What is new about energy efficiency in public buildings?

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Energy efficiency (in public buildings): a huge subject

The problem of Energy Efficiency in buildings

- According to Commission data, buildings are responsible for 40 % of energy consumption and 36 % of CO_2 emissions in the EU. Currently, about 35 % of EU buildings are over 50 years old. By improving the energy efficiency of buildings, total EU energy consumption could be reduced by 5 % to 6 %, whilst CO_2 emissions would decrease by about 5 %.
- **The retrofitting rate is highly unsatisfactory,** not only in the private sector but also in the public one, which is far below the 3% annual renovation target for public buildings.

A large number of European projects deal with the subject

- **Interreg Europe:** REBUS (improve the capacity of public authorities to undertake efficient renovation works of their public building stock, saving energy and public resources), SUPPORT, BUILD2LC, EMPOWER, ZEROCO2.

- **Interreg MED**: CESBA MED, EDUFOOTPRINT, ENERJ, IMPULSE, NEW FINANCE. PRIORITEE, SHERPA, SISMA, STEPPING, TEESCHOOLS.

- **HORIZON 2020**: PUBLENEF (Support Public Authorities for Implementing Energy Efficiency Policies), SIMPLA, CITYnvest, PANEL 2050, guarantEE, ChArGED, EDI-NET, EmBuild, FESTA.

The Interreg MED community

SUPPORT in a nutshell

- Interreg MED project
- Priority axis 2 ‘Low Carbon Economy’
- Thematic: Efficient Building
- Specific Objective 2.1 - *To increase capacity for better management of energy in public buildings at transnational level*
- 11 partners from 9 Mediterranean countries (Lead partner Anatoliki S.A., Greece)
- Project budget: 2.26 M€
- EU Funds: 1.92 M€
- Duration: 30 months (1.11.2017 – 30.04.2019)

The challenges of energy efficiency in public buildings SWOT-Analysis

Strengths

- Many local authorities have an energy plan, usually a SEAP, and an energy manager
- State government has adopted a climate protection law

Weaknesses

- Financially weak local authorities
- Lack of political commitment
- Insufficient technical knowledge
- Insufficient knowledge of funds
- Lack of capability to develop financial strategy
- Bad project design
- Lack of qualified ESCOs and enterprises

Opportunities

- Change perspective to life-cycle costs
- Rising energy costs
- Rising awareness in local authorities about long-term cost-saving effects of energy-efficiency measures

Threats

- Log-In-Investments
- Change of destination of building

The purpose

How to overcame some of these problems/barriers, specifically in the MED partners' Region

