



# Abb energy storage system

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Our Application packages were designed by domain experts to focus on your specific challenges. Our Applications simplify the process: faster selection, easy installation, and quicker results.

A secure supply of energy is the foundation for the success and continuity of many enterprises - be they industrial plants, offices, healthcare facilities, utilities, or data centers. When you want power protection for your critical applications, ABB's energy storage solutions provide peace of mind and the performance you need.

A large number of different battery systems are available nowadays that are designed to provide various levels of functionalities and to work within diversified environments and operating conditions.

ABB's energy storage expert team is fully committed to providing top-quality consulting services to ensure that the customer enjoys the very best performance from their energy storage products.

ABB's UPS applications make use of a wide variety of energy storage solutions; lead-acid (LA) batteries are currently the most common technology. In specific instances with special requirements, nickel-cadmium or lithium-ion batteries are sometimes used. Lithium-ion is a rapidly growing battery technology, used where high energy and power density, and long battery life are the primary requirements.

Most of the time, the capital-intensive energy storage systems lie unused or store more energy than is needed. This unused power can be exploited to support the grid and generate a revenue stream for the UPS owner. Providing such ancillary services allow UPS owners to support the transition to renewable energy sources, create new revenue streams and reduce operating costs and energy bills.

With ongoing rapid urbanization globally, cities are increasingly relying on electrified urban transport systems, to provide sustainable transportation for their growing population, helping to reduce traffic congestion and thereby lower carbon emissions.

ABB provides innovative solutions that recover and store braking energy from decelerating electric trains and metro cars and makes the energy available for accelerating cars. A train's braking energy is captured - or recuperated -- as it approaches the passenger station. This energy can then be stored and later utilized by the train when departing.

ABB's Enviline energy recuperation and energy storage system are wayside energy recuperation systems, which can not only store but also return the surplus braking energy back to the grid, reducing the total energy consumption of a rail transportation system by up to 30 percent.



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The braking process of a train generates about 5 kilowatt-hour (kwh) of energy. If a lightbulb of 20 Watt is switched on for one hour you need 20 Wh of energy. 5,000 Wh is enough energy to have 250 lightbulbs switched on for one hour - just with the amount of energy one train generates each and every time it brakes.

Train braking lasts only seconds yet generates extremely large currents and occurs thousands of times each day. These events can cause voltage fluctuations that can lead to performance problems. The storage system can also be used to stabilize the power in the grid, thus reducing the demand charge and peak power penalties by cutting the starting power of trains.

During the coasting period of a train, the existing infrastructure supplies virtually no power. The Enviline energy storage system can use these periods to capture and store energy, enabling it to later supply it back as needed to sustain the voltage and train operation.

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