European C&I & Residential Storage Engineering Comparison 2026

Structured engineering comparison of power, topology, three-phase backup switching, grid compliance, and customs classifications for installers, EPCs, and trade partners—from 5 kW residential three-phase hybrids up to 261 kWh liquid-cooled C&I outdoor cabinets.

POWER & TOPOLOGY PANORAMA · ACTIVE B2B LINEUP

Manufacturer Datasheet Basis · Verified November 2026



GoodWe ESA 125/261

125 kW · 261.25 kWh



SAJ CHS2-29.9K / 50K

29.9–50 kW · 100.3 kWh



GoodWe ET / ETR-G10

50–125 kW · HV Hybrid



GoodWe ETA / SAJ HS3

5–30 kW · 3-Phase

5 — 125 kW
Inverter & PCS Power Band
Three-phase 400 V lineup including 29.999 kVA and 99.99 kVA threshold editions.

5 — 261 kWh
Single Unit to MWh Scale
Modular HV LFP towers plus air- and liquid-cooled outdoor C&I cabinets.

4105 / 4110
ZEREZ & Certificate Audit
Clear split between hosted test PDFs, live ZEREZ IDs, and project checks.

CN 2026 + ADR
Customs & ADR Pre-Mapped
EU CN 2026 tariff codes (8504 / 8507 / 8537) and UN 3480 / 3481 by class.

PLANNING GUIDE · GERMANY & EU

Four Critical German & EU Grid Connection Thresholds

VDE-AR-N 4105 / 4110 · EnWG § 14a

> 4.2 kW
§ 14a / <10 kVA

EnWG § 14a, 4.6 kVA Unbalance & Solarspitzengesetz

Storage inverters with technical grid-charge capability > 4.2 kW trigger EnWG § 14a (BK6-22-300, even if set to zero grid charge; Modules 1-3). Single-phase limit 4.6 kVA; since Feb 2025 new PV > 2 kWp faces a 60% export cap until iMSys + Steuerbox (573 h negative prices in 2025).

≤ 30 kVA
zNAS Limit

External Central Grid Protection (zNAS) per VDE 4105

Up to 30 kVA aggregate inverter apparent power, the internal disconnect switch suffices. Above 30 kVA, an external zNAS relay plus redundant contactors becomes mandatory—dedicated 29.999 kVA models (CHS2-29.9K, H2-30K-T3-DE, GW29.999K-ETA-G20) stay below this line.

≤ 44 A
Direct Meter

Direct Metering vs. Semi-Indirect CT Metering (VDE 4100)

Continuous current ≤ 44 A per phase (~30.5 kVA at 400 V) permits a direct meter bay. Exceeding 44 A (e.g., standard 30K at 47.9 A or 50K at 79.8 A) requires a semi-indirect CT metering cabinet (Wandlermessung), adding switchboard cost and lead time.

≥ 135 kW
VDE-AR-N 4110

Medium Voltage & Plant Certification (E.1-E.17 Chain)

Aggregate active power ≥ 135 kW or medium-voltage connection triggers VDE-AR-N 4110 with unit certificate (E.13), plant certificate (E.15 Anlagenzertifikat), and ZEREZ-ID filing (NELEV § 4). Single units like GW125K-ETR-G10 and ESA 261 reach 137.5 kVA max.

P. 02 C&I All-in-One & Outdoor Cabinets (30–261 kWh)
P. 03 C&I Hybrids (50–125 kW), HV Racks & 3P STS/ATS
P. 04 Residential & Small C&I Systems (5–30 kW) & Desk

Technical parameters reflect manufacturer documentation verified as of 2026-11. Net B2B pricing, project availability, freight terms (EXW Barleben or DAP project site), and delivery schedules apply exclusively per formal written project quotation. Final grid approval rests with the local DSO.

01 · C&I ALL-IN-ONE & OUTDOOR STORAGE CABINETS

All-in-One Commercial Storage Cabinets (30 – 261 kWh)

Factory-integrated outdoor cabinets for peak shaving, self-consumption, and commercial retrofits—highlighted rows flag decisive topology, metering, and compliance divergences.

