



Optimize use of EV charging with BeLoaded energy load balancing



Due to the electrification of the society energy load balancing systems and energy storage solutions will be the only way to maximize the use of your contracted energy capacity at the lowest cost.



BeLoaded want to be the partner for implementation of streamline power management solutions to improve charger uptime.

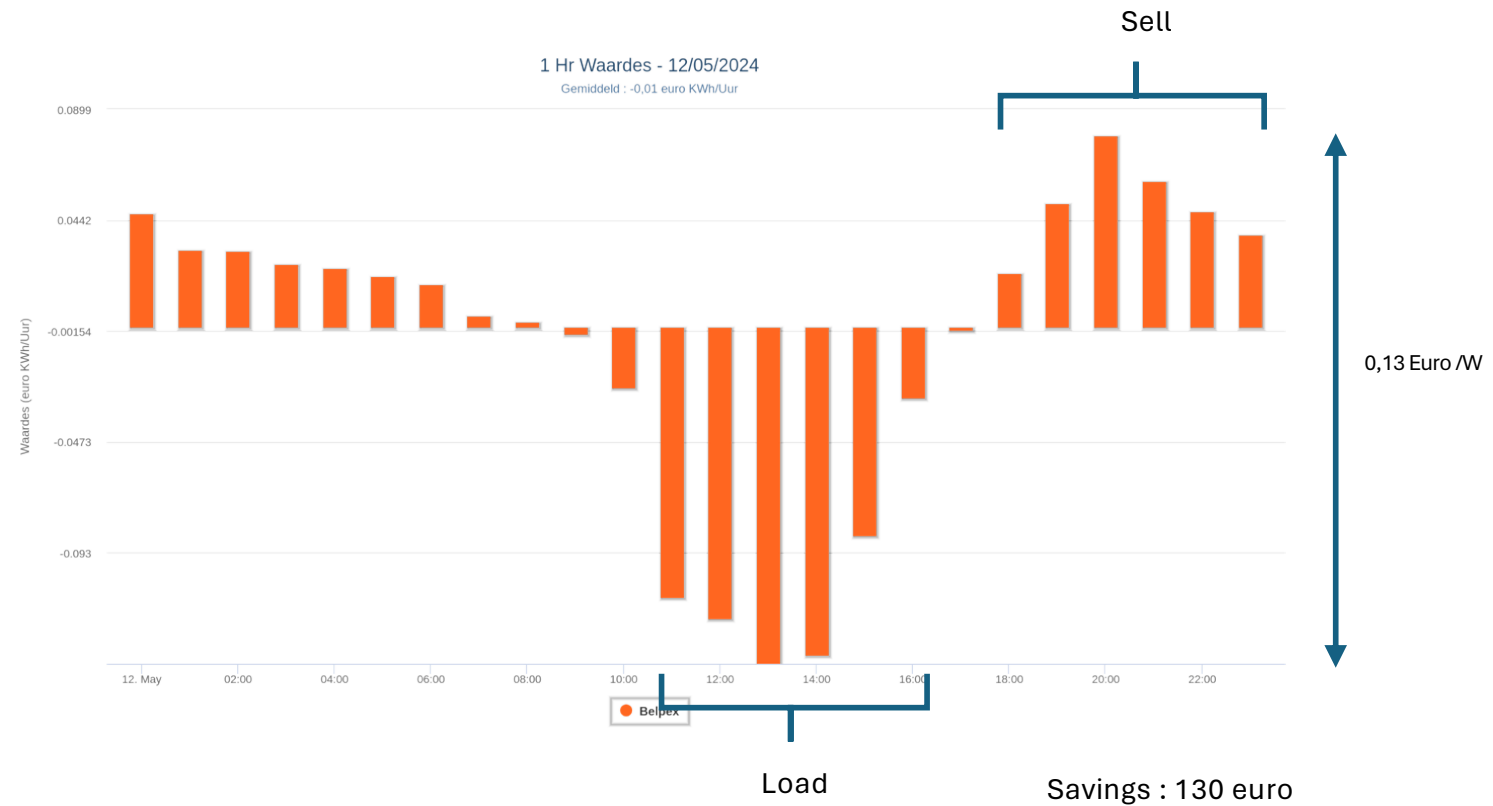


BeLoaded makes maximum use of own produced energy, off-peak energy and demand response to charge cars or forklifts at the lowest cost.