The project activities

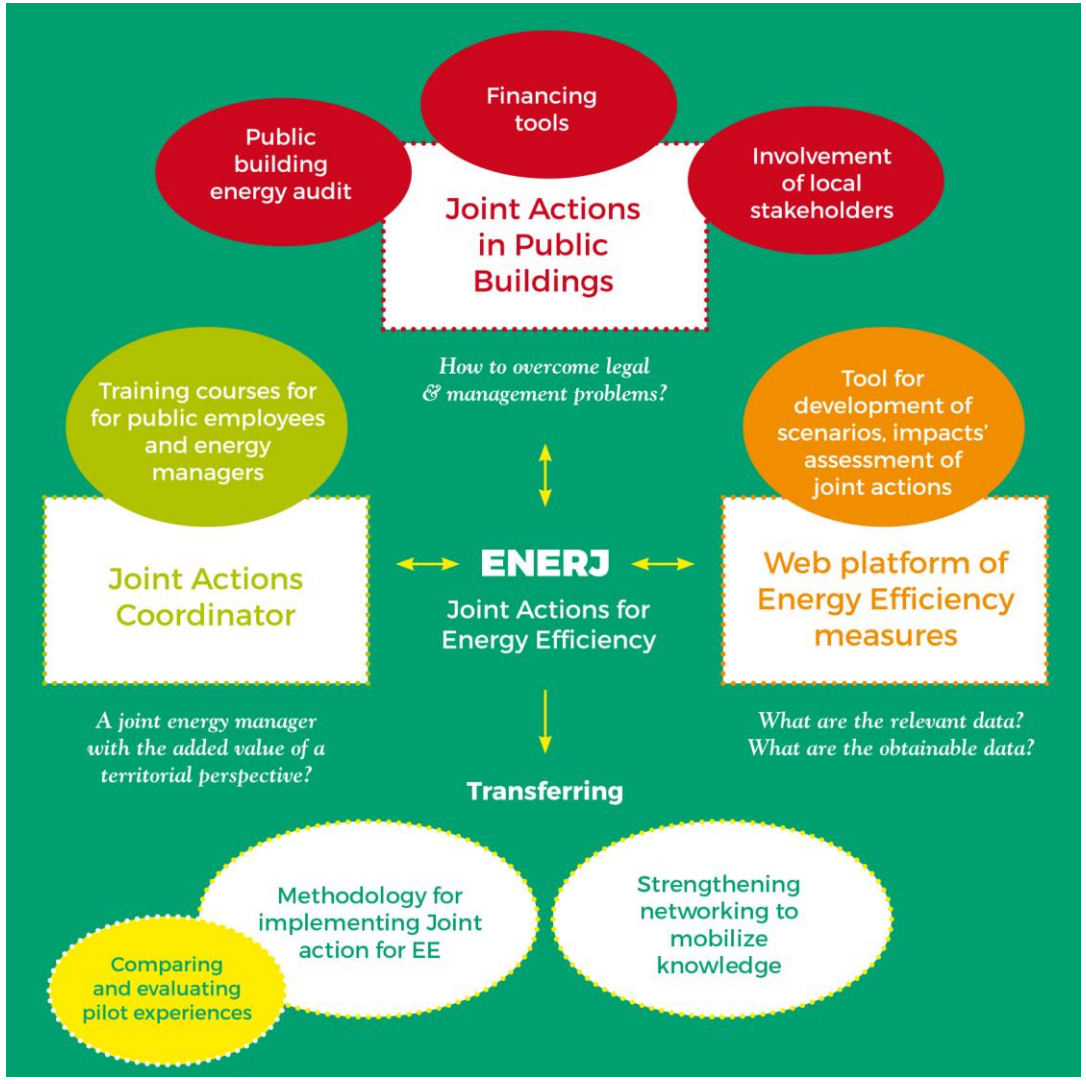
Start with the existing

- Build on existing projects, above all existing SEAPs (Covenant of Mayors), but also other Energy Plans
- do a **Territorial Context Analysis**. Look at the energy efficiency measures planned in public buildings in the SEAPs of the territory and where they overlap.
- put the data on a **collaborative web platform**
- elaborate **Joint Actions**
- facilitate their implementation through **Joint Actions coordinators**

OBJ 1: Joint Actions

Common methodology for Joint Actions on Energy Efficiency

- foreseen measures
- financing schemes
- energy audit



Example: Anatoliki S.A.

Development Agency of Eastern Thessaloniki's Local Authorities (Greece)

- SEAPs of: Thermi, Pilea-Hortiatis and Thermaikos
- Approved: 2011-2013
- Monitoring: Thermi fully monitored in 2016
- Energy Audit: public buildings of Thermi, Pilea-Hortiatis, Kalamaria, Trilofo

Example: CIMAA and AREANATejo

Intermunicipal Community of High Alentejo and the Regional Energy and Environment Agency from North Alentejo (Portugal)

- SEAPs of: Alter do Chão, Avis, Marvão and Sousel
- Approved in 2013
- Full monitored in 2015
- Energy Audit: public buildings of Arronches, Ponte de Sor, Campo Maior, Sousel, Castelo de Vide, Gavião, Marvão

OBJ 2: Joint Actions Coordinator

- Modelled along the lines of municipal Energy Manager
- Activities:
  - liaise with public authorities at local and district level
  - develop supra-municipal interventions
  - mobilisation of EU structural and other funds
  - Involvement of ESCOs and stakeholders

ENERJ will organize trainings for the Joint Actions Coordinator

Transferring

- Comparing and evaluating pilot experiences:
  - Methodology for implementing (and transferring) Joint Actions for Energy Efficiency
  - Strengthening networking to mobilize knowledge
- developed in each region and selecting the ones to be transferred among partners and on at EU level

Cultural Centre Hainholz

Cultural Centre Hainholz

- Year of construction 1905, until 2005 elementary school
- Today: Cultural Centre (basement and ground floor), junior high school for external students (first to third floor)
- The improvement of energy efficiency was part of a conversion and extensive renovation of the building (baths, accessibility for handicapped persons, technical infrastructure) in consultation with the stakeholders.
- Goal of the energy efficiency measures: reduction of final energy demand of 50%
- Measures: thermal insulation of three facades (12cm), attic (15/30 cm) and basement (2 cm), new taps and fittings
- Result: 85,8 kWh/m^{2}a, - 47% with a more intensive usage.

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Costs

- The total costs were € 2,85 million, of which 16% for energy efficiency (project development and quality control € 55.000, thermal insulation € 426.000)
- City of Hannover € 79.800
- National government € 1.970.000
- ERDF (26%) € 750.000
- Program Concerto (1%) € 30.200
- The contribution of Concerto served above all to realize

  a higher standard of energy efficiency

Cultural Centre Hainholz

Barriers

- Uncertainty about the future use of the building

Lessons learnt

- A precise idea of the destination of the building is needed as a starting point
- Energy efficiency as one goal among the others to improve the comfort and attractiveness of the building (aesthetic improvement, bigger windows for more light)
- A high level of ambition makes it easier to activate funds and increases the motivation of all subjects involved.

What good examples do you know of energy efficiency measures in public buildings were a group of local governments acted together?

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