



1st World Summit on Small Wind Turbines

New Energy Husum trade fair (18-21 March 2010) with over 50 confirmed exhibitors from the small wind turbine sector of eleven nations, and several lecture, discussion and presentation events on all four days of the fair, has already become the world's leading small wind turbine event.

Husum is simultaneously hosting the first ever **1st World Summit on Small Wind Turbines on 18 and 19 March**. The programme, developed in collaboration with the World Wind Energy Association, WWEA, and supported by the German Wind Energy Association, BWE, has set new benchmarks in several respects:

Leading experts from **Argentina, Belgium, China, Denmark, Egypt, France, Germany, the United Kingdom, India, Mali, Spain and the USA** will be presenting an overview of the use and potential of small wind turbines in each of these countries. In addition the special focus will be on stand-alone use, and setting up smaller, autonomous power systems. Throughout the world small wind turbines are already being used to drive water pumping systems or maintaining telecommunication. Talks from Egypt, Mali and China will explain the benefits of hybrid systems, i.e. combined solar and small wind turbine system. Representatives of humanitarian aid organisations will report how important the use of small wind turbines already is in third world countries, and how important it will be in the future.

A representative from California Institute of Technology has come up with the amazing realisation that clusters of vertical wind turbines achieve a multiple of the energy yield of larger turbines. What new prospects could arise for the use of offshore wind will also be explained in detail.

Date: 18/19 March 2010
Venue: new energy husum Room A
Language: English with simultaneous translation into German
Price: € 450
€ 350 [WWEA and BWE members]
(incl. VAT and admission to the trade fair for both days)

Programme:

Thursday, 18 March 2010

12:30

Opening

Welcome address by Dr. Anil Kane, WWEA
Welcome address by Prof. Shen Dechang,
Chinese Wind Energy Equipment Association
Welcome address and "The market potential and sector development of small wind turbines in Germany" by Herman Albers, BWE

13:00 **"Applications for small-scaled wind energy in India and worldwide"**

Through out the world, capacity to manufacture large wind turbine, generally for grid purpose, is rapidly increasing. The annual compound growth rate of last 10 years is about 30%. Huge amount of investments are made in this field. It has been observed that somehow small wind turbines have not caught the desired attention, though the potential of small wind turbines is enormous. If we consider every house top to have a wind turbine to supply the domestic electricity demand, the demand for only Europe would be an amazing figure of more than 1 million MW. The time has now come that all efforts are required to boost up the supply of small wind turbines for domestic needs. The small wind turbines are not becoming very popular currently because of the high unaffordable price by house holds. If small wind turbines are produced in mass, the price will dramatically come down and they will become very popular. The small wind turbine manufacturing also does not involve very large capital investment and can easily be manufactured by assembling outsourced components.

Speaker: Dr. Anil Kane, WWEA

13:30 **The market potential and sector development of small wind turbines in the US**

The US small wind turbine market has had recent periods of growth and shrinkage dominantly due to the state, federal and utility policies and the worldwide economic recession. In 2008, over 3,500 small wind turbines were deployed in the US and in the world market by US small wind turbine manufacturers. Following research on diffusion of innovation theories, which captures how people adapt, change and use new innovations, there are strong examples of the innovation attributes that help expand the number of small wind turbines in the marketplace. Those attributes will be discussed and highlighted in understanding the US market expansion.

Speaker: Trudy Forsyth, NREL

14:00 **Small-scaled wind energy in the Nordic countries: Experiences and future prospects**

Energy from small scale windmills costs more than from large grid connected Windmills as larger windmills produce more electricity per initial investment costs than smaller installations. But the prices of small windmills are coming down. The costs will continue to decrease when small windmills are mass produced like the many different kinds of appliances that today are common in the private households. The presentation will show examples and perspectives of small windmills for homes, farms, schools, business, the village or other small scale installations.

Speaker: Dr. Preben Maegaard, Director Danish Folkecenter for Renewable Energy

14:30 **The market potential and sector development of small wind turbines in France**

France has the largest potential for small grid tied wind energy in Europe, but government subsidized energy has blocked wind development. Today regional governments, small wind installers, and several new manufactures are working together for political changes in the treatment of small wind turbines.

Speaker: Jay W. Hudnall, Ti'éole - wind energy

15:00 **Break**

- 15:30 **Off-Grid Markets in Developing Countries: Opportunities and Challenges**
- Market potential and market segments for off-grid systems in developing countries and emerging economies. Best practice examples for energy home systems and mini grids. Cost analysis. Appropriate business models and policies. Practical support from the Alliance for Rural Electrification.
- Speaker:** Guido Glania, Alliance for Rural Electrification
- 16:00 **Wind-based humanitarian solutions in a changing climate: The Red Cross experience**
- Wind power can help address the humanitarian consequences of climate change among the most vulnerable, but organizations like the Red Cross lack the capacity to design and deploy wind-based solutions. We will discuss innovative options to promote climate adaptation, from devices to partnerships.
- Speaker:** Guillermo Bauer, Renewable Energies Independent consultant
- 16:30 **Experience with stand-alone small wind turbines in desert operation**
- This presentation is about our experience of operating small wind turbines in Egypt. Photovoltaic systems are being increasingly used to power telecommunication systems that are not connected to the grid. We have enhanced these with the use of small wind turbines in order to investigate the reliability and yield of small wind turbines.
- Speaker:** Thomas Gottschalk, RE CONSULTING
- 17:00 **Solar water pumping system as a tool to combat poverty in the village of Karangana, south of Mali.**
- This project used a hybrid (solar wind) water pumping system with 1 kW wind turbine and 1 kW solar system to pump water for income generating activities to provide sustainable livelihoods for local people thus directly combating poverty and producing funds necessary for operation and maintenance.
- Speaker:** Diakalia Traoré, Malifolkecenter
- 17:30 **Innovative concepts: Fish Schooling as a Basis for Vertical Axis Wind Turbine Farm Design**
- Horizontal axis wind turbines (HAWT) have reduced power output when in close proximity to neighboring turbines. However, closely-spaced vertical axis wind turbines, based on schooling fish, may yield enhanced performance and show up to a 100-fold increase in power output compared to HAWTs.
- Speaker:** Robert Wells Whittlesey, California Institute of Technology
- Moderator:** **Stefan Gsänger**, Secretary General of the WWEA

