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12 March 2024

3:00 pm – 4:30 pm | CET, Berlin
4:00 pm – 5:30 pm | SAST, Cape Town
6:00 pm – 7:30 pm | Dubai



Marija Maisch
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Solar+Storage in C&I: Market trends and smart solutions in EMEA region

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Solar+Storage in C&I: Market trends and smart solutions in EMEA region



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Krannich Solar South Africa




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CSO
Fenecon



Welcome!

Do you have any questions?  

Send them in via the Q&A tab.  We aim to answer as many as we can today!

You can also let us know of any tech problems there.

We are recording this webinar today. 

We'll let you know by email where to find it and the slide deck, so you can re-watch it at your convenience.  

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Solar+Storage in C&I: Market trends and smart solutions in EMEA region



Ali Bouattour
Technical Director EMEA
GoodWe

Paving the way for C&I storage

How emerging market trends and smart solutions create compelling opportunities across EMEA

Ali Bouattour

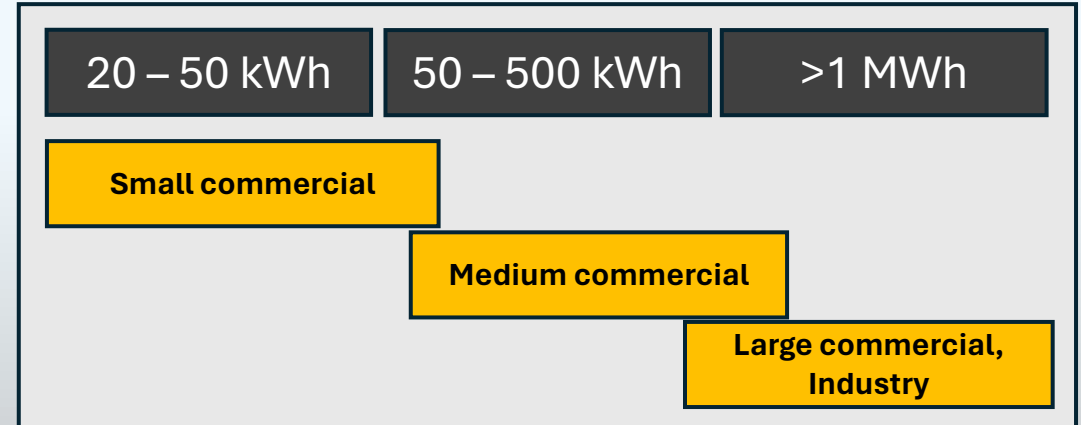
Technical Director EMEA, GoodWe Europe

1) Staying on top of market developments

Rapidly developing market trends are creating new opportunities for C&I storage

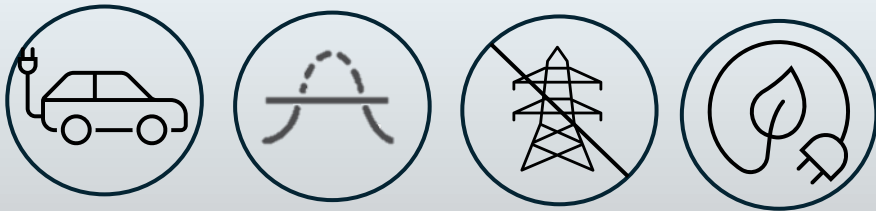
Introduction to C&I storage

The C&I storage segment covers a large variety of applications across a wide battery capacity range.



Benefits and challenges

Today, the C&I solar+storage market is largely driven by benefits related to PV energy self-consumption, peak-shaving and grid independence.



Lower energy cost

Improved energy security

Reduced CO₂ footprint

High system cost

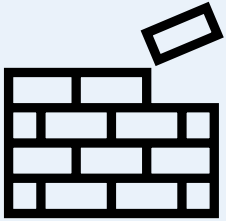
High complexity

Lack of incentives

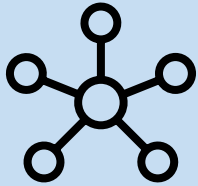


New drivers for C&I storage market

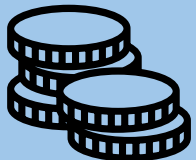
In addition to aspects such sustainability goals, new subsidies and a strong outlook for PV in Europe, key pillars that will contribute to the realization of C&I storage potentials include



Modular and flexible solutions



Smart software for system integration



Attractive project economics

Improved system profitability

The PV storage system pay-back time increasingly benefits from technology improvements, market trends and regulatory requirements that already have an impact in several markets.

