India Data Centre Energy SLAs 2026: Availability, Curtailment and BESS Backstops

By Sudarshan Karweer · 28 August 2026 · growthifye.com

A 2026 practitioner guide to data centre power SLAs in India: uptime, curtailment, deviation, BESS backstops and contract design.

India's data centre market in 2026 is not short of ambition. Capacity additions continue across Mumbai, Chennai, Hyderabad, Pune, Noida and Bengaluru, while operators face tighter customer expectations on uptime, decarbonisation and cost control. In this environment, the real commercial battleground is not just tariff discovery. It is SLA design.

A data centre can sign a renewable PPA, a round-the-clock supply agreement, a utility HT contract and a battery integration package and still be left exposed if service levels are poorly defined. The biggest failures in power contracting today are not always technical failures; they are contractual blind spots around availability definitions, curtailment treatment, outage attribution, battery dispatch obligations, deviation cost allocation and performance measurement intervals.

This article looks at a distinct but critical topic for 2026: how Indian data centres should structure energy SLAs so that grid supply, open access renewables, BESS and internal reliability architecture work together. The focus is practical and aimed at C&I consumers, developers, lenders, utilities and policymakers who need contracts that reflect actual operating risk.

Why SLA design matters more in 2026

The old model was simpler. A data centre took utility power, sized diesel backup and UPS, and treated energy contracting largely as a procurement issue. In 2026, the stack is more layered:

- HT utility supply remains the firm base in most locations
- Open access solar, wind or hybrid supply is added for cost and decarbonisation
- RTC or firming products are emerging with different balancing assumptions
- On-site or behind-the-meter BESS is increasingly used to manage outages, peak charges and renewable variability
- Customers and investors are asking for hourly or sub-hourly energy performance evidence rather than annual claims

As complexity rises, generic SLA clauses are no longer enough. A data centre that buys "RTC renewable power" at Rs 6.0-7.5/kWh may later discover that scheduled energy shortfall, grid curtailment, deemed generation and imbalance pass-through were drafted in favour of the supplier. Conversely, a developer may commit to overly aggressive availability numbers without clear force majeure and transmission unavailability carve-outs, creating an unbankable risk profile.

The answer is disciplined SLA architecture: clear definitions, measurable thresholds, realistic remedies and alignment with the physical system.

The five SLA layers every Indian data centre should separate

A recurring problem in negotiations is mixing unlike obligations into one headline availability promise. In practice, data centre energy SLAs should separate at least five layers.

1. Grid connectivity availability

This covers the availability of the utility or licensed network connection itself. Metrics should distinguish:

- Contracted demand availability

n- Feeder outage frequency and duration

- Planned versus forced outages
- Voltage and frequency performance at the interconnection point
- Restoration timelines by outage category

For large campuses connected at 110 kV, 220 kV or higher, annual grid-side availability expectations may need to be in the 99.5%+ range at the connection level, but this should not be confused with IT load uptime. Those are different metrics.

2. Scheduled renewable energy delivery

This is the supplier's obligation to deliver scheduled renewable energy under open access or captive structures. It should specify:

- Contracted capacity in MW
- Delivery profile by block, hour or month
- Forecasting responsibility
- Tolerance bands before shortfall is recognised
- How deemed generation is treated if evacuation is unavailable

3. Firming or balancing performance

If the seller is offering RTC, peak-shaping or hourly matching, then balancing service needs its own measurable SLA. Typical variables include:

- Minimum hourly delivery percentage of contracted schedule
- Permitted annual deficit energy, often 3-10% depending on product structure
- Response time for balancing assets such as hydro, market purchases or BESS
- Treatment of exchange price spikes and congestion events

4. On-site backup performance

This includes UPS, DG and BESS-backed ride-through capability. The key here is event-based performance:

- Transfer time during supply interruption
- Minimum backup duration at defined critical load levels
- Black start sequencing responsibility
- State of charge reserve policy for batteries
- Recharge priority after an event

5. Energy efficiency and operating envelope

For many data centres, the cheapest unavailable megawatt is the one avoided through efficiency. If a provider is responsible for controls or optimisation, SLAs can include:

- EMS response time
- Cooling load optimisation windows

- Peak demand caps
- PUE improvement targets with agreed baselines

In Growthifye's work across [Load & reliability engineering](/coreservices/datacentersenergymanagement/loadandreliabilityengineering) and [Energy management systems](/coreservices/datacentersenergymanagement/energymanagementsystems), these layers are best managed through distinct schedules rather than one blended commercial annex.

