Interreg Sudoe

EUROPEAN UNION

TR@NSENER

European Regional Development Fund

"SMART GRIDS AND SMART CITIES"

INTERNATIONAL SUMMER SCHOOL

6-8 June 2017 - Barcelona

Cities today are home to about half of the global population but represent almost two-thirds of global energy demand, and 70% of carbon emissions from the sector (IEA, 2016). So they must play a leading role in the transition to a low-carbon economy if COP21 commitments are to be met. With the aim of moving towards a more sustainable urban model, significant progress is being made in defining Smart Cities.

Smart Cities are urban centres capable of responding effectively to the services demanded by citizens, with a high level of efficiency in the management of the resources used. The complexity of the development of this urban centre concept depends on the effective deployment of **Smart Grids** in energy systems. This Smart City - Smart Grid binomial is indispensable to efficiently manage local urban energy resources and to fight against climate change from the perspective of the concentration of the world population in cities.

Over three days and in the hands of outstanding speakers, the **aim of this Summer School** is to advance the analysis of the role of Smart Cities in the achievement of the objectives of sustainability and the improvement in the living conditions of their citizens, emphasizing the future prospects of Smart Grids. Technological, economic and policy challenges will be discussed when defining effective policies for urban energy transition.

The Summer School is aimed at **PhD students, postdoctoral students, academic researchers, professionals and public representatives** responsible for making decisions on urban development issues.

The event is organized in three sessions of one day each. The **first session, about Smart Grids**, will give attendees the possibility of knowing the challenges associated with the deployment of these networks. The **second session will be dedicated to Smart Cities** and will allow attendees to focus on the diversity of aspects presented under this concept of city in sustainable urban development. Finally, the **third session will be an open High-Level Conference** that will be address the effective policies for urban energy transition. It will analyse the role of public actors in guiding this urban transition towards sustainable development and in the specific Smart Cities projects in the SUDOE region.

Organised by TR@NSENER Consortium

"Sala de Juntes" of the Faculty of Economics and Business - University of Barcelona. Av Diagonal 696, 08034 Barcelona.

FREE ATTENDANCE - REGISTRATION MANDATORY HERE

HOW TO GET TO THE EVENT – PRACTICAL GUIDE

INFORMATION: mvilla@funseam.com

European cooperation Network on Energy Transition in Electricity - TR@NSENER –
The project TR@NSENER is co-financed by the Interreg Sudoe program

With the collaboration of: CHAIR OF ENERGY SUSTAINABILITY

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DAY 1: SMART GRIDS
June 6

AGENDA:

9:00h Registration

9:30h **WELCOME CEREMONY AND INTRODUCTION**

- Marc Ternisien, Laboratoire LAPLACE - Université Toulouse III - Paul Sabatier
- Jose Garcia-Quevedo, Chair of Energy Sustainability – Universitat de Barcelona (CES-UB)
- Joan Batalla, Foundation for Energy and Environmental Sustainability (FUNSEAM)

10:00h **KEYNOTE SPEAKER**

- **Climate Change, economy and technologies: extending the perspective.** Jordi Roca, Economy, Energy and Environmental Pressures – Universitat de Barcelona (EEEP-UB)

10:45h Coffee Break

11:00h **Table 1: Technological challenges related with smart grids development**

- **Demand-response infrastructure for houses.** Guillermo del Campo, Research Centre for Smart Buildings and Energy Efficiency - Universidad Politécnica de Madrid (CeDInt-UPM)
- **Distributed Generation, Self-consumption and Demand Side Management.** Miguel Brito, Faculdade de Ciências of the Universidade de Lisboa (FCUL)
- **Power transmission advances technologies: the role of HVDC.** Samuel Nguefeu, Le réseau de transport d'électricité (RTE)
- **P2P Energy Trading in Smart Grids.** José Manuel Martín, INYCOM - Innovation Technologies
- **Chair:** Pol Olivella, Centre d'Innovació Tecnològica en Convertidors Estàtics i Accionaments - Universitat Politècnica de Catalunya (CITCEA-UPC)

13:30h Lunch

14:30h **Table 2: Regulatory challenges and business opportunities associated with the digitization process, Demand Side Response (DSR) and RES integration**