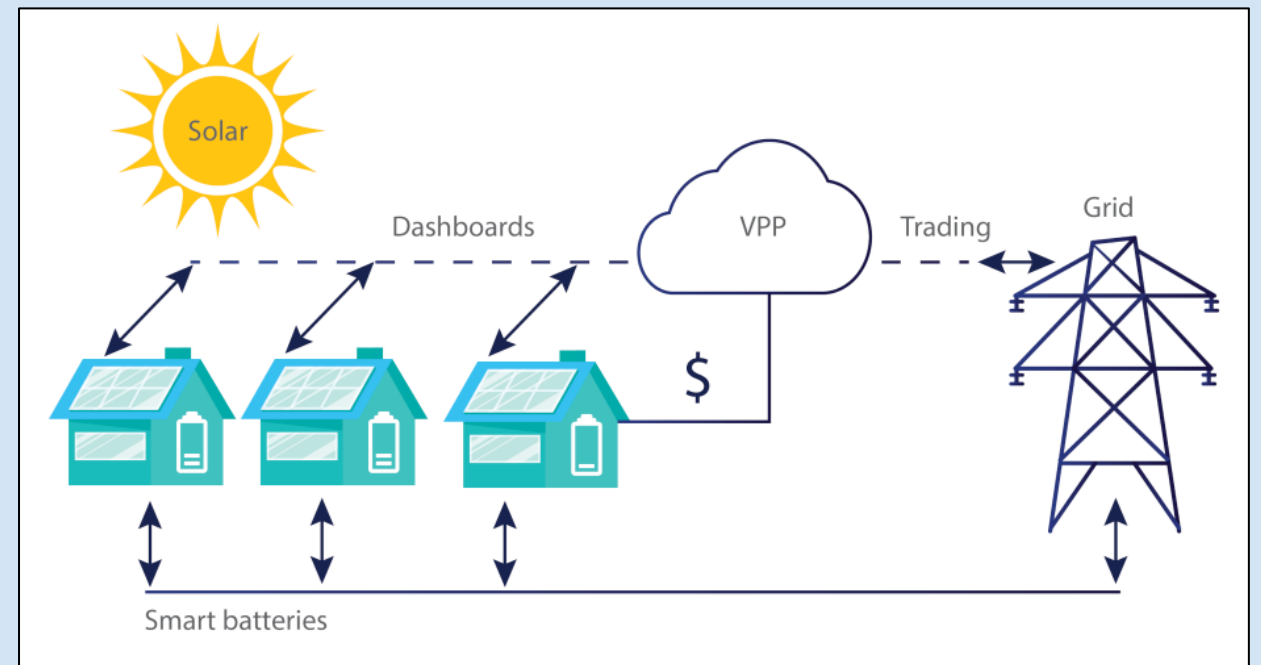
- **Lower system (battery) cost** due to technology improvements and scale of production.
- **Higher self-consumption rates** of generated PV power, e.g via EV charging and heat-pumps.
- **Time of Use (ToU) benefits** – EU requires member states to implement dynamic electricity tariffs into national law by 2025.



Additional revenue streams

As part of a virtual power plant (VPP) with access to the energy market, a business can be financially rewarded for grid support services that maintain grid stability.

- A Virtual Power Plant (VPP) consists of a network of distributed solar power and battery systems co-ordinated by a central VPP operator.
- VPP participants are compensated for balancing supply and demand depending on the needs of the grid.
- Grid support services refers to the different mechanisms used in power systems to maintain grid stability, such as frequency response, congestion relief etc.



2) GoodWe C&I storage solutions

Flexible and intelligent solutions to capture and profit from new market opportunities

POWERFUL, FLEXIBLE AND SMART PV STORAGE SOLUTIONS FOR THE C&I SEGMENT

EcoSmart
Commercial



C&I Storage Solutions: Reduced energy cost and back-up power supply

Comprehensive range of state-of-the-art inverters, batteries and accessories enables modularity required for tailor-made system design.

