

## Hill of Towie ploughs ahead



Photomontage of Hill of Towie Wind Farm courtesy RES

Leading international engineering consultancy, SgurrEnergy has been contracted by Lloyds Banking Group and BNP Paribas to provide due diligence services on the Hill of Towie onshore wind farm located in Moray, North East Scotland. The 48 MW project developed by RES will be their largest onshore wind farm to date and will be constructed using 21 x 2.3MW Siemens wind turbines. The arrangement with Lloyds Banking Group and BNP Paribas for construction of the wind farm is the first large scale project to benefit from the

European Investment Bank £700m Intermediated UK Onshore Wind Scheme. A total of £76m was secured for the Hill of Towie project over 17 years. The wind farm is expected to be fully commissioned by spring 2012. Simon Luby, Advisory Services Manager at SgurrEnergy, stated, "We are delighted to see this project reach financial close as it marks the upturn in the financial markets for wind farm financing since the credit crunch began. There is also significant interest in offshore wind farms, demonstrated by our current work

where SgurrEnergy is concurrently managing 8 separate offshore wind Lender's Engineer projects across the UK and mainland Europe coastlines. This highlights our position at the forefront of offshore wind industry and the flexibility we provide in meeting the timescales demanded particularly by the financial sector." Contact the team on +44 (0) 141 227 1700



## Technical Advisor for USA's 1st Consented Offshore Wind Farm



Offshore wind farm for illustrative purposes only

**After almost a decade Cape Wind, the first offshore wind farm in the States, has been approved.**

SgurrEnergy has been supporting the project in the Technical Advisor role since the third quarter of 2009.

In the last decade, China has built its first offshore wind farm and nine other countries have continued to develop and operate offshore farms including Belgium, Denmark, Finland, Germany, Ireland, the Netherlands, Norway,

Sweden and the UK. SgurrEnergy has advised on over 15% of the world's offshore wind farms including playing a leading role in advising the Chinese government on its offshore wind development strategy after completing a 10,000km assessment of the Chinese coastline. Jim Tolan, President, SgurrEnergy Inc. stated, "Our outstanding technical expertise garnered in Europe and Asia will bring invaluable direction to the development of the Cape Wind project. We are very proud to be part of bringing clean energy to the States and our advisory capacity will reduce and mitigate risks and allow Cape Wind Associates to benefit from the lessons learned from Europe."

Cape Wind offshore wind farm will comprise 130 wind turbines located several miles from the Massachusetts shore in the waters of Nantucket Sound and will have a maximum expected production of 454 MW.

Sgurr (pronounced Skoor) Scottish Gaelic meaning peak, pinnacle or summit. We are very proud of our Scottish roots and our reputation for engineering excellence.

## Reducing Risks for offshore wind farm financing



Ian Irvine

As leading offshore wind experts, SgurrEnergy and offshore wind partners Wood Group Kenny held a joint offshore wind seminar in London in April for the investment

community titled, *'Reducing Risks for Offshore Wind Farm Financing, Development and Operation.'*

Co-founder and Technical Director of SgurrEnergy, Ian Irvine advised caution, "The scale of the new offshore wind farms announced as part of the Scottish Territorial Waters and as part of the UK



Tim O'Sullivan

Round 3 allocation see developers faced with new challenges. A basic understanding of the structure of the wind and the harshness of the offshore

environment is crucial

to preventing longer term escalating costs. It is vital for the project developers to invest wisely at their design and planning stage as issues will magnify in the offshore environment. A pound spent wisely now will save many in the future!"

Tim O'Sullivan, Operations Director,



Simon Luby

Offshore Renewables, Wood Group Kenny delivered a presentation on, *'Actively Managing Risk in Offshore Engineering and Construction.'* Simon Luby, Advisory

Services Manager at SgurrEnergy presented on, *'Offshore Wind Farm Financing Risks.'*

If you would like to be kept informed of future SgurrEnergy seminars please register your interest at [events@sgurrenergy.com](mailto:events@sgurrenergy.com)

