



## E3SoHo European Workshop – Brussels

18<sup>th</sup> September 2013

### ABSTRACT

The aim of the Workshop was to present and discuss the results of the E3SoHo project together with other Coordinators of relevant initiatives (such as eSESH, BECA, 3e-Houses, SHOWE-IT and ICE-WISH), working on ICT for Energy Efficiency in Social Housing.

The Workshop represented also an excellent opportunity for the audience to hear from the European Commission about the current initiatives on ICT for Energy Efficiency (Smart Cities, ICT & Horizon 2020, READY4SmartCities).

**Date & location:** Wednesday 18 September 2013 / Fondation Universitaire, 11, Rue d'Egmont, 1000 Brussels



## AGENDA OF THE WORKSHOP



Wednesday 18<sup>th</sup> September 2013



### E3SoHo Final European Workshop: ICT-enabled Energy Efficiency in European Social Housing

Venue: Fondation Universitaire - 11, Rue d'Egmont, 1000 Bruxelles

Time: From 13.00 to 17.30

Working language: EN/IT

E3SoHo is a European ICT-PSP project, coordinated by ACCIONA Infraestructuras, in which CECODHAS Housing Europe participated by providing a socio-economic analysis of the use of ICT in social housing.

The overall aim of the project is to implement and demonstrate in 3 Social Housing pilots (in Spain, Italy and Poland) an integrated and replicable ICT-based solution which aims to bring a significant reduction of energy consumption in European social housing by providing tenants with feedbacks on their energy consumption and by offering them personalized and targeted advice.

The results of the project will be presented and discussed together during the workshop with other European projects working on ICT for Energy Efficiency in Social Housing. The targeted audience is composed by high-level representatives from Social Housing Organizations members of CECODHAS Housing Europe as well as other relevant stakeholders and EC representatives. To find out more about the E3SoHo Project, please visit [www.e3soho.eu](http://www.e3soho.eu).

### Final Agenda

**14.00 – 14.30 Opening Session (moderated by Mr Javier Mardaras - ACCIONA)**

**Welcome Speech**

*Kurt Eliasson (President of CECODHAS Housing Europe)*

**European policies and initiatives on Smart Cities and Energy Efficiency in Social Housing**

*Carmen Ifrim (European Commission, DG CONNECT, Unit H.5 - Smart Cities & Sustainability)*

**ICT and Energy Efficiency for Residential Districts: a Smart City Perspective**

*Christian Mastrodonato (D'Appolonia, READY4SmartCities Coordinator)*

Questions from the audience



**14.30 – 15.45 1<sup>st</sup> Panel. E3SoHo project results and lessons learnt  
(moderated by Ms Carine Puyol - USH)**

**Project Overview**

*Javier Mardaras (ACCIONA Infraestructuras) E3SoHo Project Coordinator*

**Socio-economic aspects of ICT in Social Housing and its replication potential**

*Marco Corradi (CECODHAS Housing Europe)*

**E3SoHo ICT solution and future technological trends**

*Jorge Landeck (ISA)*

**A case study: pilot site building in Zaragoza**

*Paloma Bozman (Zaragoza Vivienda - Member of AVS)*

Questions from the audience

**15.45 – 16.00 Coffee break**

**16.00 – 17.00 2<sup>nd</sup> Panel. ICT PSP projects for energy efficiency in social housing: conclusions and lessons learnt (moderated by Ms Carine Puyol - USH)**

**The eSESH Project**

*Sergio Rossi - Finabita (Project Partner on behalf of eSESH Project Coordinator)*

**The BECA Project**

*Thomas Lesperrier - Delphis (Project Partner on behalf of BECA Project Coordinator)*

**The 3E-Houses Project**

*José Luis Burón Martínez - ACCIONA (on behalf of 3E-Houses Project Coordinator)*

**The SHOVE-IT Project**

*Piotr Zietara - Bax & Willems Consulting Venturing (Project Partner on behalf of SHOVE-IT Project Coordinator)*

**The ICE-WISH Project**

*Alain Lusardi - Consorzio Nazionale CasaQualità (ICE-WISH Project Coordination Team)*

