



# PHOTOMATE

Huawei FusionSolar partner for CEE, Scandinavia, Baltics,  
Caucasus and Central Asia

**Eurasia partner for  
solar inverters and  
energy storage**

[www.photomate.eu](http://www.photomate.eu)



## ▶ PHOTOMATE STRUCTURE

### **Inverter business since 2008**

**4,000 MW** of inverters delivered during 2016 till now

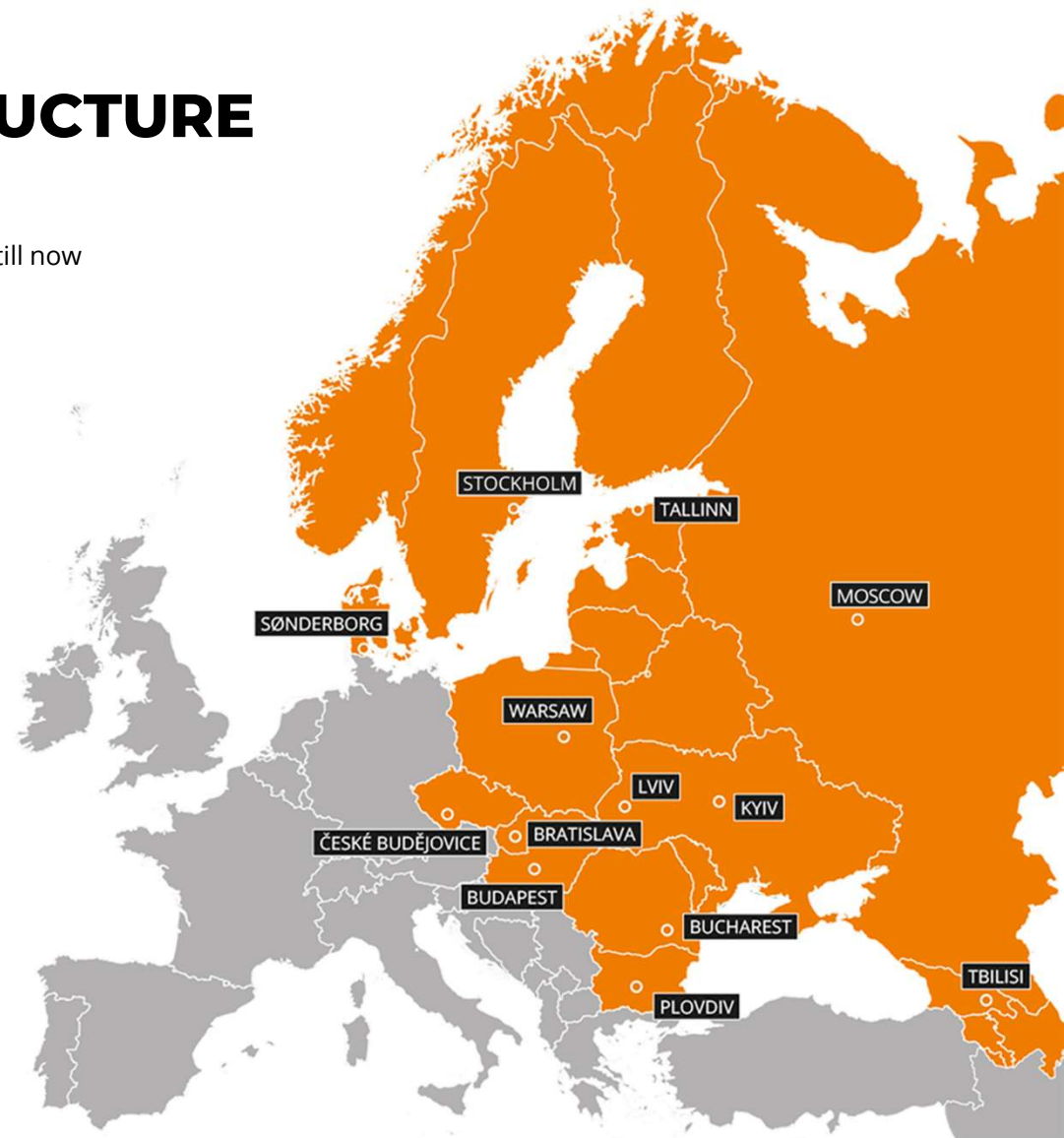
**Turnover 2020:** 96 million €

**Employees:** 48

Headquarters in **České Budějovice, Czechia**

### **SALES OFFICES**

- Kyiv, Lviv - Ukraine
- Warsaw, Poland
- Budapest, Hungary
- Plovdiv, Bulgaria
- Denmark (Scandinavian region)
- Bucharest, Romania
- Tbilisi, Georgia
- Bratislava, Slovakia
- Tallinn, Estonia (Baltic region)
- Moscow, Russia





## ▶ LOGISTICS

### NEW CENTRALISED WAREHOUSE

- Single location, **České Budějovice, Děčín in CZ**
- Compatible **ERP system**
- **3500+ pallets** capacity

