



Investing in renewable energies at local level: successful example from the municipality of Bragança



La vitalità delle montagne europee
nella programmazione 2014-2020

Roma, 6-7 giugno 2013

TERRITORIAL CONTEXT



Bragança is surrounded in the North and in the eastern by the Natural Park of Montesinho.



Bragança is a mountain city in the North-East of Portugal: 700 m of altitude (438 m - 1486 m in the Natural Park of Montesinho).

Resident population: 35 341 inhabitants

Low population density: <30 inhab/km² (~115 in Portugal).

Economic structure: services 60%, secondary sector 16%, and primary sector 24%.

Climate: long, cold winters and short warm summers, large annual temperature range and low precipitation. Average temperature between 4.5 °C (January) and 29.7 °C (July).

Bragança is the capital of the district of Bragança (12 municipalities).



Portugal is the westernmost country of Europe.



Bragança is in the north-eastern of Portugal, near the border with Spain, covering 1174 km².



The problem and starting point of the initiative

- **Low attractiveness:**
 - Bragança **lost population**, especially the youngest, **since the 60s** of last century (as all the inland of Portugal)
 - Lower competitiveness due to remoteness and sparsity of businesses
- A **mismatch** between **high energy potential** and **low utilization**
 - High hydropower, wind, solar and biomass energy potential
 - Higher energy needs from mountain people (long and cold winters)
 - In most mountain municipalities: extreme reliance on fossil fuels, little energy independence, little SEAP adoption and implementation
- **The idea → counteract this tendency through two instruments:**
 - the **Polytechnic Institute of Bragança** (last 30 years)
 - an **attractive development strategy** by the Municipality, based on 'eco-development' (last 30 years)

The Bragança ecocity strategic plan

- **Objective:** promote and encourage **policies of energy efficiency** and **use of renewable energy sources** that contribute to the reduction of emissions **in view of a sustainable development**



July 2003: development of **Local Agenda 21** and its Action Plan
January 2006: an signing of the **letter of Aalborg**

- **Flagship initiative** of the Municipality, including concepts of **Eco-Tourism, Eco-Energy, Eco-Products and Eco-Construction:** the concept of **ECOCITY**



- By August 2013 the **“Bragança Eco-Energy Techno Park”** will be finished aiming at regional business development, as well as the **“Project of Creation of a Centre for Research, Innovation and Nesting Business and Study of Viability of a Business Location Area”**
- In 2010 Bragança joined the **Covenant of Mayors**, as a way to progress further in its policy for sustainable development, and approved its **“Sustainable Energy Action Plan”** in 2012.

Examples of initiatives in the context of Bragnaça Ecocity:

- **Eco-Energy**



Electric buses



PV systems in the City Hall, schools, and parking coverage (~260kW)



4 Hydro electric power stations with a total power of 6.2MW (1.5M€/year)



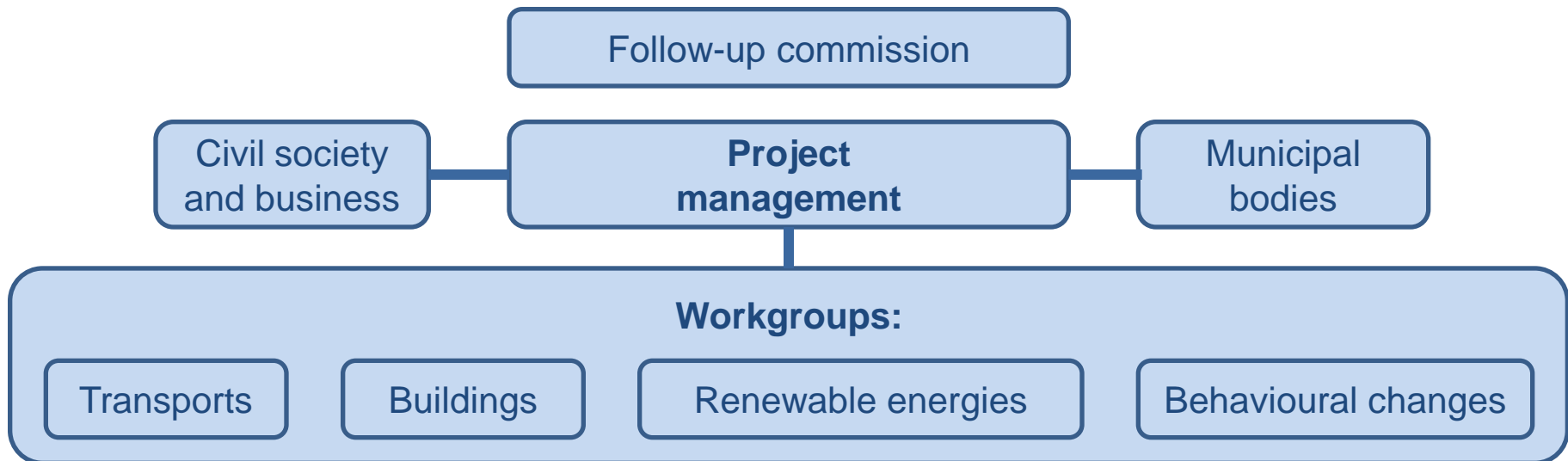
- Solar thermal heating systems, heating of Municipal Swimming Pools (246m²)
- Promotion of the energy efficiency in the municipality buildings and public illumination
- Energy certification of several municipal buildings

