



TRANSMISSION ENGINEERING · STEP 04 · UTILITY INTERFACE · REPORT

Connectivity & LTA Application Dossier

Complete technical submission package for grid connectivity, covering load flow, short-circuit and stability study summaries as required by the STU.

Worked example (anonymised): Standalone BESS Grid Connectivity Program · 400 MW / 800 MWh · Western India, 220 kV pooling substation. Battery storage project requiring LTA at 220 kV, grid-code compliance for four-quadrant reactive support, and joint commissioning with the state transmission utility ahead of a DISCOM tender COD deadline.



Illustrative sample image

Sample excerpt · LTA Application — Document Checklist & Status

Document	Description	Status	Submitted To
Load Flow Study	N-1 contingency, 220 kV pooling bus	Approved	STU Planning Cell
Short Circuit Study	Fault level at PCC, pre/post project	Approved	STU Planning Cell
Reactive Capability Curve	PCS Q-V envelope, ± 0.95 PF	Under Review	STU Protection Wing
Metering Scheme SLD	ABT-compliant CT/PT arrangement	Approved	SLDC
Protection Coordination Report	Relay grading, 220/33 kV interface	Resubmission Requested	STU Protection Wing

Notes

- Application tracked against CEA (Connectivity) Regulations timelines
- Resubmission driven by revised fault-level input from utility

What happens in this step

1. Prepare and file connectivity/LTA (Long Term Access) applications with the nodal STU/CTU, including load flow and short-circuit study inputs



2. Coordinate technical scrutiny meetings; respond to utility queries on fault level, reactive power capability and protection philosophy
3. Develop grid-code compliance documentation — voltage ride-through, frequency response, harmonic and flicker compliance reports per IEGC/CEA regulations
4. Prepare and submit protection coordination studies, relay setting proposals and metering scheme drawings for utility approval
5. Support SCADA/RTU integration and communication protocol testing (IEC 61850/60870-5-104) with utility control centre
6. Coordinate charging clearance, joint commissioning tests (CT/PT ratio checks, interlock verification, protection trip tests) with utility engineers
7. Track punch-list closure and obtain final COD/CEIG certification for commercial operation

Outcomes

- Formal connectivity/LTA grant secured from the transmission utility within regulatory timelines
- Documented, utility-endorsed grid-code compliance reducing risk of post-COD penalties
- Smooth joint commissioning with minimal punch-list disputes, protecting the COD schedule
- Clean charging clearance and COD certificate enabling commercial operation and revenue commencement

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