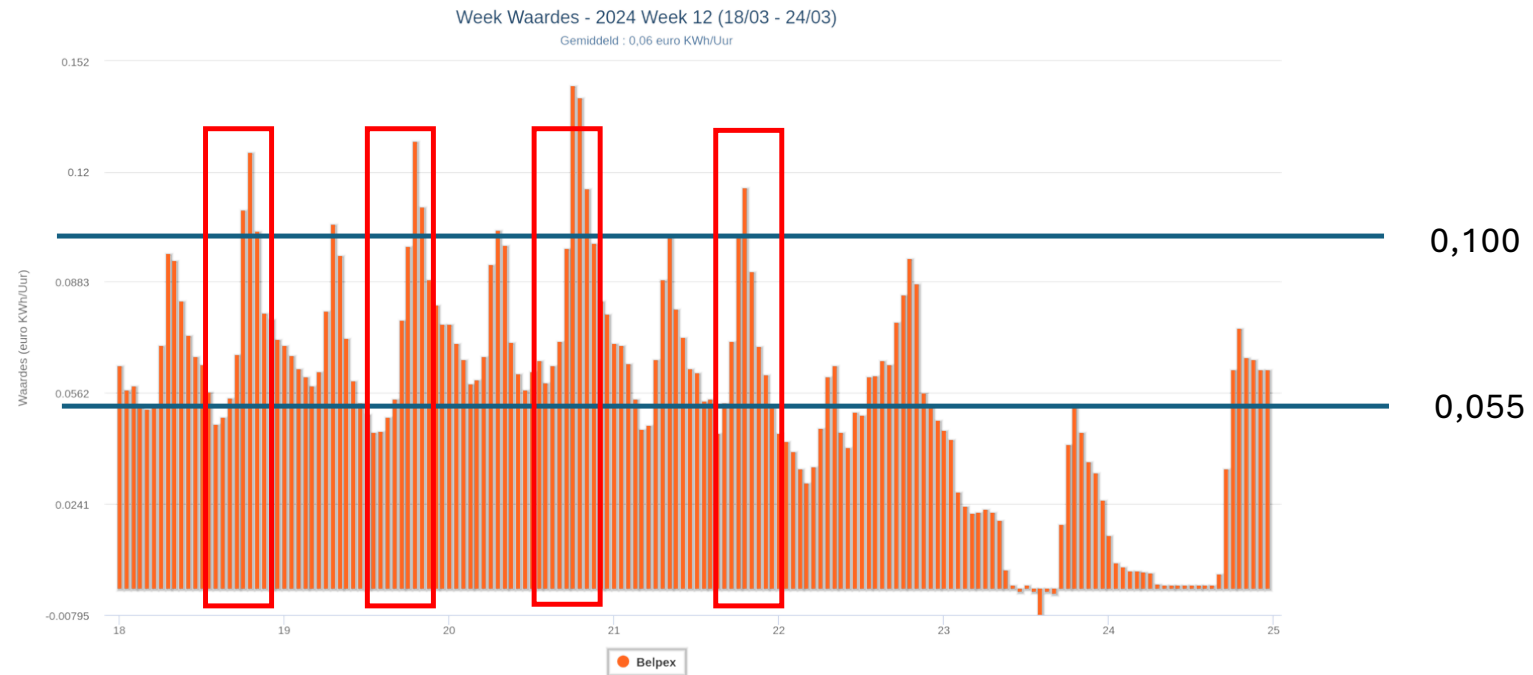


BeLoaded offers Ip modbus or OCPP 1.6J load balancing equipment and battery as a service from 20KW up to 2MW

