



Battery Tolling in India 2026: BESS Contract Structures, Tariffs and Bankability

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A practitioner guide to battery tolling in India: contract design, tariff benchmarks, dispatch rights, degradation and lender concerns in 2026.

India's BESS market in 2026 is no longer defined only by VGF-backed tenders, standalone capacity procurement, or merchant trading expectations. A fourth structure is moving into serious commercial discussion: battery tolling. For Indian C&I buyers, renewable developers, utilities, and lenders, tolling matters because it can separate asset ownership from dispatch value, create clearer risk allocation, and improve revenue visibility where pure merchant exposure remains difficult to finance.

In simple terms, a battery tolling agreement allows the battery owner to provide contracted storage capacity to an offtaker or scheduler in exchange for a fixed availability-linked payment and, in some cases, a variable operating charge. The offtaker controls or influences dispatch within agreed technical limits, while the battery owner remains responsible for asset performance, augmentation planning, and O&M. The model is familiar in other power markets, but in India it must be adapted to state-level open access rules, ISTS/STS charging structures, scheduling discipline, DSM exposure, degradation economics, and evolving market products on power exchanges.

For many projects, tolling may become the bridge between policy-led BESS procurement and fully merchant storage. It is especially relevant where an industrial consumer, utility, hybrid RE developer, or trading intermediary wants dispatch flexibility without taking construction and battery technology risk onto its own balance sheet.

What battery tolling means in the Indian context

A tolling structure in India typically includes four commercial pillars:

- the battery owner invests in, builds, and operates the BESS asset
- the tolling customer reserves a defined MW/MWh capability for a contracted tenure
- the customer receives dispatch rights, subject to operating windows and warranty limits
- the owner receives fixed payments tied mainly to availability, with penalties for underperformance

This differs from a standard energy sale. In a tolling arrangement, the offtaker is not primarily buying kWh generated by the battery. It is buying flexible charging and discharging capability. That distinction is critical for contract drafting, metering, taxation, and lender review.

In India, tolling can be structured around several use cases:

- RE firming for C&I open access portfolios
- peak shaving and demand charge reduction for large industrial loads
- time-shifting of solar output under captive or group captive structures
- balancing support for FDRE and hybrid projects with must-meet delivery profiles
- utility-side congestion management and evening ramp support
- portfolio optimisation by traders and schedulers across DAM, RTM, TAM and bilateral contracts



The most bankable projects are likely to be those where the tolling customer has a clear existing value pool, rather than speculative arbitrage alone.

Why tolling is gaining attention in 2026

Three market realities explain why tolling is becoming relevant now.

First, battery capex has softened from earlier peaks, but project economics are still sensitive to utilisation and replacement assumptions. Depending on chemistry, duration, integration scope, HVAC/fire systems, augmentation philosophy, and interconnection costs, utility-scale turnkey BESS pricing in India in 2026 is often discussed in a broad range of roughly Rs 2.6 crore to Rs 4.2 crore per MWh for AC-integrated systems, with project-specific variation. Shorter-duration systems for high-cycle applications may sit at a different per-MWh economics than longer-duration systems with lower cycle intensity.

Second, lenders remain cautious about pure merchant BESS. Revenue stacking sounds attractive on paper, but debt providers usually discount uncertain arbitrage, ancillary-service depth, and market design evolution. A tolling payment from a credible utility, developer, or C&I aggregator is easier to underwrite than a merchant spread forecast that depends on future volatility.

Third, many buyers do not want to own batteries directly. A steel plant, data centre operator, distribution utility, or renewable IPP may want storage flexibility but not battery procurement risk, warranty management, augmentation planning, or end-of-life replacement exposure. Tolling solves that by allowing capability to be contracted as a service.

Core contract design issues that decide project value

Not all tolling contracts are financeable. In India, the details matter more than the label.

1) Contracted product definition

The agreement must specify whether the customer is reserving:

- nameplate MW and initial usable MWh
- guaranteed deliverable MWh at contract year milestones
- a minimum round-trip efficiency band
- a daily cycling entitlement
- monthly throughput limits

This is where many draft term sheets fail. If the contract simply says “100 MW/200 MWh battery” without defining degradation treatment, the parties will later disagree on whether 200 MWh means at COD only, or throughout the tolling term. Lenders generally prefer a defined capacity maintenance plan, often backed by scheduled augmentation.

