EPC · STEP 01 · ENGINEER FOR CONSTRUCTABILITY · REPORT

Constructability Risk Register

A structured log of every design element that fails against real site conditions, with impact and mitigation for each item, sequenced by procurement urgency.

Worked example (anonymised): Standalone BESS constructability review · 400 MW / 800 MWh · Western India. A DISCOM-awarded standalone BESS project moved from vendor reference layout to a site-adapted design after review flagged drainage, crane-access and fire-clearance issues ahead of procurement.

Illustrative sample image

Sample excerpt · Constructability Risk Register — Sample Extract

ID	Issue	Discipline	Impact if unresolved	Mitigation
CR-04	33 kV cable trench route crosses seasonal nullah	Civil/Electrical	6-8 week monsoon delay risk	Reroute via elevated cable tray, add culvert crossing
CR-07	Crane access width <4.5 m on north boundary	Layout	Crane cannot reach 12 of 48 skid positions	Widen access road to 6 m, relocate perimeter fence
CR-11	Transformer bay spacing ignores IS 1646 fire clearance	Electrical/Safety	Non-compliance at CEA inspection	Increase bay pitch by 1.2 m, revise layout
CR-15	O&M; walkway width insufficient for stretcher evacuation	Safety/O&M;	EHS non-conformance	Widen walkways to 1.2 m minimum
CR-19	Container pad levels ignore natural drainage fall	Civil	Ponding risk in monsoon	Re-grade pad with 1:100 fall to storm drain

Notes

• Register is scored by cost-to-fix now vs cost-to-fix after procurement lock-in

• Shared with EPC contractor and lenders' engineer for joint sign-off

What happens in this step

1. Cross-check vendor reference layouts against site topo survey, geotechnical data and drainage patterns
2. Validate equipment sizing (PCS, transformers, cabling) against actual ambient conditions and site-specific auxiliary loads
3. Review access roads, crane paths and lay-down areas against real construction logistics, not idealised plot plans
4. Verify clearances, bay spacing and fire safety against applicable IS/CEA codes and state electrical inspectorate requirements
5. Design O&M; walkways, module-swap aisles and maintenance zones for 20-year operability, not just installation-day access
6. Flag constructability risks in a formal register with mitigation options, costed where material
7. Issue a sign-off package that procurement and construction teams work from — not a marketing-grade GA drawing

Outcomes

• Site-specific design issues identified before procurement, avoiding costly rework during construction
• O&M; access and safety clearances built into the layout from day one, reducing lifecycle operating costs
• Equipment sizing validated against actual site conditions, not vendor default assumptions
• Constructability sign-off typically reduces change orders during EPC execution by 15-20%

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.