Smart Campus Project
Partnership on Sustainable Buildings

Joaquin Villar Rodriguez
Andalusian Energy Agency
joaquin.villar@juntadeandalucia.es
Introduction to the Partnership

Current Composition

Participants

- 55 Entities from 45 different regions / Member States
- 38 regional administrations
- 3 national administrations
- 3 local administrations
- 8 businesses

Priority áreas (Pas)

- Eco-construction, bioclimatism and insulation of buildings
- Renewable energy integration in buildings
- Systems of maximum energy efficiency in buildings and cities

Leaders

Led by the regions of Andalusia (ES) and North Great Plain (HU), the Sustainable Buildings partnership engages the participation of 45 regions and Member States.

The EU institutions encourage regional cooperation as the ideal way to take advantage of the regional capacities. Regions and EU share a long term commitment focused particularly on decarbonising the energy system in the EU by 2050.
### Share responsibilities of partnership

<table>
<thead>
<tr>
<th>Topic</th>
<th>Coordinator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader</td>
<td>Andalusian Energy Agency, Spain</td>
</tr>
<tr>
<td>Co - Leader</td>
<td>LENERG (Hungary) and REGEA (Croatia)</td>
</tr>
<tr>
<td>Eco construction, bioclimatism and insulation of buildings</td>
<td>Lapland Region, Finland</td>
</tr>
<tr>
<td>Renewable energy integration in buildings</td>
<td>Confirmed new Regione Friuli Venezia Giulia</td>
</tr>
<tr>
<td>Systems of maximum energy efficiency use in buildings and cities</td>
<td>Confirmed IVE Valencia Institute of Building and TECES cluster Slovenia</td>
</tr>
</tbody>
</table>
Partnership collaboration business offers

New Technologies concerning NZEB applied to public buildings

Creating a Living Lab-based laboratory to foster energy-efficiency and energy-sufficiency of large panel building systems

Low carbon wood robust construction

Opening of collaboration business offers

Implementing the first pilot project: Smart Campus project
Smart Campus Project

One of the eight projects selected under call launched by EC to pilot interregional innovation projects

Objective: improve the energy efficiency of University Campuses

Regions involved:

1. Andalusian, LR (Spain)
2. Friuli Venezia Giulia Region, SC (Italy)
3. Central Slovenia - Osrednjeslovenska (Slovenia)
4. South Karelia (Finland)
5. Provence-Alpes-Côte-d'Azur (France)
6. Algarve Region (Portugal)

Support from EU: advice for scale-up and commercialization
**Smart Campus Project - Partners**

1. University of Trieste (Italy)
2. University of Udine (Italy)
3. University of Ljubljana (Slovenia)
4. University of Malaga (Spain)
5. Lappeenranta University of Technology (Finland)
6. University of Algarve (Portugal)

1. Directorate of the Energy Service - **RAFVG** (Italy)
2. Andalusian Energy Agency - **AAE** (Spain)
3. Lappeenranta City - **LAP** (Finland)
4. Energy Directorate - **SED** (Slovenia)
5. Agence des villes et territoires méditerranéens durables - **AVITEM** (France)
6. Areal Regional Energy and Environmental Agency - **AREEA** (Portugal)

---

**1. Academic** : students, professors and staff from the related campus.

**2. AEIT** (Italian Association of Electrical, Telecommunication, Automation and Computer Engineers) – **Network of stakeholders, FVG Section** (Italy)

**3. REDEJA** – Energy Management Network of the Andalusian Regional Government (Spain)

4. Responsible for **maintenance of public buildings** in the regions involved.

---

**ABB SpA** - industrial supplier

**Blue Energy Group SpA** (Italy) - energy trader

**OverIT** (Italy) - ICT for energy enterprises

**Technological Corporation of Andalusia** (Spain) - PPP

**Green Energy Showroom, cluster** (Finland)

**Iskraemeco** – energy collector (Slovenia)

**GEN-I** – energy supplier (Slovenia)

**Enercoutim**, Alcoutim Solar Energy- association (Portugal)
Smart Campus Project - WPs

WP1: Smartness Assessment of University Campuses
- Survey among University Campuses
- Survey among Industrial Stakeholders

WP2: Interregional Innovative Pilot Cases
- Business Plan of selected Pilot Cases
- Technical and legislative solutions to Pilot Cases bottlenecks
- Blending of funds to support the Pilot Cases realization

WP3: Definition of Smart Campus requirements
- Policy dialogue among Regions
- University Buildings Energy Efficiency Roadmap for the Development of Smart Campuses
Smart Campus Project – Expected Results

Solution 1. Energy Management System. Intelligent control management of electrical energy consumption by smart plugs (University of Malaga)

Solution 2. Indoor Quality. Smart Fancoil and Indoor Quality through IoT system (FVG & Slovenia)

Benchmark: Green Campus System (LUT) and Algarve
Smart Campus Project – Expected Results

Solution 3. Smart grids. Real-time control and monitoring of electrical distribution grid (University of Udine)

Solution 4. Mobility. Smart Charging of Electrical Vehicles (University of Algarve)
Smart Campus Project – Expected Results

Participating Campuses

- University of Trieste
- University of Udine
- University of Malaga
- Eco campus de Sainte Tulle
- University of Algarve
- University of Ljubljana
- Lappeenranta University of Technology

Technological solutions

- Real-time control and monitoring of electrical distribution grid
- Smart Fancoil and ambients through IoT
- Dynamic phase balancer
- Intelligent control management of electrical energy consumption and local information by smart plugs
- E-automated thermal comfort management
- Smart Charging of Electrical Vehicles
- Intelligent indoor environment quality (IEQ)

Solution Providers:
RTOs, Universities, Energy related companies, energy agencies, etc.

Intelligent Energy Management System

1. Benchmarking Campus: University of Lappeenranta - Testing and benchmarking solutions in an ideal ecosystem
2. Develop a shared Implementation Protocol targeted towards the Energy Manager of a Smart Campus
3. Introduce the Smart Readiness Indicator to assess the energy efficiency in buildings

Cross-regional Interface
Agreement on governance structure, IPR, Data sharing, etc.

Green campus system
Agreement on governance structure, IPR, Data sharing, etc.
Smart Campus Project – Additional Results

1. Benchmarking of existing solutions

2. Energy Data Sharing

3. Network of Smart Campuses

4. Jointly public procurement procedures
S3PEnergy Partnerships

Partnerships on Sustainable Buildings

more info:
http://s3platform.jrc.ec.europa.eu/sustainable-buildings

Partnership on Sustainable Buildings
Fernando.MERIDA-MARTIN@ec.europa.eu
Isabelle.SEIGNEUR@ec.europa.eu

Contacts at Andalusian Energy Agency
Joaquin.villar@juntadeandalucia.es
Marialuisa.borra@juntadeandalucia.es