E-Cars can be used as short time storages

Overall positive conclusion after completion of e-SolCar project /outcomes will be used in follow-up project

Technologically, electric cars qualify as short time storages. That is the main finding of the e-mobility project e-SolCar which was completed after three years. The finding was proven by Brandenburg University of Technology Cottbus-Senftenberg (BTU) with realizing bidirectional charging during the course of the project.

The joint project was started in 2011 between BTU Cottbus-Senftenberg, Vattenfall Europe Generation AG and German E-Cars Research and Development GmbH in the Lusatia area and is now terminating on schedule. It was funded by the European Fund for Regional Development (EFRE). During the roll-out of the project, 45 e-cars were passing through Lusatia within a 100 kilometer "radius of action". The fleet included three models: Cetos (basis: Opel Corsa), Plantos (basis: Mercedes Sprinter) and Toyota Highlander. During the project more than 400.000 km were covered in total. The cars were mainly used in the vehicle parks of Vattenfall and BTU Cottbus-Senftenberg.

As part of the project, the used vehicles types were completely remodeled by German e-Cars. To add to that, several technical components had to be newly constructed for the vehicles to be used as rolling energy storages, among them a so-called converter to feed electrical energy back from the battery into the grid. For the first time, this was made possible. Some of the e-cars were equipped with the ability to charge bidirectional – a nationwide innovation.

To do so, it was necessary to control the charging process of the e-cars as well as the refeeding of the energy from the battery into the grid from a control center. The communication needed to establish this "vehicle-to-grid"-technology was successfully implemented and tested in cooperation with Siemens. The intelligent communication between charging station and e-car allows for user requirements such as time of departure and needed range to be put in. On the other hand, this helps in realizing a grid-beneficial charging of the e-vehicles.

"By using e-cars as 'rolling energy storages' the public grids can be supplied with ancillary services that for example serve the grids stability", explains Prof. Schwarz, director of the Energy Centre Brandenburg (CEBra) and project leader of e-SolCar at BTU Cottbus-Senftenberg the benefit resulting from the projects idea. "This makes sense, especially in Brandenburg, where the generation capacity of regenerative energies already today remains above the actual usage and where innovative approaches of how to store regenerative energies according to the marked need are what we are looking for."

PRESSEMITTEILUNG

e-SolCar – DER ROLLENDE STROMSPEICHER

The e-vehicle e-SolCar does not only serve as mobile energy storage and eco-friendly means of transportation. The innovation project has also sustainably “electro-mobilized” the Lusatia area. Seven communities and institutions have been supplied with vehicles. More than 77 charging points, spread throughout the whole Lusatia area, were used to ‚fuel‘ the cars with energy. In total, approximately 10.000 charging processes were conducted during the project which equals ca. 130 MWh in charging energy.

A major part of the charging infrastructure and of the vehicle fleet will stay in the region even after the projects termination. The e-SolCar-“components” such as the e-cars, the charging station park, PV station and battery will be used in the follow-up project SMART Capital Region (SCR). SCR is dealing with the development of a future-oriented power and heating concept for the capital region which is supposed to serve as worldwide example for similar metropole regions.

“We are proud that with e-SolCar serving as a leading project within the showcase region Berlin-Brandenburg we have been able to contribute to the development of an eco-friendly way of transportation and to research future-oriented storage technologies. With the vehicles and charging infrastructure remaining in the region, this engagement becomes even more sustainable”, confirmed Hubertus Altmann from the managing board of the resort “Plants” at Vattenfall Mining and Generation.

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