

Monthly Availability Report

Example Site A (fictitious) · Month 9 of operation

SITE & REPORTING PERIOD

C&I battery energy storage system, Belgium · 2.0 MW / 4.3 MWh · 20 liquid-cooled cabinets of 215 kWh · 10 PCS of 200 kW
Reporting period: Month 9 of operation (30 days, 720 h) · Accountable party: BessRe · Report issued to: owner and lender

KPI	THIS MONTH	PREVIOUS MONTH	CONTRACT REFERENCE	STATUS
Availability, time-based	99.65 %	99.80 %	Per LTSA schedule	● On track
Availability, capacity-weighted	99.12 %	99.71 %	Per LTSA schedule	● On track
Round-trip efficiency (AC, at meter)	87.7 %	88.0 %	Per supply contract	● On track
State of health (BMS, Art. 14 data)	97.9 %	98.1 %	Per OEM warranty curve	● On track
Energy discharged (at meter)	138.4 MWh	131.2 MWh	—	—
Equivalent full cycles	32.2	30.5	Per OEM warranty	● Within limit
Events logged	7 (2 excluded)	4 (1 excluded)	—	—
HSE	0 lost-time · 1 near miss	0 · 0	—	● Action open
Open warranty claims	2	1	—	—

This month in three lines

- 1. A PCS cooling-fan failure (E-03) and a battery-module deviation (E-07) reduced capacity-weighted availability; both were fixed with parts from the Antwerp hub and filed as warranty claims.
- 2. A BMS firmware update caused a 2.5-hour site stop (E-05). BessRe rolled the firmware back, closed the root-cause analysis and updated its procedure.
- 3. State of health is tracking the OEM warranty curve; the next capacity test is scheduled for Month 12.

Actions for next month

Re-deploy the corrected BMS firmware after OEM release; close warranty claims WC-02 and WC-03; complete the postponed preventive task (MV room inspection); close the near-miss action.

Availability

Definitions

Time-based availability = Available hours ÷ (Period hours – Excluded hours). An hour counts as unavailable only when the whole site cannot operate.

Capacity-weighted availability = $1 - \sum (\text{unavailable capacity share} \times \text{hours}) \div (\text{Period hours} - \text{Excluded hours})$. A partial derate, such as one PCS out of ten, counts in proportion to the capacity lost.

Measurement point: fiscal meter at the point of connection, 15-minute intervals; cross-checked against PCS and BMS logs.

Excluded events (closed list, per LTSA schedule)

Grid outage or DSO instruction, with a DSO notice or breaker record · owner-requested shutdown, with written request · curtailment by the market or grid operator · force majeure, as defined in the LTSA. An exclusion applies only with the evidence listed; it never covers an equipment fault that existed at the same time.

Calculation this month

ITEM	HOURS
Period hours	720.0
Excluded hours (E-04 grid 4.0 + E-06 owner 3.0)	7.0
Eligible hours	713.0
Whole-site unavailable hours (E-05)	2.5
Capacity-weighted unavailable hours (E-03 1.8 + E-05 2.5 + E-07 2.0)	6.3
Time-based availability (710.5 ÷ 713.0)	99.65 %
Capacity-weighted availability (1 – 6.3 ÷ 713.0)	99.12 %

Unavailability by responsibility (capacity-weighted hours)

RESPONSIBILITY	HOURS	SHARE
OEM equipment (E-03, E-07)	3.8	60 %
Service provider (E-05)	2.5	40 %
Owner (excluded)	3.0	—
Grid (excluded)	4.0	—
Force majeure	0.0	—

