Ancillary Services from BESS in India 2026: Economics, Regulation and Bid Strategy

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How BESS can earn from India's ancillary services in 2026: regulation, sizing, tariffs, dispatch risk and bankable bid strategy.

India's battery market in 2026 is being discussed mostly through three familiar lenses: co-located solar-plus-storage, FDRE/RTC tenders, and VGF-backed standalone systems. A less crowded but increasingly important angle is ancillary services. For many developers, utilities and C&I consumers, the real question is no longer whether battery energy storage systems can technically support the grid. It is whether ancillary-service revenues in India are becoming predictable enough to influence project sizing, financing and contract structure.

The answer is: partly yes, but only for carefully modelled projects.

Ancillary services from BESS are now moving from pilot logic to commercial relevance because India's power system is carrying more variable renewable energy, tighter evening ramps, more transmission congestion pockets, and greater balancing complexity at state and regional levels. At the same time, market design is still evolving. That means upside exists, but so does revenue uncertainty. The winners in 2026 will be the developers and offtakers who treat ancillary-service participation as an engineering-and-market optimisation problem, not a headline opportunity.

Why ancillary services matter in India's 2026 grid

India's grid has added renewable capacity at scale, but balancing resources have not expanded at the same pace in every state. Thermal plants still provide a large share of balancing support, yet their technical minimum constraints, start-stop inefficiencies and coal logistics can make them expensive or slow for fast-response needs. BESS changes that equation because it can respond in milliseconds, switch from charge to discharge quickly, and provide multiple grid-support functions from the same asset if dispatch rules permit.

In 2026, ancillary services matter for four practical reasons:

- Frequency quality is becoming more valuable as renewable penetration rises.
- Discoms and load-serving entities need better tools to manage peak ramps and schedule deviations.
- System operators are under pressure to procure flexibility more efficiently rather than relying only on thermal backing.
- Storage owners need additional revenue streams beyond simple energy arbitrage to make projects financeable without assuming aggressive merchant spreads.

In Indian terms, ancillary-service value is especially relevant in states with high renewable penetration, weak evening supply-demand balance, congestion exposure, or high deviation costs. It is also relevant for central procurement entities and transmission-connected storage projects that can respond to grid needs beyond a single buyer's load curve.

What services can BESS realistically provide

In market conversations, ancillary services are often discussed too broadly. For project economics, it is better to separate services by response speed, dispatch predictability and energy throughput.

A grid-connected BESS in India can potentially support:

- Primary-type fast frequency response functions, subject to market and operational arrangements
- Secondary reserve or regulation-type response where dispatch signals are frequent
- Tertiary reserve and peak support for contingency events
- Congestion relief in specific network conditions, where system operators can utilise location-specific flexibility
- Reactive power and voltage support, depending on inverter capability and grid-code compliance
- Black start or restoration support in limited cases, though this is not the core revenue case for most projects

Not all these services are equally monetisable today. In 2026, the most bankable opportunity is still where ancillary participation is either embedded into a broader contracted framework or treated as an upside case over a stable base revenue line. Pure-play dependence on ancillary revenues remains difficult to finance unless there is strong visibility on dispatch volumes, compensation methodology and settlement discipline.

The regulatory and market context in 2026

India's ancillary-service framework has evolved through CERC regulations, system-operator procedures and market reforms linked to power exchanges and balancing mechanisms. The broad direction is clear: flexibility has value, and storage should participate. But project developers should avoid assuming that policy intent automatically equals bankable cash flow.

Three regulatory themes matter most in 2026.

First, storage now has clearer recognition in policy and procurement. This supports participation in system services, but implementation still varies by market segment and counterparty.

Second, scheduling, dispatch and settlement rules are becoming more sophisticated. For BESS, the commercial outcome depends not just on headline tariffs but on how often the asset is called, how state of charge is managed, whether charging energy is compensated implicitly or explicitly, and what performance penalties apply.

Third, grid-code compliance and telemetry are non-negotiable. A battery cannot credibly bid for fast-response services if metering granularity, communication systems, inverter controls and EMS logic are weak. In practice, ancillary participation starts with plant architecture, not the commercial bid.

Developers should also track interactions with the Deviation Settlement Mechanism, market-based economic dispatch evolution, and exchange-based reserve products where relevant. These influence whether BESS captures value as a reserve provider, a balancing asset, or simply through avoided penalties for the buyer.

The economics: where revenue comes from and where it leaks away

For an Indian BESS project in 2026, ancillary-service revenue should be analysed in four buckets:

- Availability payment, if any, for keeping capacity reserved
- Utilisation payment for actual dispatch
- Energy margin or spread linked to charging and discharging

- Indirect value such as deviation reduction, improved RE scheduling or avoided curtailment

The problem is that many early models overestimate one or more of these.

A realistic economics model must include:

- Round-trip efficiency, typically 85% to 90% at AC level depending on configuration and auxiliary load
- Degradation cost per equivalent full cycle
- Revenue loss from reserving capacity for ancillary response instead of arbitrage or contracted peak shifting
- State-of-charge constraints, especially when multiple services are stacked
- Dispatch uncertainty, where actual call frequency may be lower or higher than expected
- Performance penalties for non-delivery or slow response

For a 1-hour BESS, ancillary participation may look attractive on a per-MW basis, but the project can run into state-of-charge exhaustion if dispatch is frequent and energy replenishment is not commercially optimised. A 2-hour system offers more flexibility, but capex per MW is higher and revenue per MWh must justify the extra duration.

