India Data Centre Captive Power Strategy 2026: Group Captive, WACOG and BESS

By Sudarshan Karweer · 18 September 2026 · growthifye.com

How Indian data centres can use group captive structures, WACOG rules and BESS to cut delivered power cost and improve reliability in 2026.

India's data centre market is adding IT load faster than most corporate power strategies can adapt. In 2026, the board-level question is no longer whether renewable power should be part of the energy stack; it is which contracting structure gives the best combination of tariff certainty, legal durability, uptime support and financeability. For many operators, that pushes the discussion beyond standard third-party open access and toward captive or group captive procurement.

This article focuses on a distinct issue that many data centre teams still under-evaluate: how captive and group captive structures work in practice for hyperscale and colocation facilities in India, how WACOG compliance affects economics, and how on-site BESS changes the operating case. The angle is different from generic open access and RTC strategy. The key question here is structural: when should a data centre choose group captive over third-party supply, and what design choices matter for delivered cost and reliability?

Why captive deserves renewed attention in 2026

In several states, third-party open access remains commercially attractive only when cross-subsidy surcharge, additional surcharge, wheeling losses, banking rules and scheduling restrictions align favourably. For data centres with 24x7 load and limited tolerance for compliance ambiguity, group captive has regained relevance because it can remove or reduce major surcharge components if the structure is correctly designed and continuously maintained.

The main commercial driver is straightforward. In many industrial and commercial tariffs in 2026, utility HT supply for premium urban locations can range from roughly Rs 7.5/kWh to above Rs 10.5/kWh on a fully loaded basis, depending on state, voltage level, time-of-day treatment, demand charges and power factor performance. Third-party open access renewable supply may look cheaper at first glance, but once CSS, wheeling, losses, standby arrangements, balancing cost and scheduling inefficiency are added, the effective saving can narrow materially.

A compliant group captive structure can improve the spread because the consumer-shareholders are not treated the same way as ordinary third-party buyers for surcharge purposes, subject to state interpretation and actual compliance. For data centres with annual consumption above 50-100 GWh, even a Rs 0.75-1.50/kWh reduction in delivered cost can translate into annual savings of Rs 3.75-15 crore, before considering the resilience value of storage and demand shaping.

This is why captive strategy is now being discussed not only by energy teams but also by treasury, legal and infrastructure leadership.

Captive and group captive: what actually matters for data centres

The legal framework is familiar to most market participants, but execution gaps are common. Under the Electricity Rules, captive use requires a minimum equity participation and a minimum annual consumption threshold by captive users. For group captive, the two figures practitioners keep returning to are:

- Minimum 26% ownership by captive users collectively
- Minimum 51% consumption of generated electricity on an annual basis by captive users collectively

The practical issue is not only forming the SPV and signing the PPA. It is preserving compliance every year despite load changes, maintenance outages, under-generation, over-procurement, shareholder exits, and changes in data hall ramp-up.

For data centres, three features make group captive structurally attractive but operationally sensitive:

- Load is usually high-load-factor and relatively predictable compared with many manufacturing sectors.
- Uptime obligations mean the energy structure must coexist with redundant utility feeders, diesel systems, UPS architecture and increasingly battery assets.
- Capacity ramps often happen in phases, so the consumption profile in year 1 may differ sharply from the profile in year 3.

If a 60 MW IT campus is commissioned in two phases, the actual annual offtake can undershoot original assumptions during early years. That creates WACOG compliance risk if equity allocation and contracted generation are not sized conservatively.

WACOG compliance: the hidden risk behind headline savings

WACOG, or weighted average cost of generation in market discussion, is often used loosely by commercial teams to compare captive versus utility supply. But the more important issue in structuring is not the shorthand cost metric; it is compliance discipline around consumption and ownership, because a failed captive test can reopen surcharge exposure and trigger dispute.

For a data centre, the right way to evaluate group captive is to build a delivered-cost model under at least three scenarios:

- Base case: captive status preserved, expected generation, expected losses, planned BESS operation
- Stress case: under-generation due to poor wind year, module outage, evacuation constraint or lower CUF
- Compliance breach case: captive status challenged due to ownership or 51% annual consumption shortfall

In the compliance breach case, the commercial downside can be large. If the consumer is retrospectively treated closer to a third-party OA buyer for the relevant period, CSS and other charges may become payable depending on regulatory outcome. On a 20 MW average draw, a Rs 1.5-2.5/kWh adverse swing across a year is not a rounding error; it can wipe out a large share of the expected savings.

Common reasons captive structures fail in practice include:

- Shareholding not aligned with actual consumption ratios across users
- One participant materially under-consuming relative to plan
- Plant output lower than projected because resource assessment was aggressive
- New data centre blocks delayed, leaving contracted energy without matching load
- Corporate restructuring affecting beneficial ownership tests
- Inadequate monthly tracking, with compliance reviewed only at year-end

For this reason, a group captive programme for a data centre should be run like an operations function, not a one-time legal closing. Monthly dashboards should track:

- Shareholding and any pledged or transferred interests
- Monthly and cumulative captive-user consumption versus generation
- State-wise landed cost versus utility benchmark
- Curtailment and deemed generation exposure
- BESS charge-discharge contribution to captive energy utilisation
- Forecast compliance status at quarter-end and year-end

This is precisely where disciplined [Load & reliability engineering](/coreservices/datacentersenergymanagement/loadandreliabilityengineering) and [24/7 clean power contracting](/coreservices/datacentersenergymanagement/247cleanpowercontracting) begin to overlap. Contracting choices can no longer be separated from operating physics.

Delivered cost build-up: a realistic 2026 example

Consider a 30 MW average-load data centre in a Tier-1 market, annual consumption about 263 GWh, utility HT tariff equivalent at Rs 8.90/kWh including demand and typical adjustments. Suppose the operator is evaluating a 120 MW hybrid group captive portfolio composed of solar plus wind with market balancing support and a 40 MWh on-site BESS.

