

## Wind turbines generate enough energy to power every home in Scotland

According to the World Wildlife Fund's Scottish branch, who recently published findings from data culled from

WeatherEnergy, reported that during the month of October, the country's wind turbines collectively generated enough energy amounting to 982,842 megawatt hours (MWh) to power 3,045,000 homes in Scotland. This is about 126% of the electricity needs for Scottish households. It was also reported by WWF Scotland that solar power also made a significant contribution towards the country's electricity supply in October. Rooftop PV panels provided 46 percent of the electricity needs for Edinburgh homeowners, who have invested in residential solar installations. That number drops a bit for solar-equipped homes in Inverness (38 percent), Glasgow (37 percent) and Aberdeen (33 percent). Solar thermal also performed well, providing solar hot water panel-fitted homes in the above cities with over a quarter of their respective household hot water needs.

Lang Banks, director of WWF Scotland in a statement says *'While nuclear power plants were being forced to shut because of cracks, Scotland's wind and sunshine were quietly and cleanly helping to keep the lights on in homes across the country. With wind power generating enough electricity to power 126% of the needs of*

*every home in Scotland, it really was a bumper month for renewables in Scotland'*

<http://www.mnn.com/earth-matters/energy/blogs/blown-away-wind-turbines-generate-enough-energy-to-power-every-home-in#ixzz3LgctXsCZ>

## European Utility Week

The European Utility Week took place in Amsterdam this year from the 3rd to 6th of November 2014. Many interesting lectures were given on the latest developments on the energy market, renewable and sustainable energy and of the crossover between ICT and energy, where a lot of attention was given to the possibilities and the implications of the Internet of Things.

This was also reflected on the exhibition floor, on which topics such as sensors, smart meters and energy-related devices were very much present. The floor was filled by big industries in the field of micro-electronics and equipment, as well as SMEs with niche products and different level net operators from all over Europe.

GREAT partners were represented during the networking session organised by Smart Grid Flanders, GTA/Oost NV and Enterprise Ireland. Several SMEs, that were part of the Enterprise Ireland trade mission who attended the GREAT Smart Grid Technology Watch Event in Claremorris in September also joined the session.

## EnergyVille & Partners present the Linear Project

EnergyVille and its' partners presented their research project Linear at the European Utility Week last month to a large audience in the Netherlands. It is one of the largest smart grids research projects in Europe focusing on residential energy response. The project combines smart appliances, smart meters and home energy systems to the electricity grid of the future.

Into the future we may assume that electricity prices for consumers will vary a few times a day, depending on the offer (wind and solar) and the demand (night, weekend, evening peak, cold weather). Families will be able to identify when prices are at their cheapest, so they only turn on their washing machine in a 'smart' way, i.e when electricity is cheap. Even better: so the appliance can be automatically turned on when electricity is cheap. Or by letting the electricity grid decide to turn on the machine within a comfort zone that is set by the family. That way the grid can use surplus electricity on a regional and countrywide level until the peak is 'used away'.

Project leader Wim Cardinaels: *'Smart grids, the combination of smart meters, smart appliances and energy management systems, can offer an affordable solution to keep our grids reliable in the future and adapt them to renewable energy.'*

Linear worked with 250 families in Flanders to investigate the ability to handle the impact of the transition towards renewable energy through household appliances. For that reason EnergyVille and partners developed new technologies and management systems and they looked for those configurations that serve energy users, suppliers and managers best.

Twenty partners joined hands to support Linear, or 'Local Intelligent Networks and Energy Active Regions'. It was born of a partnership between Flemish (Belgian) research institutions including EnergyVille (University of Leuven, VITO & imec) and iMinds, industry and the Government of Flanders.

Linear was the source for many scientific publications, as well as lay information on smart grids. The project ended as a finalist in the ISGAN Award of 2013, earning global recognition.

<http://www.linear-smartgrid.be/?q=en/14-12-09>

## Carbon CLEVER Conference



The Carbon CLEVER conference on 17<sup>th</sup> Nov is part of the Highland Council's initiative to co-ordinate and accelerate a transition towards a carbon neutral city of Inverness and low

carbon future in the Highlands by 2025.



