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Promoting Energy efficiency to Local Organisations
through dissemination Partnerships in Europe
Best Actions for Collaboration in Countries
for a High efficient Use of energy in Structural funds

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Integration of photovoltaic systems in Bus-stops - **Peso da R ua - Portugal**

This project promoted the introduction of photovoltaic systems in 35 public transports bus-stops. This technology is being introduced in the municipality of Peso da R ua in order to illuminate inside the bus-stops.

Target Groups	Sector	Field
<ul style="list-style-type: none"> - Local authority - Decision makers - Domestic consumers 	<ul style="list-style-type: none"> - Transport 	<ul style="list-style-type: none"> - Renewable energy - Equipment / appliances

ANALYSIS

In the Municipality of Peso da R ua, like in many other Municipalities in the country, there was a need to rehabilitate the bus-stops, as they were very much deteriorated and without any safety and comfort to the citizens.

As the main users of this infrastructure are students, there was a need to include a lighting system inside the bus-stops in order to provide light during night periods - after the students lessons, mainly during the wintertime where days are shorter.

Thus together with Gabinete de Apoio T cnico do Vale do Douro Norte a bus-stop prototype was designed, taking into account the landscape and architectural constraints of the region and promoting as much as possible the use of typical materials of the region, namely the shale.

With the involvement of Ag ncia Regional de Energia do Vale do Douro Norte (AREVDN), a lighting system using solar energy (photovoltaic system) was designed to each bus-stop. It is foreseen that each system will operate 5 hours per day.

The option by this type of alternative energy had mainly to do with the fact that the majority of the bus-stop are located in a isolated places, far away from the electrical grid, contributing thus to be more cost effective. Besides that, the possibility to use in this project a renewable energy, strongly motivated the municipality of Peso da R ua in promoting such innovative project that also contributed to the objectives of the national energy policy.

The implementation of this project motivated the interest of the neighbour municipalities thus, in a short term period it is expected that similar installations will be provided to citizens.

This project was developed in the Portuguese region of "Vale Douro Norte" in close partnership with a local Municipality.

The system installed works with direct current, comprising each bus-stop/shelter with: one photovoltaic panel, one battery, one photovoltaic regulator, one clock switch/timer and two low consumption lamps.



BUS-STOP WITH PHOTOVOLTAIC SYSTEM



LATERAL VIEW OF BUS-STOP WITH PHOTOVOLTAIC SYSTEM

COST AND BENEFITS

The investment in this project totalled 203.000 €(including taxes) - for 35 Bus-stops/shelters, from which, 168.334 €in civil works and 34.666 €in photovoltaic systems.

This project was financed mainly by DGTT Direcção Geral dos Transportes Terrestres (90%) and by the Municipality of Peso da Régua the remaining 10%.

The use of a photovoltaic system in bus-stops will contribute to provide light during night periods, increasing the safety of citizens namely students and will reduce the energy bill of the Municipality of Peso da Régua.



**Agência Regional de
Energia do
Vale do Douro Norte**

AGÊNCIA REGIONAL DE ENERGIA DO VALE DO DOURO NORTE (AREVDN)

PARTNERSHIP

The promoter of the project was the Municipality of Peso da Régua with the conception support of Gabinete de Apoio Técnico do Vale do Douro Norte (Civil Works) and the support of Regional Energy Agency of Vale Douro Norte (AREVDN) in the design of the photovoltaic system.

The Energy Agency accompanied/supervised the execution of the project and will be responsible for the maintenance of it.

RECOMMENDATIONS

One of the main obstacles for implementation this project was the high price of the photovoltaic systems In Portugal, because we don't have yet in our country the production of this type of equipment.

This project will contribute to development of the photovoltaic systems market and to show the implementation of a new technology.

TO KNOW MORE

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USEFUL INFORMATION

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