- **Electric Vehicle, recharging network and V2G initiatives.** Miguel Brito, Faculdade de Ciências of the Universidade de Lisboa (FCUL)
- **Local energy markets – dream or fact?** Pol Olivella, Centre d'Innovació Tecnològica en Convertidors Estàtics i Accionaments - Universitat Politècnica de Catalunya (CITCEA-UPC)
- **The new role of Distribution System Operation.** Pablo Simon, ENDESA, EURELECTRIC
- **Industry 4.0: economic opportunities associated with the digitisation process.** Raül Blanco, Generalitat de Catalunya
- **Let's make the most of flexible from small consumers – Demand Response Aggregators.** Gerard del Rosario, Catalonia Institute for Energy Research (IREC)
- **Chair:** Joan-Ramon Borrell, Research Group on Governments and Markets - Universitat de Barcelona (GiM-UB)

17:00h End of the first day

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DAY 2: SMART CITIES
June 7

AGENDA:

9:30h **INTRODUCTION**

- Maria Teresa Costa, Chair of Energy Sustainability – Universitat de Barcelona (CES-UB)

9:45h **KEYNOTE SPEAKER**

- **Smart Cities: myths and realities.** Elisabet Viladecans-Marsal, UB Smart City Chair, Barcelona Institute of Economics – Universitat de Barcelona (IEB-UB)

10:30h Coffee Break

11:00h **Table 3: Smart city and urban sustainable development**

- **What Smart-city means for a geographer?** Mathieu Vidal, LISST-Cieu Laboratory
- **Visualization tools and Visual Analytics for Big Data analysis on people movement.** Luca Piovano, Research Centre for Smart Buildings and Energy Efficiency - Universidad Politécnica de Madrid (CeDInt-UPM)
- **Urban Modelling: Helping decision makers to shape sustainable cities.** Fabrice Casciani, Électricité de France (EDF)
- **Chair:** Maria Eugenia Sanin, Paris-Saclay University (UPSay).

13:00h Lunch

14:00h **Table 4: Implementation of the smart city concept**

- **From Smart Campus to Smart Cities: Challenges of the Smart Revolution.** Nicolas Verstaevel, Institut de Recherche en Informatique de Toulouse (IRIT)
- **The role of EV integration in the framework of Smart Cities.** Andrés Llombart, University of Zaragoza
- **Advanced infrastructure for smart lighting urban illumination.** Asunción Santamaría, Research Centre for Smart Buildings and Energy Efficiency - Universidad Politécnica de Madrid (CeDInt-UPM)
- **Growsmarter: low energy district for Smart Cities, the Barcelona Case.** Alaia Sola, Catalonia Institute for Energy Research (IREC)
- **Chair:** Daniel Davi-Arderius, ENDESA

16:00h **Departure to Catalonia Institute for Energy Research (IREC)**

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DAY 3: EFFECTIVE POLICIES FOR URBAN ENERGY TRANSITION (Open Session – High Level Conference) - June 8

AGENDA:

9:00h **WELCOME**

- Martí Parellada, Barcelona Institute of Economics – Universitat de Barcelona (IEB-UB)
- Joan Batalla, Foundation for Energy and Environmental Sustainability (FUNSEAM)

9:10h **KEYNOTE SPEAKER**

- **A new urban agenda.** Jaume Collboni, Ajuntament de Barcelona
- **Chair:** Maria Teresa Costa, Chair of Energy Sustainability – Universitat de Barcelona (CES-UB)

09:30h **CONFERENCE 1**

- **Local development new strategies: the experience of Barcelona.** Joan Trullén, Universitat Autònoma de Barcelona (UAB), and Vittorio Galletto, Institute of Regional and Metropolitan Studies (IERMB)

10:15h Coffee Break

10:30h **Table 1: The Role of Public Stakeholders in Catalysing Transition towards Sustainable Development**

- **Sustainable development in urban areas.** Arnau Queralt, Consell Assessor per al Desenvolupament Sostenible de Catalunya (CADS)
- **Urban cities: Toulouse.** Caroline Lapelerie, Toulouse Metropole
- **Public boost for sustainability: the Financial District of L'Hospitalet.** Lluís Traveria Sáez, Ajuntament de L'Hospitalet
- **The role of regional and local governments in Catalonia towards sustainable development.** Mercè Rius, Generalitat de Catalunya
- **Chair:** Mònica Serrano, Economy, Energy and Environmental Pressures – Universitat de Barcelona (EEEP-UB)