Which metrics actually belong in a data centre energy SLA

Indian contracts still overuse broad terms like "reliable supply" without measurement logic. By 2026, serious buyers should insist on the following metrics.

Availability metric

Define whether availability is measured:

- At the grid interconnection point
- At the data centre incomer
- At the critical load bus
- At the renewable injection point

These are not interchangeable. A seller cannot reasonably underwrite downstream internal electrical failures unless it also controls them.

Measurement interval

For data centres, 15-minute block accounting is too blunt for some reliability questions, even if settlement under market and DSM rules references block-based structures. Operational SLAs should often use:

- 1-minute or 5-minute event logs for outage and transfer performance
- 15-minute intervals for energy scheduling and settlement
- Hourly granularity for carbon-free matching or firming claims

Outage classification

Every outage should be tagged as one of the following:

- Utility planned outage
- Utility forced outage
- Transmission congestion curtailment
- State load dispatch or system operator instruction
- Seller plant outage
- Forecast error event
- Buyer internal electrical event
- Force majeure

Without clean attribution, compensation disputes become inevitable.

Curtailment definition

Curtailment in India is often poorly drafted. The SLA must state whether curtailment includes:

- Grid unavailability at project busbar

- STU or CTU evacuation restrictions
- State-level open access curtailment orders
- Backing down due to system security instructions
- Economic dispatch or market substitution

This matters because compensation treatment differs sharply. In some states, deemed generation protection exists in principle for must-run RE, but actual recovery remains uneven. A buyer should not assume that every curtailed MWh will be compensated at full tariff value.

Shortfall and excess settlement

For firm or RTC contracts, define:

- Annual and monthly shortfall thresholds
- Liquidated damages methodology
- Whether damages are linked to replacement power cost, capped tariff differential or fixed rate per kWh
- Treatment of excess supply and whether the buyer must absorb it

A practical structure in 2026 is to peg compensation to the positive difference between replacement landed cost and contracted tariff, subject to a cap, with separate treatment for force majeure and grid curtailment.

The BESS backstop: where contracts usually fail

Battery storage is now a serious contractual tool for data centres, not just a technical add-on. But many agreements still mention BESS only vaguely, as if a battery automatically converts intermittent supply into firm supply. It does not.

A proper BESS-backed SLA should answer six questions.

1. What is the battery obligated to do?

The battery may be intended for one or more of the following:

- Short-duration ride-through for feeder trips
- Peak shaving to reduce maximum demand and time-of-day cost
- Renewable firming for hourly delivery commitments
- Frequency and voltage support within site limits
- Black start or restart assistance

Each use case competes for the same storage capacity unless reserves are ring-fenced.

2. How much reserved energy is guaranteed?

A 20 MW / 40 MWh battery and a 20 MW / 80 MWh battery are not equivalent. The SLA should specify:

- Usable AC-deliverable MWh, not just nameplate DC
- Minimum reserved state of charge, for example 25-40%, for outage support
- Round-trip efficiency assumptions, typically 82-90% depending on configuration
- Degradation allowance over term

3. What is the response time?

For site reliability, milliseconds matter at some nodes and minutes at others. The contract should define:

- Inverter response time
- EMS dispatch command latency
- Full output ramp time
- Synchronisation sequence with UPS and DG assets

4. Who controls dispatch?

Control conflicts are common. If the battery is used to save demand charges in the afternoon, it may not be fully charged when an evening outage occurs. Therefore dispatch governance should define:

- Owner versus operator rights
- Override logic for critical events
- Minimum reserve rules
- No-dispatch windows during high-risk periods

5. How is performance tested?

Commissioning and annual performance tests should verify:

- Delivered power at point of interconnection
- Delivered usable energy under agreed temperature conditions
- Autonomy duration at critical load fractions
- Availability of controls and telemetry

6. What happens when battery performance degrades?

By year 6 or 8, usable capacity may fall materially depending on cycling pattern. Contracts should provide:

- Guaranteed retained capacity floor
- Top-up augmentation responsibility
- LDs or service credits if reserve levels cannot be maintained

For many Indian data centres, the right commercial answer is not to promise absolute firming from BESS alone. It is to use BESS as a backstop within a wider stack involving utility supply, OA renewables, exchange purchases and internal backup hierarchy. That is where robust [24/7 clean power contracting](/coreservices/datacentersenergymanagement/247cleanpowercontracting) becomes more valuable than a simplistic “firm renewable” label.