30 — 261 kWh · IP54 / IP55

PARAMETER	 GOODWE **GW125/261-ESA-LCN-G10** 125 kW / 261.25 kWh · Liquid-Cooled	 PYLONTECH **OPTIMUS L260-OMNI** 125 kW / 260 kWh · Liquid-Cooled	 SAJ **CHS2-50K-T6-X** 50 kW / 57.3–100.3 kWh · 6 MPPT	 SAJ · DE ≤ 30 kVA **CHS2-29.9K-T4-X** 29.999 kVA / 43.3 A · Zero Ext. zNAS
Topology & Cooling	AC-coupled · Pack liquid / PCS air-cooled	AC-coupled · Enclosed liquid cooling	DC-coupled PV hybrid · Air conditioner	DC-coupled PV hybrid · Air conditioner
Rated AC / Max. Apparent Power	**125 kW** / 137.5 kVA	**125 kW** / 137.5 kVA (110%)	**50.0 kW** / 55.0 kVA	**29.999 kW** / 29.999 kVA
Nominal / Max. AC Current @ 400 V	180.4 A / 198.5 A	181 A AC · 200 A DC	72.5 A / 79.8 A	**43.3 A / 43.3 A** (≤ 44 A)
Nominal / Usable Energy (LFP)	**261.25 / 261.25 kWh** 5 × 52.25 kWh (314 Ah)	**260 kWh** nominal Usable not stated in DS	57.3–100.3 / **51.5–90.2 kWh** 4–7 × CBU2–14.33 (280 Ah)	57.3–100.3 / **51.5–90.2 kWh** 4–7 × CBU2–14.33 (280 Ah)
Battery Voltage Window	676 — 936 V (832 V nom.)	702 — 936 V (Single String)	179.2 — 403.2 V (CB2 · 150 A*)	179.2 — 403.2 V (CB2 · 150 A*)
PV Input & MPPT Trackers	AC-coupled (no PV MPPT)	AC-coupled (no PV MPPT)	**100 kWp** · 6 MPPT 180–850 V · 2 str./MPPT	**59.998 kWp** · 4 MPPT 180–850 V · 2 str./MPPT
Backup / Switch & Parallel Scale	< 60 ms chg/dischg switch Up to 8 (feed) / 20 units (DS)	Backup capable (DS) Up to 6 units (750 kW / 1.56 MWh)	Built-in STS **20 ms** 2–10 units via eManager-C1 Pro	Built-in STS **20 ms** 2–10 units via eManager-C1 Pro
IP Rating & Operating Temp.	IP54 · −25 to +55 °C	IP55 · −25 to +50 °C	IP55 (Inv. IP66) · −30 to +50 °C	IP55 (Inv. IP66) · −30 to +50 °C
Net Dimensions & Net Weight	1050 × 2250 × 1400 mm 2,580 kg (W×H×D)	950 × 1300 × 2480 mm 2,900 kg (W×D×H, w/o PCS)	1980 × 988 × 1065 mm (H×W×D) 1,035 / 1,145 / 1,255 / 1,365 kg*	1980 × 988 × 1065 mm (H×W×D) 1,035 / 1,145 / 1,255 / 1,365 kg*
DE Grid Compliance & ZEREZ	● VDE 4105 + 4110–4130 IEC 62619 + ZEREZ active	✕ Cert. in Progress 0 ZEREZ · Verify per project	● VDE 4105 PDF 4110 in ZEREZ (968/GI 2291)	● VDE 4105 · ≤30 kVA 4110 in ZEREZ · no ext. zNAS
EU Customs (CN 2026) & ADR	**8507 60 00*** · UN 3481 / 3480 Cl. 9 · Packing/pallet: n/s	**8507 60 00*** (PCS sep. 8504 40 84) UN 3481 / 3480 Cl. 9 · n/s	**8507 60 00*** · UN 3481 / 3480 Cl. 9 · Packing/pallet: n/s	**8507 60 00*** · UN 3481 / 3480 Cl. 9 · Packing/pallet: n/s

Threshold Advantage SAJ CHS2-29.9K-T4-X & Weight Basis

The Germany-tuned **CHS2-29.9K-T4-X** caps apparent power and current at **29.999 kVA / 43.3 A**, avoiding both external zNAS (>30 kVA) and CT metering (>44 A). *CHS2 net weights follow the datasheet (1,035–1,365 kg vs. V0.2 manual 1,050–1,350 kg); CB2 current is 150 A per datasheet & CB2 manual (140 A in CHS2 manual V0.2).

