Ancillary Services from BESS in India 2026: FCAS Economics, Grid Value and Bankability

By Sudarshan Karweer · 02 September 2026 · growthifye.com

How BESS can capture ancillary-service value in India in 2026: market design, sizing, tariffs, grid integration and lender bankability.

India's battery energy storage system market is usually discussed through three lenses: standalone tenders, renewable-plus-storage RTC/FDRE supply, and merchant arbitrage. But a fourth lens is now becoming commercially important in 2026: ancillary services.

For developers, DISCOMs, system operators, lenders and large C&I consumers, the central question is shifting from "Can a battery shift energy?" to "What grid services can a battery monetise reliably, at what response speed, and under what settlement mechanism?" That question matters because the value of storage increasingly depends on stacked revenue, not a single contracted tariff line.

This article examines the ancillary-services opportunity for BESS in India in 2026: the services that matter, the economics developers should actually model, the technical sizing implications, and the bankability constraints that still separate pilot value from financeable value.

Why ancillary services are moving to the centre of India's BESS case

India's power system in 2026 has three structural features that favour fast-response storage:

- higher solar and wind penetration, including hybrid and FDRE portfolios
- tighter intra-day balancing requirements at state and national level
- increasing congestion and ramping stress in renewable-heavy hours

As renewable penetration rises, balancing needs do not grow linearly; they become sharper around morning and evening ramps, cloud events, wind volatility, and transmission bottlenecks. Traditional balancing through thermal fleet manoeuvring is still important, but it is neither infinitely flexible nor always economical.

A lithium-ion BESS can respond in milliseconds to seconds, sustain output for a contracted duration, and switch between charge and discharge rapidly. That makes it especially suitable for services such as frequency regulation, fast reserves, ramp support and local grid support, provided market rules and dispatch instructions allow those capabilities to be recognised and paid.

This is the commercial gap now opening in India. Many BESS projects have been underwritten on capacity payments, VGF-supported tenders, or bundled renewable obligations. But as competition compresses bid tariffs, ancillary-service monetisation can become the difference between an acceptable equity IRR and an underperforming asset.

What ancillary services mean in the Indian context in 2026

The Indian market does not yet resemble mature storage markets where a deep and liquid ancillary-services stack is fully available through standardised products. In 2026, developers need to think in terms of a spectrum:

- formal centrally administered ancillary-services mechanisms
- balancing and reserve products linked to system operation

- utility-specific or tender-specific grid support requirements
- implicit ancillary value embedded in RTC/FDRE scheduling performance
- local network support value that may not yet be fully monetised through a transparent market

In practice, the most relevant BESS-use cases include:

- primary-like fast frequency response or equivalent rapid-response support
- secondary regulation and AGC-type balancing support where enabled
- contingency reserves and short-duration spinning replacement
- ramp-rate control for RE injection smoothing
- congestion relief and substation peak support
- black-start support in selected configurations, though still niche

For developers, one of the biggest mistakes is to assume that every technically possible service is commercially bankable. A battery can provide many grid services. That does not mean a lender will underwrite those revenues.

The key distinction in India today is between:

- contracted value: visible in a tender, PPA, PSA or utility service agreement
- modelled merchant-like value: estimated from likely future market dispatch and price spreads
- strategic system value: real for the grid, but not yet transparently monetised

Only the first category is straightforward for debt sizing. The second may support sponsor upside. The third is useful in policy discussions but difficult to finance against.

BESS sizing for ancillary services is not the same as sizing for arbitrage

A battery sized for peak shifting or solar time-shift may not be optimally sized for ancillary-service duty cycles. This is a critical design issue.

For energy arbitrage, the instinct is usually to optimise duration around 2-hour to 4-hour windows depending on tariff spreads, renewable pairing and cycle economics. For ancillary services, the design logic starts elsewhere:

- required response time in milliseconds, seconds or minutes
- sustained discharge or charge obligation during an event
- expected daily throughput from regulation signals
- SOC management requirements to preserve availability in both directions
- degradation impact from frequent shallow cycling

A 50 MW/100 MWh battery and a 50 MW/200 MWh battery may both offer 50 MW response, but their ability to maintain state-of-charge headroom and continue service through repeated dispatch intervals differs materially.

In many ancillary-service cases, power rating matters first and energy capacity matters second, but that does not mean duration can be ignored. If the system operator or utility requires multi-interval performance, recharge constraints, or reserve persistence through evening ramps, under-sizing energy can destroy actual delivered value.

A practical 2026 rule for developers is to test at least three duty cases:

- pure fast-response reserve case with low net daily energy throughput
- mixed regulation plus limited arbitrage case
- grid support plus evening peak discharge case

Those cases can produce very different degradation and availability outcomes. In some simulations, a battery that appears attractive on gross ancillary-service revenue can lose value once SOC reservation, recharge energy cost and performance penalties are included.

Developers should also pay close attention to augmentation timing. If a project expects meaningful ancillary-service participation over a 12- to 15-year debt period, cell degradation cannot be treated as a back-end technicality. Even a modest annual usable-capacity fade can reduce reserve availability or force more conservative SOC bands, affecting revenue from year 4 onward.

Revenue stack: where the money can come from in 2026

In India, ancillary-service economics for BESS in 2026 are still project-specific. There is no single benchmark tariff that can be safely applied across states, counterparties or market pathways. However, the revenue stack usually includes some combination of the following:

- fixed availability or capacity payment
- variable dispatch-linked payment
- performance incentive tied to response accuracy or availability
- avoided deviation/imbalance costs for an RE portfolio
- reduced curtailment losses by better ramp and schedule management
- deferred network upgrade or local capacity value for utilities

For a VGF-backed or utility-contracted project, ancillary-service value may partly appear as a lower required headline storage tariff because the off-taker expects the asset to improve system operations beyond simple peak discharge.