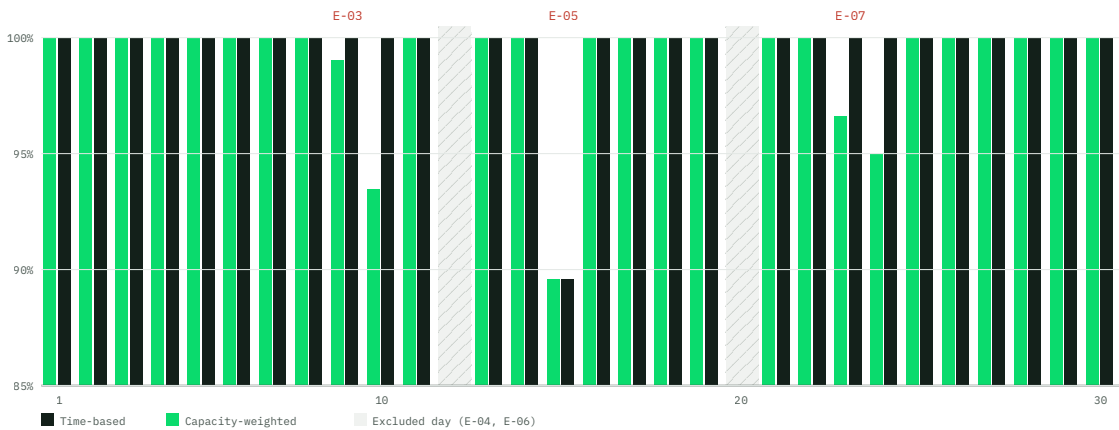


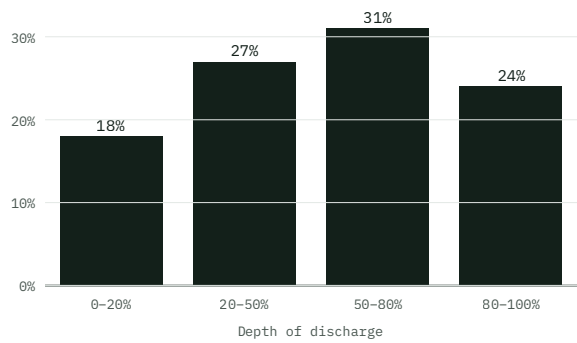
Fig. 2-1 · Daily availability (time-based in dark, capacity-weighted in green), 30 days. Events E-03, E-05 and E-07 marked in red; excluded days (E-04, E-06) hatched.

Energy and performance

METRIC	VALUE	NOTE
Energy charged (meter)	157.9 MWh	
Energy discharged (meter)	138.4 MWh	
Round-trip efficiency, AC at meter	87.7 %	Includes auxiliary consumption
Round-trip efficiency, at PCS	90.1 %	Measured at PCS AC terminals; excludes auxiliary consumption and transformer losses
Auxiliary consumption (HVAC, controls)	3.6 MWh	Higher in warm days 14–18
Equivalent full cycles	32.2	Discharged energy ÷ 4.3 MWh
Average cycles per day	1.07	
Time within warranty SoC window (5–95 %)	100 %	

Depth of discharge and cell temperature

Depth of discharge



Daily cell temperature

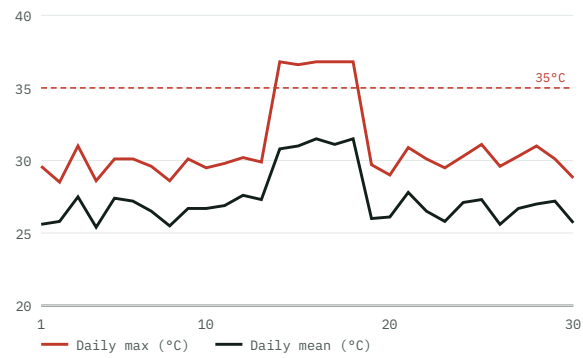


Fig. 3-1 · Depth-of-discharge distribution (left) and daily cell temperature (right). Mean 27.4 °C, maximum 36.8 °C, 6.5 h above 35 °C.

