



Merchant BESS in India 2026: Revenue Stacking, Degradation and Bankability

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A practitioner guide to merchant BESS in India: revenue stacking, cycling, degradation, dispatch strategy and lender questions in 2026.

India's battery energy storage market in 2026 is no longer defined only by viability gap funding, SECI-linked tenders, or co-located utility procurement. A more difficult question is now emerging for developers, C&I buyers, traders, utilities and lenders: can merchant or quasi-merchant BESS work in India, and under what assumptions does it become financeable?

This is a different question from open-access BESS sizing, ancillary services participation, or VGF-backed project economics. Merchant BESS lives or dies on dispatch discipline, market access, revenue stacking, battery degradation management and a realistic understanding of how many high-value cycles are actually available in Indian power markets. For many projects, the issue is not whether a battery can technically arbitrage price spreads. It is whether enough net spread remains after charging cost, round-trip losses, degradation, augmentation, state charges, scheduling constraints and market volatility.

For Indian stakeholders evaluating standalone or loosely contracted storage in 2026, the right lens is not headline capex alone. The right lens is gross margin per cycle, annual equivalent full cycles, contracted revenue share, and the minimum bankable floor that can support debt.

What “merchant BESS” means in the Indian context

In mature power markets, merchant battery projects often rely on day-ahead and real-time arbitrage, ancillary services and capacity payments. India is not fully there yet. In 2026, most projects described as merchant are actually one of the following:

- Pure market-facing BESS seeking revenue from exchange spreads and system services
- Quasi-merchant BESS with a partial tolling agreement or floor payment plus upside sharing
- C&I-linked BESS that reduces power cost but also seeks external market revenue when idle
- Developer-owned storage paired with renewable generation where part of the value is contracted and part remains exposed to the market

This distinction matters because pure merchant exposure remains hard to finance on a non-recourse basis in India. Most lenders still prefer at least one anchor revenue source with defined payment security, dispatch rules and measurable availability obligations.

In practice, many “merchant” battery opportunities in India today are better understood as hybrid revenue-stack projects. A viable project often needs two or three value streams, but each stream must be modeled conservatively and checked for operational conflict. A battery cannot simultaneously reserve the same state of charge for evening peak arbitrage, frequency response and backup support unless dispatch hierarchy is clearly defined.

The revenue stack developers are actually evaluating in 2026

For a standalone battery in India, the revenue stack typically comes from some combination of the following:

- Day-ahead market arbitrage



- Real-time market arbitrage
- Ancillary services or fast-response grid support, where allowed and practically dispatchable
- Capacity-style availability payments under utility or discom contracts
- C&I peak shaving and maximum demand reduction
- Renewable time-shifting to improve captured tariff or reduce curtailment impact
- Deferred network investment or local grid support under utility programs

The problem is that not all of these streams are mature, accessible and bankable at the same time.

Day-ahead and real-time market spreads in India can look attractive on selected days, especially during evening ramps, thermal outages, renewable variability or local demand spikes. But spreadsheet optimism often overstates the number of profitable annual cycles. Once one includes charging energy cost, round-trip efficiency losses of roughly 12% to 18% depending on system design, trading fees, scheduling limitations and battery wear, the net arbitrage opportunity narrows materially.

For example, a 2-hour battery charging at an all-in power cost of Rs 3.2 to Rs 4.2/kWh may need a discharge realization meaningfully above Rs 6/kWh to generate robust net margins after losses and degradation provisioning. On some peak days that is possible. The issue is not occasional profitability. The issue is whether this spread is available with enough frequency and confidence to support annual debt service.

Ancillary services can improve the picture, but India's market design and payment visibility are still evolving. Some developers model high-utilization fast-response revenue, but lenders will usually haircut such assumptions unless backed by demonstrated dispatch frequency, settlement history and clear rules on eligibility, metering and penalties.

For C&I applications, peak shaving may offer stronger immediate economics than pure market arbitrage. A battery that reduces contract demand breaches, diesel genset usage or expensive evening procurement can produce savings that are easier to evidence from load data. However, these savings depend heavily on tariff structure, demand charges, outage profile and the customer's operational discipline.

The numbers that matter more than headline capex

In advisory discussions, too much attention still goes to battery capex per MWh and too little to usable annual margin per MWh. In 2026, the key underwriting metrics for merchant or quasi-merchant BESS in India include:

- Rated energy and power duration, typically 1-hour, 2-hour or 4-hour design
- AC round-trip efficiency under Indian operating conditions
- Annual equivalent full cycles assumed in the base case and downside case
- Degradation curve and minimum end-of-term usable capacity
- Augmentation schedule and augmentation capex
- Charging source and delivered charging tariff
- State and transmission charge treatment, if applicable
- Availability guarantees and liquidated damages exposure
- Revenue concentration by stream and by counterparty
- Debt service coverage under low-spread and low-dispatch cases



A 1-hour system optimized for fast-response services should not be valued using the same dispatch logic as a 4-hour system intended for renewable shifting or evening peak support. Similarly, a battery expected to cycle 500 to 700 equivalent full cycles per year will degrade and augment very differently from one expected to cycle 250 to 350 times.

Degradation is where many merchant cases become weaker than they first appear. A battery may technically execute aggressive daily cycling, but the owner may destroy long-term project value if the dispatch strategy chases small gross spreads that do not adequately compensate for battery wear. Sophisticated operators increasingly use a cycle-value threshold: the battery is dispatched only when expected gross margin exceeds a minimum required amount after accounting for variable degradation cost.

In Indian conditions, this variable degradation cost cannot be treated as a theoretical footnote. It should be built explicitly into dispatch optimization. Depending on chemistry, warranty structure, augmentation philosophy and financing assumptions, degradation provisioning can materially alter which market intervals are actually worth serving.