Powerful backup, UPS level switching < 10ms

Safe and reliable LFP battery cells

Smart operation modes and monitoring systems

Easy installation and commissioning



Lower Electricity
Cost



Reduced Peak
Demand



Back-up Power
Supply



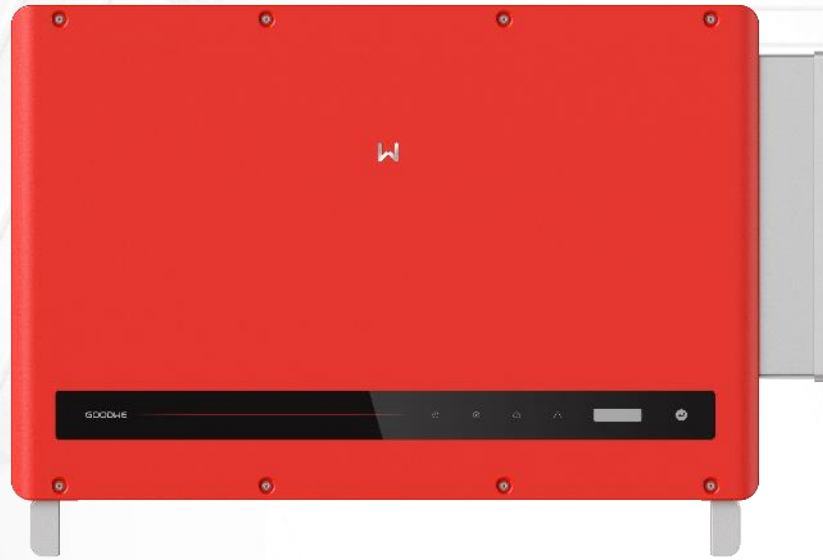
Maximized
Self-consumption

Combine with PV string inverters for additional power



25-60 kW

SMT Series



100-250 kW

HT Series

Up to 12 MPPTs

Full power up to 45°C

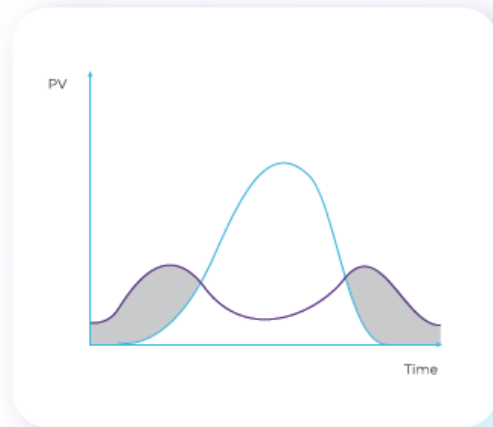
110% AC output

Optional AFCI function

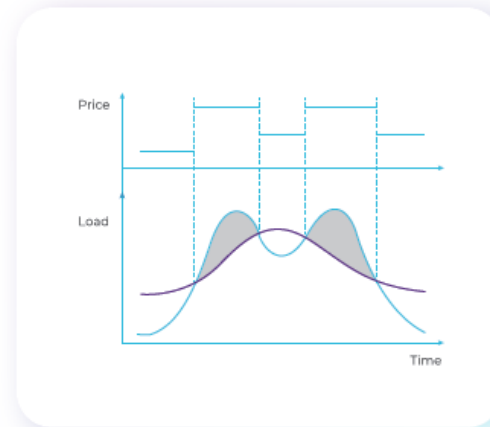
Intelligent system operation settings

Match with individual needs to maximize benefits

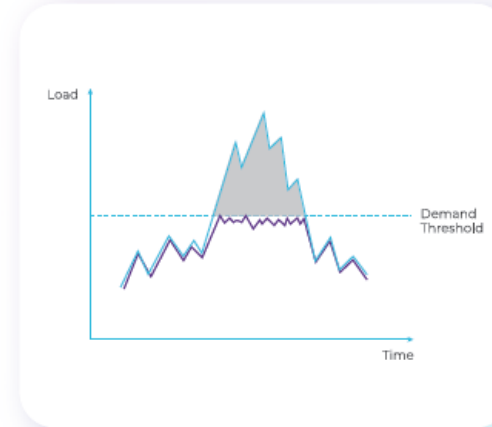
Self-Consumption



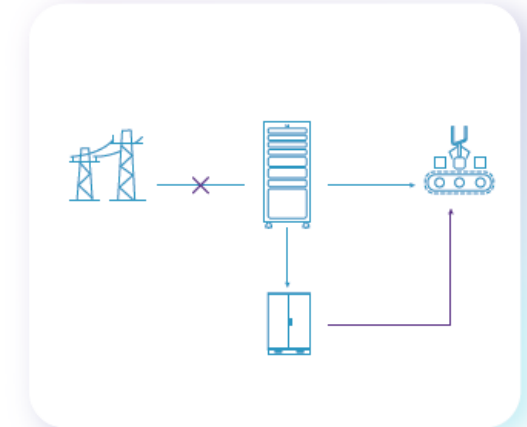
Time-of-Use (ToU)