- **Eco-Tourism** – development of of tourist routes, promotion of initiatives, ...
- **Eco-Products** – promotion of fairs of endogenous products, ...
- **Eco-Construction** – (re)construction in accordance with good environmental practices and energy efficiency (municipality buildings).

BRAGANÇA SUSTAINABLE ENERGY ACTION PLAN (SEAP)



SEAP management structure



SEAP targets for reducing emissions by sector

Sector	Included?	Emissions (tCO ₂)	Weight (%)	Reduction target (tCO ₂)	Reduction target (%)
Buildings and equipment	Yes	58974	54.5	10433	17.7
Public lighting	Yes	3447	3.2	1520	44.1
Industry	No	-	-	-	-
Transports	Yes	45871	42.4	9841	21.5
TOTAL		108292	100	21794	20.1

Local Production of Electricity	Target (MWh)	Avoided emissions (tCO ₂)
Wind farm	200943	74148
Micro-hydro power plants	77	29

It is estimated a reduction in the global emission of 88.6%, equivalent to 95,966 tCO₂.

Is it sustainable?

Strengths

- ✓ A clear vision defined (a flagship initiative at a higher level);
- ✓ A strategy with measurable and clear objectives/targets;
- ✓ A list of specific actions planned;
- ✓ A monitoring plan and structure (with reports and deadlines...);
- ✓ Stability and dynamism of some local leaders...

Opportunities

- ✓ A motivated technical staff;
- ✓ A dynamic context established;
- ✓ Distributed generation systems are a powerful instrument for employment.

Weaknesses

- ✓ The involvement of stakeholders should be greater;
- ✓ The know-how of companies must be improved.

Threats

- ✓ Additional fund is needed...
- ✓ The current crisis is a major threat...

Results & achievements

- **Level of energetic autonomy reached so far:**
 - The produced electricity is 43% of the electric consumption (2004-2012);
 - Considering also the contribution received by the use of local electric grid this ratio is 158.4%
- **Contribution of the energy strategy for the local development:**
 - Development of SMEs;
 - Increase of the sustainability;
 - Development of endogenous products business;
 - Improvement of specific tourism activities.
- **Improvement of the attractiveness:**
 - From 2001 to 2011 the population has increased about 1.7% (it has decreased in the region of North-Eastern of Portugal)
 - Student population of the Polytechnic Institute of Bragança is 6700 while the population of the city is < 24000 (>28%)!
- **Impact of the strategy on quality of life of mountain people:**
 - Water is not a problem anymore!
- **Impact on the energy bill of people or businesses:**
 - 1.5M€/year result from the electricity produced by 3 hydro electric power stations;
 - 10% of the Municipality budget is for energy.

Perspectives for programming 2014-2020

- **How the Bragança strategy will continue to be financed in this area?**
 - Municipal budget for the SEAP: 13.52M€ (buildings, transports, local production);
 - Leasing;
 - Energy Service Companies (ESCOs);
 - Public-private partnerships;
 - Revolving funds;
 - Regional and National and European funding.
- **Can it contribute for rural development?**
 - Distributed generation (e.g. solar, biomass) → development of SMEs at local level
 - A lot of families use firewood for heating
 - (New) activities related to agriculture and forest are developing (eco-products, production of biofuels and biomass, reduction of fires...)
- **Can the Bragança strategy be replicable in neighbouring areas?**
 - Yes, with adaptation to the local context...
- **Can the Bragança strategy be improved?**
 - Yes, with other experiences and continuous development...