Dispatch strategy is the real asset-management problem

Merchant BESS is not a passive infrastructure play. It is an active asset-management business.

The difference between a mediocre and a high-performing battery project is often not capex alone but dispatch quality. Operators need a clear hierarchy that answers practical questions:

- Is the battery reserved first for contracted obligations or free-market opportunities?
- What state of charge window must be preserved for contingency events?
- What minimum spread justifies a cycle?
- How will the system prioritize day-ahead schedules versus real-time re-optimization?
- When should the battery avoid cycling to preserve capacity for a more valuable evening window?

In India, this becomes harder because market liquidity, nodal realities, forecast error and scheduling discipline still vary significantly across use cases. A battery may look profitable in a broad hourly model but underperform in operations if charging windows are missed, renewable co-location is inconsistent, or intraday spreads compress once multiple participants target the same periods.

For this reason, serious feasibility work should test at least three dispatch cases:

- Revenue-maximizing unconstrained dispatch
- Realistic dispatch with state-of-charge, market-access and operational constraints
- Conservative bankability case with lower spreads, fewer cycles and stricter reserve logic

If project returns collapse between the optimistic and realistic cases, the project is not yet investable. Too many early-stage models still assume the battery captures every obvious spread. Real assets do not operate that cleanly.

Why lenders remain cautious on pure merchant storage

Debt providers in India have become more comfortable with BESS than they were two years ago, but comfort is not the same as merchant appetite. Most lenders still ask familiar questions:

- What proportion of revenue is contracted versus market-exposed?
- Is there an anchor offtaker with acceptable payment security?



- Are cycle assumptions backed by actual dispatch data or only modeled spreads?
- What happens if ancillary revenues are delayed, reduced or repriced?
- How robust is the project if battery replacement costs remain elevated?
- Is augmentation funded from operating cash flow, reserve accounts or fresh sponsor equity?

For a pure merchant battery, these questions are difficult because revenue visibility remains thin. The likely result in 2026 is that many projects with substantial merchant exposure will still require one of the following:

- Higher equity contribution
- Corporate balance-sheet support
- Shorter debt tenor
- Cash sweep structures
- Minimum revenue guarantees through tolling or floor-price contracts
- Tight reserve requirements for augmentation and debt service

This does not mean merchant BESS is impossible in India. It means the first wave is likely to be financed through hybrid structures rather than fully exposed merchant bets.

A common path to bankability is quasi-merchant contracting. For example, a utility, trader, renewable generator or large C&I user may provide a fixed availability payment or minimum monthly fee, while the developer retains some upside from market optimization. This structure can improve debtability while preserving operational flexibility.

Where merchant BESS may work first in India

The strongest near-term opportunities are not uniform across the country. Merchant or quasi-merchant battery economics are more likely to work where at least one of the following conditions exists:

- Large and recurring peak-off-peak spreads
- Expensive marginal evening supply for C&I consumers
- Renewable-rich systems with curtailment risk or negative capture-price effects
- Load profiles with sharp demand peaks and punitive demand charges
- Utilities willing to procure flexible capacity even if not through long-term energy offtake
- Industrial sites with backup-value overlap, especially where diesel displacement has value

In practical terms, this points first to batteries that are close to a monetizable problem rather than batteries built on a purely speculative market thesis. A storage system solving evening procurement cost, renewable smoothing, contract-demand risk or local reliability constraints will usually be easier to justify than one relying only on exchange arbitrage.

Developers should also be realistic about duration. A 2-hour battery may be the current sweet spot for many arbitrage and peak-support cases, but duration should be selected from dispatch evidence, not from generic market fashion. Some industrial load curves justify 1-hour systems. Some renewable shifting applications need 4 hours. Overbuilding duration can depress returns if the extra stored energy is rarely discharged into sufficiently high-value periods.

A practical diligence checklist before taking merchant exposure



Before developers, lenders or C&I buyers commit to a merchant-oriented battery strategy in 2026, they should insist on a structured diligence pack.

That diligence should include:

- At least 12 to 24 months of granular price and load analysis relevant to the intended market pathway
- A dispatch simulation with explicit charging cost, losses and degradation cost
- Warranty-linked operating assumptions, including temperature and cycling limits
- A clear augmentation plan with year-wise capital need
- Sensitivity analysis for lower spreads, lower utilization and delayed revenue-stream activation
- Counterparty review for any floor-payment, tolling or optimization agreement
- Metering, interconnection and settlement pathway confirmation
- Tax, duty and state-level charge treatment in the chosen project location

This is also where independent technical and commercial review becomes important. Projects that seem attractive at concept stage often weaken when one aligns BMS limits, warranty terms, usable depth of discharge, HVAC auxiliary consumption and Indian ambient operating conditions with the revenue model.

For sponsors, the takeaway is simple: merchant upside is real, but it should be layered onto disciplined project design, not used to rescue a weak base case. For lenders, the right approach is not to reject merchant exposure outright, but to isolate which revenues are dependable, which are emerging, and what downside protection the structure provides.

India will likely see more market-linked battery business models over the next 24 months, particularly as power-market sophistication increases and flexible capacity becomes more valuable. But the winners will not be those with the most aggressive spread assumptions. They will be those with the best dispatch logic, strongest degradation discipline, and the clearest contract architecture between fixed revenue and optional upside.

For developers, C&I buyers, utilities and financiers, that is now the central bankability question in Indian storage: not whether BESS can earn revenue, but whether that revenue can be captured repeatedly, measured conservatively and financed with confidence.

If you are evaluating a standalone, co-located or quasi-merchant storage opportunity, contact Growthifye's advisory desk for project-specific support on BESS revenue modelling, technical diligence, bankability review and commercial structuring.

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