2) Dispatch rights and scheduling control

Who decides when to charge and discharge?

Possible structures include:

- full dispatch control by the tolling customer
- day-ahead nomination by customer, with owner optimisation within boundaries
- owner dispatch to maximise contracted value, with settlement against a benchmark profile



For Indian projects, dispatch rights must also align with the actual market interface. If the battery is co-located with solar or wind under open access, dispatch control is constrained by injection rights, scheduling arrangements, and curtailment conditions. If it is a standalone grid-connected battery, the metering boundary and scheduling entity become central.

Contract language should define:

- nomination timelines for charge/discharge instructions
- emergency override conditions for battery safety and warranty compliance
- restrictions on sustained high C-rate operation
- rules for forced outage periods
- treatment of grid unavailability and backing down

3) Degradation allocation

This is the single most important commercial issue after tariff.

Battery degradation depends on throughput, depth of discharge, temperature, C-rate, and calendar ageing. If the offtaker controls dispatch but the owner bears all degradation risk, the contract will either become expensive or unstable. The better approach is to allocate a contracted throughput budget.

A practical Indian tolling template may include:

- annual warranted throughput in MWh
- cycle-equivalent limits
- degradation curve assumptions by contract year
- owner obligation to maintain a minimum available capacity band
- customer payment for excess throughput or aggressive operating profiles
- planned augmentation triggers and cost responsibility

For example, a 2-hour BESS contracted for one full cycle per day implies around 365 equivalent cycles annually, before accounting for partial cycling. If the customer expects two cycles per day during summer and one cycle on other days, the throughput case changes materially and must be priced explicitly.

4) Availability metrics

Availability should not be measured only in MW. A battery can be online in MW terms but unable to deliver the required MWh due to degradation, state-of-charge mismanagement, or thermal constraints.

Strong contracts therefore define:

- MW availability

n- MWh availability

- response time
- minimum state-of-charge management obligations
- test procedures
- liquidated damages or tariff abatements for non-availability

In utility-facing transactions, annual availability expectations may be 95% to 98%, excluding grid outages and force majeure. But headline availability is less useful unless testing windows and exclusions are tightly



drafted.

How tolling tariffs are being thought about in India

There is no single discovered national benchmark yet, because the market is still early and use cases differ. Still, tariff construction typically combines the following:

- fixed monthly availability charge per contracted MW or per MW-month
- optional variable charge linked to actual throughput or discharged MWh
- pass-through treatment for auxiliary consumption in some structures
- indexation, if any, on O&M components rather than battery capex

For a 2-hour utility-scale BESS, fixed tolling payments are generally assessed against the owner's required annual revenue requirement. That revenue requirement includes:

- debt service
- equity return
- fixed O&M
- augmentation reserve
- insurance
- land and evacuation charges
- taxes and duties not recoverable elsewhere

In broad terms, if a 100 MW/200 MWh battery has an all-in project cost of, say, Rs 650 crore to Rs 800 crore depending on configuration and interconnection, annual fixed revenue needs can easily sit in a range that implies a meaningful monthly reservation charge. The exact tariff depends on leverage, tenure, augmentation strategy, contracted throughput, and residual value assumptions. For this reason, simplistic comparisons with discovered tariffs in VGF-backed BESS tenders are misleading. VGF projects have different capital support, offtake design, and public procurement objectives.

For C&I tolling, buyers often compare the tolling fee against avoided peak power purchase cost, demand charge savings, diesel replacement, and improved solar utilisation. If the battery is used to shift captive solar from midday to evening, the economics are not driven only by energy arbitrage. They also depend on open access charges, banking restrictions, contract demand management, and the avoided cost of alternative firm power.

Where tolling is strongest: C&I, hybrids and utility portfolios

Tolling is not a universal answer. It works best where dispatch flexibility already has identifiable value.

C&I portfolios

Large Indian C&I consumers in sectors such as metals, cement, chemicals, commercial real estate, data centres and auto manufacturing increasingly run complex power portfolios combining grid supply, captive renewables, open access procurement, and backup systems. These buyers may not want a merchant battery, but they do value:

- peak-hour cost reduction
- solar curtailment mitigation
- improved renewable share during evening operations



- resilience support where regulations permit

A tolling arrangement can give them storage access without battery ownership complexity.

