

mag



INTELLIGENT
ENERGY
EUROPE
FOR A SUSTAINABLE FUTURE



4

N° 4 - MAY 2012

Energy efficiency & renewables

Making a future together



9

IN THEIR OWN WORDS
Low carbon economy
requires paradigm shift



10-11

MANAGER & MANAGED
ATLETE



14-15

COUNTRY PROFILE
Tapping biogas and
sustainable mobility



EDITORIAL

BY **PATRICK LAMBERT**
Director EACI

“In this issue we have decided to emphasise the programme’s five fields of delivery.”

Welcome to the fourth issue of the Intelligent Energy - Europe magazine. Regular readers will find the usual mix of in-depth reports and interviews on all aspects of the programme inside.

In this issue we have decided to emphasise the programme’s five fields of delivery.

*The first, **shaping policy development and implementation**, is covered in the lead feature, which looks at attempts to integrate solar energy in the planning of a town in the north of Spain, as part of the POLIS project. Implementing energy efficiency regulation is also one of the objectives of the ATLETE project, which is explored in some detail in our regular slot of Manager & Managed interviews.*

*This compliance project that focused on fridges also fits in nicely with the second field of delivery: **creating favourable market conditions**, as does PASS-NET, a project designed to spread knowledge about the benefits of passive housing.*

*PVTRIN, a photovoltaic installer training and certification project, falls under our third field of delivery: **building capacity and skills**. Read all about it in the lead feature, which goes into the state of the photovoltaic market in some detail.*

Passive houses and photovoltaic systems are two good examples of where the IEE programme promotes the uptake of solutions from European research.

*The fourth field of delivery is **preparing the ground for investment**. More on this can be found in this issue’s country profile section. This time we’re looking at projects taking place in Denmark, the current holder of the European Union’s rotating presidency, as well as in Spain. In these countries, the GERONIMO II – BIOGAS project aims to support farmers willing to build their own biogas facilities.*

*The fifth and final field of delivery for the IEE programme is **informing stakeholders and fostering commitment**. How can we convince older people of the joys of active mobility? See our coverage of the AENEAS project for more. Enjoy the issue.*

Patrick Lambert

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Executive Agency for Competitiveness and Innovation*

THE INTELLIGENT ENERGY-EUROPE MAGAZINE



Table of contents

Editorial	2
Lead feature	4-7
<i>Photovoltaic skills in high demand</i>	
On the ground	8
<i>Putting the sun to work</i>	
In their own words	9
<i>Low carbon economy requires paradigm shift</i>	
Manager & Managed	10-11
ATLETE	
Focus on	12-13
<i>Giving power to the people</i>	
Country profile	14-15
<i>Tapping biogas and sustainable mobility</i>	
On the ground	16
<i>Schools play the energy game</i>	
On the ground	17
<i>Community-driven change</i>	
On the ground	18
<i>Lessons for low-income households</i>	



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More details on the IEE programme can be found at ec.europa.eu/intelligentenergy





Photovoltaic skills in high demand

An Intelligent Energy - Europe project is working to ensure that a shortage of skilled installers does not put the brake on the booming photovoltaic (PV) market.

PV power is booming, but how sustainable are the growth rates? There could be more than 600 GW of installed PV capacity by 2030, but will there be a sufficient number of skilled installers?

This is the main concern for the PVTRIN project partners, who are supported by the Intelligent Energy - Europe programme.

Poorly trained installers can lead to poor PV performance. If word gets around that modules are not generating the power expected of them, market confidence could suffer.

“If there’s a small shadow the whole panel will not work properly.”

There are as yet no freelance, certified PV installers who can take their skills from one European Union Member State to another.

“The lack of qualified installers is quite evident,” says Stavroula Tournaki, PVTRIN project manager. While more than 1 400 000

jobs should be created over the next 20 years in various PV fields – research, production, wholesale, installation and supply – the industry is currently outgrowing the workforce.

Technicians who install PV modules might be competent electricians, but they often have little or no PV training.

“The PV industry is highly concerned about quality,” says Stavroula.

Untrained installers might not know how to connect the PV unit to the grid properly and safely, says project coordinator Theocharis Tsoutsos. Potential shading problems are often not sufficiently taken into account, he says.

The PVTRIN team aims to train 160 installers. As an indication of the high demand, the pilot courses were oversubscribed by 100% at the halfway stage. The team’s main goal is to promote the training and certification for PV installers incorporating the criteria set down in both EU legislation and national legislation.

PVTRIN’s UK partner, BRE, certifies PV installers according to the standards laid down in the British micro-generation certification scheme (MCS), currently one of the only nationwide schemes in the EU. “The physics is the same across Europe, even if other schemes will need to be tweaked to take into account national regulations,” says Dr John Holden, a principal consultant at BRE Global.

“When you certify you look for a number of things,” John says. “The first thing is the competence to install on-site. The second thing you look for is consistency; the installer needs to have a quality management system in place that includes, for example, the preparation of quotations and estimates for the PV’s annual energy performance.”

