



sunflower

energy | innovation | development

project newsletter

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Working Towards Sustainable Energy Communities Throughout Europe

With the Support of

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Intelligent Energy



Europe

The Sunflower Project is a European network of 8 partners. The aims of the project are; the promotion, dissemination and implementation of good practice examples of Renewable Energy Sources and their contribution to Local Sustainable Development, maximising involvement in the project and thus start a long and durable community energy vision in line with European energy climate targets.

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VISIT TO BILBAO TECHNOLOGY PARK, SPAIN BY THE SUNFLOWER PROJECT TEAMS AND STAKEHOLDERS REPORT



The fourth meeting of the Sunflower Project, a two-day event was organised and hosted by Bilbao Technology Park in Spain. The first day comprised of a Stakeholder meeting with presentations from the hosts and each of the project partners followed by a tour of the Technology Park focussing on a number of key developments. The second day was devoted to a Project Meeting.



The Stakeholders and Project Teams

Overview of first day.

Marian Ibarrondo welcomed the Project Partners and their Stakeholders to Bilbao Technology Park, the first in Spain and gave an interesting insight into its development and scope of activities, which include: Energy Efficiency, Sustainable Development in Industrial and Technological areas, Aeronautics, Advanced Engineering, R&D, Medicine and Biosciences, Energy and Electronics.

The Technology Park covers 227 ha and includes 202 companies employing 6750 workers. It is set in a rural area and is well located for the Airport (2 km), the centre of Bilbao (10 km) and Bilbao Port (20 km). Established in 1985, the Technology Park adopts a multi-disciplinary and innovative approach to research, development and growth. Different sectors are involved in the management and development of the Park including the recent addition of a joint venture with the university which specialises in sciences. www.parque-tecnologico.net/aPTBW/web/en/presentation/index.jsp

Gloria Etzebarria from the Basque Government's Energy Agency www.eve.es/web/Portada.aspx?lang=en-GB explained that there has been an increasing demand for energy which has recently stabilised at 3.73 tonnes of energy equivalent (toe). The region is not self-sufficient and does not have any natural gas supplies although it does have renewable energy resources available for utilisation. The region produces 67% of the electricity it consumes, of which 5.4% is from renewable energy sources. The majority of electricity is generated from imported natural gas and oil derivatives.

By 2010, the vision of the Basque Country is to see an increase in renewable energy use. With targets for renewable energy use in the domestic sector increasing from 5.4% in 1988 to 12%, electricity generation from 5.6% to 22.1% and bio-fuels from 2.4% to 5.75% .

A new energy strategy for 2020 will use incentives of the Feed-In Tariff and grants which are available to both small and large renewable energy projects in the region..

Gloria gave a rundown of the renewable energy options and development in the region and gave an

Stakeholders visit to Bilbao



insight into the issues associated with various options. These can be viewed in detail on her presentation.

Details of this and other partners presentations can be found in the full report on the Sunflower Website <http://www.sunflowerproject.org.uk/Bilbao%20Notes.pdf>

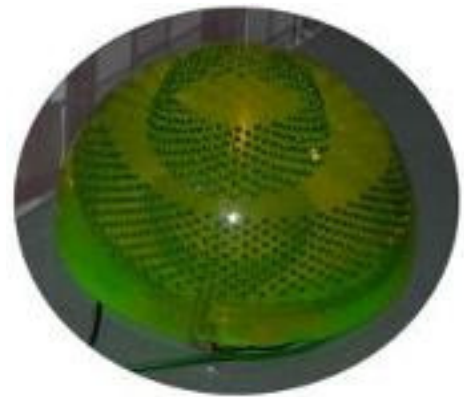
Tour of Bilbao Technology Park

Tecnalia

The tour of Bilbao Technology Park began with a short presentation and tour of the research and development facilities of Tecnalia. Tecnalia has a 128 million Euro turnover, employs 1,378 staff, has 3,800 clients and owns many technological patents. The following examples of research and development in solar technologies were viewed:

'Sphere PV'

Silicon spheres generate more electricity than flat plate solar PV collectors and their applications are more flexible, for example, transparent, thin film panels containing PV spheres:

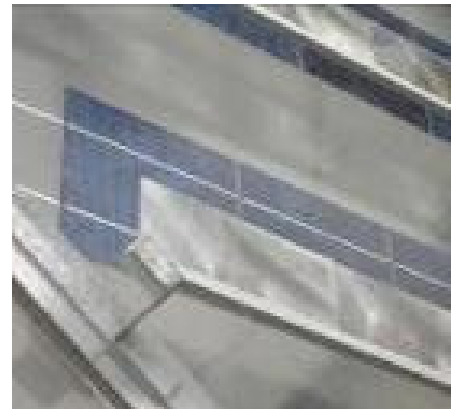


Solar trackers

Tecnalia is carry out research into mounting solar PV panels on trackers which enables PV panels to follow the sun which significantly improves the efficiency of solar PV installations:

Solar PV with Lenses

The main application for this technology which intensifies light onto solar cells is in commercial greenhouses:



Mixed PV arrays

A new technology has been developed (patent pending) to homogenise the electricity output of PV panels with different ratings (power outputs):

Solar PV thermal hybrid

Ways of integrating solar PV and solar thermal panels are being explored:



Stakeholders visit to Bilbao



Educational models

A number of models were demonstrated including one showing the relationship between the location and position of roof-mounted solar PV panels and adjacent obstructions (which cast shadows) on electricity output:



Organic PV

One new area of research and development is the creation of organic PV which could totally revolutionise the PV industry.