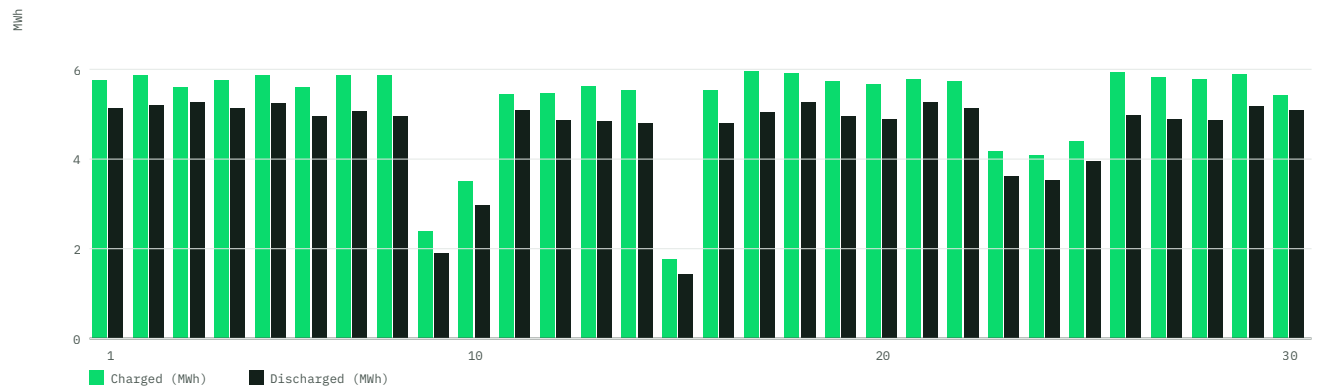


Fig. 3-2 · Daily charge and discharge energy (MWh), 30 days. Monthly totals: 157.9 MWh charged, 138.4 MWh discharged.

Battery health

METRIC	VALUE	REFERENCE
State of health (BMS, Art. 14 data)	97.9 %	OEM warranty curve at Month 9: 97.2 %
Last capacity test (Month 6)	4.21 MWh (97.9 % of nameplate)	Next test: Month 12
Maximum cell voltage spread	38 mV	Alarm threshold 80 mV
Maximum cell temperature spread	4.1 °C	Alarm threshold 8 °C
Cells flagged for monitoring	2 (cabinet 07)	Linked to E-07

Warranty conditions

CONDITION	STATUS
Cycles year to date vs warranty allowance	285 of 365 (pro rata 274) — slightly ahead, reported to owner
C-rate within warranty limit	Yes
SoC window within warranty limit	Yes
Ambient and cell temperature within limit	Yes

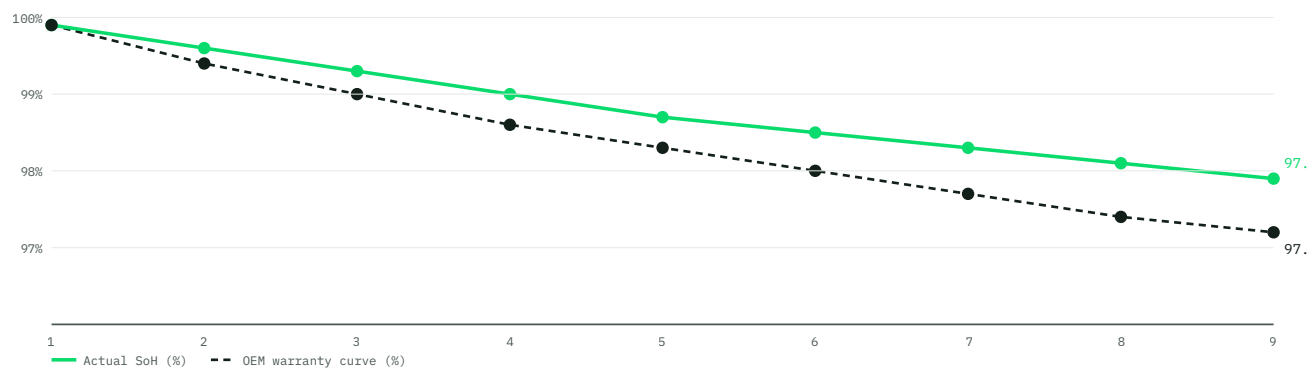


Fig. 4-1 · State of health trend since commissioning (green) against the OEM warranty curve (dashed). Month 9: 97.9 % actual vs 97.2 % warranty curve.

