sustainability.

Sustainability Mandates: Embed carbon-free energy procurement, circularity, and efficiency KPIs into policy, ensuring India's data centres remain globally competitive and environmentally responsible.

User-Centric Affordability: Align incentives and infrastructure planning to deliver low-cost, green digital services to end users, making sustainability a driver of competitiveness rather than a cost burden.

Conclusion: The Road Ahead

India's data centre sector is at a decisive inflection point. The 2020 Draft Data Centre Policy provided a visionary blueprint and catalyzed meaningful progress, but it fell short in critical areas such as clean energy integration, streamlined execution, uniform incentives, and measurable sustainability outcomes. State-level leadership and private sector dynamism have filled some gaps, yet the risks of fragmented incentives, grid bottlenecks, and regulatory opacity remain pressing.

The forthcoming national data centre policy must therefore go beyond incremental reform and embrace a systems-level approach. Embedding sustainability at the core of policy by mandating carbon-free energy procurement, incentivizing circularity in infrastructure, and ensuring low-cost, green digital services for end users.

To achieve this, the new policy must be bold, unambiguous, and future-ready. It should hard-wire clean energy mandates into project approvals, transform permitting through genuine digital single windows, invest in domestic manufacturing and resilient supply

chains, and demand transparency through annual sustainability reporting. At the same time, it must remain adaptive to fast-accelerating shifts in AI, cloud, cybersecurity, and edge computing.

With targeted interventions-anchored by enforceable KPIs and clear timelines-India can build a world-leading, sustainable, and resilient data centre ecosystem. This will not only fortify the nation's digital backbone but also create substantial economic opportunity, catalyze the net-zero transition by 2070, and project India as a beacon for secure, green, and inclusive digital infrastructure for the decades ahead.

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About Authors

Radhey Shyam is a renowned professional in India's renewable energy and power sector, with over 12 years of techno-commercial experience spanning generation, transmission, regulatory strategy, data centre infrastructure, and large-scale project development. He played a pivotal role in landmark initiatives such as the 40 GW Solar Park Scheme, Solarization of Defense establishments, GatiShakti, National Solar Mission and has shaped key policy frameworks to accelerate India's clean energy transition.

He holds degrees from IIT Kanpur and Rajasthan Technical University, and is recognized as a Senior Member of IEEE, Member of CIGRE, IEEE HAC Ambassador, Island Innovation Ambassador, Fellow of RESI and SESI, and Chartered Engineer in IEI.

His prolific contributions include over 65 peer-reviewed publications, 8 authored books, and a portfolio of 40+ patents — including 10 international and 30 national design patents — covering emerging technologies in clean energy, e-mobility, and digital infrastructure.

Ajay Mishra is a distinguished former Indian Administrative Service (IAS) officer with over four decades of experience in governance, infrastructure development, and energy policy. Throughout his career, he has held key leadership roles in both the Government of India and the Government of Telangana, where he was instrumental in shaping strategic frameworks for power sector reform, renewable energy deployment, and digital infrastructure expansion.

Mr. Mishra's contributions span across policy formulation, institutional capacity building, and public-private coordination. He has played a pivotal role in advancing solar and wind energy adoption, promoting smart grid technologies, and enabling sustainable urban development. His expertise in regulatory affairs and administrative execution has helped bridge the gap between visionary policy and on-ground implementation.

As Director General of RESI, he continues to lead national discourse on clean energy transition, energy storage, and data centre readiness — advocating for integrated planning, climate resilience, and inclusive growth. His thought leadership is widely recognized in academic, industry, and policy circles, making him a key voice in India's journey toward sustainable and digitally empowered infrastructure.

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