

# **What Future Internet means for Smart Energy ?**

Convenor / Rapporteur : Pierre-Yves DANET France Telecom/Orange Labs

Support : Mikhail SIMONOV (ISMB)

## **Context :**

Scientists, economists and policy makers are calling for CO2 emissions targets of at least 20% below 1990 levels in 2020. CT could bring its contribution reducing the global carbon footprint on three main aspects :

- by reducing non-ICT carbon-footprint through smart use of ICT
- by enabling green energy, i.e. the generation and distribution of energy without CO2 emissions
- by reducing the carbon-footprint of ICT itself.

It has been estimated that ICT may help other sectors to reduce their CO2 emission by 15% in 2020 which is a significant step towards reaching the 20% objective.

ICT Energy efficiency should address two main topics :

- Network efficiency : How to reduce telecom infrastructure energy consumption ?
- Application efficiency : How to help people to reduce their energy consumption with innovative services ?

The Smart energy session has the objective to bring a wide vision of the situation today and to bring some ideas where savings could be done.

## **Objective :**

1. Get a common vision of where ICT and the Future Internet could help in energy savings (PPP, ETPs). 2 different areas :
  - How to reduce telecom infrastructure energy consumption : Network savings/scavenge (protocols, infrastructure, devices, ...)
  - How to help people to reduce their energy consumption with innovative services : Application savings (smart metering, home automation, eApplications, tele-transportation, ...)
2. Identify the research topics where ICT could bring features to decrease energy consumption
3. Identify those research topics which are already covered by existing research projects and see how they could contribute to the Future internet design.
4. Propose new projects ideas for the missing ones

## **FIA session agenda :**

11h30 – 11h45 : Session introduction : Pierre-Yves Danet (FT)

11h45 – 12h45: Smart energy panorama

- Energy Utility vision : Asier Moltó Llovet (REE)
- Smart grid vision : Duncan Botting (Smartgrids ETP)
- Open challenges enabled by Future Internet : Mikhail Simonov (ISMB)
- M2M standardisation activities : David Boswarthick (ETSI M2M)

12h45 – 13h00 : Socio economy analysis

- Gabriella Cattaneo (IDC)

13h00 -13h20 : Panel session Q&A with speakers

- Moderator Roger Torrenti (Sigma-Orionis)

13h20 – 13h00 : Conclusion and next steps : PY Danet

### **Session Introduction :Py Danet**

A short presentation of the context, the objective of the session and the session agenda

### **Energy utility vision : Asier MOLTO LLOVET (Red Electrica De Espana)**

A large overview of the problems that have the Electrical company for energy management with the objective to optimize the power generation

### **Smart grid vision : Duncan BOTTING (Smart Grid ETP vice chair – Scottish European Green Energy Center)**

An overview of the smart grid techniques as well as first solutions studied in the Smart Grid European Technology Platform.

### **Open Challenges enabled by the future internet : Mikhail SIMONOV (ISMB)**

A concrete presentation showing where the future internet could help in the field of smart energy.

### **M2M Standardisation activities : David BOSWARTHIC (ETSI)**

An overview of the standardisation activities regarding smart grid and machine to machine

### **Socio Economic analysis : Gabriella CATTANEO (IDC)**

The vision of the economy of smart energy regarding the user needs

### **Panel : Roger TORRENTI (Sigma Orionis)**

The presentations cover all the SE sector : Utility view, Smart grid, research use cases, standardisation, social economics

A short panel session where panellist have asked to propose their R&D priorities :

- Development of ICT skills to allow end users to improve their energy consumption behaviour
- Integration between power grid and ICT networks
- A need to insure interoperability through standardisation
- Management of large amount of data
- ICT network energy efficiency
- Deployment of sensors and communication in a cost-effective manner

### **Next Steps :**

- Collect the names of people interested (end of the week)
- Setup a mailing list with interested people (end April)
- Launch a survey in order to collect ideas from participants (end May)
- Analyse/classify ideas (end June) -> setup an editing group
- Identify which one are already covered by existing projects (end August)
- Come back to PPP and ETPs with the non covered topics (if any) in order to help new project proposals to rise. (end September)

- Publish a white paper collecting all these information (November in preparation to the next FIA) in order to :
  - Facilitate existing research projects to participate to the Future Internet design.
  - Provide recommendation to any ICT project to help them to take into account this cross issue.