**Thank you for your attention
any questions?**

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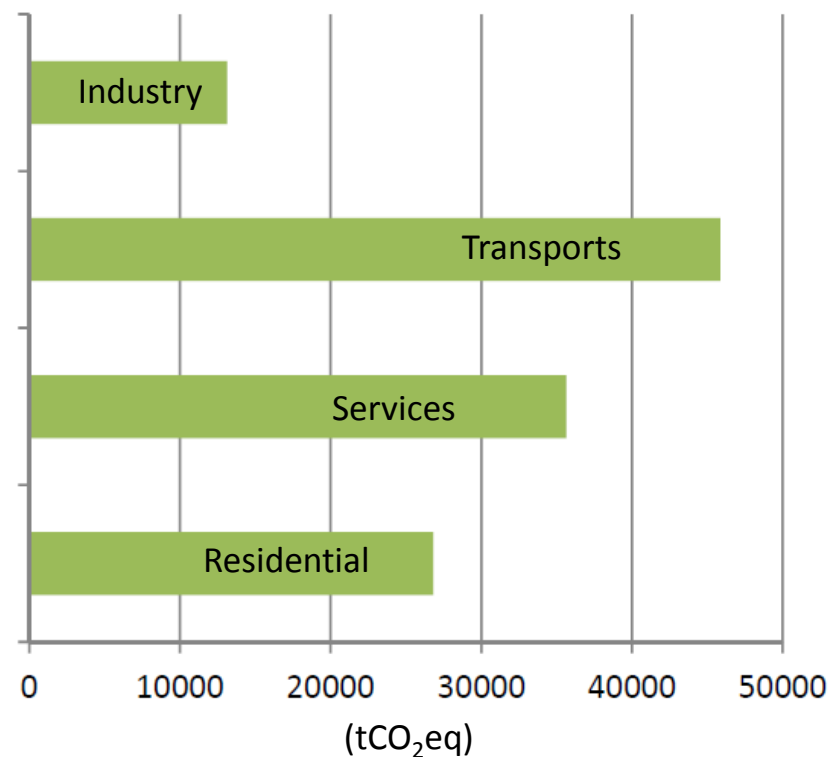
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Percentage of energy consumption by sector of activity

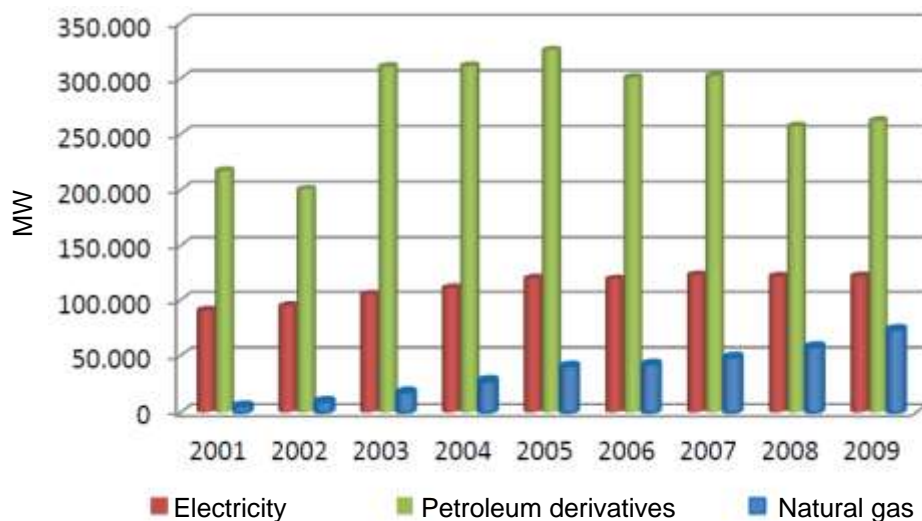
Activity Sector	Bragança	Portugal
Residential	20%	19%
Services	27%	13%
Industry	11%	29%
Transports	42%	39%

Energy and emissions profile of the Municipality

Distribution of emissions by sector of activity



Disaggregation of the consumption by energy vector



Municipal budget for the SEAP

Sector	Subsector	Estimated cost (€)
Buildings	Municipal buildings and equipment	9 314 973.19
	Tertiary buildings and equipment	0
	Residential buildings	0
	Public lighting	3 752 063.20
Transports	Municipal fleet	0
	Public Transports	300 000.00
	Commercial and private transports	0
Local production	Micro-hydro power plants	150 000.00
TOTAL		13 517 036.39



Where did the funds come from?

- **Regional and National funding sources:**
 - ✓ Several specific programs for renewable energies and energy efficiency and sustainable development, co-financed by the European Regional Development Fund, European Social Fund and Cohesion Fund;
 - ✓ Specific programs for energy efficiency funded by national authorities.
- **European funding sources:**
 - ✓ Risk Sharing Finance Facility (RSFF);
 - ✓ European Local ENergy Assistance (ELENA);
 - ✓ Life +;
 - ✓ New Entrants Reserve – NER300;
 - ✓ Intelligent Energy Europe;
 - ✓ Joint European Support for Sustainable Investment in City Areas (Jessica);
 - ✓ ...