Hybrid and FDRE-adjacent portfolios

Although tolling is different from an FDRE PPA, it can support hybrid portfolios where the seller or buyer wants a separately contracted flexibility layer. A developer with wind-solar assets may contract a third-party battery through tolling to improve delivery shape, rather than owning the battery directly. That can be attractive if the developer wants to preserve capital or avoid technology-performance risk.

Utility and intermediary portfolios

Distribution companies and state agencies may use tolling to secure flexibility for evening ramps, local congestion pockets, or renewable balancing while leaving asset performance risk with specialist operators. Likewise, power traders and scheduling intermediaries may use tolling to optimise portfolios across exchange products, though this structure remains more difficult to finance unless the tolling obligation itself is firm and creditworthy.

The bankability lens: what lenders will focus on

For lenders and investors, a tolling contract is financeable only if it behaves like infrastructure revenue, not speculative optionality.

The main diligence questions are predictable:

- Is the offtaker creditworthy, and is payment security adequate?
- Is the contracted term long enough relative to debt tenor?
- Are dispatch rights compatible with OEM warranty limits?
- Is degradation risk quantified and compensated?
- Is augmentation funded and timed properly?
- Are change-in-law, taxation and grid-curtalement clauses clear?
- Are metering, settlement and testing protocols dispute-resistant?

Payment security is particularly important in India. Lenders will usually prefer at least some combination of:

- letter of credit
- escrow or structured payment waterfall
- reserve account
- termination compensation provisions

On tenor, tolling contracts below 7 to 8 years may struggle to support meaningful leverage unless the counterparty is exceptionally strong or there is visible recontracting value. Longer tenures, often 10 to 15 years, are more naturally aligned with BESS project financing, provided augmentation obligations are realistic.

Termination mechanics also matter. If the tolling customer walks away early, lenders need compensation linked to debt outstanding and breakage costs. Without this, debt sizing becomes conservative.

Key risks parties still underestimate

Even sophisticated counterparties sometimes miss these issues:



- Round-trip efficiency drift over time affects settlement economics.
- Charging energy source and price must be defined clearly.
- GST, electricity duty and open access treatment can change effective value.
- Grid outage during low-price charging windows can destroy the business case if risk is unallocated.
- Co-located projects need clarity on whether battery charging from grid is permitted under the applicable approvals.
- EMS logic must align with both market strategy and warranty conditions.
- Fire safety compliance, black-start protocols and local permitting timelines can affect COD materially.

Another underappreciated issue is dispatch data transparency. If the customer controls dispatch but disputes arise on state-of-charge, throughput and thermal derating, real-time data access rights become essential. The contract should specify SCADA visibility, audit rights, and hierarchy between EMS records and settlement meters.

What a workable 2026 tolling framework should look like

In the Indian market, the most practical tolling structures in 2026 are likely to have the following features:

- 10 to 15 year contracted term
- fixed monthly availability payment as the tariff backbone
- clearly priced throughput allowance and excess-use charges
- minimum annual availability in both MW and MWh terms
- scheduled augmentation plan embedded from financial close
- robust payment security
- detailed dispatch protocol and metering architecture
- explicit treatment of grid non-availability, curtailment and change in law

For developers, tolling can diversify BESS monetisation beyond government-led procurement. For C&I buyers, it can unlock flexibility without owning a battery platform. For utilities, it can bring specialist storage capability onto the system while preserving operating control. For lenders, it can create a revenue profile that is materially easier to underwrite than pure merchant exposure—if the contract is drafted with discipline.

The key message is simple: in India, battery tolling is not just a commercial innovation. It is a contract-engineering exercise. The winners will be those who quantify degradation correctly, align dispatch with market reality, and build settlement frameworks that survive operational stress rather than only spreadsheet assumptions.

If you are evaluating a BESS tolling model, storage-backed RE portfolio, or utility flexibility strategy, contact Growthifye's advisory desk for project-specific support on structuring, techno-economics, bankability and procurement strategy.

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