# Example 1 : Trade

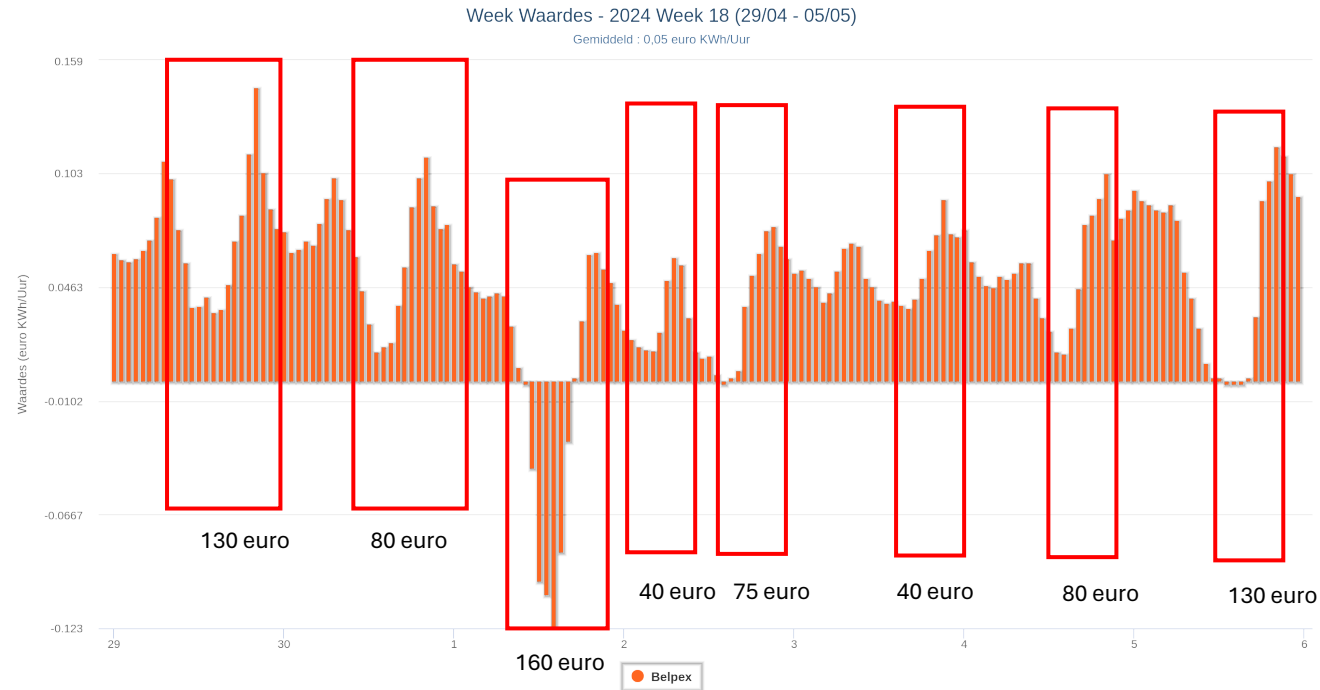


# Example 2 : Peakshaving and shifting



Savings based on 100 KW flexibility : 90 euro

# Example 3 : Week overview dynamic pricing

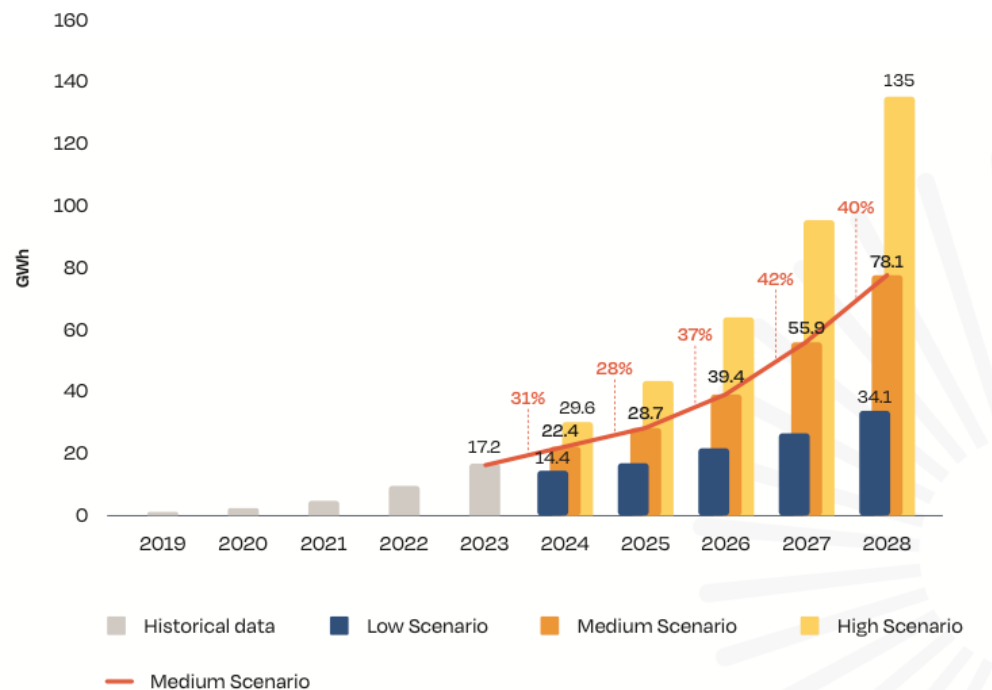


Based on 100KVA storage

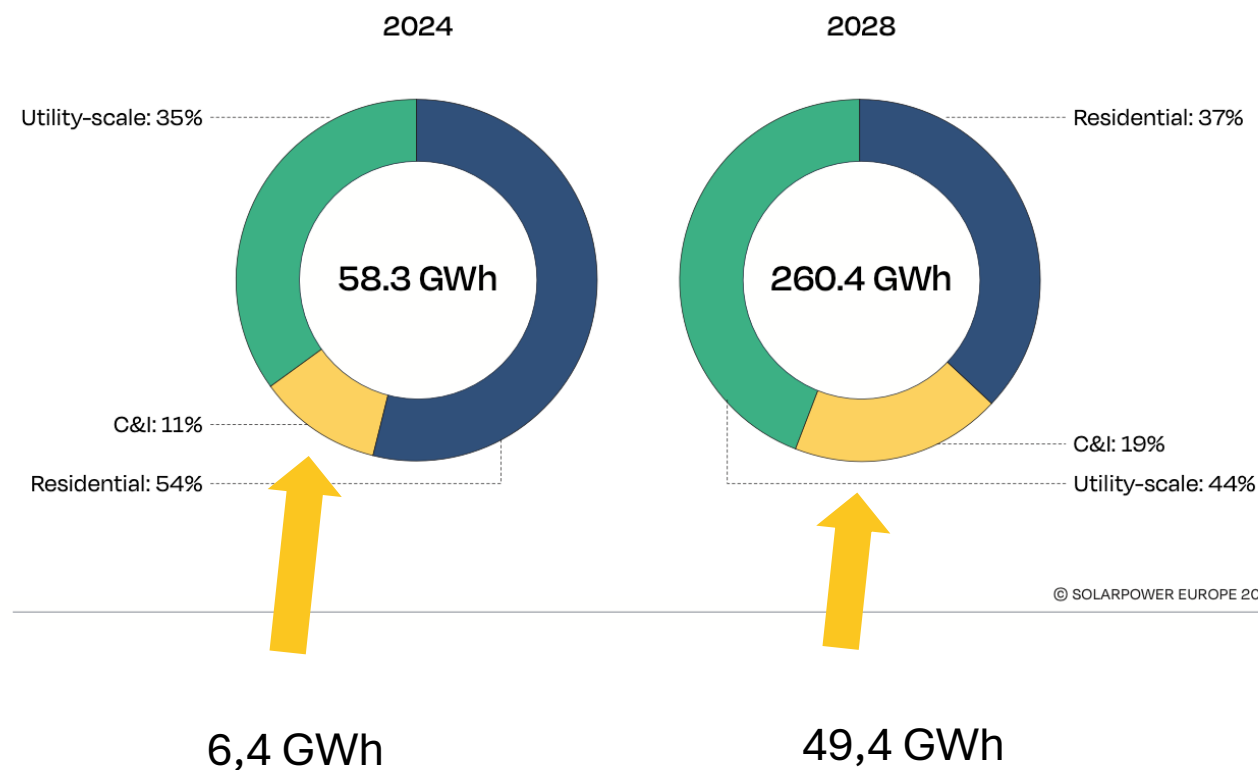
Earning : 735 euro / week

Earning : 38.220 euro / year

# Battery market Europe



© SOLARPOWER EUROPE 2024



© SOLARPOWER EUROPE 2024

# Balancing load between grid , EV and battery systems

- Saves money
- Reduces peaks
- Reduces injection
- Increase charging capacity for cars
- Avoid to increase net capacity

BeLoaded unburden customers in managing the  
unbalance and making the right choices in  
technology and suppliers to have the maximum  
return





# BeLoaded Flexibility Solutions

- Own produced energy ( minimal injection )
- Dynamic pricing market ( day ahead )
- Real time market

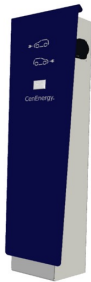
