



**Media Information**

**27 September 2006**

## **SEI to Fund Testing of Innovative Wind Farm Technology**

### **New electricity storage system could increase installed wind energy capacity on national grid**

Sustainable Energy Ireland (SEI) has today announced that it is to provide 50% funding to Irish Company, Tapbury Management (Tapbury), for a study into the feasibility of using an innovative electricity storage system which could guarantee an uninterrupted supply of wind generated electricity to the national grid. If successful the technology would allow wind energy generated at off-peak times to be stored and supplied to the grid at a scheduled time. Currently, electricity generated by wind farms at off-peak times cannot be stored directly and is lost if unused.

Tapbury which oversees the management of Sorne Hill Windfarm in County Donegal, where the study will be undertaken, is to begin testing a Vanadium Redox Battery Energy Storage System ("VRB-ESS™") from Canadian company VRB Power Systems Inc. If deemed successful the technology when combined with an integrated wind power forecasting system will facilitate the delivery of a reliable supply of electricity from Sorne Hill to the national grid.

David Taylor, CEO, SEI said "Given the rapid growth and potential for wind power in Ireland and the Government's commitment to the greater use of renewable energy in our electricity generation mix, it is critical that we begin now to examine those technologies that will enable Ireland to realise the full potential of our renewable energy resources. SEI supports the development of innovative solutions and technologies which can help us to exploit our renewable resources in a sustainable way while maintaining the security of the electricity supply network."

Electricity usage in Ireland follows a regular predictable pattern 24 hours a day. Wind energy is, however, weather dependant and therefore irregular. If the VRB technology was deemed to be suitable for deployment at other windfarms throughout Ireland it would enable the use of larger amounts of wind power while minimising the risk of disrupting supply to the Irish economy.

The VRB-ESS is the most advanced wind coupled storage system in the world. The technology could help avoid challenges associated with the management of supply when large numbers of wind farms are eventually connected to the electricity network in Ireland. Following successful completion of the study, Tapbury is aiming to progress the project to full scale deployment commencing in 2007. The battery is expected to have a capacity of 1.5MW providing 8 hours of storage making it the largest deployment of a battery of this type in Europe.

John Ward, Director, Tapbury and Sorne Wind Energy Limited said; "With approximately 3,000MW of wind energy in the application process in Ireland, we believe that there could be a need for in excess of 700MW of storage. The VRB system will enable us to significantly expand and develop the substantial wind energy resources which the country has".

Tim Hennessy, Chairman and CEO of VRB Power said; "A large VRB system has been successfully installed in Japan and a smaller one installed in Australia. The repeated scale of charging and discharging of the battery required for wind applications makes it virtually impossible for conventional batteries or even advanced batteries to compete with the VRB system. This project in Ireland will provide high level visibility and credibility for our technology for wind applications in what is a fully commercial project". Mr. Hennessy also added "In view of the significant potential market for storage in Ireland and its ideal location we are investigating the possibility of establishing a manufacturing facility in Ireland along with a support centre for our European efforts".

Tapbury oversees the management of Sorne Hill Windfarm, a recently commissioned 32MW windfarm which is located in Buncrana, Inishowen, Co. Donegal. In phase two of the development, the wind farm will have an additional 6.9MW of wind power added to the site by the end of 2007. This study will examine the potential to use a storage battery to deliver controlled power output from the 6.9MW wind farm.

An integrated wind power forecasting system will be developed which will determine the storage requirements to ensure a smooth reliable delivery of power from the wind farm over a 24 hour period. The system will also determine the optimum schedule of release of the energy from storage to ensure that value and revenues can be maximised. The study is expected to be completed by the end of this year and will be used to determine the economic potential for battery storage operating in the forthcoming Single Electricity Market in Ireland. Electricity storage technology will enable the development of all intermittent renewable energy sources including future wave energy systems.

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## **Editors Notes:**

### **About SEI**

Sustainable Energy Ireland (SEI) is the statutory authority charged with promoting and assisting the development of sustainable energy. SEI is funded by the Irish Government under the National Development Plan 2000 – 2006 with programmes part-financed by the European Union.

### **About Sorne Wind and Tapbury Management**

Sorne Wind Energy Limited is a private company formed to develop a 32 MW wind farm at Sorne Hill, Bunrana, Co. Donegal, Ireland. The budgeted development cost for this wind farm is €40 million. Construction has been completed and all 16 turbines have been generating electricity since July 2006. Tapbury Management Limited is a private company formed specifically to provide administration and management services to Sorne Wind Energy Limited. This Company will oversee the implementation and the operation of the VRB-ESS at Sorne.

### **About VRB Power**

Headquartered in Vancouver, Canada, VRB Power Systems Inc. is an energy storage technology developer which is marketing, selling and manufacturing products utilizing the patented VRB Energy Storage System ("VRB-ESS™"). The VRB-ESS can economically store and supply large amounts of electricity on demand and is focused on stationary applications. It is a long life, cost effective, low maintenance, efficient technology that allows for the scalability of power and storage capacity independently. The VRB-ESS is particularly beneficial to renewable energy providers, utilities and end users through its ability to "inventory" electricity, allowing for the optimal match of supply and demand.

The VRB-ESS is well suited for a variety of applications. Enabling the provision of "firm" capacity from intermittent renewable generation such as wind and solar; more cost effective and efficient generation of electricity in remote areas; capital deferral for utilities; and load levelling (peak shaving) applications. The VRB-ESS is also capable of providing backup power solutions including applications for utility substations and telecommunication sites. The VRB-ESS is characterized by having the lowest ecological impact of all energy storage technologies and is unlike most other conventional energy storage systems that rely on substances such as lead or cadmium.