

Press Release

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Fraunhofer ISE and Badenova present project on electric mobility

Utilities' vehicle fleet also to be powered by electricity in the future

Scientists at the Fraunhofer Institute for Solar Energy Systems ISE are currently in charge of a project that shall make it possible for large-scale operators to integrate electric vehicles into an existing vehicle fleet. The project "Efficient Mobility" is subsidized by Badenova's Innovation Fund for Climate and Water Protection. On August 25, the solar energy research institute in Freiburg and the regional utility presented their communal project at Fraunhofer ISE in Freiburg synchronous with the visit of the road show of Mitsubishi's electrical vehicles, showing the first electric vehicles to be mass produced worldwide.

Within the project "Efficient Mobility", which runs through the end of 2010, Fraunhofer ISE analyses the existing hybrid vehicle fleet of Badenova, tests the operation of electric vehicles as well as the use of renewable energy to power the vehicles with electricity. The goal is to determine the potential for the integration of electric vehicles and to optimize the vehicle fleet based on economical and ecological criteria. "First, we will look at Badenova's hybrid vehicle fleet. Some of the approximately 500 vehicles, which run either on gasoline, diesel or natural gas, will be analysed with regard to capacity utilization and primary energy use. Based on the results of this analysis, any supplements to the existing fleet will be simulated before an actual electric vehicle is put into use," explains Dr. Christof Wittwer, Head of the Working Group "Operation and System Control" as well as the responsible project leader at Fraunhofer ISE.

In order to guarantee a balanced load management, storage management and energy production management, the researchers at Fraunhofer ISE are developing an intelligent

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control. Since the regional renewable energy production is dependent on the solar irradiation and the local wind conditions, the charging of the vehicle batteries is to be synchronized with this fluctuating feed-in to the distribution grid. At the same time, the intelligent controls provide important information about electricity tariffs and billing. A demonstration version of the charging station is to be similarly presented at the informational event today.

"As a solar research center, it is our intent to make use of as many contact points as possible for the application of renewable energies. Also in the project "Efficient Mobility", we follow this integrated approach," says Dr. Günther Ebert, Department Head of "Electrical Energy Systems" at Fraunhofer ISE as he describes the different aspects in the project. At the end, powering the electric vehicles solely with renewable energy is our goal. When a large energy demand occurs on the short term, the intelligent controls shall ensure that the charging procedure be preferably delayed in order to exclusively use electricity from renewable energy sources during the off-peak times. The availability of the vehicles, however, always has priority.

"Badenova is participating in this groundbreaking and exemplary project, because it demonstrates a way in which ecology and mobility can be compatible," says Mathias Nikolay, Director of Badenova AG. "As an electric utility operator, we are extremely interested in integrating renewable energy in a sustainable grid management. Badenova's Innovation Fund provides part of the necessary research funds."

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Information about the Event:

"Mit Solarstrom mobil" (Mobile with solar electricity)

August 25, 2009 from 9:30 to c. 1:00 P.M.

Location: Fraunhofer ISE, Heidenhofstr. 2 79110 Freiburg

Electric mobility at Fraunhofer:

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Fraunhofer ISE is involved in several research projects in the area of electric mobility. The two main focuses of the activities are integrating electric mobility into the electricity grid and providing the electricity through renewable energy sources.

Fraunhofer ISE, together with 32 other Fraunhofer Institutes, is participating in the system research of electric mobility. The speciality of Fraunhofer lies in the fact that all of the steps in the value-added chain, along with their interaction with each other, are considered and further developed – from the energy generation, through the transport and distribution of the energy within the electricity grid, the interface between the electricity grid and the vehicle, the energy storage through to new vehicle concepts with a new infrastructure as well as use and billing concepts.

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Demonstration of the charging station developed at Fraunhofer ISE for electric vehicles. Provides information about the charging state and optimizes the charging time according to ecological and economical aspects. The concept is intended for both private and commercial use in the future. Source: Fraunhofer ISE

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