

# ZEM History

The ZEM ALLIANCE, a research initiative, was launched in connection with COP 15, the Climate Conference in Copenhagen in December 2009.

*The initial members of the ZEM ALLIANCE were Vorarlberger Kraftwerke (with Vlotte, the largest regional EV demonstration program in Europe), E.ON, Germany's largest electric utility, and DnV Research of Norway. Later several battery companies and an OEM joined the Alliance.*

*ZEM has conducted several research projects with members of the Alliance, and is a member of the Sustainable Transportation Ecosystems Taskforce of the World Economic Forum.*

Since its launch, ZEM signed cooperation agreements with Europe's largest research network, with the three primary R&D Groups in Germany and Norway, and the national US research center

To get the best financing for EV batteries, we need to quantify the factors that influence their value throughout their lifetimes, extend that useful life by regularly monitoring and optimally managing batteries while in use, and capture the maximum value possible after the batteries have ended their useful lives in cars (i.e. to help repurpose them in other energy storage applications). This requires a global R&D effort and a partnership among EV pioneers.

• Therefore, ZEM signed research partnerships with DnV, (the Norwegian technology certification group) and with the German Fraunhofer Institute (Europe's largest research group) to assess the key factors which affect battery life and performance. This research is done in close cooperation with leading battery producers, OEMs, and electric utilities.

• ZEM has also concluded an agreement with the US Department of Energy National Renewable Energy Laboratory (NREL) with respect to information and analyses of battery designs and their cell chemistry, energy and power performance, and degradation mechanisms in real life driving cycles.

• Such collaborative efforts are needed so that the electric vehicle can make a substantial contribution to lowering the CO2 emissions in the transport sector, says Prof. Matthias Busse, Head of the Fraunhofer Institute IFAM in Bremen.

## **Make the EV accessible:**

In order to advance the broader acceptance of the EV, cars have to be out in the field and become accessible to a broader clientele, ranging from corporate users and local authorities to individuals. ZEM is therefore initiating a number of early commercial projects in partnership with local utilities, financial institutions, and governments.

As part of this effort, ZEM signed a Partnership Memorandum with VLOTTE, the Austrian energy consortium, launching a large scale EV Program in Austria that will test both the operational and

financial/economic aspects of operating EVs.

“We need a radical rethinking of how tomorrow’s vehicles will be used. We are therefore happy to work with ZEM and MoveAbout on their international roll-out of the shared use of EVs - the concept of “clean mobility on demand” says Christian Eugster of the Vorarlberg Kraftwerke in Austria, a member of the VLOTTE Consortium.

**Make the EV a city priority:**

At the Climate Leaders Summit in Copenhagen, ZEM also joined the non-profit Climate Group in creating a working group on EV policy, finance and deployment. The goal of the “EV20” initiative is to accelerate the uptake of electric vehicles by working with leaders from cities, states and nations together with auto manufacturers, financiers and the electric vehicle supply chain.

Prince Albert II of Monaco who chairs the working group said, "The EV20, convened by The Climate Group with the support and collaboration of my Foundation will work to turn electric vehicles into a mass market solution to climate change by mobilizing leading public and private players to adopt bold new EV projects, policies and commitments, identify and address barriers, and share emerging understandings around best practices.”