Peak Shaving

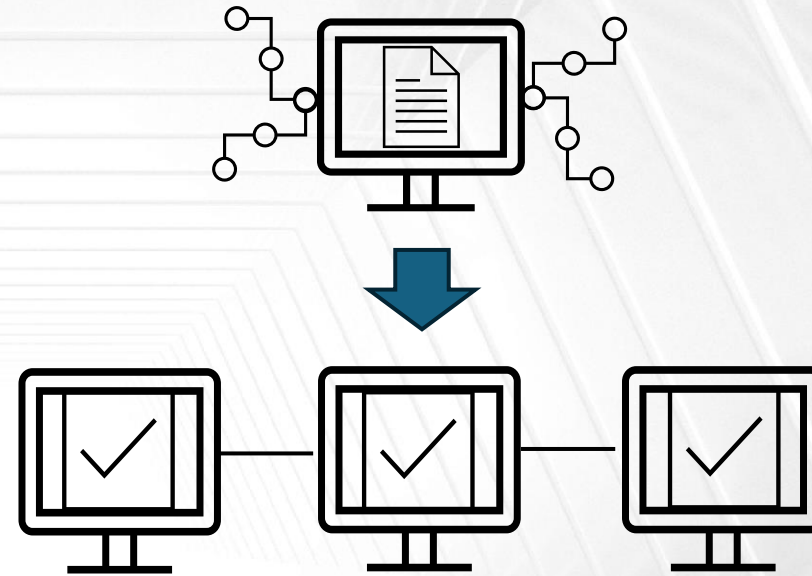
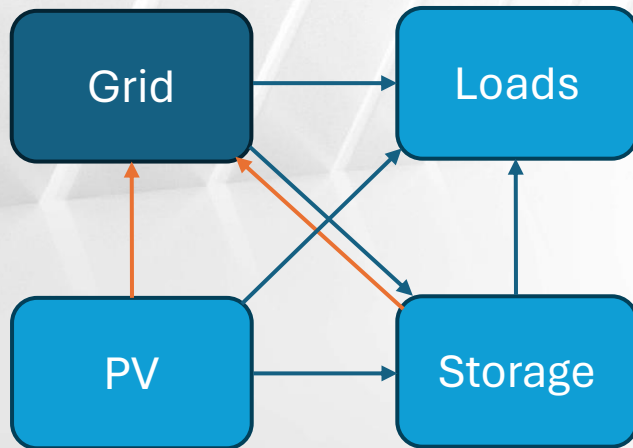


Backup



EMS and VPP Compatibilities

An intelligent Energy Management System (EMS) enables effective system integration and operations.



GoodWe follows an open protocol strategy to support compatibility with local EMS as well as VPP players, ensuring availability of solutions across the EMEA region.

Solution for small C&I applications

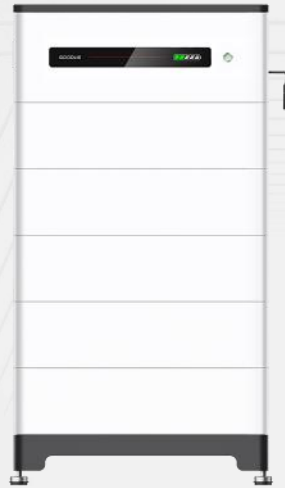
1

- ET 15-30kW: Up to 4 inverters in parallel (max 120kW)



15-30kW Hybrid Inverter

ET Series



16.4kWh Battery

Lynx F PLUS+ Series

Hybrid inverter - ET 15-30kW

- ✓ Energy backup with UPS level switching < 10ms
- ✓ Peak-shaving and load management
- ✓ Compatible with a range of batteries

Battery - Lynx F PLUS+

- ✓ Stackable, self-detecting battery modules
- ✓ Advanced safety standard VDE 2510-50
- ✓ Remote diagnosis and update via inverter