Certification & EU Customs / ADR Transparency (CN 2026)

Pylontech L260-OMNI: OEM datasheet states *Partial application in progress* with 0 ZEREZ records—verify per project before German grid filings. *All-in-One cabinets fall primarily under **CN 8507 60 00** per GRI 3(b) (BTI boundary vs. 8504 40 84); ADR **UN 3481** (in equipment) or **UN 3480** (separate battery). Outer packing dimensions and pallet counts are not published in OEM PDFs.

Technical parameters reflect manufacturer documentation verified as of 2026–11. Net B2B pricing, project availability, freight terms (EXW Barleben or DAP project site), and delivery schedules apply exclusively per formal written project quotation. Final grid approval rests with the local DSO.

02 · C&I HYBRID INVERTERS & HV BATTERY CABINETS

Modular C&I Hybrid Inverters (50 – 125 kW) & HV Cabinets

GoodWe ET-10 / ET-G10 / ETR-G10

PARAMETER	 GOODWE · 50 KW **ET-10 (GW50K-ET-10)** + Lynx C 101–156 / BAT-AC 61–112 kWh	GOODWE · 75–100 KW **ET-G10 (GW99.99K / 100K)** + BAT-AC 61–112 / BAT-LC 208.9 kWh	GOODWE · 80–125 KW **ETR-G10 (GW124.99K / 125K)** + GW261.2-BAT-LCD-G10 (PV Voc > 813 V)
Rated AC / Max. Apparent Power	**50.0 kW** / 50.0 kVA · 72.5 A @ 400 V	**99.99 / 100 kW** · max 99.99 / 110 kVA 144.4 A / 158.8 A @ 400 V	**124.99 / 125 kW** · max 124.99 / 137.5 kVA 180.5 A / 198.5 A @ 400 V
Max. PV Input & MPPT	75 kWp · 4 MPPT (2 str./MPPT) 165–850 V · max 1,000 V DC	200 kWp · 8 MPPT (2 str./MPPT) 160–950 V · max 1,000 V DC	250 kWp · 10 MPPT (2 str./MPPT) 160–1,000 V · max 1,100 V DC
Battery Voltage & Current	200 – 800 V · 100 A (55 kW)	300 – 800 V · 2 × 110 A	700 – 1,000 V · 178.5 / 180 A
Approved Paired HV Cabinets	**Lynx C** 101 / 138 / 156 kWh (IP21, BMS ≥25600) **BAT-AC-G10** 61.4 / 112.6 kWh (IP55, ARM ≥10)	**BAT-AC-G10** 61.4* / 112.6 kWh (VDE 2510-50) **GW208.9-BAT-LC-G10** (202.7 kWh usable, IP55)	**GW124.99K: GW261.2-BAT-LCD-G10 only** (250.9 kWh usable · **PV Voc > 813 V** req.!)*
IP Rating, Net Weight & Parallel	IP66 · 65 kg · 520×660×260 mm Up to 10 units via **SEC3000C**	IP66 · 97 kg · 995×758×358 mm Parallel via **SEC3000C** · GM330 incl.	IP66 · 98 kg · 995×758×358 mm Parallel via **SEC3000C** (≥ V7.8.19)
Grid Codes, ZEREZ & CN 2026	● 4105 + 4110/4120 PDF + ZEREZ Inv. 8504 40 84 · Bat. 8507 60 00 · UN 3480	● 4105 + 4110/4120 PDF + ZEREZ Inv. 8504 40 84 · Bat. 8507 60 00 · UN 3480	◐ 4105/03.26 + 4110 PTCER PTCER (08/2028) · Inv. 8504 40 84 · Bat. UN 3480

