Energy GivEnergy Support

Cold Weather Guide for GivEnergy Batteries

Contents

Purpose

This guide helps you diagnose cold-related performance issues and configure your system to maintain stable charging, capacity, and efficiency in winter.

Key Facts from the Video

- Internal battery temperature is what matters (not the outdoor or room temperature).
- Around **10°C**: mild efficiency drop can begin.
- Around **5°C**: temporary efficiency/capacity drop (up to ~10%); returns when warmer.
- Below **0°C**: charging is inhibited; discharge allowed down to about –1°C.
- GivEnergy batteries do not have active internal heating; warmth comes from charge/discharge activity.

Common Symptoms

- Battery won't charge on very cold mornings.
- Reduced usable capacity or faster SOC drop on cold days.
- Overnight charge finishes too fast, battery cools and underperforms during daytime.
- Graph shows internal temperature dipping and staying low, especially with solar-only setups in winter.

Quick Diagnosis

1. **Check internal battery temperature** on the GivEnergy portal:
    - Open the Power graph, select "Battery Temperature," and view the last 24 hours.
2. **Correlate behaviour with temperature thresholds:**
    - If temp < 0°C and charging stops — this is expected protection.
    - If temp ≈ 5°C and capacity feels ~10% lower — this is normal and reversible.

3. **Review charging pattern:**
    - Are you completing charge too quickly and leaving the battery idle in the cheap window?
    - Are you solar-only in winter with long idle or cold-soak periods?

Step-by-Step Troubleshooting and Fixes

A) Battery won't charge (below freezing)

- Confirm internal temperature < 0°C in the portal.
- **Action:** Schedule a short grid charge to gently warm the cells, then resume normal charging as temp rises.
- **Tip:** Prioritise an overnight charge window on cold nights to pre-warm.

B) Noticeable capacity/efficiency drop (~5°C)

- Expect up to ~10% temporary capacity reduction.
- **Actions:**
    - Extend overnight charging duration so the battery stays warm longer.
    - Smooth large daytime loads to avoid deep cold-soak.

C) Solar-only in winter leads to cold-soak and poor daytime performance

- Add a nightly grid top-up (a few hours) to raise temperature; cost is typically tens of pence per day.
- Ensure the battery slowly discharges through the day to maintain warmth.

D) Overnight charge finishes too fast, battery cools before morning

- Lower charge rate to spread charging across most of your cheap window (e.g., 6-hour window → finish in ~5.5 hours).
- For All-in-One systems, target charge rate above ~3.6 kW; ~3.8–4.2 kW is a practical sweet spot that also aids calibration.

E) Internal temperature monitoring unclear

- **Portal:** Use the Power graph → enable “Battery Temperature.”
- If your app supports it: tap the battery icon → **More Information** → per-battery details (availability may vary by model/firmware).

Preventive Winter Setup

1. **Create a winter schedule:**
    - **Night:** Charge for several hours during your cheap tariff window (complete just before window ends).
    - **Day:** Use self-consumption to discharge gradually, keeping cells warm.
2. **Optimise charge rate:**
    - Aim to fill most of the cheap window without finishing too early.
    - For AIO systems, 3.8–4.2 kW is ideal for stable, extended charging.
3. **Enable Winter Battery Management** (when available):
    - Automatically triggers 30-minute charge cycles if internal temperature drops below ~2°C, repeating until warmed.
4. **Placement and insulation:**
    - External installations benefit from a simple enclosure or insulation to reduce heat loss.
    - Maintain clearances and ventilation; avoid blocking vents or trapping moisture.

Cost Perspective

Controlled charging to maintain temperature typically costs tens of pence per day and is comparable to EV battery preconditioning—often offset by improved daytime performance and battery longevity.

When to Contact Support

- Charging remains inhibited even when internal temperature is well above 0°C.
- Persistent, large capacity loss that doesn’t recover as temperature rises.
- Temperature telemetry missing or inconsistent across batteries.
- Unable to maintain a stable charge cycle despite correct schedules and rates.

Information to Provide

- Portal screenshots: Battery Temperature, SOC, Power graph for the last 24 hours.
- Your charge schedule and rates (window length, kW setting).
- System details: inverter model, battery model/count, firmware versions.
- Ambient conditions (approx. outdoor temp) and installation placement (indoor/outdoor).

Need help? Contact support@givenergy.co.uk

https://givenergy2025.zohodesk.eu/portal/en/kb/articles/cold-weather-troubleshooting-guide-for-givenergy-batteries