### NEW WAREHOUSE IN GEORGIA OPENED

- Intended for Caucasus and Central Asian Countries



**Logistic team:** 4 persons dedicated to meet all customer requests

### TRANSPORT

- **2000+** roadfreight **shipments** in 2020
- Groupage and FTL transport
- Ocean and Rail freight for import shipment from China
- **International** customs brokers







## ▶ **TOP MARKETS 2020**

### **POLAND**

Almost 600MW delivered in 2020

Highest market share in commercial scale projects

20% market share in residential in 2020

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### **UKRAINE**

377MW delivered in 2020

Stronger position in residential market (up to 30kW)

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### **ESTONIA**

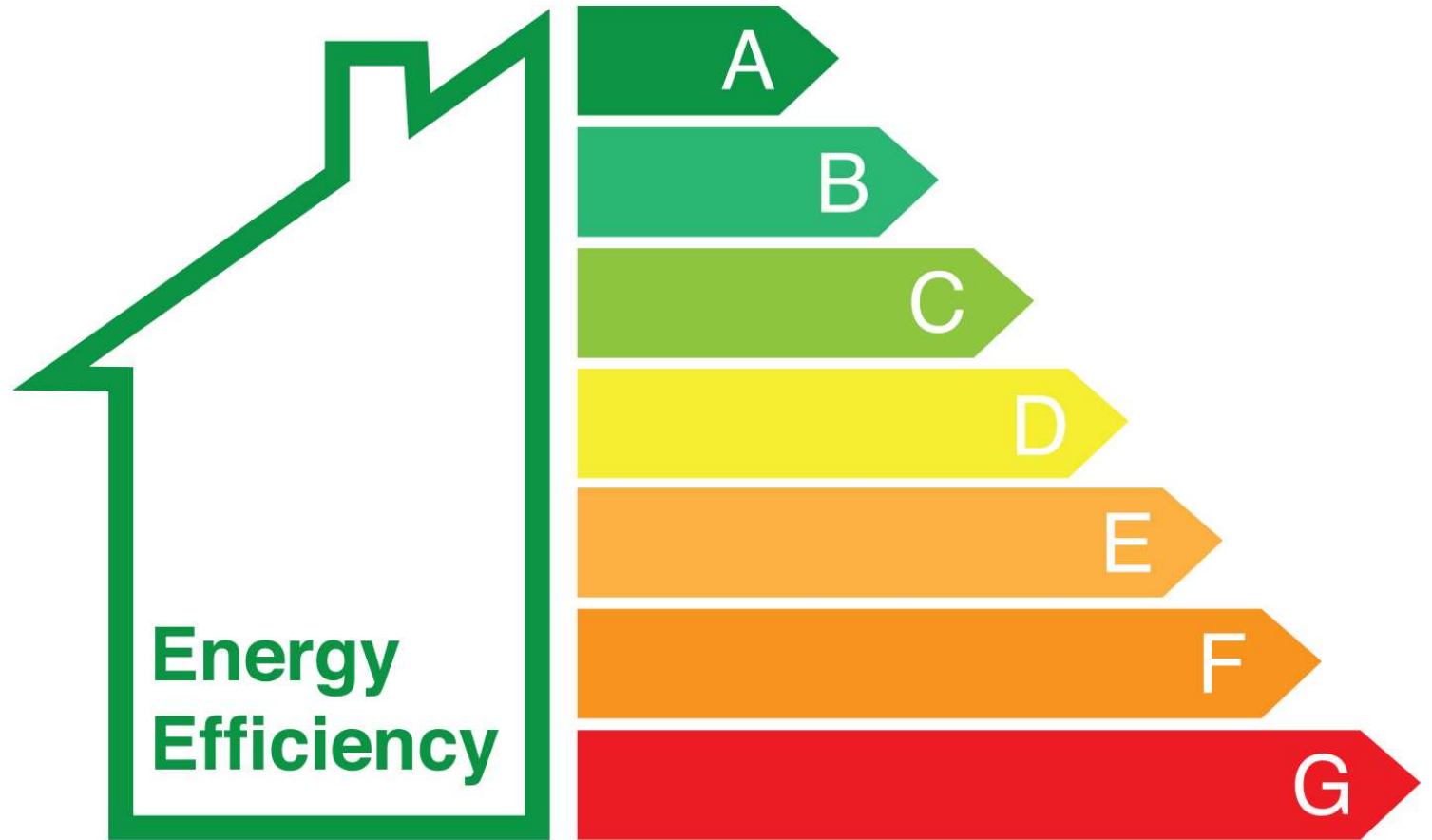
280MW of inverters delivered in 2020

Over 70% of the market share

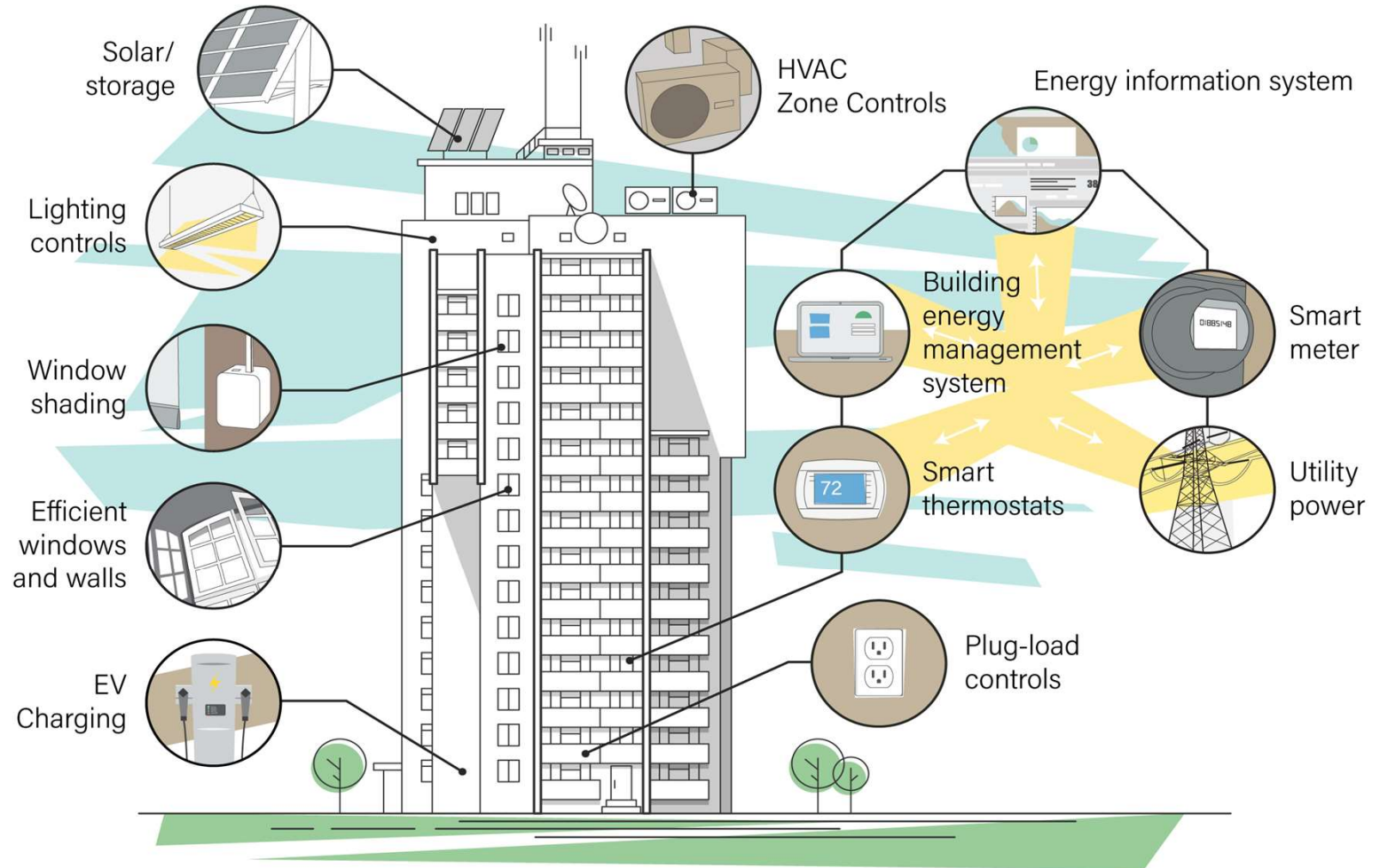




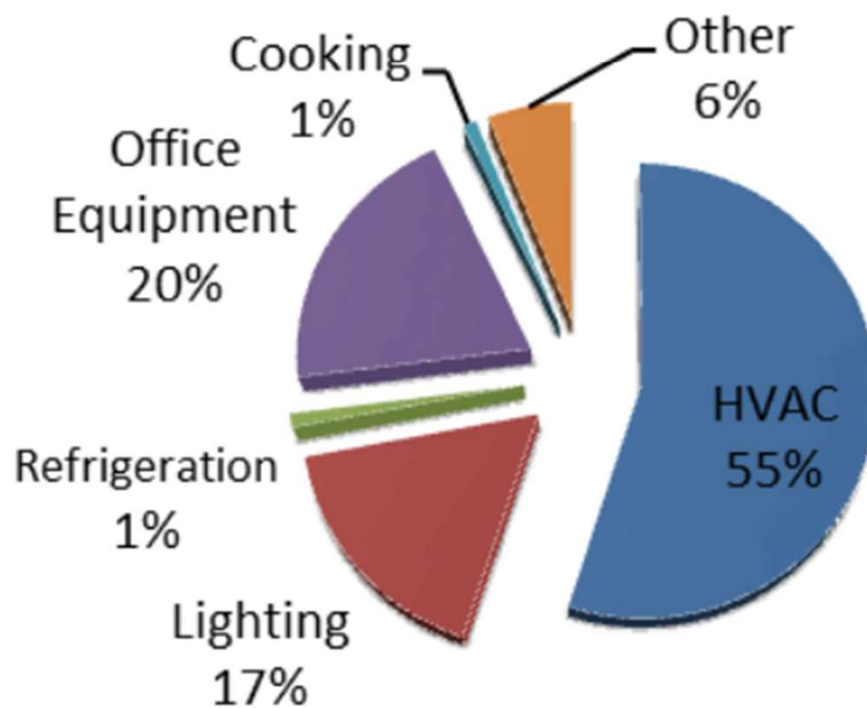
# Energy efficiency



# Grid-interactive efficient buildings



# Typical Office Building Energy Consumption







# Understanding Local Energy Use

- **Utility energy data** (electricity and natural gas use in the community)
- **Transportation energy** (primarily gasoline and diesel use for vehicles traveling within city limits)