# BeLoaded EV Charging products



**EVC-100**



**E-Two**



**E-Five**

1 or 2 socket support

OCPP 1.6J , 4G , RFID, Bluetooth support

Remote VPN connectivity for configuration and support

EV controller supporting Master/Slave loadbalancing via Canbus

Modbus TCP load balancing via Modbus Grid port

OCPP load balancing via ethernet Lan port

Modbus TCP energy readings per charger socket

White Label EV charger including EVC100

Two sockets One RFID

Wall or stand installation

White Label EV charger including EVC100

Two sockets

One or two RFID

Stand installation

Optional : screen



# BeLoaded Load balancing management solutions



**Bel-IP**

- Load balancing solution via external controller
- Modbus TCP connectivity
- Integrates other assets like PV, ..
- Supports Battery storage systems
- Able to manage PV invertors
- Priority loading option possible
- AI optional module for Sun or Dynamic pricing balancing
- Optional Cloud API for connection to EMS systems
- No interaction with OCPP or CPO

- Loadbalancing using OCPP proxy controller over IP
- Modbus port for Energy meter and PV integration
- Able to manage PV invertors
- No 4G connectivity needed in chargers
- No recurrent cloud costs
- Works on any OCPP 1.6J compatible charger
- Remote support through BeLoaded cloud
- Optional extra controller to connect to EMS systems



**Bel-OCPP**

# BeLoaded Indoor Storage Products



Model	Athena5000L
Nominal Voltage (V)	48V (51.2V)
Nominal Capacity (Ah)	100Ah @0.5C discharge current 25±2°C
Nominal Power (Wh)	5.12kWh+N
Dimension (mm)	600*420*170mm
Weight (KG)	51.5±1kg
BMS	Built-in BMS
Standard Charge/Discharge Current (A)	50A @25±2°C
Max Charge/Discharge Current (A)	100A @25±2°C
Communication Interface	CAN, RS485
Configuration	1P16S
Working Temperature	0~40°C (Charge)/-10~50°C(Discharge)/-20~55°C(Storage)
Cell chemistry	Lithium iron phosphate (LiFePO4)
Cycle life	>3000 cycles @ 0.1C 80% DOD
IP level	IP 64
Humidity	5% - 95%
Certification	IEC62619, ROHS, MSDS, UN38.3
Display	Yes

