



TRANSMISSION ENGINEERING · STEP 04 · UTILITY INTERFACE · REPORT

Grid-Code Compliance Report

Demonstrates compliance with IEGC voltage/frequency ride-through, harmonic limits and reactive power obligations using PSCAD/PSSE simulation evidence.

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 · Compliance Test Summary — Key Parameters

Parameter	Grid-Code Requirement	Simulated/Tested Value	Result
LVRT	Ride through to 0 pu for 150ms	Ride through to 0 pu, 160ms	Pass
Frequency Response	47.5-52 Hz continuous operation	47.0-52.5 Hz demonstrated	Pass
Reactive Power Range	0.95 lag - 0.95 lead at rated MW	0.93 lag - 0.96 lead	Pass
THD (Voltage)	< 3% at PCC	2.1% measured	Pass
Flicker (Pst)	< 0.8	0.55	Pass

Notes

- Field validation conducted during commissioning trial runs
- Report co-signed by utility protection engineer for record

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

Want this for your project? Write to info@growthifye.com or use the Contact page — we will scope the real deliverable set for your capacity, state and lender requirements.

ILLUSTRATIVE