

Conference summary EWEC 2007

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Introduction

Summarising an event of over almost 5000 participants, with four continuously running parallel sessions, a large exhibition, numerous side events and meetings, would take me at least two hours. As we are short of time and people long to go home after such a tiring event, I will not try to summarise the conference in detail, but rather place this event in the perspective of the most important developments, the wind energy sector as a whole is being faced with nowadays.

What are these developments?

All developments which I will address in a minute, were discussed and presented during this conference. I will divide the developments into short term and long term issues. All the developments are taking place at the same time and because of this and their interdependence, they present a particularly heavy load on the sector.

Short term developments

1. Continued market growth of around 25% per year and an emerging shift of demand markets from Europe (in 2002 about 80 % of the world wide installed wind power was in Europe) to other countries like the USA, India and China (in 2007 about 54 % of the installed wind power was located in Europe). The market is predominantly determined by land applications. Out of 70,000 MW installed wind power in the world, about 900 MW's were installed offshore.

The spectacular growth of the market among others leads to:

1.1. An imbalance of supply and demand which is reflected into long delivery times (up to 3 years) of wind turbines and increasing prices.

1.2. The increased prices which presently are being observed in the market are further caused by scarcity of steel and copper because of the demand for these materials in the booming Indian and Chinese economies.

Medium and long term developments

2. Lack of skilled personnel, not only at PhD level, but also on bachelor's and master's level. As a consequence the industry and R&D establishments face a shortage of engineers, designers, developers and researchers. It is questionable whether Europe is able to resolve this problem in the medium term.

3. Wind energy will be an essential building stone for achieving the European renewable energy targets which have become binding (!). In that respect the future perspective for the application of renewable energy in general and for wind energy in particular has become much more robust. The future has become less uncertain than it used to be.

Especially the establishment of European binding targets is a reason to become enthusiastic, but if the bottle necks are placed in the perspective of these targets, there are also reasons to become somewhat nervous.

Let me explain a bit more in detail why I think we are not completely prepared for the future, despite the fact that many future oriented initiatives are in place.

Initiatives such as the establishment of a European Offshore Action Plan, supported by EWEA's Task Force on Offshore Wind Energy (development of a European offshore implementation strategy supported by the entire wind energy industrial sector), The European Technology Platform Wind Energy (development of a European R&D strategy), the Integrated Project 'UpWind' (large European R&D project exploring all important design barriers when up scaling wind turbine systems) and the activities of the European Academy of Wind Energy (development of a European basic research and training strategy). These initiatives are essential preparations for the future, but they are not sufficient.

In order to understand the future better we should compare the giant step we set in the past with the future step to be set in the same time span. In the past 25 years 40,000 MW of wind power were installed in Europe (and 70,000 MW world wide) mainly by the European industry. In September of this year we will among others celebrate this during EWEA's 25-th anniversary. Installing an additional 250,000 MW in about 25 years in order to arrive at the European target of 300,000 MW in 2030, is a step 5 times as big as we did in the past. Think about the consequences!

During EWEC 2007 quite a number of threats and opportunities, sometimes wrapped in the term 'roadmaps', were addressed:

- * Can we keep the supply chain intact? Think of the future sustained supply of fibres for blades, copper and steel at affordable prices, manufacturing capacity, end of life solutions for wind turbine installations, after sales services.

- * Are we able to develop one all encompassing concept of a flexible and intelligent European grid able to absorb large amounts of varying limited controllable electricity output from wind farms? Very valuable information was provided during the IEA workshop 'Integration studies'. With the present grid, 25% of electricity from wind energy, equal to present day Denmark's capacity for all European countries is technically not possible because of limited cross border exchange capacity. Here the European Technology Platform Smart Grids has to play a crucial role.

- * Are we able to design and implement market mechanisms and a regulatory framework which enhances the use of wind power rather than hampering growth?

- * Are we able to win the hearts of the people and get rid of nonsense arguments such as considering wind energy a non-sustainable energy technology, because wind turbines are ugly. Wind energy is environmentally friendly. I have never heard of somebody dying of looking at something ugly, but have seen people dying from breathing poison. We need to secure a fair balance between pro's and con's of wind energy in the public debate!

- * Do we have the capacity to create and competitive wind turbine technology, especially to be installed offshore? This implies finding solutions to technical problems associated with up scaling, reliability (offshore), operation & maintenance strategy (including access technology), condition monitoring (find reliable ways of early failure detection), intelligent distributed aerodynamic control of very large blades, compact transmissions, materials of which prices are insensitive to market fluctuations). All these aspects were addressed during this conference, the most thoroughly during the scientific track.

Timing

Little attention has been paid in the past to the aspect of time planning when discussing the roadmaps. This is particularly important when long preparation times are needed before an action can be implemented. Two striking examples are the modification of the electric infra structure and the training of experts.

Installing new high voltage transmission lines, either under ground or over head lines, require extreme long preparation times for land purchase, building permits, environmental impact assessments, legal obstructions etc. If we need an infrastructure to transport a 180,000 MW of peak wind power by 2020, the preparation of the planning process should be in place already now. This, however is not the case. One of the countries which identified the problem and drew consequences is Germany, by implementing the Infrastrukturplanungbeschleunigungsgesetz (Infrastructure Planning Acceleration Law).

To have the appropriate work force in five years from now implies that the future experts should be occupying the university lecture halls now. This however is not the case! Here the national and European wind energy programmes have to play a role in close cooperation with the academia. The European Academy of Wind Energy has accepted the challenge and will develop initiatives to learn more in detail about the industry's demands and to arrive at a rational European approach for training; not only on a PhD level, but also on the Bachelor's and Master's one.

Thinking big(ger)

To face the real challenges of the future we have to put our activities in the right perspective. This implies that we have to scale up not only wind turbine structures and market volumes but also infrastructure planning activities, training and R&D efforts.

The following example will give us an idea of the extent of the 'up scaling factor'. If we translate the future wind power targets, which I mentioned in the beginning, into annual volumes and into annual turn over volumes (in terms of billions of euro's) and apply percentages of the turn-over similar industries are spending on R&D (about 10%), assume that 2/3 of the spending is financed by the companies themselves, and 50% of the remaining 1/3 by national governments and the other 50% by the European Commission, than we can only conclude that the EU spending is a factor 8 to 10 too low compared to the present level.

For the expertise needed in the near future we need all hands on deck; which means men and women. Looking into the audience confirms the fact that the wind energy sector is dominated by men. One obvious strategy for acquiring expertise is mobilising the female intellectual potential, to a level that equals the present male work force. It might well be that in such a way the problem could be solved entirely!

The first signs of this development were already visible during this conference. For the first time in wind energy conference history a session (the IEA workshop on grid integration) was chaired by two women. The second record was the geographical diversity of the countries of origin of the two chairwomen: Finland and Portugal!

A necessary condition for the sector to attract sufficient experts ('high flyers' as one of the exhibitors named them) is that the sector becomes very attractive as a work place. And humour is one of the ingredients! Humour disappears if there are no disputes anymore, which is a result of increasing unanimity on the policy level. This is what I noticed during the first day's plenary sessions! We should find ways to get the excitement and humour back in the (policy) sessions realising that each day without laughter is a lost day!

Thank you for your attention.