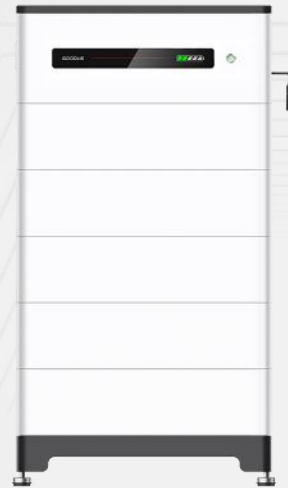
Solution for small C&I applications

1

- ET 15-30kW: Up to 4 inverters in parallel (max 120kW)



15-30kW Hybrid Inverter
ET Series



16.4kWh Battery
Lynx F PLUS+ Series



*Optional system extension max
8 towers in total (131.2 kWh)*

15-30 kW

+

16.4 – 131.2 kWh

Flexible Outdoor Solution

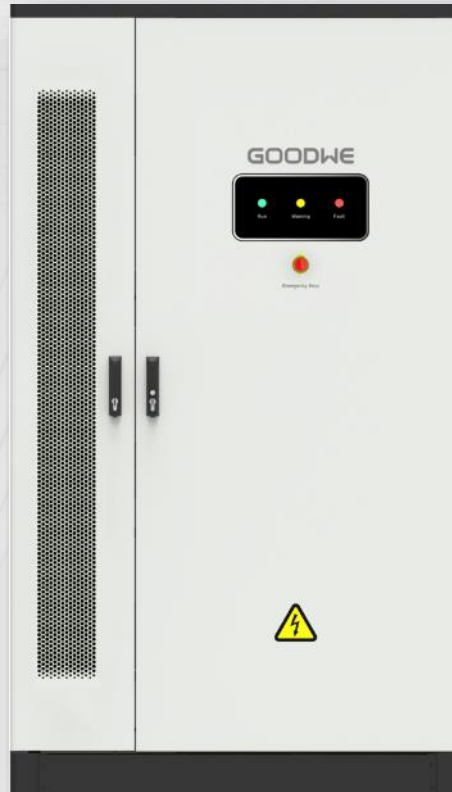
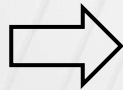
2

- ET 15-30kW: Up to 4 inverters in parallel (max 120kW)



15-30kW Hybrid Inverter

ET Series



60kWh Outdoor Battery

Lynx C Series

Hybrid inverter – ET 15-30kW

- ✓ Energy backup with UPS level switching < 10ms
- ✓ Peak-shaving and load management
- ✓ Compatible with a range of batteries

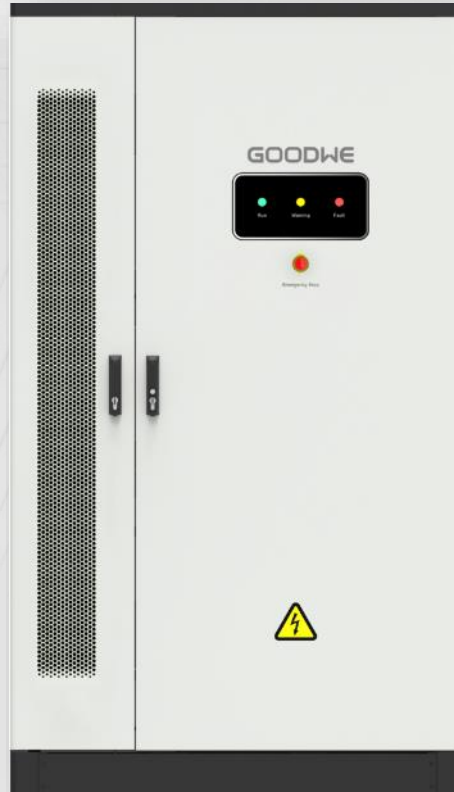
Outdoor battery - Lynx C 60kWh

- ✓ Reliable and safe LFP battery cells
- ✓ Effective temperature management
- ✓ Easy to install

Flexible Outdoor Solution

2

➤ ET 15-30kW: Up to 4 inverters in parallel (max 120kW)



15-30kW Hybrid Inverter

ET Series

60kWh Outdoor Battery

Lynx C Series

Optional expansion, max 3 batteries in total (180 kWh)

