

FACT SHEET

e-SolCar — DER ROLLENDE STROMSPEICHER

e-SolCar is a joint project that was undertaken in the Lusatia area between Brandenburg University of Technology Cottbus-Senftenberg, Vattenfall Europe Generation AG and German E-Cars Research and Development GmbH.

Project duration: June 2011 until December 2014

Total investment: 9 233 000 EUR

Funded by the European Fund for Regional Development (EFRE).

Research Fleet

vehicles total 45

BTU 15

Vattenfall 22

Communities in Lusatia 8

3 types of vehicles

Cetos 30

Plantos 11

Toyota Highlander 4



Total distance: more than **400.000 km**

Charging infrastructure

Charging points total 77

Non public 44

Public 18

BTU stations 15



As part of **e-SolCar** approximately **10.000 charging processes** were undertaken. This equals a **charging energy** of ca. **130 MWh**.

In the project the following **vehicles** were newly developed:

- Remodelling of 30 Opel Corsa to e-cars ready for street-use including the necessary type approval
- Remodelling of 11 Mercedes Sprintern to e-transporters ready for street-use including the necessary type approval
- Remodelling of 4 Toyota Hybrids to plug-in hybrid vehicles ready for street-use

To be able to use the vehicles as storages within the grid the following **technical components** were newly developed:

- Module for communication between driver and vehicle to put in the drivers requirements
- Module for communication of vehicle and charging station
- Module for communication of charging station with grid control center
- Converter for feeding energy from the battery back into the grid
- EMC test chamber, in which e-cars can be tested while being developed

For using the vehicles as storages within the grid the following **control and fleet management systems** were developed:

- Energy Management System to operate a charging station park with vehicles capable of bidirectional charging (V2G) as part of a micro grid with PV and stationary batteries
- Control system for the whole micro grid
- Control system for a developed, technically new CHP system and set-up of CHP system

All that was then implemented into the **general concept**:

- Construction and coordination of a micro grid to supply smaller or medium sized cities with a high amount of regenerative energies
- Contribution to stabilize the system of micro grids with vehicles capable of V2G