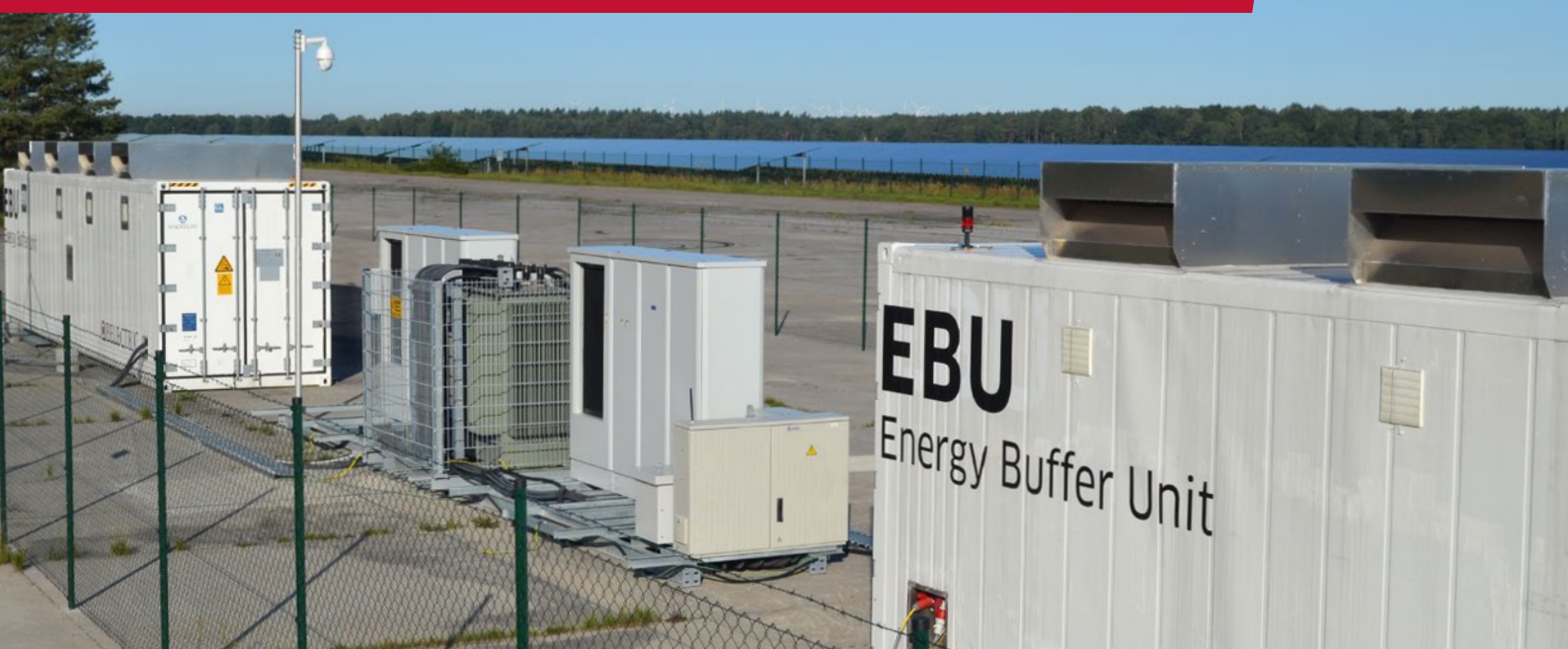




Energy Buffer Unit

Energy storage is a key element for the integration of renewable energy into power grids all around the world. With an increasing share of renewable energy, the ability to store and release energy whenever needed is gaining more and more importance. BELECTRIC has used its decade-long experience of integrating solar energy into power grids worldwide and designed a storage solution that meets exactly those requirements: The Energy Buffer Unit. It focuses on applications such as frequency regulation, peak-shaving, ramp-rate control, provision of spinning reserve as well as continuous energy supply in off-grid situations. The EBU is optimized for maximal scalability and flexibility and for lowest storage costs possible. It can be adapted for today's and tomorrow's needs of power grids, guaranteeing a stable energy supply and allowing for even more renewable energy in the future.