As a broad 2026 planning lens, developers often examine utility-scale BESS capex in the range of roughly Rs 4.8 crore to Rs 6.8 crore per MW for 2-hour systems, depending on chemistry, integration scope, augmentation strategy, evacuation and owner-furnished infrastructure assumptions. For a 1-hour system, the per-MW capex may be lower, but the revenue opportunity in ancillary markets can also be more constrained because energy-limited operation reduces sustained response capability.

Ancillary-service participation becomes economically meaningful when one of the following is true:

- The project already has a fixed-capacity revenue base and ancillary earnings are incremental
- The battery is optimised for a high-power, lower-duration response role with clear dispatch signals
- The offtaker values avoided imbalance costs enough to share that value with the storage operator
- The battery sits at a grid node where flexibility has local system value beyond generic energy arbitrage

A practical benchmark used in advisory models is to test whether ancillary revenues can cover at least the annual fixed O&M plus a meaningful share of debt service buffer in downside cases. If not, lenders will treat ancillary income as upside only.

Sizing BESS for ancillary services is different from sizing for arbitrage

One common mistake in India’s 2026 storage market is using the same sizing logic for all business cases. A battery designed for solar shifting or peak arbitrage is not automatically optimal for reserve response.

For ancillary-service-oriented BESS, developers should model:

- Required ramp rate in MW per second or equivalent response window
- Minimum sustained discharge or charge duration under dispatch instructions
- Recovery period needed to restore usable state of charge
- Probability of multiple calls within the same operating day
- Contractual reserved capacity versus merchant-operating capacity split

For example, a 100 MW/200 MWh battery allocated partly to ancillary services may reserve 30 MW to 50 MW for fast response while using the balance for time-shift or peak support. But this only works if the EMS can

prioritise dispatch hierarchies and if the contract clearly defines when the buyer or system operator has first call on capacity.

A battery committed fully to frequency response without careful state-of-charge bands can end up charging at expensive hours or missing arbitrage windows. Conversely, an aggressively arbitraged battery may fail reserve availability tests.

In Indian conditions, many ancillary-led projects will likely land around 1-hour to 2-hour durations, but the exact sizing depends on whether the service is power-dominant or energy-dominant. Fast frequency response rewards power electronics and availability. Longer reserve support requires more stored energy and better recharge logistics.

Bid strategy and contract structure: what developers and buyers should not ignore

Ancillary-service projects become fragile when commercial documents are vague. Bid strategy should therefore start with contract architecture.

Key issues to lock down include:

- Definition of reserved capacity in MW and guaranteed energy availability in MWh
- Baseline state-of-charge obligations at different times of day
- Who pays for charging energy used to maintain readiness
- How utilisation is measured and settled
- Performance tests, response-time thresholds and liquidated damages
- Whether the battery can stack revenues outside contracted windows
- Curtailment, grid unavailability and force-majeure treatment
- Change-in-law treatment for market-design evolution

For utilities and public tenders, the lowest discovered tariff is not always the cheapest outcome. A low availability quote can mask aggressive assumptions on dispatch scarcity, charging-cost pass-through or auxiliary-energy treatment. Buyers should compare bids on a normalised basis that includes full life-cycle use case, augmentation requirement, warranty throughput limits and replacement assumptions.

For developers, bid discipline matters. If the project economics require high annual dispatch with low degradation impact, the bid may be structurally weak. If the project relies on vague future market reforms to monetise spare capacity, lenders will haircut that revenue. In both cases, headline IRR can look acceptable while downside DSCR fails.

Bankability: what lenders will scrutinise in 2026

Lenders looking at Indian BESS projects linked to ancillary services are becoming more sophisticated. They are no longer satisfied with generic storage decks showing fast response, renewable integration benefits and optimistic merchant upside.

In 2026, a lender’s review is likely to focus on:

- Counterparty quality and payment security
- Dispatch and settlement history for comparable products, if available
- Technical compliance of EMS, SCADA, metering and control systems

- OEM warranty alignment with expected duty cycle
- Degradation modelling under mixed-use operation
- Replacement reserve assumptions and augmentation capex timing
- Revenue concentration between fixed and variable streams
- Grid availability and evacuation constraints

A bankable case typically needs a robust base-case revenue source, with ancillary services either contracted with sufficient clarity or conservatively layered in. If ancillary revenues account for a dominant share of project cash flow, the lender will likely require heavier sensitivity analysis on call frequency, response penalties, cell degradation and recharge cost.

From a sponsor perspective, one of the smartest 2026 strategies is to develop ancillary capability into the project from day one even if the first contract does not fully monetise it. That means selecting inverter capability, telemetry, EMS logic and control architecture that can support future participation. Retrofitting these later is often costlier and operationally messier.

Who should move now, and what the 24-month outlook looks like

Ancillary-service participation is not yet a universal answer for every BESS project in India. But it is moving fast enough that three groups should act now.

- RE developers planning standalone or hybrid BESS should include ancillary-service optionality in sizing and controls design.
- Discoms and utilities should evaluate whether batteries can reduce balancing cost, not just meet peak supply obligations.
- Large C&I consumers with flexible procurement strategies should examine whether storage can reduce deviation exposure and improve reliability in addition to demand management.

The next 24 months should bring more clarity on reserve procurement, better operational data, and more disciplined pricing of flexibility. That will not eliminate market risk. But it will increasingly separate serious storage platforms from speculative ones.

The central investment point for 2026 is straightforward: ancillary services can improve BESS returns in India, but only where project design, dispatch logic and contract terms are built around actual grid-service requirements. This is not a side revenue to sprinkle into a model. It is a specialised operating case that must be engineered, scheduled and financed accordingly.

If you are evaluating a BESS project, utility procurement strategy or lender due diligence around ancillary services, contact Growthifye’s advisory desk for a project-specific assessment of sizing, economics, dispatch risk and bankability.

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