15-30 kW

+

60 – 180 kWh

Indoor solution with powerful back-up

3



50/100kW Inverters

ETC/BTC Series



101-156kWh Battery

Lynx C Series

Hybrid and battery inverters – ETC,BTC 50/100kW

- ✓ Energy backup with UPS level switching < 10ms
- ✓ Peak-shaving and load management
- ✓ Black start capability

Indoor battery - Lynx C 101-156kWh

- ✓ Reliable and safe LFP battery cells
- ✓ High energy density
- ✓ Easy to transport

Indoor solution with powerful back-up

3



50/100kW Inverters

ETC/BTC Series



101-156kWh Battery

Lynx C Series



Optional system extension, max 3 batteries per battery input (468 kWh)

50/100 kW

+

101 – 468/936 kWh

NEW: Flexible solution with higher power & capacity

GOODWE



50kW Hybrid Inverter
ET 50 Series

100kWh Outdoor Battery
Lynx C Series

Coming soon!

50 kW

+

100 – 300 kWh



Example: 2 x 30kW, 6 x 60kWh

Parallel connection of the hybrid inverters enables further system expansions.

FEATURE ROADMAP 2024

- ET50: Up to 4 inverters in parallel (max 200kW)
- ETC/BTC: Up to 16 inverters in parallel (max 1,6MW)

3) Use cases and references

Serving the needs of different use cases with individual and modular solutions

Scenario: Convenient outdoor energy storage system

Hotel with diminishing profitability due to rising electricity prices and challenges with an unstable grid

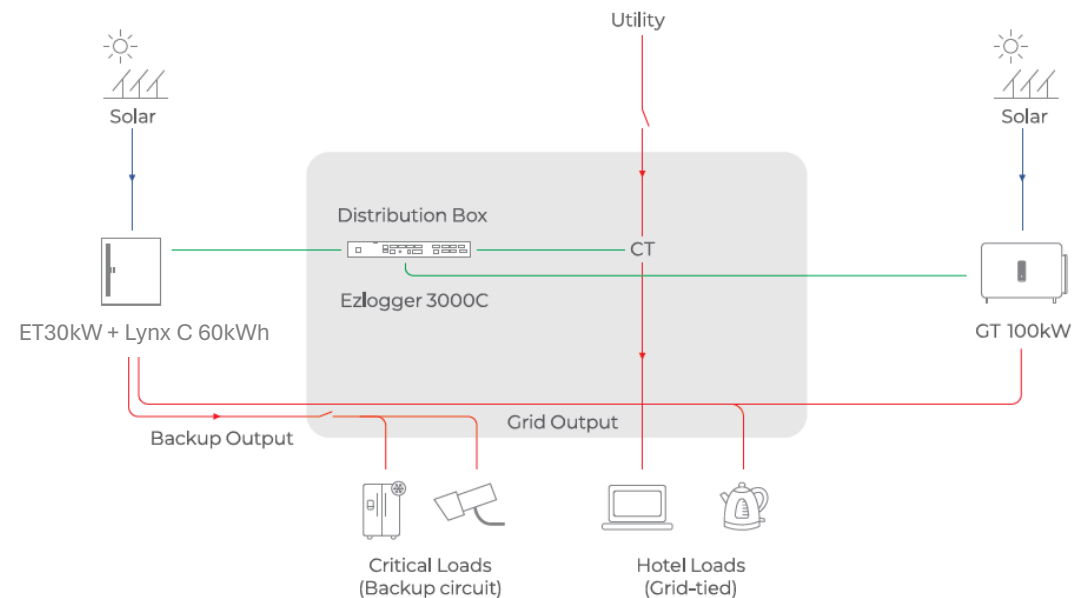


Benefits

- ✓ Lower electricity bills due to optimized self-consumption
- ✓ Uninterrupted power supply for better customer service
- ✓ Implementing green policy and positive brand-building
- ✓ Easy planning and installation

Solution

- String inverter GT 100kW
- Hybrid inverter ET 30kW
- Battery Lynx C 60kWh
- Data logger EzLogger 3000C



Case study: Retrofit solution at GoodWe China facility

Microgrid solution with 3MW PV systems, energy storage, EV chargers and adjustable loads

