

BESS Site Acceptance Test — Professional Checklist

Hoenergy • Overseas Business Division • Technology Center | V1.0 Professional | 2026-07-15

Note: First check the applicable scenarios below. Items marked [ENIRIS] / [Self-built] / [Customer] / [With Meter] / [PV] / [DG] in subsequent sections are **conditional items** (fill in N/A if not applicable).

Project Basic Information

Item	Entry
Product Model	
Project Code	
Factory Serial Number	
Capacity • Power	
Date	
Inspector	

Applicable Scenario Checklist

Hoenergy Proprietary EMS / iSolarCloud	ENIRIS Third-Party EMS / SmartgridOne V4.1	Customer-Owned EMS	With AC/DC Meter	[PV] Photovoltaic Inverter	[DG] Diesel Generator
☐ Applicable	☐ Applicable	☐ Applicable	☐ Applicable	☐ Applicable	☐ Applicable

Part A — Hardware Installation

Mandatory Checks • 11 Items

No.	Inspection Item	Acceptance Criteria	Result
A1	Equipment Positioning	Positions of the container / PCS / transformer / switchgear match the one-line diagram as built	☐ Pass ☐ Fail ☐ N/A
A2	Foundation & Mounting	Levelness ≤ 2 mm/m; M12 bolt tightening torque 45 N • m ±5%; anti-loosening marks applied	☐ Pass ☐ Fail ☐ N/A
A3	Earth Grid	Earth connections are reliable	☐ Pass ☐ Fail ☐ N/A
A4	One-Line Verification	Field wiring matches the as-built drawings (positions of switches / circuit breakers / instrument transformers)	☐ Pass ☐ Fail ☐ N/A
A5	DC Bus Wiring	Battery cluster → BCU → PCS DC positive/negative wiring is correct, with no reverse connection or looseness	☐ Pass ☐ Fail ☐ N/A
A6	AC Bus Wiring	PCS → transformer → grid-connection point wiring complies with the design	☐ Pass ☐ Fail ☐ N/A
A7	MV/LV Wiring	MV cable terminations are fabricated per code (heat-shrink / cold-shrink / silicone rubber)	☐ Pass ☐ Fail ☐ N/A
A8	Cable Sizing	Conductor cross-section / voltage class / temperature class meet the design current-carrying capacity and short-circuit withstand requirements	☐ Pass ☐ Fail ☐ N/A
A9	Crimping & Lugs	Crimping torque meets the specification; lugs show no overheating discoloration; torque rechecked	☐ Pass ☐ Fail ☐ N/A
A10	Fire Stopping	Cable penetrations through floors / fire walls are sealed with fire-resistant putty / fire-rated boards	☐ Pass ☐ Fail ☐ N/A
A11	Markings & Labels	Equipment / circuit / phase / warning labels are complete and bilingual (per project requirements)	☐ Pass ☐ Fail ☐ N/A

Part B — Power Supply Verification

Required Checks • 3 Items

No.	Inspection Item	Acceptance Criteria	Conclusion
B1	Three-Phase Voltage	Three-phase line-to-neutral voltage unbalance < 2%, amplitude within $\pm 10\%$ of nominal value	☐ Pass ☐ Fail ☐ N/A
B2	Phase Sequence	L1-L2-L3 is positive phase sequence, no reverse phase	☐ Pass ☐ Fail ☐ N/A
B3	Frequency	50 Hz $\pm$ 0.5 Hz (or 60 Hz, depending on region)	☐ Pass ☐ Fail ☐ N/A

Part C — Metering & Current Transformers

Conditional item [With Meter] • 6 items

No.	Inspection Item	Acceptance Criteria	Result
C1	AC Meter Install	Meter model / accuracy class (0.2S / 0.5S) conforms to design, installation orientation is correct	☐ Pass ☐ Fail ☐ N/A
C2	CT Polarity	P1 end faces the power source side, P2 end faces the load side; reverse connection is prohibited	☐ Pass ☐ Fail ☐ N/A
C3	CT Ratio	Ratio matches the design (e.g., 1000/5 A, 800/5 A)	☐ Pass ☐ Fail ☐ N/A
C4	CT Wiring	s1 connects to meter I+, s2 connects to I-, shield layer grounded at one end only	☐ Pass ☐ Fail ☐ N/A
C5	Meter Reading	Compare meter readings with a clamp-type ammeter; error < 2%	☐ Pass ☐ Fail ☐ N/A
C6	Meter Communication	Meter data (voltage / current / power / energy) read normally via Modbus / IEC 104	☐ Pass ☐ Fail ☐ N/A

Part D — EMS & Communication Topology

Multi-scenario condition items [ENIRIS] / [Own] / [Customer] / [PV] / [DG] • 9 items

No.	Inspection Item	Pass Criteria	Result
D1	EMS Hardware in Place	Server / Gateway / Industrial PC in place, powered on normally	☐ Pass ☐ Fail ☐ N/A
D2	4G Router / Firewall	4G router installed in place, signal normal, firewall policy allowed	☐ Pass ☐ Fail ☐ N/A
D3	Clock Sync	NTP / IEC 104 / GPS time synchronization, time deviation ≤ 1 s (Czech projects use IEC 104 sync)	☐ Pass ☐ Fail ☐ N/A
D4	[ENIRIS] SmartgridOne Point Table	SmartgridOne Modbus V4.1 full coverage: SOC / SOH / V / T / P / Alarms / Protection	☐ Pass ☐ Fail ☐ N/A
D5	[Own] Hoenergy EMS Point Table	iSolarCloud-style EMS connects to PCS / BMS / Meter / Weather Station	☐ Pass ☐ Fail ☐ N/A
D6	[Customer] Third-Party EMS Integration	Provide data dictionary per interface protocol and complete communication interface test	☐ Pass ☐ Fail ☐ N/A
D7	Remote Access VPN	Owner / dispatch VPN tunnel established, remote login available	☐ Pass ☐ Fail ☐ N/A
D8	[PV] PV Inverter Integration	Sungrow / Huawei and other inverters connected to EMS, points complete (DC / AC / Power / Status)	☐ Pass ☐ Fail ☐ N/A
D9	[DG] Diesel Genset Integration	Diesel genset controller (ComAp / DeepSea) Modbus integration, including Start-Stop / Paralleling / Power / Status	☐ Pass ☐ Fail ☐ N/A

