





The following assets are presently part of PowerLab.dk to help facilitate the above studies:

 A photograph of a laboratory test bed. It features a wooden desk with a metal frame. On the desk, there is a computer monitor, a keyboard, and various electronic components. A blue power supply unit is connected to the desk. A red and white device is mounted on a stand behind the desk.	<p>Table-To-Grid (T2G) - EV Battery Test Bed</p> <p>A test bed has been implemented to reproduce the realistic charging or discharging behavior of an EV. A 15 kWh lithium-ion battery pack, composed of 110 series-connected lithium-ion cells is monitored by a battery management system. The EV test bed can either charge or enter the Vehicle-to-Grid mode, using a flexible communication and control architecture, using contemporary communication standards. During test the EV battery can be remotely controlled based on different control scenarios.</p> <p>In addition to the above, the test bed is designed as a multipurpose platform where tests on individual cells are used for electrical and thermal characterization studies.</p>
 A photograph of a silver electric vehicle (eBox) parked on a grassy area. The car is a small, boxy hatchback with a red circular logo on the side.	<p>The eBox</p> <p>This electric vehicle prototype is the first of its kind in Europe. It comes with a large Battery Pack (35 kWh / Up to 240 km), support of bi-directional charging (Vehicle-To-Grid) and a set of advanced computers combined with modern communication protocols and standards.</p> <p>The above qualities make the eBox a suitable platform for testing many different utilization concepts!</p>
 A photograph of an outdoor charging infrastructure. It shows a concrete base with several metal poles and red cables. The area is surrounded by dirt and some construction materials.	<p>Charging Infrastructure</p> <p>A parking lot outside Center for Electric Power & Energy (CEE) has been made to support six charging spots, each with a 32 Amp 3-phase power connection and Ethernet cables for internet communication. The goal is to support a series of different charging spots from different vendors using different types of equipment. This asset is suitable for the test of roaming and interoperability.</p>

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	<p>(charging infrastructure - continued)</p> <p>Also available in the PowerLab.dk environment is a general CEE 63 Amp 3-phase power connection supporting V2G (up to 44kW).</p> <p>In addition a special EV connection for up to 150kW - ready for fast charging - can be established. Local systems with high penetration of renewable and intelligent loads, such as EV's, can be tested in an isolated grid within powerlab.dk.</p>
	<p>Electric Vehicle Supply Equipment (EVSE) / Charging spot</p> <p>PowerLab.dk has its own custom charging spot that will implement a series of measuring and computing units that will grant outside control of the charging process. This asset can be used for communication and standardization studies.</p>