Questions from the audience

**17.00 – 17.30 Open discussion panel**

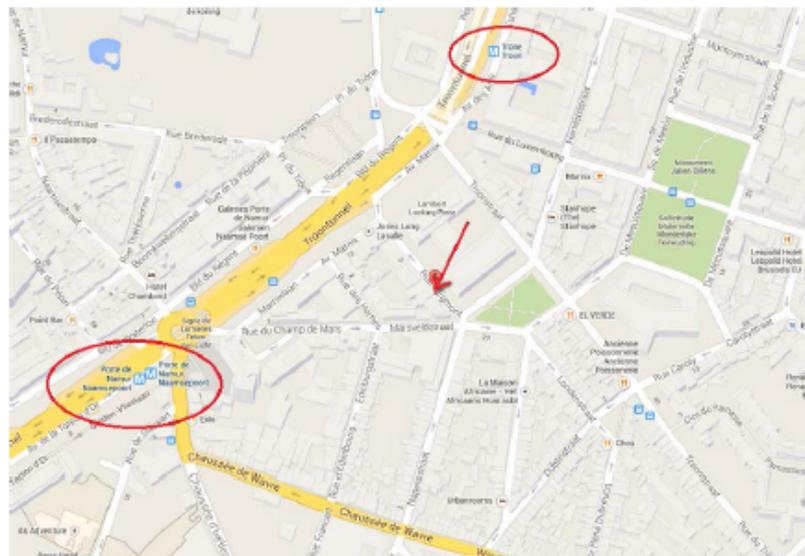
Synthesis of projects' results: lessons learnt, social aspects, business models and future replication and exploitation strategies

*Selection of speakers from 1<sup>st</sup> and 2<sup>nd</sup> Panel*



## Venue

The event is taking place in the meeting room «Félicien Cattier», on the ground floor of the Fondation Universitaire, 11, Rue d'Egmont, 1000 Bruxelles. The building is close to both Metro station "Porte de Namur" and "Trône" as you can see from the map below:



## Contact:

Alessandro Cesale - CECODHAS Housing Europe  
Email: [alessandro.cesale@housingeurope.eu](mailto:alessandro.cesale@housingeurope.eu)  
Phone: +32 2 5410566

## AUDIENCE / ATTENDEES

The meeting was attended mainly by high-level representative from National/Regional federations member of CECODHAS Housing Europe, representing the Public, Cooperative and Social Housing sector - below you will find the List of Participants:

Wednesday 18<sup>th</sup> September 2013



### E3SoHo Final European Workshop: ICT-enabling Energy Efficiency in European Social Housing

Venue: Fondation Universitaire, Room «Félicien Cattier» - 11, Rue d'Egmont, 1000 Bruxelles

Time: From 13.00 to 17.30

### List of Participants

	Family Name	Name	Organisation
1	Ajao	Olusoji	SciencesPo
2	Boisson	Pierre	CSTB
3	Boulmier	Muriel	USH
4	Bozman	Paloma	Zaragoza Vivienda
5	Brassier	Pascale	Nobatek
6	Büchner	Frederick	GdW
7	Buron Martinez	Jose Luis	ACCIONA
8	Caffini	Luciano	Legacoop Abitanti
9	Calvo	Elena	Fundación CIRCE
10	Carvalhosa	João	CECODHAS Portugal
11	Cesale	Alessandro	CECODHAS Housing Europe
12	Corradi	Marco	CECODHAS Housing Europe
13	Dijol	Julien	CECODHAS Housing Europe
14	Eliasson	Kurt	CECODHAS Housing Europe
15	Garnier	Sebastien	AEDES
16	Gómez Campos	Alicia	CECODHAS Housing Europe
17	Goudis	Michailis	CECODHAS Housing Europe
18	Grzesiak	Lech	ISEP
19	Hauke	Christian	DG Enterprise and Industry - EC
20	Heich	Hermann	Heich Consult
21	Ifrim	Carmen	European Commission
22	Jaensson	Charlotta	Riksbyggen
23	Joglekar	Parag	Respond! Housing Association
24	Kuosa	Jarmo	Municipal Housing Ltd
25	Landeck	Jorge	ISA
26	Lesprier	Thomas	BECA
27	Lilja	Marten	Riksbyggen
28	Linde	Lief	Riksbyggen
29	Lugger	Klaus	GbV
30	Lusardi	Alain	ICE-WISH Project