# BeLoaded Battery Storage Products Outdoor 100/200 Kwh



Technical Specification	
DC Data	
Battery Capacity (kWh)	100-200
Number Of Battery Racks	1-2
BMS Communication Interface	RS485/CAN
DC Voltage Range(V)	420-850
AC Data	
Rated AC Power(kW)	30-150
Max. AC Power(kW)	30-150
Rated AC Current(A)	43-216
Max. AC Current(A)	48-238
DC Current Component	<0.5%
THDI	<3% (Rated Power)
Rated Grid Voltage(V)	400
Allowable Grid Voltage Range(V)	320-460
Rated Grid Frequency(Hz)	50/60
Allowable Grid Frequency Range(Hz)	45-55/55-65
Power Factor	1Lagging-1Leading
Isolation Method	With The Isolation
General Data	
Ingress Protection	Outdoor cabinet type energy storage system-NE-20221125.pdf_01
Fire Extinguishing System	Support
Operating Temperature	-30°C ~ 55°C
Dimension W*D*H (mm)	Customization*1,300*2,400
Weight (kg)	Customization
BMS Communication Mode	CAN, RS485
EMS Communication Mode	RS485, TCP/IP
PCS Cooling Way	Temperature Control Intelligent Air Cooling
Battery Cooling Way	Air Conditioning Cooling
Altitude	4,500m (>3,000 Derating)

# BeLoaded Battery Storage Products Outdoor 1 or 2 Mwh

## CONTAINER TYPE ENERGY STORAGE SYSTEM



## PRODUCT HIGHLIGHTS

- ✓ FLEXIBLE SETTING OF MULTIPLE WORKING MODES ✓ SUPPORT REAL-TIME ONLINE MONITORING OF SYSTEM STATUS
- ✓ SUPPORT BATTERY MANAGEMENT SYSTEM AND COMPREHENSIVE THERMAL MANAGEMENT ✓ INTEGRATED DESIGN, CONVENIENT FOR TRANSPORTATION AND INSTALLATION, FLEXIBLE DEPLOYMENT
- ✓ SEPARATE BATTERY COMPARTMENTS TO PREVENT THERMAL RUNAWAY AND SPREAD

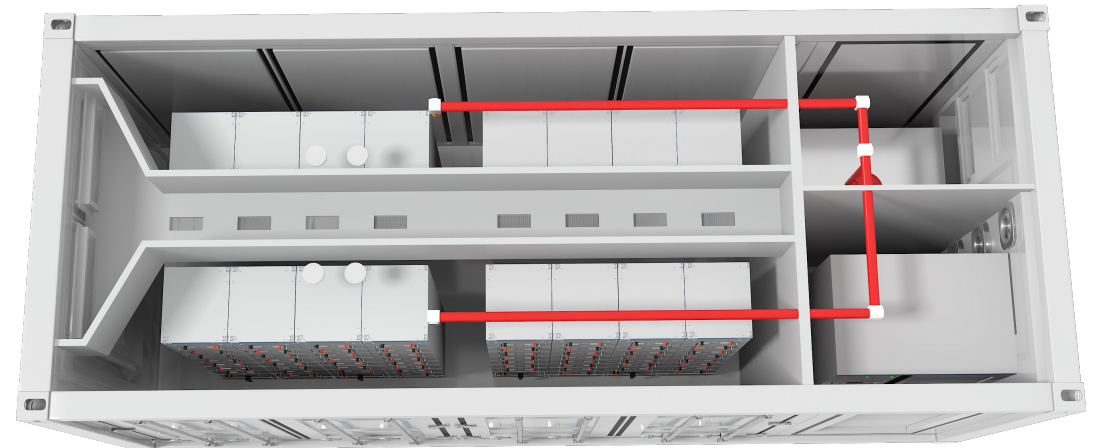
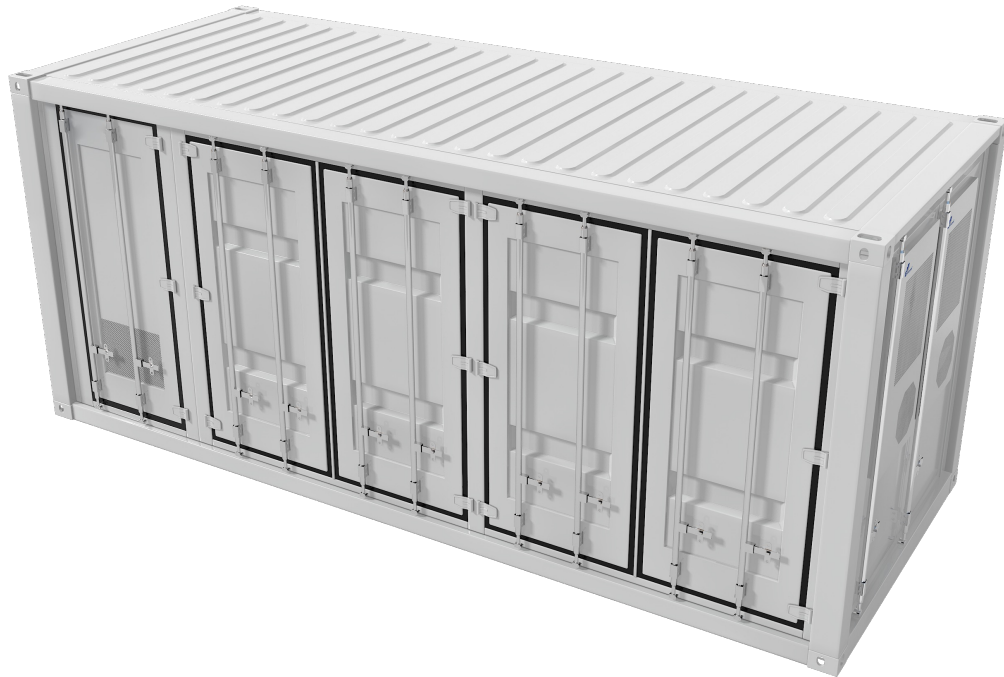
## APPLICATION