State policy, open access and curtailment risk allocation

No SLA is complete without state-specific policy mapping. By 2026, landed cost and performance risk for data centres still differ materially by state because of:

- Cross-subsidy surcharge treatment
- Additional surcharge applicability
- Banking restrictions or withdrawal windows
- Time-of-day settlement structures
- Open access approval timelines
- Forecasting, scheduling and deviation rules
- Curtailment behaviour in practice, not just in regulation

For example, a buyer evaluating supply for a Maharashtra or Tamil Nadu data centre must look beyond generator CUF assumptions and model monthly delivery under actual OA operational constraints. Wind-heavy profiles may look economical on annual tariff, but hourly firmness risk can still be high during low-wind evenings unless balancing cover is explicit.

Developers and lenders also need realistic curtailment allocation. If the generator bears all curtailment risk regardless of cause, debt sizing may become strained. If the buyer bears all replacement cost risk, the product is not truly firm. A balanced position often includes:

- Seller liability for plant-side underperformance and controllable scheduling error
- Shared treatment for network-led curtailment beyond a threshold
- Buyer right to optional market replacement if prices are below a defined cap
- Transparent pass-through rules for statutory changes in OA charges

A workable commercial template for 2026

For large Indian data centres procuring 20-150 MW equivalent power, a pragmatic SLA template in 2026 often includes the following design principles:

- Utility supply remains the reliability anchor for critical load
- Renewable PPA provides energy cost reduction and decarbonisation
- Firming sleeve covers hourly or peak-period deficits, not every annual mismatch
- BESS is contracted for specific reliability and tariff-management functions with reserved capacity rules
- Replacement power methodology is pre-agreed
- Telemetry, metering and event-tagging are standardised across assets

In tariff terms, buyers may still see plain OA solar or hybrid supply in the broad landed band of around Rs 4.0-6.0/kWh depending on state, structure and charges, while RTC or heavily firmed products can move closer to Rs 6.0-8.0+/kWh depending on shape, duration and balancing obligations. The SLA must explain what that premium buys. If a contract carries a firming premium but leaves curtailment, market spike and battery reserve risk largely with the buyer, it is mispriced.

This is also where technical diligence matters. A contract promising 99.9% delivery at the energy node means little if site topology, transfer logic, BESS sizing and cooling interaction are not engineered accordingly. In practice, commercial drafting should be reviewed together with electrical single-line philosophy, outage studies and controls architecture, especially for campuses seeking multi-source resilience.

What lenders, developers and utilities should watch

Lenders should test whether SLA remedies are financeable and whether downside scenarios are measurable. Developers should avoid overcommitting to firmness metrics that depend on third-party networks they do not control. Utilities should recognise that data centres are increasingly willing to pay for premium reliability if the service and compensation framework is credible.

Policymakers can help by tightening curtailment transparency, improving outage data quality, standardising OA process timelines and supporting storage-aware interconnection frameworks. The sector does not only need more megawatts. It needs better definitions of firmness.

In 2026, the strongest data centre energy contracts in India will be the ones that convert system complexity into operational clarity: who delivers what, at which node, in which interval, with which backstop, and at whose cost if performance fails.

If your team is evaluating RTC procurement, BESS-backed reliability design or multi-source SLA structuring for a new or existing campus, contact Growthifye’s advisory desk. We help data centre operators, developers and financiers translate energy strategy into bankable contracts and workable operating models.

Explore Growthifye's related capabilities

This analysis connects directly to our advisory practice: [Load & reliability engineering](/coreservices/datacentersenergymanagement/loadandreliabilityengineering) · [24/7 clean power contracting](/coreservices/datacentersenergymanagement/247cleanpowercontracting) · [Grid connectivity & redundancy](/coreservices/datacentersenergymanagement/gridconnectivityandredundancy) · [On-site generation & BESS](/coreservices/datacentersenergymanagement/onsitegenerationandbess).

ABOUT THE AUTHOR

Sudarshan Karweer — Chief Executive Officer, Growthifye

Over 23 years in management consulting — concept to scale — building and scaling new-age digital and energy businesses. An EY alumnus, Sudarshan leads Growthifye's renewable energy & storage advisory, EPC, transmission engineering and green-financing practices for developers, utilities and C&I consumers across India.
Contact: info@growthifye.com · +91 84510 99371 · growthifye.com