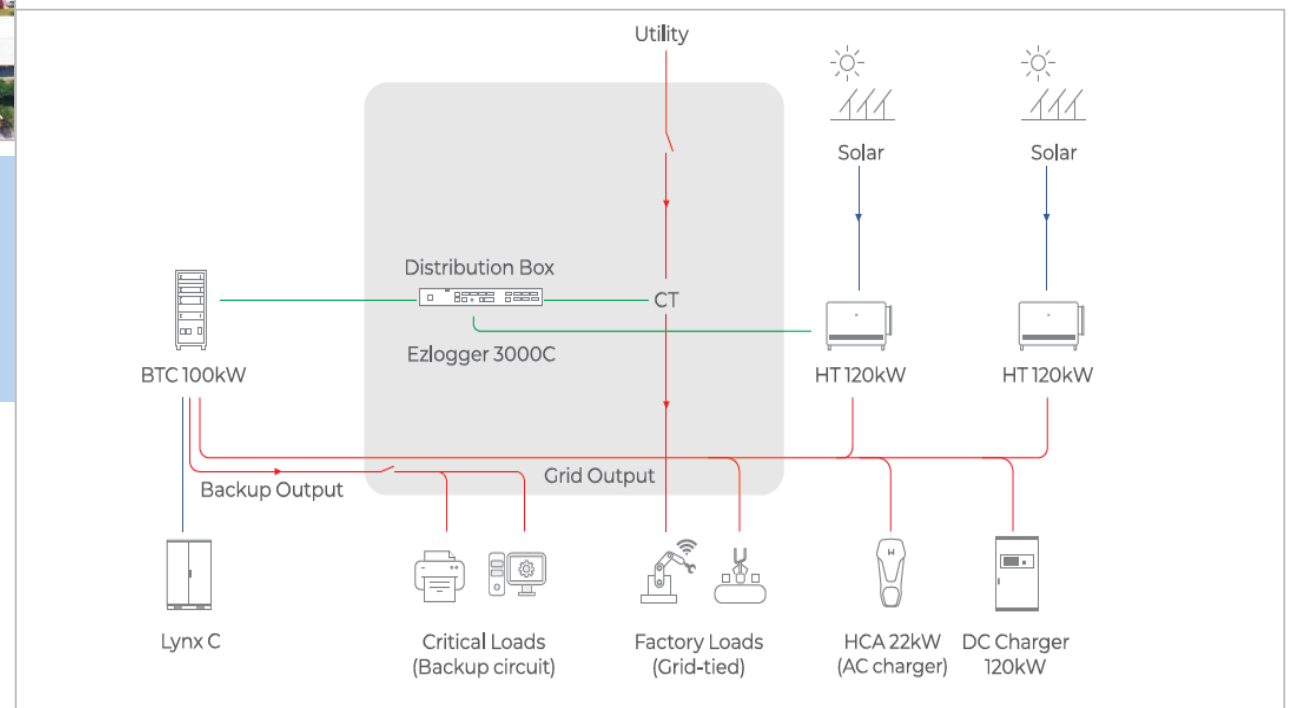


Benefits

- ✓ High PV energy self-consumption rate
- ✓ Uninterrupted power supply for critical loads
- ✓ Full-site control for optimized energy utilization

Solution

- String inverter HT 120kW (multiple)
- Retrofit battery inverter BTC 100kW (multiple)
- Batteries Lynx C 156kWh (multiple)
- Data logger EzLogger 3000C
- EV charger (AC) HCA 22kW x 6



Case study: Small production facility in Germany

High energy cost is reduced with intelligent energy storage solution



Solution

- String inverter SMT 60kW x 2
- Retrofit battery inverter BTC 50kW
- Battery Lynx C 101kWh

Benefits

- ✓ Self-consumption
- ✓ Peak-shaving



Case study: Retrofit solution for agriculture, Germany

Farm in northern Germany reduces energy cost and secures energy back-up



Solution

- Retrofit battery inverter BTC 50kW
- Battery Lynx C 101kWh

Benefits

- ✓ Self-consumption
- ✓ Back-up power



Thank you!

Learn more: emea.goodwe.com

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Panel discussion

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by Marian Willuhn



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by William Driscoll



Coming up next...

Thursday, 21 March 2024
11:00 am – 12:00 pm CET, Madrid

Wednesday, 27 March 2024
2:30 pm – 3.:30 pm CET, Berlin

Many more to come!

**Ecosistema PVcase:
La solución integral
para el desarrollo y
diseño de plantas
fotovoltaicas**

(Webinar in Spanish)

**Weather alert –
measuring module
load in snowy
regions**

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**Thank you for
joining today!**