A specific skill set is required for PV installations. Most modules are placed on pitched roofs. “Roofing skills are required, which means the ability to work at height,” says John. “PV panels are heavy. Health and safety is very important. There needs to be a risk assessment before the installation takes place.”

There are other important safety concerns. PVs work on direct current (DC) rather than the alternating current (AC) used by most appliances. DC is dangerous. “If you touched a live AC conductor you would be pushed backwards. A DC conductor on the other hand could make you clamp your hand around the conductor; the current makes the muscles contract. PV installers must be experienced in dealing with live DC systems.”

John continues: “If there is a small shadow, people think that part of the panel might not work properly. But that’s not the case. If there’s a small shadow the whole panel will not work properly.” For this reason, a site survey needs to take place prior to installation, taking into consideration objects such as TV aerials or even fast-growing trees.





In the UK, only PV systems installed by an MCS-certified installer can sell excess power into the national grid, a system known as “clean energy cash-back” or the “feed-in tariff.”

The link between the certified installer and the feed-in tariff is crucial, according to Joseph De Jonghe, a PV consultant in Belgium. Such a link does not exist in Belgium’s southern region, Wallonia, where poorly installed modules are not uncommon. “For photovoltaic power the qualification process is a lot less structured than for solar thermal,” Joseph explains. “Certified instructors in solar thermal energy are required to take a 56-hour course, sit a certification exam and spend a day with a manufacturer. For PV, there is a one-week course. Installers are recommended, not certified.” He continues: “We have seen poorly calculated module sizes and orientations. Sometimes the system stops working and the clients ask why.”

With its Europe-wide qualification approach, the PVTRIN project should hopefully help developing markets avoid problems such as these.

“With the latest change in the law you could say that we are on the way!”

“We have good news,” says Camelia Rata, the PVTRIN project coordinator in Romania. Legislation has recently been passed enabling private dwellings, companies and public administrations to connect their PV installations to the national electricity grid. “This is the first time it has been clearly allowed by law for a capacity up to 50kW,” says Camelia, who is executive director of ABMEE, a non-governmental organisation. She hopes that a Romanian installer certification scheme will be in place by the

end of 2012. There is also hope that the Romanian Government might consider state support for PV. “The environmental support fund has co-financed solar thermal but not PV,” says Camelia. “Most of the talk about PV has been purely theoretical, but with the latest change in the law you could say that we are on the way!”

State support has undoubtedly kick-started the photovoltaic market across the EU. But with state budgets under severe strain there is no guarantee the same level of support will be available in the future.

Under budget pressure, the Spanish Government has already cut incentives. The retroactive nature of these cuts, which apply to producers who had already signed contracts, risks damaging the credibility of the Spanish system, warns Eduardo Roman, the PVTRIN partner who works in the energy unit of Tecnalia, a company specialised in PV research. State incentives have been cut from around €0.25 per kWh to around €0.13 for ground installations.

While this is worrying, in the not-too-distant future PV power is expected to stand on its own two feet, without subsidies, thanks in part to the research undertaken by companies such as Tecnalia.

“By 2020 we expect that there will be no incentives and that PV installations will be profitable without them,” says Eduardo. A PV module bought in 2011 cost around half the price of a unit bought in 2009, he points out. “The technology will continue to advance,” he says. “The modules will become more efficient and cheaper, as will the whole system, including the connection between the PV installation and the grid.”

Spain is of course blessed with some of the best weather in Europe. Many Spanish towns are keen to harness the sun’s potential.

One such town, Vitoria-Gasteiz, is participating with other European cities like Paris, Malmö, Lisbon, Munich and Lyon in another Intelligent Energy – Europe project, POLIS, which in Vitoria-Gasteiz aims to assess and to mobilise the solar potential that can be extracted from both residential neighbourhoods and industrial areas. “Our first pilot action is in Lakua, a northern residential area,” says Xabier Marrero, project manager in the Vitoria-Gasteiz City Council’s environmental and public space

department. The objective is the creation of a ‘solar map’ that highlights issues such as the shadows cast by antennas and chimneys. By 2015 the City intends to integrate solar requirements in the Urban Master Plan encouraging residents to invest in PV roof installations.

“By 2020 we expect that there will be no incentives and that PV installations will be profitable without them.”

In the town’s main industrial area, Jundiz, the project is focusing on rooftop potential rather than ground installations. In the past years, in Spain, there has been a solar business model based on ground installations, but we believe that this soil needs to be preserved for better uses such as agriculture,” says Xabier. “Ground installations are an opportunity in degraded or arid areas as in the south of Spain but here in the Basque Country the soil is much richer and needs to be preserved.”

The town’s sustainable policies on renewable energy, climate change, air quality, water management, mobility and biodiversity have been recognised with the European Green Capital Award for 2012.

FOR MORE INFO

PVTRIN

www.pvtrin.gr

POLIS

www.polis-solar.eu