- **Non-utility heating fuels** (primarily oil and propane use provided by private sector vendors)
- **Solar energy resources** (the amount and locations of economically viable solar energy within city limits)
- **Wind energy resources** (the amount and locations of economically viable wind energy within city limits)

- **Biomass energy resources** (the type and amount of biomass within the city, such as wood waste, agricultural or industrial byproducts with energy value, and solid waste that has energy value)
- **Waste heat** (industrial or institutional sources of heat that is released into the air, water, or earth)







## ▶ A typical day for PV Energy Production, Storage & Consumption

### OPERATIONAL BENEFITS

Power resilience through full Uninterruptible Power Supply (UPS) capabilities  
Grid stabilization - Harmonics reduction and power quality improvements  
Intelligent and optimized use of energy offers increased flexibility

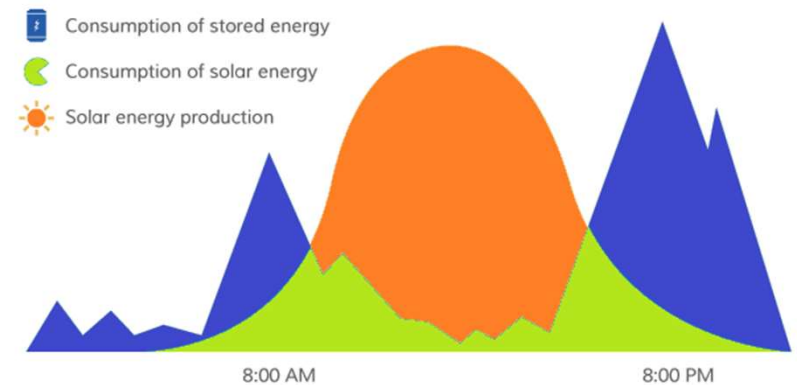
### COST SAVING BENEFITS

Minimize distribution costs  
Power on demand - Peak Power Boost  
Average reduction of 25% off electricity bill

### ENVIRONMENTAL BENEFITS

Diesel Generator Hybridisation - reduced fuel burn and emissions  
Renewable Energy Optimization – stores renewable energy for later use  
Off-Grid power solution in combination with renewable energy production

### Typical day with a solar battery system





## ▶ HUAWEI FUSIONSOLAR IN CENTRAL ASIA

### Huawei FusionSolar SUN2000-185KTL with SmartLogger2000 in Kazakhstan

This equipment is used in the SPP Nura of 100 MW capacity.