12:00h **CONFERENCE 2**

- **Smart Grids, distributed generation and the role of utilities.** Antonio Gomis Sáez, Club Español de la Energía

13:00h **CLOSING CEREMONY**

- Maria Teresa Costa, Chair of Energy Sustainability – Universitat de Barcelona (CES-UB)
- Joan Batalla, Foundation for Energy and Environmental Sustainability (FUNSEAM)

About TR@NSENER – project:

This Summer School is being run as part of the European cooperation Network on Energy Transition in Electricity - TR@NSENER - project. This European project, financed by FEDER funds, and brought to fruition by the consortium led by the French university **Université Toulouse III - Paul Sabatier** and which includes the participation of the **Foundation for Energy Sustainability (FUNSEAM)** together with the **Chair of Energy Sustainability of the Universitat de Barcelona (CES-UB)**, the **Faculdade de Ciências of the Universidade de Lisboa (FCUL)**, the **Universidad Politécnica de Madrid**, the **University of Beira Interior**, the **CIRCE Foundation**, **PROMES** and the **Technological Corporation of Andalusia (CTA)**, aims to contribute to transnational cooperation to solve common problems in the southwestern region of Europe, such as exposure to climate change and energy and environmental challenges.

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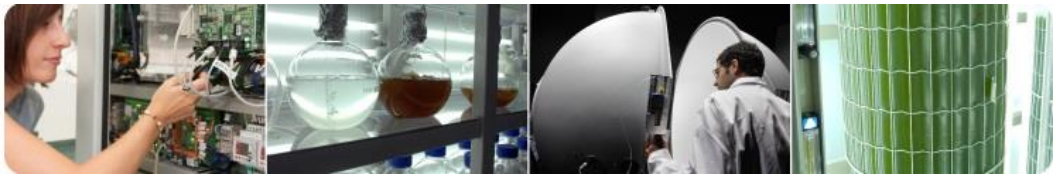
VISIT TO CATALONIA INSTITUTE FOR ENERGY RESEARCH (IREC)

DAY 2: SMART CITIES
June 7 – 17:00h

IREC
Institut de Recerca en Energia de Catalunya
Catalonia Institute for Energy Research



Presentation of IREC

The Catalonia Institute for Energy Research was created to contribute to the objective of creating a more sustainable future for energy usage and consumption, keeping in mind the economic competitivity and providing society with the maximum level of energy security.

This contribution will be done through scientific and technological development. The research requires a long-term vision which allows the identification of future challenges in energy. The Institute also works with practical research which allows businesses to implement innovative solutions immediately.

The project is framed in the Catalan, Spanish and global economic systems, and for that reason the institutional and business patrons have singularly and significantly joined forces for one common objective: the creation of value by means of scientific knowledge and technological development in the energy sector, a sector with global consequences with brings the IREC to an international arena, and becoming a point of reference in several of these areas.

The IREC is a project in which there are people participating who know that through the Institute they can contribute to a more sustainable future of energy production and consumption, in an environment of excellence.

As is already well known, it is necessary to find the equilibrium between sustainable energy development, economic competitivity and safe and secure energy supply. Each country and each situation requires a different point of equilibrium, but there are common objectives: reduce carbon emissions below 500 ppm before the year 2050.

In any case, the Institute was born within the framework of energy policies and technological research in Catalonia, Spain and the European Union, which design their strategies for a long term basis.

The IREC must help to develop and put into action the new opportunities of the energy sector, while still engaging the present and future social reality.

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DAY 2: SMART CITIES

TABLE 3: SMART CITY AND URBAN SUSTAINABLE DEVELOPMENT

Visualization tools and Visual Analytics for Big Data analysis on people movement. Luca Piovano, Research Centre for Smart Buildings and Energy Efficiency - Universidad Politécnica de Madrid (CeDInt-UPM).

Luca Piovano received the PhD degree in computer science from the University of Turin. He is currently a researcher with the group of Virtual Reality and Visual Analytics at CeDInt (Centre of Integral Domotics) – UPM, Madrid, since 2012. His main research interests include the area of information visualisation and visual analytics with a special focus on decision-making and/or concurrent engineering contexts for visualisation applications (especially in the fields of transport, economy, and environmental sensors), data fusion, and interaction.