

Other products:



19"/23" VRLA-FT Batteries



Cyclic batteries



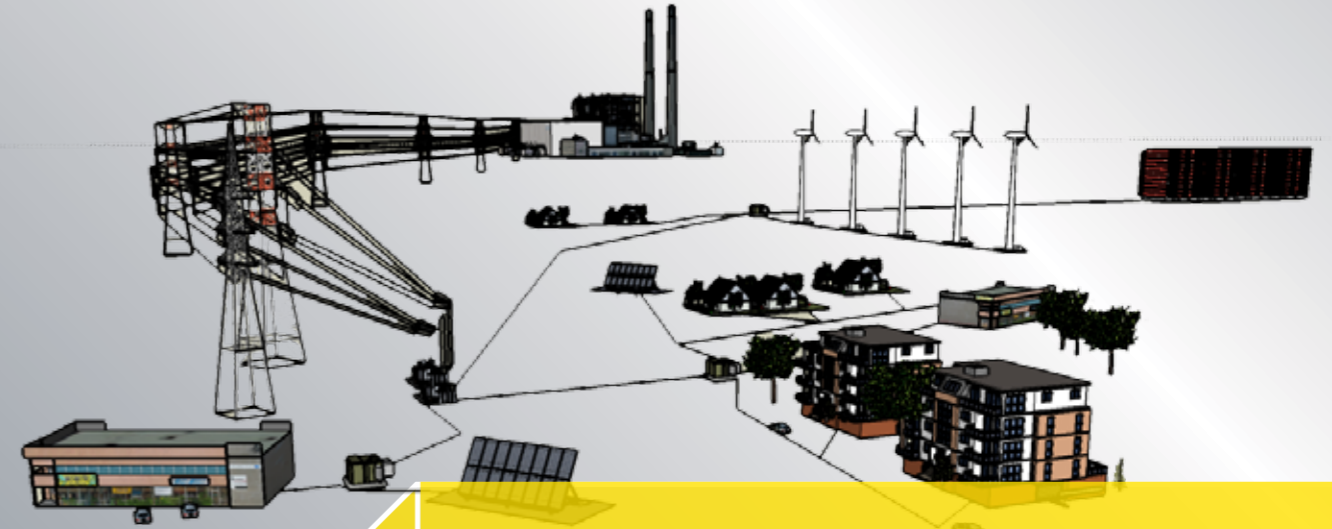
High-Power EV and Standby modules



VRLA batteries



LCD-Touch screens, BMS/BMU controllers



Smart Grid Solutions



einfach stark.

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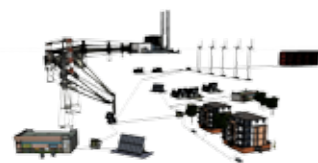


einfach stark.



Smart Grid and Peak Shaving

Smart Grid is a new term defining the addition of intelligent sub-systems to electricity grids. These sub-systems often provide local storage of energy generated by photo voltaic, wind or other green energy generators. ?



Smart Grid and Peak Shaving

The advantages of smart grid systems are local storage of energy and hence reduced or no transmission losses. Although "smart grid" is still a rather loose term, the overall consensus is that a well-designed system can reduce cost and increase reliability of the grid.

The mains grid is recognized as the largest man-made construction on earth spanning from Alaska to Punto de Fuego in the far south of South America and from the far east of China to the most western point of Ireland. Adding more green energy generation systems reduce the cost of electricity, however, at the cost of reliability.

Why does reliability suffer from wind- and solar systems?

Consider how far electricity has to travel from one point to another. Along the network there are voltage regulators that adjust the voltage so this stays within the nominal values specified. Adding devices that influence the voltage on the network in a rather random way, will influence this voltage. By nature, wind and solar energy are unpredictable and while one of these voltage regulators increase the voltage to compensate for a load, a cloud could move away and more energy is added to the network contradicting the voltage regulators; this in turn now has to reduce rather than increase the voltage. With many alternative energy generators and voltage regulators in a network, the instability increases. Voltage regulators can reach their control limits or are too slow to respond to the changes, resulting in a total breakdown of the energy supply.

Smart Grid comes to the rescue

Adding local energy storage close the load will decrease the effects of intermittent loads on the whole network. Also they are used to absorb any surplus in energy that is available in the network or store alternative energy. In small applications, a super capacitor bank can store the energy while in larger applications batteries are the prime choice.



Supercaps

BSOL Solutions

BSOL Batteriesysteme GmbH offers a number of solutions for smart grid applications ranging from small super capacitors modules to 5MW and larger, fully autonomous, containerized systems.

Applications

Small applications only drawing limited current but with a high frequency, will benefit for the super capacitor solution developed by BSOL. The extremely high number of cycles that super capacitors can reach are rivaled



BTX-LS VRLA Batteries

by no other storage solution and the fast charge capabilities enable the system to be ready for the next power surge virtually instantly. Start-up current of large machineries, medical equipment such as X-ray and Cat-scanner, small and medium size ovens, etc. can all be supported by super capacitors.

Medium-size applications such as family homes and offices benefit from storage of locally generated green energy in more than one way; they reduce their overall energy cost and have a more stable power supply. Wind- and photo voltaic energy can be stored in either lead acid batteries or Lithium Iron Phosphate batteries and is available during peak demands and when main power would be unavailable.

For large applications such as producing factories the previous system can be scaled-up to several Mw to support production processes during start up surges and to store any regenerative energy that might be generated by the production process itself. These systems are fully containerized and can include DC/AC converters able to deliver high currents to the application(s).

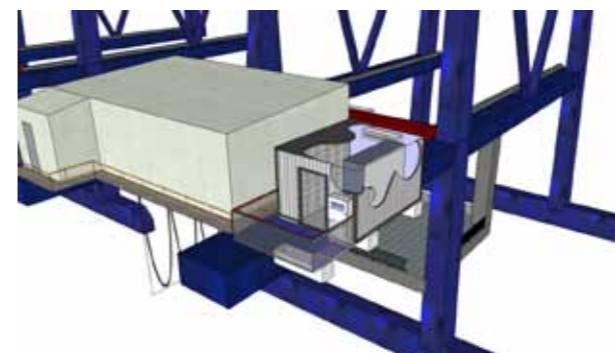
Engineering

For many of BSOL's smart grid solutions are offered "off the shelf" and are based on solutions developed for large UPS and emergency lighting applications. Our wide experience with critical systems, using first grade products and matching system design, result in solid solutions that will last long and form a reliable energy source for your smart grid system.



WING-FT VRLA Batteries

Large systems are engineered around your exact application and requirements and can include things such as remote monitoring, data logging, redundancy and several other options. Depending on your needs, qualified and motivated sub-contractors will assist in the installation on-site up to and including the HV connections. Obviously, these systems come with training for your facility managers and his staff, so they can make the most out of these sophisticated solutions.



Peak shaving unit installed on a container crane



600V Lithium system