## Wind monitoring in the Philippines

**SgurrEnergy recently completed feasibility studies of multiple sites totalling 300MW throughout the Philippines.** This work involved pre-feasibility constraints mapping and wind resource modelling using NCAR/NCEP re-analysis data and local wind data. Field surveys were carried out in co-operation with government authorities to confirm wind farm boundaries and layouts and technical presentations were made to

government officials for site permitting applications. In addition, wind monitoring stations were designed, procured and commissioned to IEC and Measnet standards and the subsequent energy yield predictions were used to inform wind farm designs to support project investment and development. To discuss your Asian project contact [cathryn.chu@sgurrenergy.com](mailto:cathryn.chu@sgurrenergy.com)



Third from left: SgurrEnergy's James Wu carrying out micro siting in the Philippines

## Innovative power solution for remote locations

**With sunlight at a premium during winter months and average temperatures falling below zero degrees for five months of the year, the north of Sweden represents a particularly challenging environment for wind farm development.**

A fundamental problem associated with conducting a wind monitoring campaign



Weatherproof battery enclosure

in these climes is loss of data resulting from frozen instrumentation. Heated anemometry is often used to mitigate these risks but this creates an additional challenge of increased power requirement. SgurrEnergy was commissioned by leading developer SSE Renewables to design an autonomous power system capable of providing a reliable source of power to their met masts located in remote areas lacking grid connection.

Adam Spearey, Renewable Energy Consultant at SgurrEnergy explained, "Creating this innovative solution was an enjoyable challenge. We used specialist software to design stand-alone renewable energy systems capable of meeting the power requirement of the masts taking into account the challenging environmental conditions.



Wind turbines installed on met mast

Two hybrid renewable energy systems were designed and specified comprising wind turbine generators, solar panels, charge controllers, battery bank and enclosure."

Jenny Longworth, Wind Analyst at SSE commented, "SgurrEnergy provided an excellent solution to a real challenge we face here in Sweden. The autonomous power systems have now been deployed alongside two mast installations and are performing well."



## Three Galion Lidars onsite in Scotland

Three Galion Lidars undergoing burn-in at our test facility. This forms part of our rigorous QA procedure prior to new product shipment.



**Galion Lidar continues to lead the way in remote sensing for wind power applications.** As the only 2km range, pulsed beam, highly portable Lidar on the market, SgurrEnergy is fully committed to staying at the forefront and bringing innovative, beneficial solutions to the wind energy market.



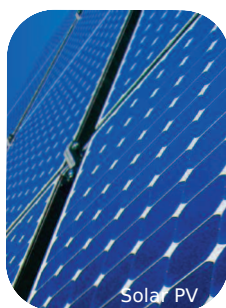
A longer range 4km+ Galion device is set for launch in the coming weeks in response to significant demand for even greater scanning distances, particularly useful for offshore applications.

The 4km+ range Galion will be available on the SgurrEnergy ORQA (Offshore Risk Quantification Analysis). The offshore wind platform is the very latest data monitoring platform designed specifically to capture a full meteorological, environmental, wave, tidal and foundation picture of offshore conditions and inform design, planning and environmental consenting phases for the offshore wind industry. To find out more about Galion Lidar or ORQA please visit [www.sgurrenergy.com](http://www.sgurrenergy.com) or email [galion@sgurrenergy.com](mailto:galion@sgurrenergy.com)

## EnerCap commission solar due diligence

**SgurrEnergy has completed a full technical due diligence review of three solar PV developments in the Czech Republic totalling 7.4MW for EnerCap Capital Partners. The project incorporated the development of two green field sites in the Klatovy area and one industrial site in Mimon, using First Solar's Cadmium Telluride (CdTe) modules, fitted to fixed frame mounting system.**

SgurrEnergy performed a technical appraisal of the design including a review of the equipment specifications (modules, inverters and mounting mechanisms), energy yield prediction, grid connection agreements and building permits. We also assisted EnerCap

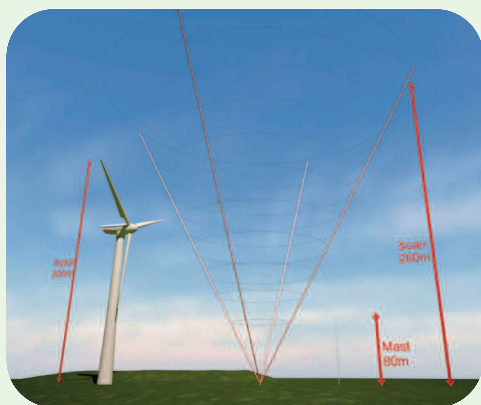


Capital Partners in its development and negotiations on the EPC and O&M contracts for the three sites.