Events and root causes

ID	EVENT	CAPACITY AFFECTED	DURATION	ACKNOWLEDGED · ON SITE · RESTORED	CAUSE CATEGORY	RESPONSIBILITY	ROOT CAUSE	STATUS
E-01	HVAC filter clog alarm	0 %	—	Day 3 08:10 · Day 4 10:30 · Day 4 11:15	Auxiliary	Service provider	Closed (preventive)	
E-02	EMS communication loss	0 %	0.4 h	Day 6 14:02 · remote · Day 6 14:26	Communications	Service provider	Closed	
E-03	PCS #4 over- temperature trip	10 %	18.0 h	Day 9 21:40 · Day 10 09:15 · Day 10 15:40	Power conversion	OEM	Closed: cooling fan failure; fan replaced; claim WC-02	
E-04	DSO planned grid maintenance	100 %	4.0 h	Planned · — · Day 12 12:00	Grid	Grid (excluded)	DSO notice on file	
E-05	BMS master communication fault	100 %	2.5 h	Day 15 10:05 · remote · Day 15 12:35	Firmware	Service provider	Closed: update configuration error; rolled back; procedure updated	
E-06	MV switchgear inspection	100 %	3.0 h	Planned · — · Day 20 11:00	Owner request	Owner (excluded)	Written request on file	
E-07	Cabinet 07 module voltage deviation	5 %	40.0 h	Day 23 07:50 · Day 23 13:20 · Day 25 00:00	Battery	OEM	Closed: module replaced from Antwerp stock; claim WC-03	

Root-cause categories

Battery (cell, module) · power conversion (PCS) · auxiliary (HVAC, fire system) · communications · firmware · grid · owner · external or force majeure. Each event receives one category and one responsibility; disputed responsibility is marked and resolved in the next report.

Maintenance and field service

METRIC	VALUE
Preventive tasks planned / completed	14 / 13 (93 %) – MV room inspection postponed, owner access
Corrective work orders	4 (E-02, E-03, E-05, E-07)
Preventive vs corrective technician hours	78 % / 22 %
Site visits	5

E-01 handled within preventive maintenance.

Spare parts

PART	USED	SOURCE	STOCK AFTER
PCS cooling fan	2	Antwerp hub	4
Battery module	1	Antwerp hub	1 (re-order placed)

Firmware and configuration changes

BMS v2.3.1 → v2.3.2 on Day 15; rolled back to v2.3.1 the same day (E-05); corrected release expected from OEM next month.

Health, safety and environment

0 lost-time incidents · 0 environmental incidents · 1 near miss (cabinet door not secured during high wind, Day 18) — door-check added to visit close-out checklist.

ILLUSTRATIVE

Warranty, claims and insurance

CLAIM	COMPONENT	OPENED	EVIDENCE PACK	OEM STATUS
WC-01	Battery module (cabinet 03)	Month 7	Complete	Accepted; replacement delivered — closed
WC-02	PCS #4 cooling fan (E-03)	Day 10	Complete	Submitted, awaiting OEM response
WC-03	Battery module (cabinet 07, E-07)	Day 25	Complete	Submitted, awaiting OEM response

Each evidence pack contains: event timeline, BMS and PCS logs, photographs before and after, serial numbers removed and installed, root-cause note and technician sign-off.

Insurance

No notifications this month.

ILLUSTRATIVE

Compliance, outlook and methodology

Compliance

EU Batteries Regulation: state-of-health data accessed under Article 14 through the OEM data interface. Battery passport readiness for February 2027: data fields mapped with the OEM, open items listed in the annex.

Producer obligations (EPR): producer registration in Belgium confirmed; next periodic report due next quarter.

Grid connection: no non-compliance events reported by the DSO.

Next month

Re-deploy corrected BMS firmware · complete postponed preventive task · follow up WC-02 and WC-03 · prepare Month 12 capacity test plan.

Data sources

Fiscal meter (15-minute) · BMS and PCS logs via OEM interface · EMS dispatch log · BessRe work-order system · DSO notices and owner requests for exclusions.

Methodology notes

Availability as defined on page 2; round-trip efficiency at meter includes auxiliary consumption; equivalent full cycles use nameplate energy; any change to a definition is shown in the report where it first applies.

ILLUSTRATIVE SAMPLE

Example Site A, all figures, dates and events are fictitious and shown only to demonstrate the structure of a BessRe monthly report. Contract references depend on each site's agreements.