Setting an example of best practice and leadership, the Local Authority is achieving ambitious targets to reduce carbon emissions by installing renewable energy in their schools. The excess energy is then transmitted to surrounding regions through smart grids and efficient storage; LED Street lighting; EVs in their transport fleet and the roll out of a promotional campaign to introduce e-bikes supported by SSE and Highlands & Islands Enterprise. Collaborative workshops were also conducted on Climate Justice.

## Report: British solar could be subsidy-free by 2020

Solar power will be a competitive energy source in Britain as early as 2020, says a report which uses the German market as a benchmark.

The Berlin-based think-tank Thema1 concluded that the three markets in solar power - large-scale "solar farms", and commercial and residential rooftop - will be economic without support in Britain within the next decade.

"We are firmly convinced that solar will become the bedrock of

the global power system going forward," said report author Gerard Reid, a partner at corporate finance company Alexa Capital, which finances low-carbon energy projects in Germany and Britain. "That said the road going forward is uncharted and difficult. Our message to the UK government is to reduce support for solar but do so gradually."

The impending competitiveness is driven by falling hardware costs and a maturing supply chain. Germany provides a useful roadmap for the future, where renewable energy has revolutionized power markets.

Commenting on the report Professor Catherine Mitchell, Professor of Energy Policy at the University of Exeter said: "This confirms that even in Britain with its grey skies, solar power is finding its feet faster than anyone has suspected. "The old argument that 'we can't afford the low-carbon transition' is increasingly untrue, which is great news for the consumer and for climate change - and for companies such as E.ON that are prepared to embrace change rather than fight it.

"But solar power can't power the nation on its own because of its intermittent nature. So the government's backing for interconnectors, which help balance supply and demand across the continent, is also very welcome as another key component of the smart, low-carbon grid that we need."

<http://www.edie.net/news/6/Report--British-solar-could-be-subsidy-free-by-2020/#.VIA40PCOmCo.mailto>

## Smart Grid Transmission and Distribution.

Attending the Smart Grid Transmission and Distribution event on 18<sup>th</sup> Nov in the University of Strathclyde's Power Networks Demonstration Centre (PNDC) was an ideal networking opportunity to engage with SMEs developing new smarter technologies to meet the needs of DNOs.

The workshop was targeted at raising the profile of opportunities in the Transmission and Distribution side in the Smart Grid Supply Chain. Network and system management has been a major area of research, development and demonstration in recent years and there are multiple gateways in this area for Scottish companies offering technology, products and services.

Notable Speakers included Sir Jim McDonald, Jim Sutherland (MD at Scottish Power Energy Networks) and David Rutherford (CEO of PNDC).

The PNDC is a unique, world-class collaborative R&D and demonstration facility aimed at accelerating the deployment of innovative electrical, transmission, distribution and generation technologies to provide integrated smart grid solutions.

An SME wishing to test a new product will have faults thrown at their technology in a simulated MV and LV network to accelerate an understanding of system behaviour, develop

operational experience and reduce delivery risk.

## Community Energy Scotland

The Community Energy Scotland conference in Edinburgh on 26/27<sup>th</sup> Nov looked at addressing fuel poverty and grid constraint through smart domestic Phase-Change technology and battery storage solutions, community-led smart demand side management, as well as practical measures to realise the socio-economic potential of Local Energy Economies with accessible funding from the Scottish Government Local Energy Challenge Fund (LECF).

Creating the right conditions and facilitating community engagement in local energy economies was demonstrated through case studies in grid innovation through the Scottish Power Energy Networks Accelerating Renewable Connections (ARC) project.

Meanwhile, it was encouraging to also hear about the lead role Scotland is taking in international development of community energy projects in Malawi to address poverty reduction by providing rural mini-grids in Africa and in providing micro renewable energy systems to power electric lighting for maternity hospitals and doctors surgeries.