After SgurrEnergy's full technical due diligence review the construction of the

projects has now begun with full energisation scheduled for the end of Q3 2010. Geoff Hoffheinz, Project Manager commented, "This project demonstrates the wealth of solar expertise that has been built up in the team and our flexibility to work across Eastern Europe and further a-field.

## Latest innovation in remote sensing



**Technical Director Ian Irvine was invited to speak at the prestigious joint annual lecture of the Royal Society of Edinburgh and the Royal Academy of Engineering in**

**Edinburgh in March, 2010.**

His talk, 'The simplicity and complexity of wind: an engineers tale' focused on his 25 year engineering career working in the wind industry and the work still to be done in optimising the potential of wind energy conversion devices. Ian discussed why he believes that there is a general lack of understanding of the complexity and character of wind as a renewable energy resource going on to explain how remote sensing will substantially enhance wind energy understanding to improve wind farm productivity and optimisation. The lecture, attended by an audience of more than 200 guests, was very well received and a tremendous opportunity

to showcase pioneering developments in remote sensing technology for wind farm development from the industry's leading innovator. Galion Lidar flexibility shown top left and below.





# About SgurrEnergy

SgurrEnergy is a leading independent engineering consultancy specialising in renewable energy. The team includes over 100 highly skilled professionals with hands on experience both in the UK and internationally. We provide full life cycle knowledge encompassing feasibility, design, development, and implementation services. This ensures

successful project delivery in wide range of technologies including wind, bio-energy, wave, tidal, hydro and solar energy. Clients in the utilities, investment, manufacturing, construction, renewable energy development and government authority sectors have benefited significantly from our technical expertise.



## Visit us

Event	Location	Date	Stand Number
Renewable Energy Finance Forum Wall Street	Wall Street, New York, USA	29-30 June 2010	Main hall
DIREC 2010	Greater Noida, India	27-29 October 2010	TBA

## Sharing expertise worldwide



**SgurrEnergy is an internationally recognised expert in the field of renewable energy and as such consultants are regularly invited to participate in prestigious wind**

**energy conferences.** Dr Peter Clive, Technical Development Consultant at SgurrEnergy is presenting at Wind Farm O&M 16 -17 June in Glasgow on "Understanding Wind Turbine Performance from Front to Back," where he will discuss the latest remote sensing techniques and how to achieve more

successful revenue predictions. Tools such as Sgurrtrend wind farm optimisation software and Galion Lidar are becoming increasingly important to O&M strategies.

Simon Luby, Advisory Services Manager at SgurrEnergy will be presenting at Offshore Wind China 2010, 7-9 June, in Shanghai on "Risk and Financing for Offshore Wind Farms." Simon will then return to London where he will present at the Wind Energy Infrastructure Financing 2010 conference on 1 July discussing "Mitigating Risk through Effective Due Diligence and Project Management." For further information please contact [claire.forbes@sgurrenergy.com](mailto:claire.forbes@sgurrenergy.com)

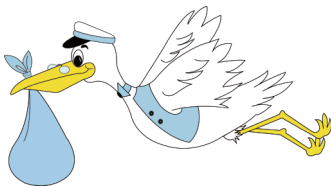


**Are the trees or hills near your wind farm reducing turbine performance?**

**Call SgurrEnergy for an assessment using Galion Lidar and the industry's most experienced consultants in modelling forestry.**

**Tel: +44 141 227 1700**

## Wedding bells and baby boom!



**It's been a busy 12 months at SgurrEnergy HQ with a number of high profile contract wins and exciting developments with our Galion Lidar.** Our consultants have not spent all their time working as the

office has experienced something of a baby boom, with a record 7 new Dads in the last year. We really must get the water checked out!

Hot on the heels of our baby numbers there have also been 5 SgurrEnergy weddings recently. The latest consultant to tie the knot was Marine expert Jacob Royle who recently married his Norwegian girlfriend Lis. Congratulations to Jake, Alasdair, Derek, Gavin, John, Alan, Stuart, Simon, Stevie, Neil, Alastair and Chris!

### UK Head office

SgurrEnergy Ltd,  
225 Bath Street,  
Glasgow,  
G2 4GZ,  
UK  
Tel: +44 (0) 141 227 1700

