

## Context

The IURBAN project focuses on both energy consumption (electricity, heating, water and gas) and energy production (PV and solar thermal) for cities located in different European countries (Bulgaria, Croatia, Germany, Italy and Spain). It is part of the Horizon 2020 programme for the period 2014-2020.

The objective of the project is twofold. Firstly, it aims at establishing a coherent policy framework at Community level, at building and piloting a real-time energy monitoring and management system at urban level. Secondly, it focuses on addressing in an innovative way the challenges of urban areas and communities in terms of energy management. Strengthening its control in real time, setting up an urban energy management system for public and private buildings, and developing the production of renewable energies are the main actions.

Bulgaria, as a partner, has to apply within its territory the IURBAN project and the its general objectives. In order to do so, a smart "Urban Energy" tool has been developed.

## Description and Main Objectives

The tool "Urban Energy" should allow the creation of new models of management and production of cleaner and more efficient energy. The objective is to put in place support systems enabling local elected officials and professionals to take effective decisions as to integrate their territories in the IURBAN project's objectives. The tool will meet the growing needs of the market for cheaper and cleaner energy services. It is designed with the direct involvement of end users (local residents, energy companies and public administration).

The use of information and communication technologies (ICTs) has proven pivotal. The goal is to create a more entrepreneurial ICT ecosystem, increase innovation, help entrepreneurs to take risks and businesses to grow. The core of the iUrban Tool will be a SMART urban Decision Support System (smartDSS) - a customized energy management and control platform in the framework of a city. It will allow scalability and incorporate a two-level Decision Support System:

- Local Decision Support System (LDSS) will engage consumers and prosumers by capturing near real-time data from installed Distributed Energy Resources (DER). The data will refer to their energy consumption and production and will be displayed on a user-friendly interface.
- Centralized Decision Support System (CDSS) will aggregate data from all LDSSs to provide city-level decision support to authorities and energy service providers. It will generate a number of parameters, including city-wide energy production and consumption forecasts.



## Implementation Strategy

The iURBAN project has been applied in the field by new infrastructures designed and built, piloted and validated with a view to reducing energy consumption. An evaluation of cost-effectiveness in public and private buildings has been carried out, as well as energy-saving programmes.

### Expected benefits

- Significant reduction in energy consumption and CO2 emissions, achieved through ICTs for energy management and monitoring;
- Adoption of ICT for energy monitoring and management purposes by city authorities;
- Synergies with national and international research and policy activities;
- Opening to new markets;
- Publications jointly authored by researchers from ICT, energy, construction and civil engineering and city experts based on real-life pilots.

### Results

- Energy management and monitoring systems deployed in 2 pilot cities and 50 buildings;
- Deployment of SmartHomes and SmartHeating equipment in public and private facilities;
- Up to 10% decrease of the energy costs due to the iURBAN system;
- Development of a centralized support system and a database network;
- Development of a virtual power plant to simulate the urban energy balance;
- User Engagement Strategy, public and private.

### Key lessons learned

- Energy management and monitoring through ICT has the potential to bring savings of up to 10%;
- The technical infrastructure must be continuously validated, as well as the software and data cloud;
- User engagement requires a constant methodology and actions to motivate and keep end-users interested.

## Budget

The total budget is € 5.632.289, € 3.849.958 of which co-financed by EC within FP7.

## Time Frame

Start date: October 2013 - End date:  
Ongoing

## Contacts

Narcis Avellana Tarrats  
Project Coordinator  
Email: [narcis.avellana@sensingcontrol.com](mailto:narcis.avellana@sensingcontrol.com)

Bulgarian Partners: EVN TP and EAP  
EAP contact: Ina Karova  
[ina.karova@eap-save.eu](mailto:ina.karova@eap-save.eu)

*This project has been funded with support from the European Commission. The sole responsibility for the content of this factsheet lies with the authors. It does not necessarily reflect the opinion of the European Union. Neither the EASME nor the European Commission are responsible for any use that may be made of the information contained therein.*



This project has received funding from European Union's Horizon 2020 research and innovation programme under grant agreement No 695923