Testing technologies and economics of medium voltage battery storage

Project details

<table>
<thead>
<tr>
<th>Title</th>
<th>M5BAT – Modular multi-megawatt multi-technology medium voltage battery storage</th>
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<tbody>
<tr>
<td>Project Executing Unit</td>
<td>Uniper Energy Storage GmbH</td>
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<td>Collaborative project</td>
<td>With RWTH Aachen University, Exide Technologies GmbH, SMA Solar Technology GmbH</td>
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<tr>
<td>Location</td>
<td>Germany</td>
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<td>Planned timescale</td>
<td>2013 – 2017</td>
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Strategic impact

- High strategic value in building our capability to exploit stationary battery storage
- Reinforce our relationship with RWTH Aachen
- Will help to create new business opportunities for energy trading in the future

Opportunity

Battery technologies are becoming more widely accepted as a viable option for large-scale electrical energy storage, capable of fundamentally changing the way electricity is generated and used. In particular, by integrating battery storage with renewables, the technology could play a key part in balancing an energy system with a growing proportion of intermittent and unpredictable generation sources.

In addition to technical performance, the ability to operate stationary battery storage on a profitable basis must be considered. Establishing a facility with alternative battery storage technologies and then trading its capacity on the energy market represents an important opportunity to gauge the economic viability of technology. It can deliver valuable insights for Uniper and the wider energy industry.

Project aims

The first stage of this collaborative project is the development of a 5MW capacity stationary battery facility in a specially converted building in Aachen, Germany.

Use and benefits

Through the connection with the local medium voltage grid, in this project Uniper has the opportunity to test the economical operation of stationary batteries in the energy markets. The insights this will provide will be important to future strategies for the deployment of battery storage, particularly to support the transition to low carbon generation.

In addition, Uniper will gain experience of a mix of different battery technologies, including lead-acid and lithium-ion in long-term operation, and be able to determine the most profitable applications using stationary batteries.

The project reinforces our relationship with RWTH Aachen. Moreover the test facility can be used to test further battery storage technologies.

As well as providing valuable experience and data for Uniper’s energy storage and trading businesses, the project has wider significance for the energy industry. This is underlined by approval of part-funding for the project by the German Federal Ministry for Economic Affairs and Energy.

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Preliminary design for the M5BAT energy storage facility