- » INDUSTRIAL AND COMMERCIAL PEAK SHAVING AND VALLEY FILLING
- » EMERGENCY SUPPLY
- » GRID SIDE PEAK SHAVING AND FREQUENCY REGULATION

EXCHANGE		
MODEL	ESSCO500B-1075	ESSC1000B-2150
Rated power(kw)	500	1000
Rated voltage(v)		400
Rated current(a)	722A	1445A
Voltage range(v)		320V-460V
Rated frequency		50/60Hz
Frequency range		45-55/55-65Hz
THDI (grid connected)		<3%
THDu (off grid)		≤ 1% linear; ≤ 5% non-linear
Power factor		1 (Can be set to 0.8 lead~0.8 lag)
Overload capacity		110% Long term
AC output		3W+N+PE
Isolation transformer		315/400
Grid connected and off grid		SUPPORT
PHOTOVOLTAIC		
Maximum photovoltaic input voltage(v)		1,000
Maximum photovoltaic power(kw)	600/660/720	1,200/1,320/1,440
MPPT working voltage range(v)		250-850
MPPT full load voltage range(v)		450-850
Step-down Boost Mode		SUPPORT
BATTERY		
Type		3.2V/280Ah/1C, LFP
Rated voltage(v)		768V/1P240S
Nominal energy(mwh)	1.0752	2.1504
Working voltage range(v)		672-850V
Maximum charging and discharging rate		0.5C@25°C
Cycle		≥5,000
SYSTEM		
SizeW*D*H(MM)	6,058*2,438*2,896	12,192*2,438*2,896
Net weight(kg)	21,000	38,000
Operation temperature		0 ~ +45
Relative humidity		0~95% non condensing
Protection grade		IP54
Noise(dB)		<75dB
Working altitude		3,000m
Cooling method		intelligent temperature controlled air cooling
fire extinguisher system		Heptafluoropropane/perfluorohexanone
display screen		Touch type liquid crystal display screen+cloud platform
EMS communication		RS485, TCP/IP



# Battery container + 1 MWh





# BeLoaded charge solutions in renting

- 200Kwh battery container with 4 x 22Kw of 4 x 11Kw charge sockets
- Connected to a 3 x 16A or 3 x 32A 400V net via standard plugs
- Battery stores and balances for maximum capacity at sockets
- Used for temporary workplants or events
- Charges at night or off peak





# Our Services



## Research

Customization

Net integration

Business case creation



## Engineering



## Deploy



## Support

---

## Your contact

Bert Callens

[Bert.C@beloaded.be](mailto:Bert.C@beloaded.be)

+32 476 20 00 34

General Manager



# Partners



Installation NL



EV infrastructures



Engineering



Thank you