31	Mae Moring	Jelly	BSHF
32	Mardaras	Javier	ACCIONA
33	Martyn	Emily	Housing Services Corporation
34	Mastrodonato	Christian	READY4SmartCities
35	Matyba	Natalia	Silesia Region
36	Michel	Laure	SWL
37	Ode	Johanna	SABO
38	Owens	Edward	ORIGIN Project Coordinator
39	Pelignot	Nancy	Europabüro der bayerischen Kommunen
40	Pozzo	Anna Maria	Federocasa
41	Puyol	Carine	USH
42	Rosenoer	Alain	SWL
43	Rossi	Sergio	eSESH
44	Roumet	Claire	CECODHAS Housing Europe
45	Stewart	David	SFHA
46	Torpe	Mia	HSB
47	Toussain	Virginie	USH
48	Van Luijn	Anne Ingeborg	Independednt Consultant
54	Zaganelli	Francesca	CECODHAS Housing Europe
50	Zgutka	Mateusz	Mostostal
51	Zietara	Piotr	SHOWE-IT Project



## PRESENTATIONS

Presentations made during the meeting have been uploaded to the POWER HOUSE Website at the following link.

[http://www.powerhouseeurope.eu/nc/news\\_events/events/detail/back/past-events/article/workshop-on-how-to-finance-energy-efficiency-focus-on-divided-and-cooperative-ownership-multifamil/](http://www.powerhouseeurope.eu/nc/news_events/events/detail/back/past-events/article/workshop-on-how-to-finance-energy-efficiency-focus-on-divided-and-cooperative-ownership-multifamil/).

**POWER HOUSE NEARLY ZERO ENERGY CHALLENGE**

**WORKING FOR A FAIR ENERGY TRANSITION**

Home | nearly-Zero Taskforces | Forum | Cases & Resources | Policy Work | **NEWS & EVENTS** | Partnerships

Plug-in to POWER HOUSE

Our BUILD-UP Community | Events | Events Proceedings | Newsletter

you are here: News & Events » Events »

### Events

18 September 2013  
**"E3SoHo Final European Workshop: ICT-enabled Energy Efficiency in European Social Housing" - 18 September 2013, Brussels, Belgium**

Hot Topics: Knowledge and Support

**E3soho** is a European ICT-PSP project, coordinated by ACCIONA Infraestructuras, in which CREDOHAS Housing Europe participated by providing a socio-economic analysis of the use of ICT in social housing.

The overall aim of the project was to implement and demonstrate in 3 Social Housing pilots (in Spain, Italy and Poland) an integrated and replicable ICT-based solution which aims to bring a significant reduction of energy consumption in European social housing by providing tenants with feedback on their energy consumption and by offering them personalised and targeted advice.

The results of the project were presented and discussed together during the workshop with other European projects working on ICT for Energy Efficiency in Social Housing. The targeted audience was composed by high-level representatives from Social Housing Organizations members of CREDOHAS Housing Europe as well as other relevant stakeholders and EC representatives. To find out more about the E3SoHo Project, please visit [www.e3soho.eu](http://www.e3soho.eu).

Please download here the presentations made during the event:

- Opening Session
  - Opening Speech
    - Mr Kurt Eissson - President of CREDOHAS Housing Europe
    - European policies and initiatives on Smart Cities and Energy efficiency in Social Housing
    - Ma Carmen Irim - European Commission, DG CONNECT
    - ICT and energy efficiency for Residential Districts: a Smart City Perspective
    - Mr Christian Mastrodato - D'Agnostini, READY4SmartCities Coordinator
  - 1st Panel - E3SoHo project results and lessons learnt
    - Project Overview
      - Mr Javier Mendez - ACCIONA Infraestructuras - E3SoHo Project Coordinator
      - Socio-economic aspects of ICT in Social Housing and its replication potential
      - Mr Marco Corradi - CREDOHAS Housing Europe
    - E3SoHo ICT solution and future technological trends
      - Mr Jorge Landeck - ISA
    - A case study: pilot site building in Zaragoza - Technical Probe - Information for Tenants
      - Ma Patricia Soriano - Zaragoza Vivienda, Member of AVS
  - 2nd Panel - ICT PSP projects for energy efficiency in social housing: conclusions and lessons learnt
    - The e3SoHo Project
      - Mr Sergio Rossi - Finabla (Project Partner on behalf of e3SoHo Project Coordinator)
    - The S2CA Project
      - Mr Thomas Leppertier - Depts (Project Partner on behalf of S2CA Project Coordinator)
    - The 30-Houses Project
      - Mr José Luis Buján Martínez - ACCIONA (on behalf of 30-Houses Project Coordinator)
    - The SHOW-IT Project
      - Mr Piotr Zieliński - E&C & Willems Consulting Venturing (Project Partner on behalf of SHOW-IT Project Coordinator)
    - The ICE-WISH Project
      - Mr Alan Luard - Consorzio Nazionale CaseQualità (ICE-WISH Project Coordination Team)

