

# Battery storage solutions

Battery storage solutions optimise both costs and load on your infrastructure. We can assist in setting up and operating energy storage systems for your applications.

As Switzerland's largest producer of renewable energy, an experienced plant construction specialist and a leading energy trader across the whole of Europe, we also have a wealth of expertise in battery storage at our disposal. Is the energy management of your infrastructure suitable for your requirements? This is one of the key questions that energy suppliers and industrial companies constantly ask themselves.

And the questions don't stop there:

- How does the consumer profile affect your electricity bills and is there scope for optimisation?
- How can you improve your own consumption and thus the profitability of your power plant?
- How can you avoid complex and costly grid expansions for the connection of new renewable energy supply systems?
- How can a battery storage system be used profitably in the balancing market?

# Put our expertise to good use and benefit from the following advantages:

- Increased profitability of your plants
- Improved energy efficiency and security of supply
- Technical and commercial operational management
- Inclusion in energy markets as an individual plant or as part of a management pool





# Battery storage – an all-round solution for a broad range of applications

#### **General applications**

#### Peak shaving

Optimisation of power plant efficiency (PV, Wind, Hydraulic and gas)

Microgrid stabilisation (offline mode with black start capability)

Avoidance of grid expansion

Uninterruptible power supply (UPS)

Increasing own consumption capability

Storage (feed-in and feed-out) for charging stations (electromobility)

Power bank for PV plant operators

# Special applications for grid operators

Primary control reserves (PCR)

Secondary control reserves (SCR) association pool

Tertiary control reserves association pool

Reactive power generation

#### Analysis, planning, implementation and energy management

Right from the outset, we offer everything from a single source:

- Detailed determination of your consumption patterns (permanent load, peak load, timing)
- Simulations for selecting the optimum site in the grid, including income calculations
- Independent, individual analysis and consultation for optimising your consumption and generation structures through the use of a battery storage solution
- · Professional support in site evaluation, approval procedures, design, construction and management
- Manufacturer-independent development of profitable, sustainable and innovative solutions for your long-term benefit
- Pool management and maintenance contracts throughout the entire service life

### Choose the best solution for your requirements

We construct and service your battery storage system together with you or also as EPC contractor on your behalf:

- $\cdot\,$  We know which battery storage systems have proven themselves for each individual requirement
- We know what is available on the global market and negotiate, order and import everything on your behalf
- $\cdot$  We coordinate the work and the services offered by the construction companies and suppliers in the project planning phase and afterwards on the construction site
- $\cdot\,$  We take on responsibility for installation, commissioning and connection to the local grid
- $\cdot\,$  We take care of maintenance and fault management around the clock

#### Profit from optimal operation and energy management

We ensure that your battery storage system is used and managed optimally at all times:

• Connection of your battery storage system to a standard pool for optimal management on the balancing market



Axpo battery storage system 2 MW / 2.17 MWh, completed 2019, end customer Elektrizitätswerk Jona-Rapperswil AG (EWJR), Switzerland

# Planning and implementation of a battery storage system

(sample size 4 MW / 4 MWh)

 1 to 2 months
 Image: Start of the main project and order/tendering phase for implementation: From this point, we estimate an implementation phase of 9 to 12 months

	3 to 6 months*									
				4 to 6 months**						
								2 to 3 month		ths

#### Phase 1

- $\cdot$  Analysis of the possible applications
- · Determination of the battery storage solution requirements
- · Clarification of warranty requirements and contractual conditions
- Phase 2
- · Dimensioning of the battery storage system
- Site selection for the different application options
- · Tendering phase for component procurement
- · Obtaining of building permits and operational licences
- Phase 3
- · Procurement of battery storage system
- · Construction
- $\cdot$  Establishing the grid connection
- $\cdot$  Installation and commissioning
- Phase 4
- $\cdot$  Implementation of data transmission from the battery storage system
- controller to the energy management system
- · Management concept
- $\cdot$  Prequalification
- · Development of reporting
- $\cdot$  Start of marketing of balancing and peak shaving

#### Your reliable management partner for the next 10 years

- $\cdot$  Access to energy and service markets
- · Prequalification of plants
- · Algorithms and data basis (peak shaving and charge management)
- Marketing
- · Resource planning and management of battery storage system

- \* Duration depends on whether approval is required and how much time this will take.
- \*\* Duration based on the delivery time for the battery storage modules and the size of the plant.

# Get in touch with us today

Our field-proven team of experts is on hand to guarantee the most financially attractive and technically convincing solution for your needs. We would be happy to discuss what we can do for you in a personal meeting.

### Contact

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