



# Energy Buffer Unit - EBU Lion

Energy storage will make an important contribution to the stability of future power grids which have a significant share of renewable energy. It will become more important as the renewable energy share will get larger in the future energy mix. The main areas of application of a storage unit are: Permanent frequency regulation, peak-shaving at high load or high feed-in periods, allocation of regulation energy for national grid operators as well as continual energy provision for off-grid applications. The EBU is optimized for these applications and is designed for maximal scalability and flexibility. It can be adapted for today's and tomorrow's needs at local or national power grids, guaranteeing a stable grid, and even allowing more renewable energy in the near future. The EBU is optimized for maximal scalability and flexibility and for lowest storage costs possible.

## GRID-SUPPORTIVE ENERGY STORAGE SYSTEM



### KEY FEATURES OF THE NEW EBU Lion:

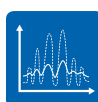
- **Comprehensive warranties** over 10 or 20 years. Guaranteed bankability.
- Rise of output power from 0 to **100 % in 55 ms**
- Up to **4,016 kWh** battery capacity, **1,500 V** system voltage
- Battery cell equilibration is integrated in Battery Management System
- High packing ration ► **low BoS cost** and headroom for replenishment
- Fully diagnosable **local SCADA and central SCADA** interface
- **Full integrated battery controller** for inverter, BMS, HVAC, safety and data storage
- Supplied with highly available and cost saving **outdoor SKID solution** for inverter and transformer
- Optional: Value adding **grid stabilization** services and functional upgrades (black start, island operation, virtual inertia)
- Optional: BELECTRIC's fully automated EMS to provide primary and secondary **frequency response (pre-qualified** scheme with several European TNOs), enhanced frequency response (EFR), RoCoF response, load shifting, peak shaving, point following and others



Advanced  
Grid shaping  
technology



Dynamic  
Reactive Power  
Compensation



Fast Response  
Frequency  
Control

## TECHNICAL DATA EBU Lion

Type	Stationary batteries		Automotive batteries
	Energy	Medium	Power
Max. power per EBU	Up to 4 MW	Up to 5.8 MW	Up to 9.9 MW
Capacity (C5)	2 - 4 MWh	2 - 2.9 MWh	1.5 - 3.3 MWh
Maximum C rate	1	2	3
Voltage	1,500 V <sub>DC</sub>	1,500 V <sub>DC</sub>	1,000 V <sub>DC</sub>
Fire security system	NOVEC 1230 / water		Not necessary
Cooling system	Air		Air / liquid
Cycle life	Up to 8,000 full cycles		Up to 8,000 full cycles
Temperature range	13 - 28 °C (18 - 23 °C set point temperature)		10 - 35 °C (15 - 25 °C set point temperature)
Dimensions (L / W / H)	12.19 m / 2.44 m / 2.90 m (40' high-cube container)		
PCS	GE outdoor inverters and transformer mounted on BELECTRIC SKID 1 to 4 MVA per SKID (scalable up to 3 SKIDs per battery unit)		
Output voltage	6 - 33 kV		
Internal protection marking (IP code)	IP 65		
PCS Features	<ul style="list-style-type: none"> <li>- Unit certificate for the complete system</li> <li>- Warranty 5 years, extended warranty up to 20 years</li> <li>- Global GE maintenance</li> <li>- Mass production PV derived inverter: highest quality, attractive pricing</li> <li>- Hybrid and island operation capable</li> <li>- DC coupling with battery available</li> </ul>		

## BATTERY STORAGE BELECTRIC EBU Lion



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