

Press release

**Three Swiss companies address the energy dilemma in an FP7 European Project**

## **Flexible buildings to make eco-friendly districts in smart-city**

**Neuchatel, 21 May, 2013 – By taking their environment into consideration, smart buildings can perform significant energy savings, translated directly into CO<sub>2</sub> reduction. The €6.5 million European project AMBASSADOR will transform smart buildings into flexible buildings in an eco-district. Three Swiss companies have joined a consortium of 15 industrial and academic partners with complementary background know-how, and will team up to offer unique reference designs for eco-friendly district(s) in a smart city.**

The energy dilemma is growing daily, with an energy demand expected to have doubled by 2050 and the need to reduce CO<sub>2</sub> emissions by half in the same time frame. Failure to solve the dilemma will result in frequent power outages, rising energy prices, and conflicts over resource access and control.

So far, research efforts have been concentrated on stand-alone buildings weakly tied to their immediate environment. Specifically, in each building, only key sub-systems have been optimized. Such individual systems have been made more effective by becoming pervasive in any building area (the reign of “boxes” and “controllers”). Also, importing parameters from other sub-systems has allowed better regulation (so called Access or Occupancy Management Systems). Still fairly new on the market, Energy Usage Analysis tools provide the capability to analyze energy profiles of the scattered buildings of large corporations. However, this type of analysis and planning on a *district* level is as inexistent as Energy Usage Modeling leveraged in control schemes. This means that more effective building control schemes are an unexplored area and suggests a potential for each smart building to contribute to district-level energy optimization schemes, thanks to appropriate behavioral and stochastic models.

In parallel, many more renewable and cogeneration energy sources have been made available in the form of high-capacity energy storage systems. Such systems are increasingly taken into account during the planning of large districts, but still barely influence that of individual buildings. Energy flows (electrical or thermal) can be managed through energy usage schemes, at district and domestic levels, planned to deliver significant savings.

Funded through the EU's 7<sup>th</sup> Framework Programme, the AMBASSADOR (Autonomous Management System Developed for Building and District levels) project will study, develop, and experiment on systems and tools that aim to optimize the energy usage within a district by managing energy flows, and predicting and mastering energy consumption and energy production. The overall goal is to define and experiment on a system that optimizes the cost of energy within a district, that cost being expressed in terms of Primary Energy, CO<sub>2</sub>, or euros. A number of mechanisms and technical systems will be studied, both at building- and district level, for the creation of such a system.

To achieve this aim, the project will use real-time adaptive and predictive behavioral models of buildings and districts, exposed to weather conditions, human presence, and energy-efficient materials and technologies. Such models will allow optimal supply/demand balancing to be reached. Building energy management systems will be turned into real-time configurable systems, bringing flexibility to the building. Thus, buildings will establish, in real-time, energy schemes linked to the district energy-management and information system (DEMIS). The project will investigate and validate the contribution of certain technologies to the energy-optimization objective of a district. The focus will be on technologies that are availa-

ble or will be available at the horizon of the project. There is little interest in studying solutions which are too far away from commercial availability.

The results of AMBASSADOR will be deployed and validated on several validation and demonstration sites in France, Greece, and the United Kingdom.



*National Solar Energy Institute (INES), France*



*Lavrion Technological and Cultural Park (LTCP), Lavrion, southeastern Attica, Greece*



*BedZED: the UK's largest mixed use sustainable community*

As for Switzerland, the project is a significant step toward net-metering at a district level, fully in line with the Swiss government's Energy strategy 2050. This is why the three Swiss companies — CSEM, Plannair, and Amires — have joined the recently created AMBASSADOR consortium.

### **Additional information**

#### **CSEM**

Mr. Emmanuel Onillon  
Project Manager Control & Sensing  
Tel. +41 32 720 5402  
Fax +41 32 720 5950  
E-mail: [eon@csem.ch](mailto:eon@csem.ch)

## About AMBASSADOR

Christened *AMBASSADOR* for Autonomous Management System Developed for Building and District Levels, the FP7 project was launched on 1 November, 2012, and will run for four years until October 2016. In order to reach the challenging goals of the project, the AMBASSADOR consortium consists of 15 partners with complementary background know-how. The consortium is led by Schneider Electric Industries SAS.

Coordinator: Alfredo Samperio (Schneider Electric), T: +33 (0) 6 70 71 09 02, Mail: [alfredo.samperio@schneider-electric.com](mailto:alfredo.samperio@schneider-electric.com)

Other consortium members: CSEM (CH), CEA Commissariat à l'Energie Atomique et aux Energie Alternatives (FR), Neurobat AG (CH), Leclanché GmbH (DE), FUNDACION TEKNIKER (ES), Zigor R&D (ES), D'Appolonia S.p.A. (IT), NTUA (National Technical University of Athens) (EL), Planair SA (CH), CISCO, EC Brussels (BE), Teknologian Tutkimuskeskus VTT (FI), ZEDfactory (UK), and AMIRES (CZ).

Further information is available at [www.ambassador-fp7.eu](http://www.ambassador-fp7.eu)

## About CSEM

### CSEM – an innovation center

CSEM SA, founded in 1984, is a private Swiss research and technology organization (RTO) specializing in microtechnology, nanotechnology, microelectronics, systems engineering, communications technologies, and photovoltaics. Many consumer products used daily in the fields of automation, watchmaking, medical technology, pharma, clean- and greentech, security, or transport have been developed at CSEM and transferred to industry. Around 400 highly qualified and specialized employees from various scientific and technical disciplines work for CSEM in Neuchâtel, Zurich, Alpnach, and Landquart, and Muttenz.

Further information is available at [www.csem.ch](http://www.csem.ch)

## About Planair SA

### Consulting engineers for sustainable development

Established in 1985 in a spirit of commitment and with the desire to contribute to sustainable development, the Planair office mission is to promote energy conservation, renewable energy, and environmental protection before a broad customer base: public authorities, industries, individuals, architects, real estate agencies, banks, insurers, etc. By offering commitment and wide-ranging expertise in energy, physics, and technical equipment for buildings and environmental impacts (air pollutants, hazardous materials, etc.), the Planair team is "the" partner to meet customers' needs, to design and plan energy- or environmental projects, and to monitor their implementation to completion.

Further information is available at [www.planair.ch](http://www.planair.ch)

## About Amires

### Support in strategically oriented innovations for business impact

AMIRES is a consulting company for EU research, development, and innovation (R&D&I) projects, technology scouting, and business innovation. It specializes in the creation of consortiums of partners with a common aim of product or service innovation with significant potential for know-how commercialization. Unique and profound knowledge of the European public funding environment (e.g. the EU 7<sup>th</sup> Framework Programme for research and technological development) as well as a broad network of market key-players contribute to the high quality of entrusted projects. AMIRES follows projects from their initiation and planning, through negotiation, execution, and management to the final stage, where the exploitation of new technologies, products, or services is facilitated.

Further information is available at [www.amires.eu](http://www.amires.eu)

## Media contact

### CSEM

Sabina Müller  
Strategic Communication Manager  
Tel. +41 32 720 5226  
Fax +41 32 720 5730  
e-mail: [sabina.mueller@csem.ch](mailto:sabina.mueller@csem.ch)

