



TRANSMISSION ENGINEERING · STEP 04 · UTILITY INTERFACE · SCHEDULE

Joint Commissioning & Charging Plan

Milestone schedule coordinating utility witness tests, protection trip checks, SCADA integration and charging sequence to achieve COD.

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.

Sample excerpt · Commissioning Milestones

Milestone	Responsible Party	Target Date	Status
CT/PT Ratio & Polarity Check	EPC + Utility Metering	Week 1	Complete
Protection Relay Trip Test	EPC + STU Protection Team	Week 2	Complete
SCADA/RTU Handshake Test	SI Vendor + SLDC	Week 3	In Progress
First Charging (No-Load)	Utility + Project O&M;	Week 4	Scheduled
Trial Run (72-hour)	Joint Team	Week 5-6	Scheduled
COD Certificate Issuance	STU / CEIG	Week 7	Pending

Notes

- Trial run data logged for RE generation/discharge certification
- Punch-list items tracked jointly to avoid COD slippage

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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