For developer-owned portfolios, the more realistic case is often indirect monetisation. Example:

- a hybrid RE project reduces DSM exposure through battery balancing
- an RTC/FDRE portfolio improves scheduling compliance and lowers penalties
- a substation-connected battery supports local peak management and reduces power procurement at high-cost intervals

In such cases, ancillary value exists even if no separate ancillary-services market payment is received.

Indicatively, practitioners in 2026 should stress-test whether ancillary-service revenue contributes:

- less than 10% of project EBITDA in a conservative case
- 10% to 25% in a moderate stacked-value case
- above 25% only where market access, dispatch rights and settlement visibility are unusually strong

If a base-case model requires ancillary revenue above 25% to meet debt service comfortably, lenders are likely to push back unless those cash flows are contractually anchored.

The bigger concern is double counting. A battery cannot be fully reserved for evening peak supply, fully available for frequency response, and fully dedicated to congestion management at the same instant. Co-optimisation assumptions must reflect physical and contractual exclusivity.

Bankability: what lenders will and will not accept

From a lender's perspective, ancillary services are attractive in theory but difficult in underwriting unless the project has clear contractual architecture. In 2026, the bankability questions are straightforward:

- Who is the counterparty?
- Is payment based on availability, dispatch, performance, or all three?
- What are the metering and telemetry requirements?
- What penalties apply for non-performance?
- How are degradation and augmentation treated over the contract life?
- Is there change-in-law or market-design risk?
- Can the project still service debt if ancillary revenues underperform?

For a fully merchant-style ancillary strategy, debt sizing will remain conservative. Sponsors should expect lenders to haircut such revenues aggressively, in some cases to zero in the base case, while recognising upside only in sensitivity analysis.

For contracted projects, bankability improves if the service framework includes:

- minimum monthly availability payment
- clearly defined dispatch windows and response obligations
- pass-through or indexed treatment of augmentation capex where appropriate
- explicit force majeure and grid unavailability provisions
- transparent testing procedures and performance measurement

This is where lender's engineer work becomes central. The financing community will increasingly need independent views on whether the proposed control strategy, cycling assumption, thermal management design and augmentation plan are consistent with the contracted ancillary obligations.

Another issue is warranty alignment. OEM warranties are often framed around throughput, cycles, calendar life, temperature range and retained capacity. If the commercial contract assumes a highly dynamic ancillary-service duty profile, but the warranty envelope is narrower, the project company may retain significant technical risk.

Policy and market-design issues that still need work

India's regulatory direction clearly recognises the need for flexibility resources, but market design remains a work in progress. The next stage of BESS growth will depend not only on tender volume but also on whether grid services are defined and settled in a way storage investors can trust.

Key areas to watch in 2026 include:

- clearer product definitions for fast-response and reserve services
- settlement systems that value speed and accuracy, not just delivered MWh
- state-level alignment on scheduling, dispatch and metering requirements
- treatment of storage as generation, load and grid-support asset across use cases
- rules for co-located versus standalone storage participation
- interoperability requirements with SLDC/RLDC control frameworks

For policymakers and utilities, the objective should be simple: pay for measurable system value, avoid ambiguous service definitions, and reduce the gap between technical usefulness and commercial monetisation.

India does not need to copy another market exactly. But it does need enough contract and settlement clarity that BESS investors can distinguish a real service market from an aspirational one.

What developers, DISCOMs and C&I buyers should do now

For developers, the near-term opportunity is not to chase every possible ancillary-service headline. It is to identify specific, defensible value pools and structure projects accordingly.

A disciplined 2026 workflow should include:

- nodal/grid-congestion assessment, not just statewide price assumptions
- sub-hourly dispatch modelling for likely ancillary duty cycles
- degradation modelling tied to actual control strategy
- co-optimisation of energy arbitrage, capacity commitment and reserve availability
- revenue classification into contracted, quasi-contracted and merchant components
- lender-friendly downside scenarios with ancillary underperformance

For DISCOMs and utilities, the storage question should increasingly be framed as a total system cost question rather than a standalone tariff question. A battery with a headline tariff that seems high on a pure Rs/kWh basis may still be cheaper than alternative combinations of peak procurement, thermal cycling inefficiency, renewable backing down and network reinforcement.

For large C&I consumers, ancillary services are not yet a standard direct procurement product in most cases, but they matter indirectly. If a developer can use storage to improve firmness, reduce curtailment risk and support delivery quality under group captive or open-access structures, that can influence landed power cost and reliability.

The practical message is that ancillary value should not be treated as a speculative add-on, nor as a universally bankable revenue stream. It should be treated as a serious but highly model-dependent component of the BESS business case.

In 2026, the winners in India’s storage market will not simply be those with access to battery supply or the lowest EPC number. They will be the players who can translate grid need into contract structure, sizing logic, revenue realism and financeable documentation.

That is especially true in ancillary services, where technical capability is necessary but not sufficient. The real edge lies in quantifying service value credibly, allocating performance risk correctly, and ensuring that what is promised in the model can actually be delivered on the grid.

If you are evaluating a BESS opportunity around ancillary services, grid support, hybrid integration or storage bankability, contact Growthifye’s advisory desk for project-specific support on sizing, economics, tender strategy and lender-grade diligence.

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