**SEARCH**

back | print | pdf | send to a friend

**CHECK THE CALENDAR**

October 2013						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		01	02	03	04	05
06	07	08	09	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

**SUBJECT INDEX**

- Financing and Management
- Knowledge and Support
- Architecture
- Renewable energies
- Building Services
- Monitoring and Certification

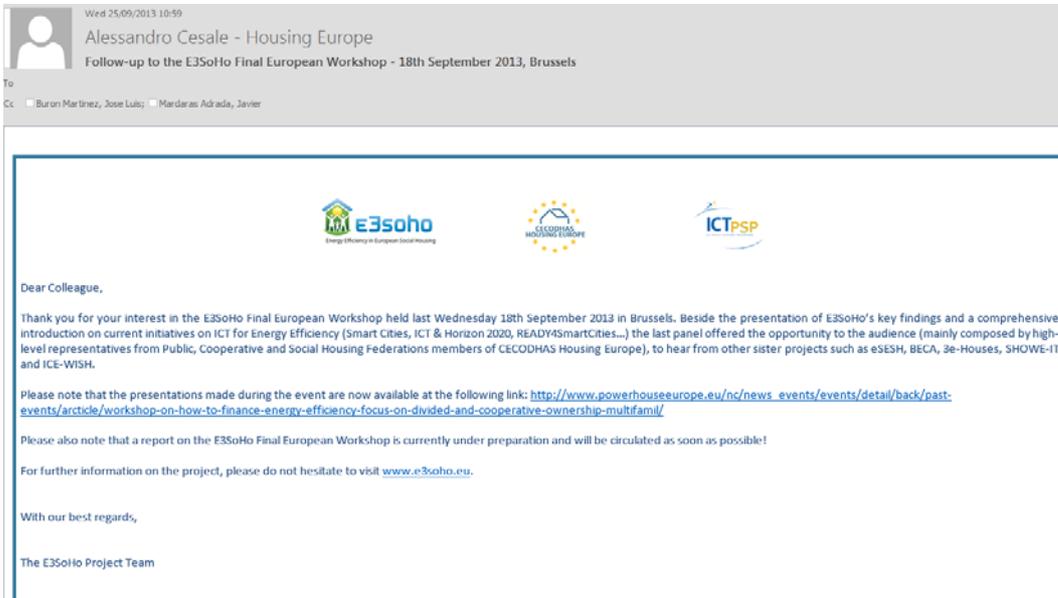
Show all

**Related Files**

- E3SoHo Final Programme - 18 September 2013 - Brussels.pdf



Participants have been informed about the availability of the presentations via the follow-up email reported below:



## SUMMARY OF PRESENTATIONS

### Opening Session

**Mr. Kurt Eliasson** in his welcome speech said:

This conference is concluding a long collaboration between different partners and reached its principal objective: to identify solutions based on ICT for decreasing energy bills of social tenants. Energy efficiency is at the core of CECODHAS Housing Europe members' activities. After years of building up real expertise in technical and non-technical aspects – legal, financial, stakeholders' involvement, project management, it is time to pursue a new phase for energy efficiency in social housing: the era of scaling-up and "massification" from now on to 2020 and beyond. The right ingredients are in place, but it needs a bit of cooking to gain momentum. The instruments we propose:

- The first instrument could be called an aggregation hub for low-carbon finance
- A second instrument would be the pooling of expertise and skills through the development of clusters of actors (housing providers, municipalities, finance aggregation hubs, training centres, universities, and renovation and energy companies) for the energy transition
- A third instrument: the democratic planning of energy systems. Above all, the energy transition needs social acceptance.



- And lastly an instrument for the continuation of applied research to develop low-cost technologies for the improvement of energy efficiency in social housing.