**HEVEL**  
ENERGY GROUP







## ▶ HUAWEI FUSIONSOLAR IN BUCHAREST



SUN2000-33KTL-A



SUN2000-8KTL-M1







## ▶ **Smart string Energy Storage system - Luna2000 FROM 5 KWH TO 30 KWH**



Fire Safe



Easy installation



100% depth of  
discharge

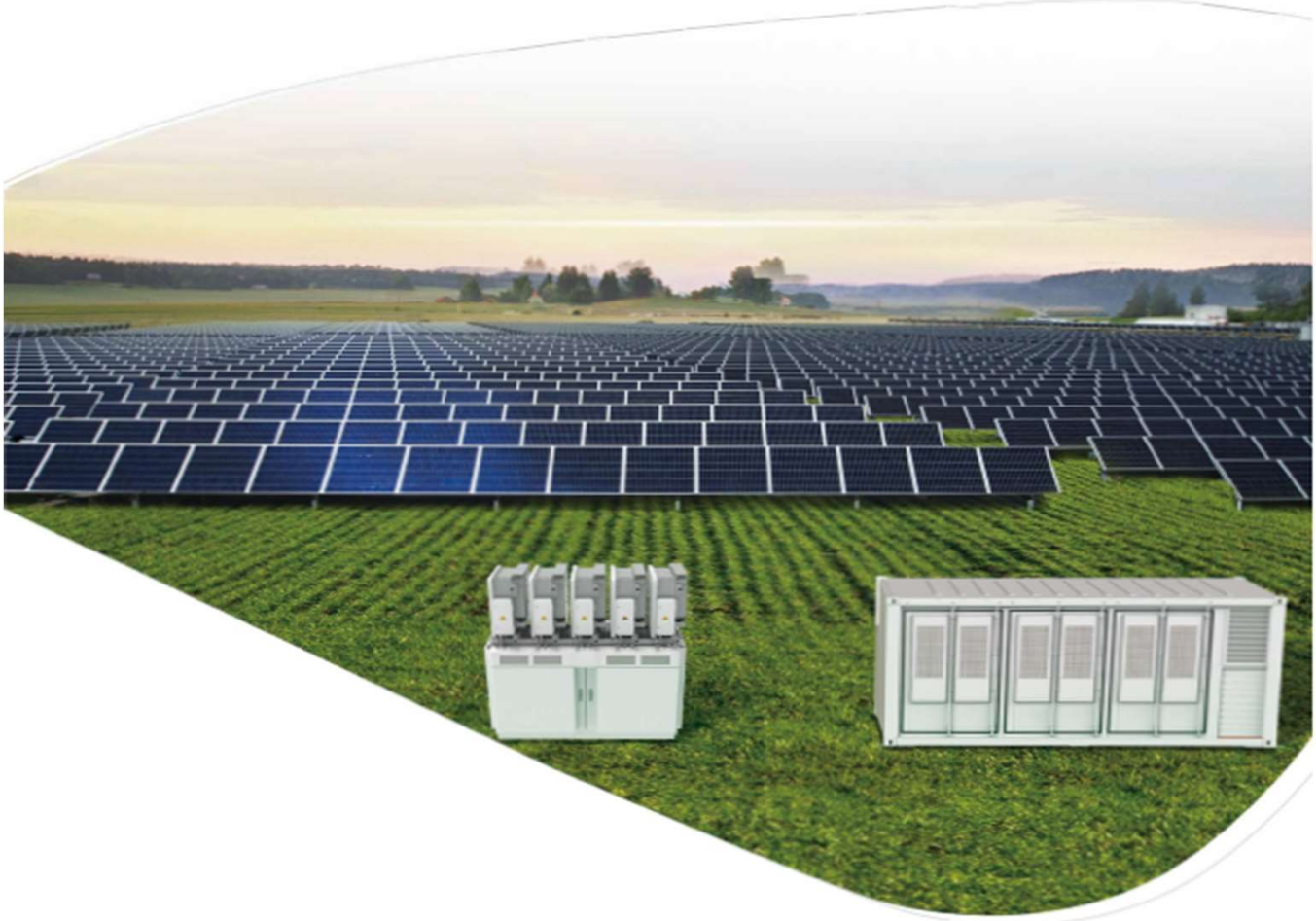


Parallel storage  
systems





# FusionSolar Smart String ESS Solution





# LUNA2000-2.0MWH-1H0/2H0 Smart String ESS



**More Energy**



**Optimal Design**



**Simple O&M**



**Safe & Reliable**



Battery Container	
DC Rated Voltage	1,200 V
DC Max. Voltage	1,500 V
Nominal Energy Capacity	2,064 kWh





# ▶ **Smart PV Management System**

## FusionSolar Smart PV Management System



### **Simple & Swift**

- Simple commissioning by APP
- Auto-detection of system equipment
- Registering your plant by scanning any device



### **Convenient & Reliable**

- Energy flow illustration
- Real-time data at anytime from anywhere
- Performance data back-up



### **Improved O&M Experience**

- Physical & logical module layout
- Module-level performance management\*
- Smart I-V Diagnosis





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xelectrix partner for CEE, Scandinavia, Baltics,  
Caucasus and Central Asia

## **Eurasia partner for energy storage**

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# REFERENCES





Power Box  
Uniqueness

# USP POWER BOX



[xelectrix-power.com](http://xelectrix-power.com)



## ▶ Safety

- Self-securing LFP cells
- Integrated extinguishing system in each battery pack (non-flammable) emergency power system
- Backup Power / formation of an emergency power system during blackouts
- Continued operation and control of PV systems during blackouts

## ▶ Environmental Sustainability

- Hybridization of diesel generators / increasing efficiency with less diesel burn
- Peak Power Boost / e.g. using smaller diesel gensets
- Increase of RE self-consumption
- CO<sub>2</sub> Reduction

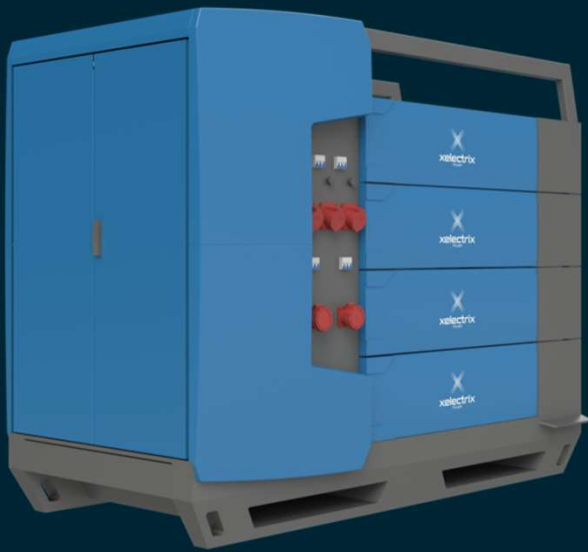
## ▶ Cost Saving

- High voltage LiFePO<sub>4</sub> battery pack with screwed cells (650 V nominal voltage)
- Active Battery Management System (aBMS)
- Up to 8000 charging cycles depending on the application
- Maintenance costs / fossil fuel costs / logistic costs / grid connection costs
- Performance warranty of battery packs: 70 % capacity after 10 years

Power Box  
APPLICATIONS

# OFF-GRID

solutions



- ▶ **Diesel Generator Hybridization**  
Stabilize load curves, control the DG to reduce fuel burn and emissions.
- ▶ **Peak Power Boost**  
Supplement power from the on-board inverter to meet high load peaks utilizing battery power.
- ▶ **Genset Control**  
Communicate with a generator and automatically switch it on / off at pre-programmed loads.
- ▶ **Renewable Energy Optimization**  
Be connected without infrastructure changes to wind / and or solar sources.
- ▶ **Charging Solutions**  
Act as an Island Style solution for EV and construction equipment charging requirements.
- ▶ **MicroGrid**  
Supply grid independent energy supply, especially for areas that are not in conventional grid coverage.
- ▶ **Local Energy Community – LEC**  
Facilitate independent energy storage and supply on a community level, combining RE Prosumers (PV, Waterpower).