Illustrative economics could look like this:

- Busbar captive energy cost from project SPV: Rs 3.70-4.40/kWh depending on site, CUF and financing
- Transmission and wheeling charges/losses: Rs 0.80-1.60/kWh state-dependent
- Scheduling, SLDC fees, forecasting and balancing: Rs 0.10-0.35/kWh
- Corporate overhead, compliance administration and metering: Rs 0.05-0.15/kWh
- On-site BESS effective energy shifting cost impact: Rs 0.20-0.60/kWh depending on cycle strategy and throughput

That yields an indicative delivered renewable energy cost of about Rs 4.85-7.10/kWh before considering residual utility draw for shaping and backup. Against a utility benchmark of Rs 8.90/kWh, the gross saving looks meaningful. But a proper model should then add:

- Residual grid energy cost for non-coincident hours
- Demand charges that remain payable to the utility under connection conditions
- Curtailment replacement cost
- Cost of standby and redundancy arrangements
- Potential surcharge downside if captive status fails

Once these are added, many projects still clear the hurdle comfortably, but not all do. The difference between a robust and weak captive strategy usually comes from four design choices:

- Conservative sizing of shareholder offtake versus plant output
- State selection and evacuation design
- Treatment of nighttime shaping and monsoon variability
- Integration of BESS for both economics and reliability support

Where on-site BESS changes the captive equation

A frequent misconception is that BESS only matters for hourly matching claims or diesel reduction. For captive structures, BESS has at least four additional values.

First, it improves self-consumption quality. If the data centre can absorb more captive generation during shoulder periods by charging the battery and discharging later, effective utilisation of captive energy improves.

Second, it reduces expensive residual purchases during peak utility tariff windows. In states with strong time-of-day differentials, a 1-2 hour discharge strategy can shave the costliest imports.

Third, it supports power continuity during transfer events, sags or short disturbances when integrated with the facility's electrical architecture and EMS logic.

Fourth, it can provide a buffer against scheduling deviations and forecast errors, reducing imbalance costs in some operating configurations.

Take an illustrative 20 MW / 40 MWh lithium-ion BESS at a large data centre campus in 2026. Depending on import dependence, tariff spread and cycling pattern, value streams may include:

- Peak import avoidance worth Rs 1.5-3.0 crore per year
- Reduction in short-duration DG starts and fuel burn
- Lower deviation exposure on selected days
- Resilience value not fully visible in energy-only ROI

The caution is equally important: a BESS does not rescue a badly sized captive structure. If the generation profile is systematically mismatched to the load, storage may improve outcomes but not repair the underlying economics. The battery should be justified on multi-service value, not on a single optimistic arbitrage assumption.

Structuring issues lenders and counterparties now scrutinise

Lenders financing captive renewable projects for data centre offtake have become more granular in diligence. They no longer stop at land, interconnection and PPA tenor. In 2026, they increasingly test whether the captive structure can remain compliant through the debt tenor and whether the data centre demand ramp is credible.

Questions that now get close scrutiny include:

- Is the data centre load already operational, or still under phased development?
- Are shareholder consumption shares aligned to realistic commissioning dates?
- What happens if one captive consumer exits or scales down?
- Are there backup buyers or replacement captive participants?
- How are curtailment, force majeure and change in law allocated?
- Is there a robust metering, scheduling and reconciliation process?
- How will storage be dispatched, and who controls it?

For data centre sponsors, this means the energy structure should be integrated with financing and infrastructure planning early. If the RE SPV, grid approvals, land rights, utility interconnection and campus energisation timeline are sequenced poorly, the project can incur both delay cost and compliance risk.

A practical decision framework: when group captive fits best

Group captive is not automatically the right answer for every data centre. It tends to fit best when most of the following conditions are true:

- Annual energy consumption is large enough to justify structural complexity, often above 50 GWh and more compelling above 100 GWh
- The operator has medium- to long-term load visibility, not highly uncertain occupancy
- Utility tariffs are high enough that surcharge-efficient procurement creates a clear spread
- Management is willing to hold equity in the generating SPV and monitor compliance continuously
- The site can support BESS and advanced EMS integration
- The legal and regulatory team can handle state-specific interpretations and documentation rigorously

By contrast, a simpler third-party open access or mixed utility-plus-RTC strategy may be preferable when load ramp is uncertain, energy volumes are smaller, or organisational appetite for captive governance is low.

A sensible procurement roadmap often looks like this:

- Benchmark current utility tariff and reliability costs in delivered Rs/kWh terms
- Compare third-party OA, group captive and hybrid portfolios under state-specific charges
- Stress-test WACOG and compliance risk under multiple generation and load scenarios
- Design BESS not only for arbitrage but also for ride-through, peak shaving and backup optimisation
- Align SPV equity, PPA tenor, interconnection and campus commissioning milestones
- Establish monthly compliance and settlement governance from day one

The strategic point is simple: in 2026, power procurement for Indian data centres is no longer only about buying cheaper renewable units. It is about engineering a legally durable, operationally disciplined and financeable supply architecture. Group captive can be a powerful part of that architecture if the plant, the load and the governance model are matched correctly.

For operators evaluating this route, the best outcomes usually come from joining commercial modelling with technical system design. [On-site generation & BESS](/coreservices/datacentersenergymanagement/onsitegenerationandbess) decisions, utility interface design, and captive compliance should be assessed together rather than in separate workstreams.

If your team is evaluating captive or group captive supply for a new or operating data centre, contact Growthifye's advisory desk for a project-specific assessment of structure, landed cost, compliance risk and reliability integration.

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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).

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