**Ms. Carmen Ifrim** presented a document on “Smart cities, Horizon 2020, ICT for Energy Efficiency”.

She started with a holistic megavision of the tomorrow of the smart city as a System of Systems followed by the Cities as digital platforms showing the contribution of ICT to sustainable cities with an enabling role in buildings, in particular energy management and control systems, transport and smart energy including smart meters. The concept of smart and green city through strategic deployment of ICT infrastructure and services to achieve sustainability policy objectives has been presented. For addressing the challenge the Green Digital Charter initiative and the NICE network- Networking intelligent cities for energy efficiency was presented together with the support for smart cities and innovation from DG connect, DG RTD, DG ENER, DG MOVE and the European Innovation Partnership (EIP) proposed in the Innovation Union Flagship Communication. An EIP on smart cities and communities has been released focused in the intersection of Urban Energy Production and Use, Urban Transport and Mobility and Urban Information and Communication Technologies explaining its characteristics, philosophy, implementation, governance, innovation process and financing.

An overview on the Horizon 2020 was presented including the key objectives and priorities, noting that in the Priority 2 Societal challenges appear as a specific objective: secure, clean and efficient energy. ICT in the Horizon 2020 was also presented appearing in the 3 objectives: Excellence science, Industrial leadership and Societal challenges. It was followed by an explanation regarding simplified participation and next steps underlining the next ICT conference in Vilnius and the forecasted publication of first calls and deadlines in December 2013 and spring 2014 respectively. Finally the role of ICT in Energy Efficiency was presented from the conclusions from the examination of the European building stock, the existing financial support measures for energy efficiency in buildings and the different market barriers.

**Mr. Christian Mastrodonato** presented ICT and Energy Efficiency for Residential Districts: A Smart City Perspective.

He started with a strategic vision of the transition from buildings to cities from the E2B (Energy Efficient Buildings) initiative with the projects that have contributed to this transition from smart buildings to smart districts and to smart cities. He stated that Europe is leading the way to optimize ICT enabled use and production of energy in buildings stressing that ICT applications cover the building life cycle. The Energy Efficient Neighbourhood elements, from people to energy distribution, were presented and stressing also how smart cities are at the intersection of energy, transport and



ICT. The Key ICT needs: implementation recommendations were presented for the holistic planning and operation of energy efficient neighbourhoods. The project Ready4SmartCities was presented. Its main objectives are the definition of a new data ecosystem that will accommodate cross domain-data, the identification of a set of ontologies relevant to smart cities and an holistic and shared vision, allowing feasible step-by-step action plans for city authorities and other relevant stakeholders groups to develop and use ICT based solutions for energy systems in urban and rural communities towards future smart cities.

Only two questions from the audience were addressed:

To Ms. Carmen Ifrim regarding the continuation of this kind of projects (like E3SoHo) in Horizon 2020 and if there is already funding allocated to them.

The answer was, yes to the first question. To the second question the answer was: we do not know yet.

To Mr. Mastrodonato regarding if there will be a kind of roadmap from the Ready4SmartCities project and how The Commission will take this into account.

The answer was that the main target of READY4 Smart Cities is the regulatory framework at local level.

### **Panel 1**

This panel was dedicated to provide to the audience detailed information about the E3SoHo objectives, the obtained results and the lessons learnt from multiple perspectives: exploitation and replication, methodological issues, technical implications, and interaction with the end users: tenants and building owners.

**Mr. Javier Mardaras** (ACCIONA Infraestructuras), **E3SoHo** project coordinator, presented an **overview of the project** focusing on the following topics:

- E3SoHo project and consortium: General and partial objectives, work plan and pilot sites.
- Project results: energy savings, main exploitable products and services. Grouping of products and services.
- Drivers, barriers and actions identified for accelerating the implementation of ICT solutions for energy efficiency in social housing.
- Main conclusions and lessons learnt for exploitation and in the project.

**Mr. Marco Corradi** (CECODHAS) presented Socio-economic aspects of ICT in Social Housing and its replication potential.



The social context stressing the increase of the elderly population, the immigration, the people living alone, in culture diversity, in poverty, of homeowners' conflicts and discomfort.

The environment context was also presented: old and inadequate buildings with accessibility problems, heterogeneous neighborhoods, lack of collective, individual and green living spaces and lack of opportunities for the neighbourhood and its inhabitants conducting to poor quality housing

It was followed by an explanation of the economic context: increase in the house costs, energy prices and condominiums administration costs conducting to unbearable house costs

To overcome the above consequences people need flexible tools with integrated and customized solutions towards improving life quality, from the individual to the city, through the condominium to the district, from the district to the city.

In this context he stressed the role of social housing companies to help people to live better providing and managing housing, taking care of people, promoting the relationship, and giving services and value people's capacities

He finished by advocating of the use of ICTs to save energy and increase the safety and comfort of tenants, being E3SoHo a step forward this goal followed by the replication potential in the European social housing stock.