Power Box  
APPLICATIONS

# ON-GRID

solutions



[xelectrix-power.com](http://xelectrix-power.com)

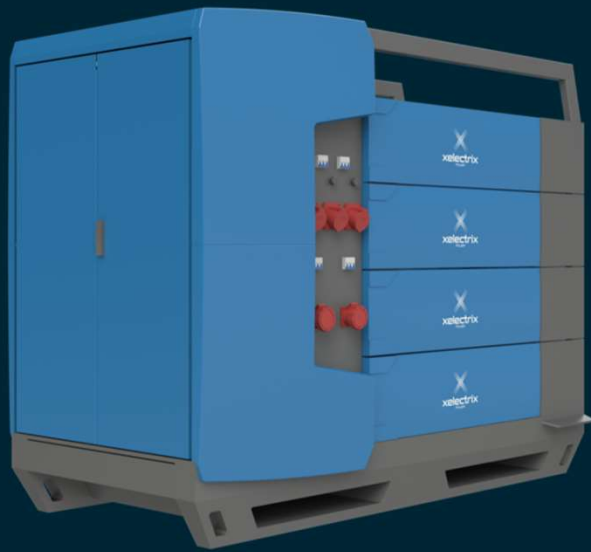


- ▶ **Peak Shaving**  
Reduce energy costs by using on-board inverter power to reduce consumer kW power peaks.
- ▶ **Peak Power Boost**  
Supplement power from the on-board inverter to meet high load peaks utilizing battery power.
- ▶ **Grid stabilization**  
Apply innovative voltage frequency regulation using pre-set target parameters that are then monitored.
- ▶ **Load Shifting**  
Store and discharge power at selected times allowing the shifting of power away from higher tariff periods.
- ▶ **Charge Shifting**  
Pre-programmed to charge at specific times and specific source – Grid / Genset / PV / Wind.
- ▶ **Energy Trading**  
Store and discharge electricity at specific times allowing traders benefit from variable market conditions.
- ▶ **Reactive Power Compensation**  
Supply reactive power from on-board inverter to avoid kVAR costs.
- ▶ **Grid Connection Optimization**  
Lower GC costs by allowing a building / consumer site to move into a lower power bracket.
- ▶ **Elimination of sleeping BackUp and sleeping UPS**  
Be used as On- / Off-Grid backup provider. Often replacing conventional generator systems. Be used as an uninterruptible power supply delivering electricity independent of the grid.
- ▶ **BackUp**  
On-board transformer and switch function
- ▶ **Island Style Charging Solutions**