03 · THREE-PHASE BACKUP TRANSFER CABINETS (STS / ATS)

Three-Phase STS & ATS Transfer Cabinets: Ports & Transfer

30 – 125 kW · IP54 · CN 8537 10 98

PARAMETER	 GOODWE **GW30K-STS-G10**	GOODWE · 100 A BYPASS **GW60K-STS-G10**	GOODWE · C&I 210 A **GW125K-STS-G10**	SAJ · MOTOR-ATS **ATS1-T63-A**
Grid / Backup / Bypass Port	30 kW · 43.5 A nom. / **63 A** max	**60 kW** · 87.0 A nom. / **100 A** bypass	**125 kW** / 137.5 kVA · **210 A** (all 4 ports)	**63 A** three-phase (380/400/415 V)
Inverter-Side Port Limit	**30 kW / 63 A** (GW5K-30K-ETA-G20)	**MAX 30 kW / 63 A!** Single ≤30 kW ETA-G20 only (not 60 kW inv.)	**125 kW / 210 A** (ET-G10 80-100K & ETR-G10)	**63 A** (SAJ H2-10-30K / HS2 / HS3)
Transfer Time (On ↔ Off-Grid)	**≤ 4 ms** (static · UPS-grade)	**≤ 4 ms** (static · UPS-grade)	**< 10 ms*** (DS p.1: 4 ms / p.2: <10 ms)	**50 ms** (motorized · **not** <10 ms UPS)
IP, Dimensions, Weight & CN	IP54 · 506×590×180 mm · 12.5 kg CN 8537 10 98 · 0 cert PDF (IEC 61439 DS)	IP54 · 506×590×180 mm · 15.0 kg CN 8537 10 98 · 0 cert PDF (IEC 61439 DS)	IP54 · 680×620×165 mm · 21.0 kg CN 8537 10 98 · CE LVD AN 50703461	IP54 · 520×518×142 mm · 15.8 kg CN 8537 10 98 · EU DoC EN 61439-1

Critical Engineering Checks Before BOM Sign-Off

① **GW60K-STS-G10:** Inverter-side port is strictly capped at **30 kW / 63 A**; 60 kW / 100 A applies solely to whole-building grid/load bypass! ② **GW124.99K-ETR-G10:** Per GoodWe Overview V029.1 paired solely with **GW261.2-BAT-LCD-G10** (requires **PV string Voc > 813 V**; GW208.9-BAT-LCD-G10 appears only in the user manual for GW125K-ETR-G10). ③ **GW50K-ET-10 Backup:** Single-unit backup requires a separately supplied **STS200-80-10** (SW ≥ 4.400). ④ **SAJ ATS1-T63-A:** 50 ms motorized transfer—do not specify for <10 ms UPS-grade IT loads.

04 · RESIDENTIAL & SMALL COMMERCIAL SYSTEMS (3-PHASE)

Three-Phase Hybrid & All-in-One Systems (5 – 30 kW)

Aligned with VDE-AR-N 4105, EnWG § 14a, and Germany's Solarspitzengesetz (up to 200% PV oversizing). Note: Single-phase GoodWe EHA-G20 (3–10 kW) has 0 ZEREZ records and is not cleared for German grid connection.