## **Speakers bio**

### **Mikhail Dr. SIMONOV (ISMB)**

Mikhail Simonov is graduated in 1987 from the Moscow State University. Specialized on Computer Science. Ph. D. research at Energy Dept. of Polytechnic University of Milan (on Near-Energy Ubiquitous Services: digital energy, cyber security, load management and forecast, and softcomputing). He attended a stage in management consultancy at Bain in Italy, worked in an Insurance company and Software House.

Project leader and manager for more than 15 years. After a long experience in application projects and executive tasks, he performs EU R&D activities since 1999, some chairing and participation in Advisory Boards, several publications. Main areas of competence and experience include ICT, Knowledge and Internet Of Things technologies and their applications.

### **Asier MOLTO, (Red Eletrica de Espana)**

Asier Moltó is Industrial Engineer from the Universidad Politécnica de Madrid. He has completed his formation in the École Nationale des Ponts et Chaussées in Paris and started his professional career in France as strategy consultant in the European energy markets.

He joins the Demand Side Management Department within Red Eléctrica de España in 2008, where he works in the development of strategies to drive demand side management into the operation of the electrical system

### **Duncan BOTTING (Scottish European Green Energy centre)**

Duncan currently holds the posts of Executive Chairman and Interim CEO of the Scottish European Green Energy Centre and Managing Director Global Smart Transformation Limited, based in Scotland. In these roles he works closely with customers, academia, industry, government and regulators to deliver innovative technical solutions to market challenges. His previous roles included Managing Director, ITI Energy (a research institute) and with ABB as Head of Technology & Business Development. He has over 30 years experience covering the complete spectrum of technical and commercial roles from apprentice to boardroom. He is a visiting professor at Imperial College London and the University of Strathclyde, Glasgow.

He is an active member of the Institution of Engineering and Technology (IET, formerly the IEE) and is involved in many influential panels, advisory boards and committees both at a National and European level. As an active member of the IET Energy Sector Panel and as Vice-Chair of the European Technology Platform for “SmartGrids” he is helping to shape future thinking in the energy sector. He is also a founding member and shadow board member of the National Skills Academy for Power.

### **Gabriella CATTANEO (IDC)**

Gabriella Cattaneo is the director of the Expertise Centre on Competitiveness and Innovation of Government Insights, business unit of IDC EMEA, the global ICT market research and consulting company. She has 20 years experience in socioeconomic research on the development of the information society, ICT markets quali-quantitative analysis, monitoring and benchmarking of ICT services. She is currently involved in studies for the EC on the Future Internet socioeconomic impacts, the Enterprise 2.0, and Benchmarking indicators of e-government. She is a graduate in Political Sciences Magna cum Laude from Milan State University with a prize-winner research Thesis and has worked ten years as a business journalist.

**David BOSWARTHICK, Technical Officer, ETSI**

David has been extensively involved for over 10 years in the standardization activities of mobile, fixed and convergent networks in both the European Telecommunications Standards Institute (ETSI) and the 3rd Generation Partnership Project (3GPP).

He is currently involved in the M2M standards group which is defining an end to end architecture and requirements for multiple M2M applications including Smart Metering, Smart Grid healthcare and enhanced home living.

David holds a Bachelor's Honours Degree in Telecommunications from the University of Plymouth, and a Master's Degree in Networks and Distributed systems from the University of Nice and Sophia Antipolis, France.

**Roger TORRENTI, Sigma Orionis**

Roger founded Sigma Orionis, a market and research company specialising in ICT, after having managed a research center on energy systems and renewable energies. Sigma Orionis is involved today in several ETPs and particularly in NEM and is a partner of the BeyWatch project coordinated by Telefonica which recently received from the European Commission the award of the best ICT for energy efficiency project. Sigma Orionis is also the coordinator of the PARADISO2 FP7 project launched on April 1, exploring the societal aspects of the Future Internet and the organizer of the annual ICT for sustainable homes cooperation forum.