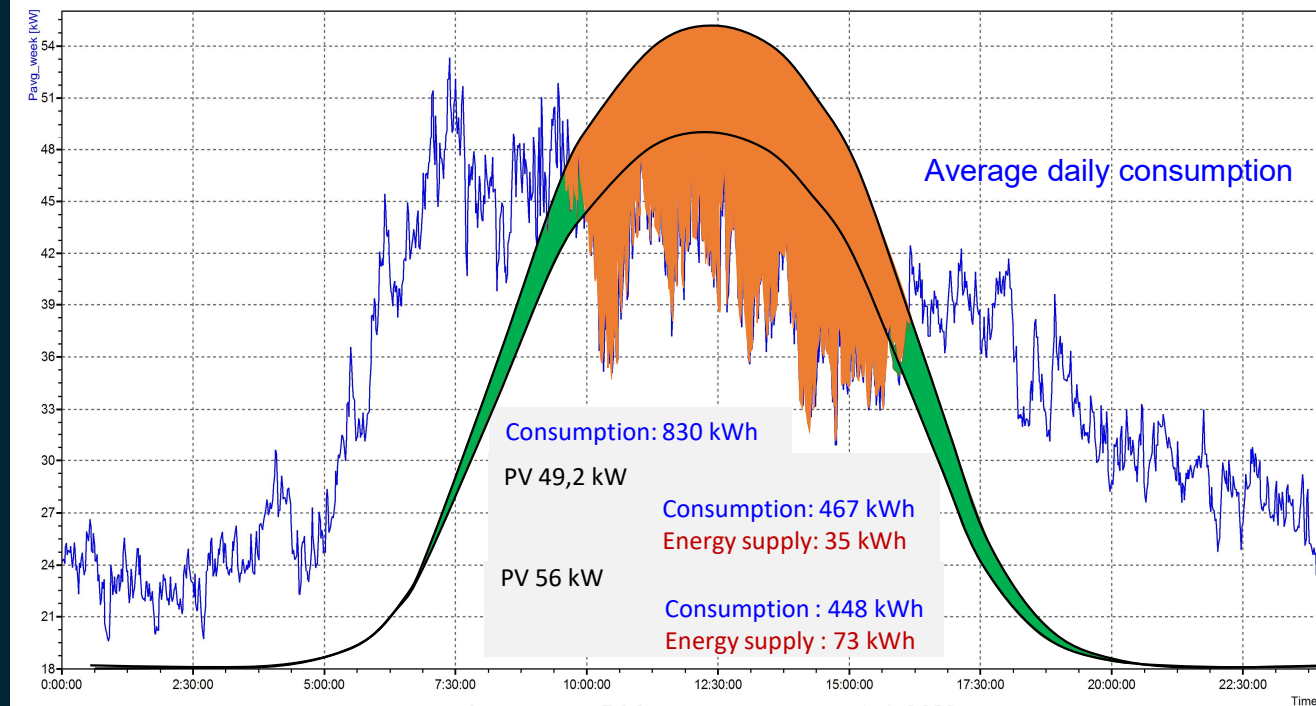
Power Box  
APPLICATIONS

# ON-GRID and PV solutions



Example

Maximum PV production



increase PV power: **6,8 kWp**  
decrease in consumption: **-19 kWh**  
increase energy supply : **+38 kWh**

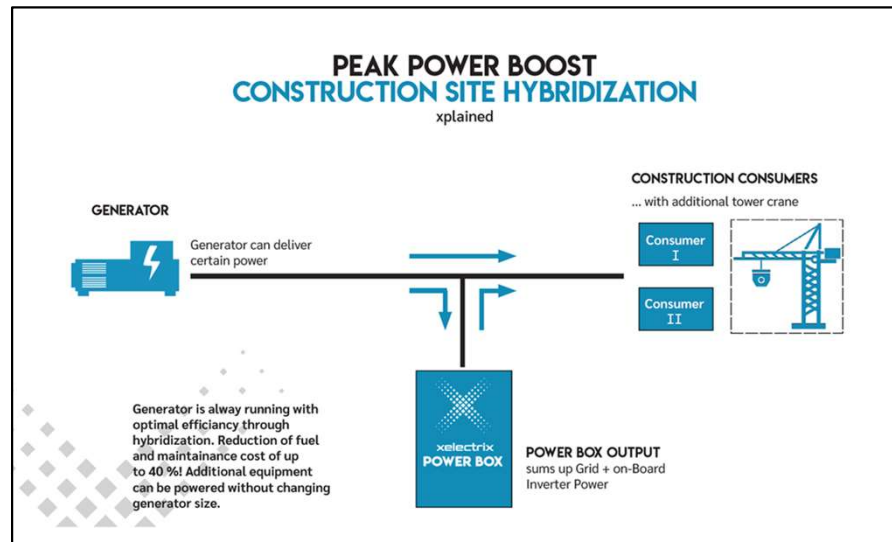
Power Box  
APPLICATIONS

# xplained

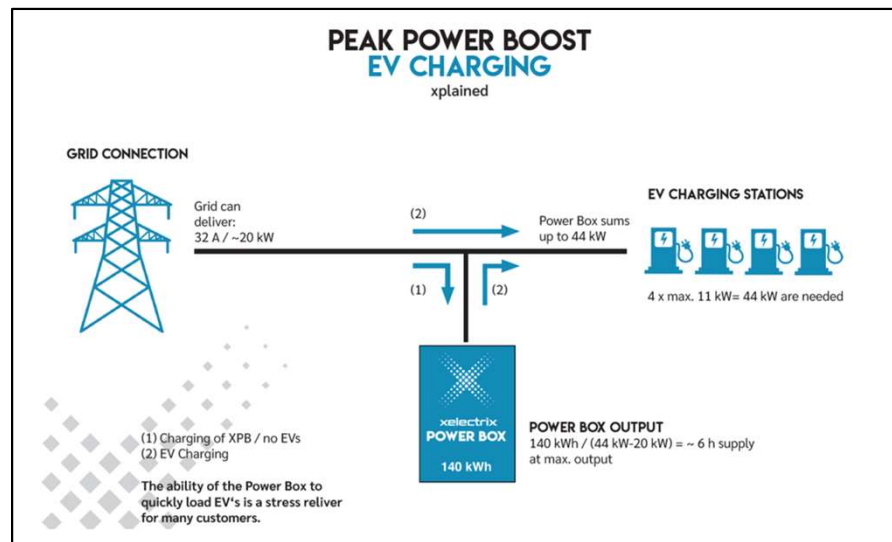
Real Solutions for your application

1 | Construction Hybridization  
CONSTRUCTION SITE OF THE FUTURE

2 | EV Peak Power Boost  
E-MOBILITY



Ability to use smaller DG's or to add equipment with higher power requirements



Ability to utilize power-limited grid connections to meet additional requirements

