Press Release:

New Report Calls for Expansion in Wind Energy Research

Paris, 4 April 2002

More longer term research into wind energy is vital if the technology is to become competitive, according to a new report presented at the 2002 Global Windpower Conference in Paris.

"There is an urgent need for stronger publicly supported long-term research to complement the product development already carried out within the industry," says Jorgen Lemming, chairman of the International Energy Agency's R&D Wind Implementing Agreement, which published the report. "This basic research is essential for both industry and society."

The report indicates that, although costs have already fallen dramatically, if wind energy is going to supply 10% of the world's electricity needs by 2020, cost reductions in the technology of 30 to 50% are still necessary. This will enable wind power to compete with conventional energies head to head. Research and development work could contribute up to 40% of those cost reductions.

The study brought together 17 countries, as well as the European Commission, to identify the required wind energy research. The results will need to become available in the mid-term (5-10 years) and long term (10-20 years).

In the mid-term time frame, R&D areas of major importance for the future deployment of wind energy include forecasting techniques, grid integration, public attitudes and visual impact. The report concludes:

- R&D to develop forecasting techniques will increase the value of wind energy by allowing electricity production to be forecast from 6 to 48 hours in advance.
- R&D to facilitate integration of wind generation into the electrical grid and on demand-side management will be essential when large quantities of electricity from wind will need to be transported.
- R&D to provide information on public attitudes and visual impact of wind developments will be necessary to incorporate such concerns into the deployment process for new locations for wind energy, especially offshore.

For the long-term time frame, the report says that it is vital for R&D to help improve the way in which wind turbines interact with the grid infrastructure. The report concludes:

- Adding intelligence to the complete wind system and allowing it to interact with other energy sources will be essential in areas of large-scale deployment.
- R&D to improve electrical storage techniques for different time scales (minutes to months) will increase the value of wind energy at penetration levels above 15% to 20%.

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The full text of the document can be downloaded from www.afm.dtu.dk/wind/iea/ and click on "Long-Term R&D Needs for Wind Energy".

Background

The IEA R&D Wind Implementing Agreement

The report on long-term R&D needs for wind energy was produced by the Implementing Agreement for Co-operation in the Research and Development of Wind Turbine Systems (IEA R&D Wind). This forms part of a programme of international energy technology collaboration undertaken under the auspices of the International Energy Agency. The IEA is the energy forum for 25 industrialised countries established in 1974.

The IEA R&D Wind Implementing Agreement, begun in 1977, has provided a flexible framework for cost-effective joint research projects and information exchange on wind energy for the past 25 years. Member countries in 2001 were Australia, Austria, Canada, Denmark, European Commission, Finland, Germany, Greece, Italy, Japan, Mexico, the Netherlands, New Zealand, Norway, Spain, Sweden, the United Kingdom, and the United States.

The basis for the IEA R&D Wind collaboration is the national wind energy programmes of the member countries. Members exchange information on the planning and execution of national large-scale wind system projects and undertake collaborative R&D projects approved as annexes to the original Implementing Agreement. The activities of national programmes and of the collaborative R&D projects, called Tasks, are reported each year in a 200-page Annual Report.

The Role of R&D

The benefits of past R&D in the wind energy sector have been clearly demonstrated by the increasing sizes of turbines and the lower prices per installed production capacity of electricity. Production costs of wind turbines have been reduced by a factor of four from 1981 to 1998. Today, wind energy is cost competitive with other forms of electrical generation at locations with a good wind resource.

Continued R&D is essential, however, to provide further reductions in cost and uncertainty to realise the anticipated level of deployment. Large-scale implementation of wind energy requires a continued cost reduction and an improved acceptability and reliability. In order to achieve a 10 to 20% contribution to worldwide energy consumption provided by wind, major steps have to be taken.

There is a need for continued long-term research supported by society in addition to internal product development and research, which is carried out within the industry. The R&D priorities in this document are recommended in the mid-term and long-term time frame.

Availability of the document

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