

NEWSLETTER

January 2014 - n.6

AlpStore pilot actions: after Germany and Slovenia, we are back in Italy and discover France.



The demand for storage facilities is closely connected to the volatility of renewable energy sources. Wind and solar energy are not continuously available. Short-term peaks in energy generation and consumption have to be balanced. Additionally there is also the need to detect means and ways to bridge longer periods of little energy generation. There is a wide range of storage technologies for short-term and long-term purposes. The **AlpStore** project will lead to assessments, what kinds of storage means are reasonable to be used to different extents in different regions – from the technological as well as the economical perspective.

PILOT ACTION IN STRASBOURG: the Alsace Auto 2.0 project

Freshmile is a mobility operator and a load aggregator, which manages the charging process for batteries in electric vehicles in real time. The Alsace Auto 2.0 project is the first experimental roll-out of this system. It takes place in Strasbourg and its region and is scheduled for 2014. By managing in real time the charging process of batteries in electric vehicles, the Freshmile system is in fact a distributed energy storage system, spread over a given territory. The pool of batteries is aggregated into a kind of distributed virtual power plant. In **AlpStore**, the Alsace Auto 2.0 pilot action aims at investigating in particular mobile storage, i.e. storage by batteries in electric vehicles. It deals with questions pertaining to economics, environmental footprint and large-scale technical feasibility for such a system. In this action, a few dozen electric vehicles will be rolled out in Strasbourg and its region next year. A larger commercial launch will start in 2015.

ALPSTORE



Energy Storage for the Alpine Space



Dear Reader,

Welcome to the 6th issue of the **AlpStore** newsletter with much new information on our project, that is running in full activities since more than one year now!

In our previous issues we introduced you the **AlpStore** pilot actions in development in Graing and in the Allgäu region in Germany, in Slovenia and the Lombardy Region (Italy) ones. In this newsletter we would like to turn your attention to the French actions in Strasbourg and Belfort and to the one in the Aosta Valley in Italy (see also [here](#)). Moreover please save the date for our **2nd Technical Symposium** that will be held in **Belfort** on **27th of March 2014** organized and hosted by the Technological University of Belfort-Montbéliard, Laboratory IRTES-SET.

Enjoy reading!

*Ludwig Karg
Project Responsible*

AlpStore up-coming events:

2nd AlpStore Technical Symposium, 27th March 2014, at the Technological University of Belfort-Montbéliard in Belfort (France). The Symposium will focus on the role of gaseous forms of energy storage and distribution and their influence on mobility from an industrial point of view



In the picture above: Université de Technologie Belfort-Montbéliard. Image Source: web

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ALP STORE



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PILOT ACTION IN BELFORT: Gas and Power – together for a cleaner future

Situated in the midst of the industrial sector of Franche Comté, the Technical University of Belfort-Montbéliard (UTBM) has been engaged in Fuel Cell research since over a decade and proposes that hydrogen, generated from surplus of renewable energy, may be stored for long durations and used as fuel in Fuel Cell based automobiles. In return, as mobile energy storage units, Fuel Cell vehicles can supplement the electricity supply on micro-grid (unit of multiple buildings) and nano-grid (residential unit) levels. UTBM objective in **AlpStore** is to implement a virtual platform to simulate a fleet of Fuel Cell vehicles connected to the grid. Each vehicle will act as a mobile electricity storage unit from the grid's point of view. The vehicles will in turn be fueled by a virtual hydrogen station that generates the gas through electrolysis, using surplus grid energy. The goal is to build a virtual tool for analyzing the Electricity-Hydrogen-Electricity chain including the communication and management system. This platform will be based on generalization of the energy storage, consumption and communication overhead data obtained from different physical sources.



In the picture above: one of Freshmile Pilot sites, in Hager's headquarter, Obernai (Fr). Image Source: ALOT and Freshmile



In the picture above: UTBM Pilot site. Image Source: ALOT and UTBM

AOSTA VALLEY REGION PILOT ACTION: The “Smart Node” application in a SME

The pilot action is based in the headquarters of MAVEL Srl in the small Municipality of Pont-Saint-Martin at the very beginning of the Aosta Valley, Italy. MAVEL srl, technological partner of the Region in the **AlpStore** project, is a SME whose core business is the design and manufacturing high speed electric engines, inverter and power control electronic, including the smart inverter tested in the project. The pilot action main goal is to implement a "Smart Node", constituted by a PV generator, the end-user load, a stationary storage system, an electric vehicle and an intelligent control unit (inverter) of the energy flows. The smart node will manage the energy production and consumption (including the electric vehicle recharge) over time according to different priorities with the aim to provide the maximum benefits to the end-user and to the grid. The project results will be extended to the whole regional territory through a mathematical model in order to support the Regional planning process and the future energy and environmental policies. For more info on these pilot actions please see also [here](#).



In the picture above: Aosta Valley Pilot site. Image Source: Aosta Valley

Project partners in these pilot regions are:

- Freshmile, www.freshmile.com
- Université de Technologie Belfort-Montbéliard, Laboratoire IRTES-SET www.utbm.fr
- Autonomous Region of Valle d'Aosta - Regional ministry for productive activities - Energy planning and energy efficiency bureau www.regione.vda.it



In the pictures above: Smart Box and Storage Image Source: Aosta Valley