Part E — Station Build

Mandatory Checks • 6 Items

No.	Inspection Item	Acceptance Criteria	Result
E1	EMS Create Site	Create a site in the EMS (iSolarCloud / SmartgridOne / Customer System) and fill in the project information	☐ Pass ☐ Fail ☐ N/A
E2	Device Registration	PCS / BMS / Meter / Weather Station / Fire Protection / HVAC all registered	☐ Pass ☐ Fail ☐ N/A
E3	Point Mapping	Mapping of the 4 point categories — telemetry, telesignal, telecontrol, and teleadjust — completed (per the point list)	☐ Pass ☐ Fail ☐ N/A
E4	Topology	EMS topology diagram auto-generated and consistent with the on-site single-line diagram	☐ Pass ☐ Fail ☐ N/A
E5	[PV] PV Inverter Registration	PV inverter registered in the EMS with the communication link established	☐ Pass ☐ Fail ☐ N/A
E6	[DG] Diesel Generator Registration	Diesel generator registered in the EMS with the start/stop and paralleling control links established	☐ Pass ☐ Fail ☐ N/A

Part F — Energization & Grid Connection Test

Mandatory Checks • 5 Items

No.	Inspection Item	Acceptance Criteria	Result
F1	Auxiliary Power Energization	Lighting / socket / control power energized normally	☐ Pass ☐ Fail ☐ N/A
F2	Control Power Energization	BMS / PCS / fire protection / HVAC control power energized	☐ Pass ☐ Fail ☐ N/A
F3	First Grid Connection	Close the AC circuit breaker; PCS connects to grid smoothly without inrush	☐ Pass ☐ Fail ☐ N/A
F4	No-Load / Light-Load Run	No-load run for 5 min, light-load (10% of rated) run for 5 min	☐ Pass ☐ Fail ☐ N/A
F5	[DG] Diesel Generator Paralleling / Black Start	Coordination between diesel generator and energy storage: paralleling / disconnection / black start test, switching time < 2 s	☐ Pass ☐ Fail ☐ N/A

Part G — Cloud Platform Charge/Discharge Test

Must-check • 4 items

No.	Inspection Item	Pass Criteria	Result
G1	Cloud Platform Login	Owner / O&M personnel log in to the cloud EMS via browser	☐ Pass ☐ Fail ☐ N/A
G2	Manual Charge	Cloud issues a charge command (set power / duration), PCS responds within ≤ 2 s	☐ Pass ☐ Fail ☐ N/A
G3	Manual Discharge	Cloud issues a discharge command, PCS responds within ≤ 2 s	☐ Pass ☐ Fail ☐ N/A
G4	Emergency Stop (E-Stop)	Cloud emergency stop command response within ≤ 1 s, PCS stops immediately	☐ Pass ☐ Fail ☐ N/A

Part H — Schedule / Planned Curve Test

Mandatory Inspection • 5 Items

No.	Inspection Item	Pass Criterion	Conclusion
H1	Daily Schedule Upload	EMS imports a 24 h planned curve (CSV / manual input)	☐ Pass ☐ Fail ☐ N/A
H2	Auto Tracking	The system automatically charges and discharges according to the curve without manual intervention	☐ Pass ☐ Fail ☐ N/A
H3	Multi-Period Switching	At least 4 periods (Peak / Flat / Valley / Sharp), with smooth switching and no abrupt jumps	☐ Pass ☐ Fail ☐ N/A
H4	Schedule Deviation	Actual power vs. planned deviation $\leq 3\%$ (15 min average)	☐ Pass ☐ Fail ☐ N/A
H5	[PV+DG] PV-Storage-DG Coordination Test	Linked mode: PV prioritized for self-consumption → energy storage charging → DG backup, with smooth switching	☐ Pass ☐ Fail ☐ N/A

Part K — Fire & Safety

Mandatory Check • 1 Item

No.	Inspection Item	Pass Criteria	Result
K1	E-Stop Button	E-Stop buttons at entry/exit are securely installed and easy to operate	☐ Pass ☐ Fail ☐ N/A

Punch List — List of Outstanding Issues

Required to be closed within 30 days

No.	Outstanding Issue	Severity	Responsible Party	Closure Deadline
1		☐ Critical ☐ Major ☐ Minor		
2		☐ Critical ☐ Major ☐ Minor		
3		☐ Critical ☐ Major ☐ Minor		
4		☐ Critical ☐ Major ☐ Minor		
5		☐ Critical ☐ Major ☐ Minor		
6		☐ Critical ☐ Major ☐ Minor		

Signatures

Three-Party Closure

Unit	Name	Signature	Date
Hoenergy Engineer			
Owner Representative			
EPC Supervisor			

Summary

Total Items	Pass	Fail	N/A	Pass Rate	Result