**Mr. Jorge Landeck** (ISA) started his presentation by explaining the 3 pilot cases putting more insight into the technical details of the **ICT solution** developed within the project: architecture, summary of measurements, meters and sensors, communications, central platform, and user interfaces for tenants and building managers. Special focus was given to the interoperability capabilities of the E3SoHo ICT solution, and the current and emerging trends in the field of Home Energy Management Systems and ISA product lines. Finally some conclusions and lessons learnt were shown.

**Ms. Paloma Bozman** (Zaragoza Vivienda) gave an overview of the participation of Zaragoza Vivienda in E3SoHo project, as part of the **general energy strategy of Zaragoza Vivienda**. The presentation included information about the Sustainable Energy Action Plan of the City of Zaragoza and about the participation of the city in other Spanish and European initiatives related to smart cities and energy efficiency. This was followed by an introduction to the mission of Zaragoza Vivienda and its main areas of activity, an overview of other European projects where Zaragoza Vivienda has participated or is participating, and a detailed description of the activities carried out by Zaragoza Vivienda in E3SoHo projects, the interaction with the tenants, the lessons learnt, and the potential replication plan of the project results.



No questions from the audience

## Panel 2

ICT PSP projects for energy efficiency in social housing: conclusions and lessons learnt

### Mr. Sergio Rossi presented the eSESH project

10 Pilots in 6 countries. 29 partners in 8 countries. Finished project

To reduce the energy consumption different kinds of services have being provided:

Energy Awareness System (EAS) provided directly to tenants and ICT-based services for Energy Management (EMS) for owners, effective ICT monitoring and control of local generation of power and heat. The services delivered to tenants with different pilot examples are described including the type of service provided EAS, EMS, or both EAS+EMS.

In operational terms the consortium has carried out intensive work on optimising services for tenants. It is stressed among other facts that the pilots at all sites would operate for at least 14 months and that each pilot site developed and implemented its own customized services which turned out being quite different from each other. Savings have been measured in two ways: through measurements before and after the implementation of the ICT solution and through control groups. Global savings achieved 9%. HDD, change of tenure and size of the dwellings have been considered. Some relevant conclusions: eSESH solutions is viable with ROI achievable in a few years, European standards for exchange of metering data are required.

### Mr. Thomas Lesperrier presented the BECA project.

7 pilot sites, 7 European countries. 19 partners. Ongoing project.

To reduce the energy consumption different kinds of services have being provided:

RUAS: Resource Use Awareness Services for tenants through web service, human coaching and paper based information, and RMS: Resource Management Services for building owners/managers including adjustment of energy consumption/production, integrating renewable energy through web services. Baseline design and also control groups are used. Expected average results 6% Electricity, 9% heating, 7% hot water, and 6% cold water. Some relevant conclusions-recommendations: to maximize savings through RUAS like global coaching and targeting heavy consumers: work with tenants associations as close as possible, find champions and include the project into the daily business.



**Mr. José Luis Burón** presented the **3e-Houses** project on behalf of the coordinator, Ms. Milagros Rey.

2 pilot sites and 2 replicators. 4 European countries. 11 partners. Finished project.

The service for energy efficiency comprises: real time monitoring and management of the energy consumption, integration of renewable energies and creating the resources to lower energy consumption. Results of pilots: In the Spanish pilot the savings were 18,75% for heating, 20,27% for DHW, 29,89% for Electricity (21,25% in total energy consumption) and 16,53% savings in cold water, while in the German pilot no savings were achieved: heating -1,3%, DHW -13,26%, electricity -3,31% (-1,82% Total) and cold water savings of 10,21%. The results of the two replicators were: in UK a total saving of 10,7% and in Germany a total saving of 6,57%.

The total savings for all pilots and replicators were 12,31%. Some conclusions regarding technology were: technology must be easy to install with little or no cabling and the one for direct tenants' use must be simple, robust and cheap enough. Regarding tenants, it is important to target groups with high energy consumption levels. Although some problems arose during the project, 3e-Houses has been a success because the pilots and replicators have been executed, the users of the project are in general satisfied with the savings achieved, and the project had major impacts in terms of dissemination.