GRID-SUPPORTIVE ENERGY STORAGE SYSTEM



KEY FEATURES OF THE ENERGY BUFFER UNIT (EBU):

- Rise of output power from 0 to 100% in less than one second
- Up to 1012 kWh battery capacity, 1500 V system voltage
- Low maintenance and high durability through automated battery management
- Modular and extendable as 40ft-container units can be stacked as desired
- Best price performance on the market of large-scale energy storage solutions
- Pre-qualified for frequency response (Primary Reserve)
- **Optional:** Value adding grid stabilization services and functional upgrades



Pre-qualified for Primary Reserve Application



Advanced lead-acid battery technology



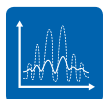
Redundant and Certified Safety System



Advanced Grid shaping technology



Dynamic Reactive Power Compensation



Fast Response Frequency Control

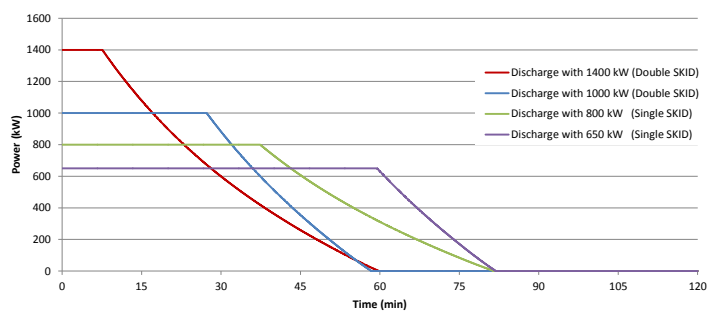
TECHNICAL DATA EBU

Type	EBU 917		EBU 1012	
Nominal capacity (C10)	917 kWh		1012 kWh	
Number of cells	960 cells in 2 strings		1060 cells in 2 strings	
System voltage	1,500 V _{DC}		1,500 V _{DC}	
Internal resistance	120.0 mΩ		132.5 mΩ	
Weight	36 tons		38.5 tons	
Dimensions (L / W / H)	12.19 m / 2.44 m / 2.90 m (40' high-cube container)			
Output voltage (AC)	6 to 66 kV (depending on transformer)			
Operating temperature	-20°C to 45°C			
Battery technology	<ul style="list-style-type: none"> • Newly developed advanced lead-acid batteries • Optimized for high current applications with low cyclic costs 			
Cyclic life	3000 to 5000 full cycles (depending on application)			
Inverter configuration	Single SKID	Double SKID	Single SKID	Double SKID
Nominal power	800 kW (>35 min), 650 kW (>55 min)	1400 kW (>5 min), 1000 kW (>25 min)	800 kW (>45 min), 650 kW (>65 min)	1400 kW (>10 min), 1000 kW (>30 min)
Features	<ul style="list-style-type: none"> • Reliable and robust energy storage system • Energy efficient cooling and ventilation • Automatic temperature and voltage control of the battery cells • Centralized water refilling system • Self-acting charging and discharging management • Redundant and certified safety system • Online battery monitoring 			

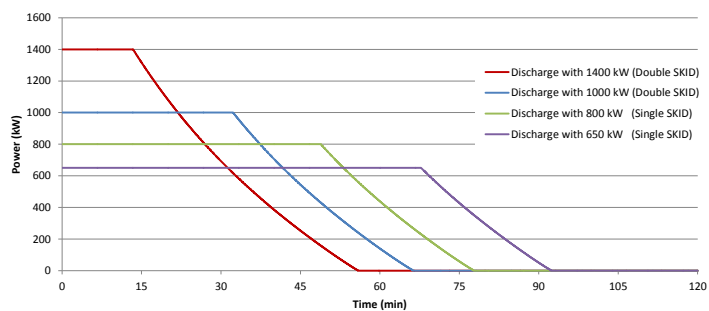
BATTERY STORAGE BELECTRIC EBU



EBU 917: Autonomous time graph



EBU 1012: Autonomous time graph



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