Energy Efficiency Test Facility



The second stop on the tour of the Technology Park was an energy efficiency test and integration facility. The idea is to recreate a variety of environments found in buildings using the latest technology to monitor and optimise energy use via sensors. The facility (building) included a micro CHP plant, ground source heat pump and a green roof garden to help keep the building cool.



Science Museum

The last stop on the tour was the new Science Museum, designed in the shape of a pyramid composed of PV panels. In this underground building an interactive museum has been created, specifically for schools, to demonstrate that anyone can become a scientist and you don't have to be a geek!



Summary

The Sunflower Stakeholder and Project Meeting in Bilbao provided a useful insight into the development of Technology Parks as a way of stimulating renewable energy developments from research and development of new technologies through to stimulating investment. The visit demonstrated the value of European funded partnership projects bringing people together from different countries and backgrounds to share experiences and discuss ways of overcoming barriers facing renewable energy installations. The level of commitment, enthusiasm and willingness to share and help others was inspiring. Overall, the visit showed that collectively a lot of individual actions can make a big difference in the transition towards sustainable energy communities. Although a lot more work is needed, there are a growing number of people and organisations who are working hard to make it happen.

This is an edited version of a report by Dr Vicki Shaw. The complete version can be found on the Sunflower website, by clicking on the link below

<http://www.sunflowerproject.org.uk/Bilbao%20Notes.pdf>

COMMUNITY RENEWABLE ENERGY PROJECT FINAL REPORT



Survey work in Appleton-Le-Moors with the assistance of North Energy Associates



Community meeting in the Village Hall in Appleton-Le-Moors.



Energy Drop in session in Castleton.



Example of a similar development in Derbyshire



Peter Woods from the Esk Energy group with the Head teacher from Danby School at an Energy Fair organised by the Project Team.

The Project had 3 distinct phases;

1. Footprinting / bench marking and capacity building and training.
2. Development of Action Plans and feasibility studies.
3. Capital development and implementation.
- 4.

The CRE Project was community based with the Project team acting in an advisory and supporting role. Activity was driven by the communities involved with support and advice from the Project Team. A Steering Group (composed of the local electricity distribution company, Friends of the Earth, and other experts in the field of renewable energy) guided the project throughout.

Following a carbon foot printing exercise to establish the baseline the communities the communities went through a process of evaluating the best options for renewable energy and energy efficiency, given their specific circumstances. This resulted in detailed energy action plans whose implementation involved numerous community meetings and training sessions in order to build knowledge and skill capacity within the communities. Assistance was given by Micro-generation Yorkshire, Energy Savings Trust and Yorwoods.

Evaluation of the renewable energy resources and methods of capture was undertaken through a range of feasibility studies of bio-mass district heating, wind energy, hydro power and woodland management. This process resulted in the development of four main project areas:

- a 55kW hydro power solution at Ruswarp on the River Esk
- micro-renewable installations and energy efficiency measures in Appleton-le-Moors and Spaunton
- a community woodland in Appleton-Le-Moors
- a biomass heating programme including installations and establishment of a fuel chain in Bransdale, an area of remote farms

These programmes of work were implemented with mixed success although all outcomes are considered of value to the findings of the project as a whole.

The full report including case studies and lessons learned can be downloaded from the Sunflower website.

www.sunflowerproject.org.uk/Final%20Report%20Short%20Version.pdf

The project officially ended at the end of June 2010 and the communities continue to work to implement their energy action plans. The project has given the communities the knowledge and tools to take their projects forward into the future allowing the on-going development of sustainable communities within the North York Moors National Park.

BILBAO TECHNOLOGY PARK IS INVOLVED WITH NEW EUROPEAN FUNDED PROJECT



The Sunflower Project team at Bilbao Technology Park are involved with another European project called 'Zero-Hytechpark' www.zerohytechpark.eu related to hydrogen technologies and renewable energies. During the last meeting in Bilbao, the coordinator of this Project, the Aragon Hydrogen Foundation presented this project, whose main aims are to achieve more sustainable technology parks. Specific objectives include the generation of hydrogen using renewable energies, integration of fuel cells in the foundations of buildings, hydrogen fuelled vehicles for transport, development of optimal PV and hydrogen systems to heat and power the buildings and dissemination of the project.

The first leaflet about the project has been produced and in October, the next project meeting will be held in Málaga, (Spain), at which there will be the opportunity to learn about hydrogen technologies, and for the Sunflower Project partners to share experience with the partners of Zero-Hytechpark. [Click here to download the leaflet.](#)



Solar PV trackers. A variety of solar collectors are being tested.
Photo courtesy on Zero Techpark website



Hydrogen Fuel Cell Powered Bikes and Cars
Photo courtesy on Zero Techpark website



Marian Ibarondo from Bilbao Technology Park makes a presentation at the Kick-off Meeting of the Zero-Hytechpark Project.

Further details about the Sunflower project can be found on the Sunflower Website
www.sunflowerproject.eu