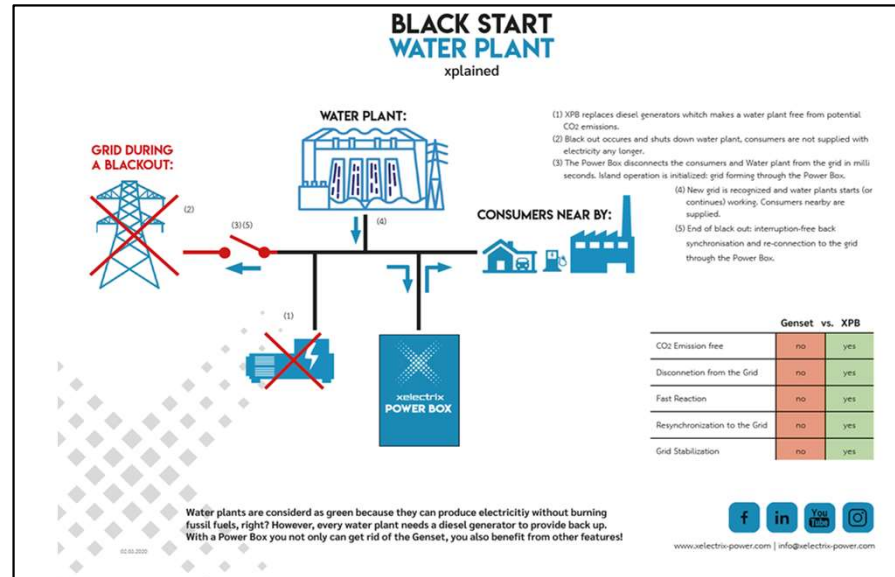
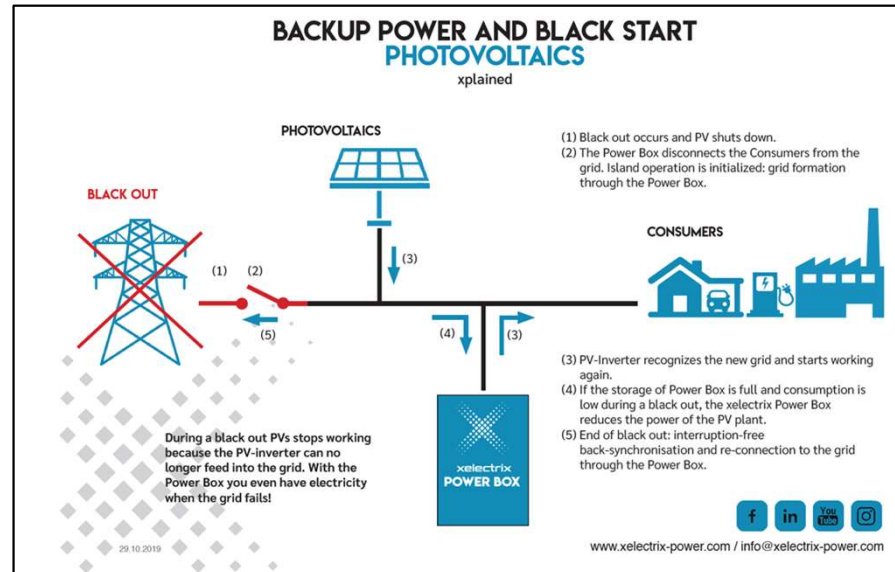
Power Box  
APPLICATIONS

# xplained

Real Solutions for your application

3 | PV during Grid Outages  
RE OPTIMIZATION & BACKUP POWER

4 | Hydro Energy Optimization  
ENERGY OPTIMIZATION STORAGE CONTROL



Ability to keep PV systems running during blackouts as well as regulate PV production

Ability to blackstart power plants after a grid shutdown, including forming XPB-grid and re-sync with the grid



XELECTRIX POWER  
PRODUCTS

# PRODUCT RANGE 2021

XPB = xelectrix Power Box

W = WALL

B = BASIC SPLIT

P = PRO

U = UNLIMITED

1st VALUE = Inverter Power in kW

2nd VALUE = Battery Capacity in kWh

M = U Range container sizes in feet

TS = B Range with Backup Option  
(Transformer and Switch Function)

▶ XPB-U80-200-M10

▶ XPB-B80TS-80-SPLIT

## WALL RANGE

XPB-W11  
11 kW / 20-40 kWh

XPB-W35  
35 kW / 40 kWh



## BASIC SPLIT RANGE

XPB-B11  
11 kW / 40-240 kWh

XPB-B35  
35 kW / 60-240 kWh

XPB-B80  
80 kW / 100-240 kWh



## PRO RANGE

XPB-P11  
11 kW / 20-120 kWh

XPB-P35  
35 kW / 40-120 kWh



reddot winner 2021  
industrial design



## UNLIMITED RANGE

M10 (10ft container)

35 kW / 60-240 kWh  
80 kW / 100-240 kWh  
150 kW / 180-240 kWh

M20 (20ft container)

35 kW / 240-480 kWh  
80 kW / 240-480 kWh  
150 kW / 240-480 kWh



For project specific requests please contact us directly!



**THANK YOU  
FOR YOUR  
ATTENTION**

[www.photomate.eu](http://www.photomate.eu)



# PHOTOMATE

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