5 – 30 kW · 400 V 3P

PARAMETER	 GOODWE · ESA G20 **ESA ETA-G20 (5–29.999 / 30K)** + BAT-D-G20 / G21 (5.1–9.0 kWh)	 SAJ · H2-T3 HYBRID **H2-10K-30K-T3-DE** + B2 / BU2-5.0-HV1 + BC2-HV1	 SAJ · ALL-IN-ONE **HS3-5K-12K-T2-W/G-PX** + BU3-5.0-TV2-PRO (opt. 11 kW EV)
3-Phase AC Power Range	**5 – 29.999 / 30 kW** 11 models · max 30 kVA (43.5 A @ 400 V)	**10 – 25 kW / 29.999 kW (-DE)** H2-30K-T3-DE: 29.999 kVA / 43.4 A	**5 / 6 / 8 / 10 / 12 kW** 5.5 – 12.0 kVA · 7.2 – 17.4 A
Max. PV Input & MPPT	10 – 60 kWp (200%) · 3–4 MPPT 120–950 V · max 1,000 V DC	20 – 45 kWp (150%) · 3 MPPT 180–900 V · 2 str./MPPT · 40 A	10 – 15 kWp · 2 MPPT 180–900 V · 20 A / MPPT
Battery System & Scaling	**BAT-D-G20 / G21** (5.0 / 5.8 / 8.0 / 8.7 kWh usable) Max 6 mod./column · up to 12/sys (expansion kit)	**B2-HV1 (2–5 × BU2-5.0-HV1)** + req. **BC2-HV1** 9.0–22.5 kWh usable (min. 2 modules!)*	**1–8 × BU3-5.0-TV2-PRO** (4.8 kWh usable/mod.) 4.8–38.4 kWh · opt. 11 kW EV charger module
Battery Window & Backup	700 – 950 V · **< 4 ms** (UPS) 63 A / 80 A internal bypass (whole-home)	180 – 800 V · 50 A (2 bat. ports) Switchover ≤ 20 ms (10 ms UPS highlight)	380 – 500 V (450 V nom., DC/DC opt.) 100% phase unbalance · Cable-free plug-in
IP Rating, Size & Net Weight	IP66 · Inv. 34–38 kg (800×340×270 mm) Bat. 57.5–79 kg (800×326×270 mm)	IP65 · Inv. 50 kg (576×659×242 mm) BU2 50.5 kg · BC2-HV1 11 kg (top box)	IP65 · Inv. 34 kg (450×695×170 mm) BU3 52 kg (370×695×170 mm · nat. conv.)
Smart Meter, § 14a & ZEREZ	Built-in meter + 120 A CT incl. All > 4.2 kW (§ 14a) · ● 4105 PDF + ZEREZ	Smart meter + 3×CT + 10 m cable incl. All > 4.2 kW (§ 14a) · ◐ ZEREZ A3 50617818	Chint DTSU666/iDM411 incl. All > 4.2 kW (§ 14a) · ◐ ZEREZ A3 50681505
EU Customs (CN 2026) & ADR	Inv. 8504 40 84 (non-DG) BAT-D 8507 60 00 · UN 3480 Cl. 9	Inv. 8504 40 84 · BU2 8507 60 00 (UN 3480) BC2-HV1: non-DG (8507 90 80 / 8537 10 98)	Inv. 8504 40 84 (non-DG) BU3 8507 60 00 · UN 3480 Cl. 9

Engineering Notes: SAJ H2-T3 / BC2-HV1 & Austria / Switzerland / Denmark

***SAJ H2-T3 + B2-HV1:** A single BU2-5.0-HV1 module (89.6–115.2 V) sits below the H2-T3 battery floor (180–800 V); pair a minimum of **2 modules (B2-10.0-HV1, 179.2–230.4 V) plus the BC2-HV1 top control unit** (cell-free, 100 A max fault current). **AT / CH / DK:** No country-specific TOR, NA/EEA-NE7, or GPD Positivliste PDFs are hosted on de-linker.com—verify local DSO rules per project.

Linker Technology GmbH
Steinfeldstraße 3 · 39179 Barleben, Germany
Amtsgericht Stendal · HRB 33824
VAT ID: DE367367711

PROJECT INQUIRY & ENGINEERING DESK

Direct Engineering Desk Email
chester@de-linker.com
Online B2B Project Inquiry
de-linker.com/contact/
System & Roof Solution Configurator
de-linker.com/solution-configurator/

COMMERCIAL BASIS & WARRANTY COORDINATION

Exclusively for business partners (installers, electrical contractors, EPCs, project developers, and commercial resellers). Net B2B pricing, availability, freight terms (EXW Barleben or DAP project site), and delivery schedules are confirmed exclusively per formal written project quotation. Manufacturer warranty terms apply; Linker actively coordinates diagnostics and manufacturer RMA workflows. Electrical installation and DSO filings remain with the qualified installer or EPC.