**Mr. Piotr Zietara** presented the **SHOWE-IT** project.

3 Pilot sites. 12 Partners from 5 countries. Ongoing project.

The objective is to reduce energy and water consumption, to deepen insights into social aspects of energy consumption patterns and to demonstrate the socio-economic viability of ICT-services. The ICT solution proposed by the project includes a home energy management system of high complexity, and a tablet interface provides real time consumption data and control functionalities to the tenants. The installation in the pilots is 100% complete in Sweden and in England and 90% in France. It is expected to reach savings similar to the average savings of the projects that have introduced data in the eeMeasure tool. The project detected problems with engaging tenants in participation, namely lack of motivation, suspicion of metering and unwillingness to change lifetime habits. The project has suffered problems mainly due to variations of the buildings infrastructure. Knowledge and experience of installers has proven to be relevant. Utilities are the most active players on the market but with not much success yet, although they have a huge network of potential customers.

**Mr. Alain Lusardi** presented the **ICE-WISH** project.

10 Pilot sites. 19 partners in 10 countries. Ongoing project.



The main objective of ICE-WISH is to provide a user friendly and widely accessible ICT based resource use service, to engage individual households as active players in developing resource conservation practices without compromising their living environment, provide social housing inhabitants and housing organisations with customized information accessible via home TV in quasi real time on resource consumption and environmental comfort, and feedback on energy system and building management. There is one common ICT solution for all dwellings in all pilots: a data concentrator acting as the data collection and storage hub for each dwelling, and a low cost Android-based set-top box able to be connected to any home TV. It was explained that ICE-WISH service provides users with real time data for the whole service operation period. There are no savings results yet because the 12 month monitoring period will start by 1<sup>st</sup> October 2013 and will end at October 2014. However, many technical and non-technical challenges raised have been solved regarding high level of skepticism of users, resistance to participation in trials, privacy-related issues, and issues in the interaction with the interface. Some lessons learnt so far are: solution must be easy to install, to use, to maintain, technically viable and easily adaptable to any building typology. Longer testing, operation and training periods are needed and skilled installers are crucial to install and maintain the system.

There was no time for additional questions in this panel.

#### **Main conclusions & perspectives:**

From the speech of the President of CECODHAS and Mr. Corradi we can conclude that the commitment of CECODHAS with energy efficiency in social housing is clear and ICT are an enabling technology to be used with the purpose of saving energy and improving the quality of life of the tenants. From the speech from Mr. Ifrim there is no doubt of the important role of ICT in energy efficiency, in the EIP smart cities and communities and in the whole Horizon 2020.

There was no time for additional questions, but the conclusions that we can outline from the presentations, and from a similar workshop held in Zaragoza a week later, are the following:

The role of the social housing providers that are the owners of the buildings is fundamental in all phases of the project conception and development and to involve tenants.

Savings are the main factor that motivates them to participate due to economic reasons and is the main driver for changing behavior, in a lesser extent comfort and environmental impact.

Training has been considered part of all the projects and has been positively received in all of them.



The activity that has been called by one project as “energy coachers” from the social housing providers has been part of all projects and has been fundamental and positively perceived.

The tools for the tenants should be as simple as possible and take into account specific needs from some collectives like elderly people.

To implement a project of these characteristics requires a long period in order to define adequately initial consumption, install and validate the solution, monitor the situation and evaluate the results. Actually most of the projects have claimed for extension.

One year pre-monitoring at least and another year monitoring was the most widely adopted option, combining it when possible with energy bills and in some cases with control groups. There are very different results in terms of energy savings in different pilots, in the same project, and across different projects.

It was stated that the projects (pilots) that include Energy Management Services (automation) have obtained higher savings, although it is not clear how much is due to awareness, and how much is due to management/automation. The costs of the solutions implemented are generally quite high to be marketed as they are now, so that effort to reduce costs is necessary for exploitation.

Some of the partners underlined their perception of the difficulty to sell a solution to tenants when utilities have spent a lot of money trying to massively introduce awareness tools with little success.

In general either social housing providers or other partners think that replication and exploitation should be possible if, using the lessons learnt, reliable, cheaper, and easier to use awareness tools are developed and offered to the market.

It still not clear how much of the savings correspond to changing behavior due to the ICT tool itself, to the normal consumption evolution or to the fact of being participating in the projects.

The interoperability of the solutions is a necessity, although the approach regarding the use of a unique or a variety of ICT solutions was different across the projects.

All the projects have suffered problems in the implementation and monitoring phases.

Although the different technologies themselves were relatively mature, the integration of them in the building environment has in general caused problems in all project phases.