Friday, 19 March 2010

10:00 What the Small Wind Turbine Industry Needs to do to Make Its Mark.

Small wind turbines are currently too expensive, too unreliable, and too dangerous to make any more than a minor contribution to reducing climate change. Small wind turbines are 20 years behind big turbines in their performance and reliability. For the small wind turbine industry to make its mark it needs to seriously examine itself, accept feed-in tariffs as the only responsible way for the industry to grow, and accept measures to protect consumers from poor products. To make their mark, small turbines must become more reliable, perform better, and offer better value than they do today.

Speaker: Paul Gipe, USA

10:30 Small-scaled wind energy in Spain: Current situation and perspectives

To date, although there exists Spanish technology and a consolidated business structure, small-scaled wind energy in Spain still does not have an own regulation with a specific remuneration, so that nearly all installations (8 MW) are non-grid applications (for which investment aids are already available). The two top priorities for the small wind section of APPA is to incorporate small wind energy in the next Renewable Energy Plan (2011-2020) as a specific technology and to elaborate an own regulation together with the government including a proper tariff to develop the Spanish market in an orderly and progressive way, like in other EU countries.

Speaker: Francisco Javier Forte Ortega and Mischa Bechberger,
Spanish Renewable Energy Association - APPA

11:00 The impact of standards on the markets for Small Wind Turbines and overview

The application of standards for Small Wind Turbines is crucial for more professionalism in the market resulting in more quality, safety, reliability of Small Wind Turbines and therefore more customer satisfaction. However, controversial discussions started regarding the speed, degree and costs implied for general application of technical standards and certification. Some countries require certified turbines for their financial support programs, some for their building permission.

This presentation summarises the status quo in different Small Wind Turbine markets and suggests approaches to overcome the standards issues as a basis for further discussion.

Speaker: Nico Peterschmidt, INENSUS GmbH

11:20 International standardisation and labelling

Within the frame of the IEA-Wind Programme a new task has been launched in 2009 by members from ten different countries. This task aims two objectives. First objective is to develop a consumer labelling for SWT. The second objective is the deployment of the "Small Wind Association of Testers" (SWAT).

Speaker: Ignacio Cruz, IEA/CIEMAT

12:00

The Application of Chinese Small wind generators

In order to meet the growing electricity demands in rural areas, wind generators with capacities of 200W, 300W, 500W, 1kW, 2kW, 5kW, 10kW, 20kW and Wind/PV hybrid systems with capacities from 400W to 10kW have been developed in China. Until the end of 2009, 400,000 small wind generators have provided electricity supplement for 300,000 families (about 1.5 million people) in the rural areas of China. After utilizing the Small wind generators, the living conditions of local users have been improved obviously. And about 130,000 small wind generators have been exported to other countries in the passed 5 years.

Speaker: Prof. Shen Dechang, CWEEA

12:40

The role of robust industry standards in the British small wind market

Industry and UK Government have worked together in delivering national standards (MCS/BWEA). Announcement of UK Feed-In Tariffs and robust consumer protection are set to usher in a new phase of evolution for one of the largest small wind markets.

Speaker: BWEA representative - David Sharman, BWEA Small Systems Technical Group Chairman

13:00 – 14:00 Lunch

14:00

The market potential and sector development of small wind turbines in the UK

The wind resource & a realistic tariff to reward generation creates a good opportunity for small wind in the UK. The challenge for the industry is to develop continually improving standards which build consumer confidence without restricting innovation-essential in this new & developing industry.

Speaker: Stephen Tasker, British Small Wind Association

14:30

Small Wind Turbines – Product safety and technical background information

Safety requirements from the EC machinery directive. Introduction to fail-safe design of different wind turbine systems. Safety is an integral design feature which has to be considered in the very beginning of the product design phase. Basic parameters, like the choice of a IEC / EN 61400-2 wind class, define the effects on the mechanical loads and further requirements to the generator and braking system. Fatigue lifetime of critical components and the control system have to fulfill n-1 safety. Examples and experience with different rotor types like Savonius, Darrieus, and horizontal axis.

Speaker: Holger Peters, INENSUS GmbH

15:00

Small Wind Turbines – Certification and what you should know!

Independent Certification of Small Wind Turbines provides market advantages to manufacturer in reference to technical integrity, functionality, structural reliability and safety of their products.

The benefits continue with increasing consumer's confidence, simplifying authority permissions and investments. GL reveals its point of view regarding the importance of certification and worth knowing for the SWT industry.

Speaker: Fabio Pollicino, Germanischer Lloyd Industrial Services GmbH

15:30

Panel Discussion

"How can standardisation and certification enhance small-scaled wind"

Moderator: Stefan Gsänger, Secretary General of the WWEA

Subject to alteration at short notice