ERA Joint Programme Wind Energy

Joint Programme Coordinator: Peter Hauge Madsen, Head of Department DTU Wind Energy

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Number participants and associates: 41 from 14 European Countries, 200+ person years committed

Why a Joint Programme on Wind Energy?

The EU has set a binding target of 20 per cent of its energy supply to come from wind and other renewable resources by 2020. According to EWEA, to meet this target, more than one-third of European electrical demand will need to come from renewables, and wind power is expected to deliver 12 to 14 per cent (180 GW) of the total demand. Thus wind energy will play a leading role in providing a steady supply of indigenous, green power.

JP Wind – visions and objectives

The EERA JP Wind’s research programme is strategically directed towards the scientific challenges following the implementation of the SET Plan and the EU Renewable Energy Directive: Large scale integration and an accelerated offshore wind energy deployment, including very large offshore wind turbines.

The vision for JP Wind is:

- to provide strategic leadership for the scientific-technical medium to long term research
- to support the European Wind Initiative and the Technology Roadmap activities on wind energy, and on basis of this
- to initiate, coordinate and perform the necessary scientific research

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EERA is an official part of the EU SET-Plan. http://setis.ec.europa.eu/
Joint Programme on Wind Energy Sub-programmes

Sub-programme 1: Wind Conditions coordinated by Prof. Hans E. Jørgensen, DTU Wind Energy (DK)
The objective of the sub-programme on Wind Conditions is to perform pre-competitive research into the fundamental understanding on how atmospheric motions affect the use of wind energy: From the design and operation of the turbines to the spatial integrated renewable energy systems.

Sub-programme 2: Aerodynamics coordinated by Dr. Peter Eecen, ECN (NL)
The objectives of the sub-programme on Aerodynamics are to reduce the uncertainty in aero-elastic design calculations of future large wind turbines and to provide the theoretical basis for innovative steps in turbine technology for the European Industry.

Sub-programme 3: Structures and Materials coordinated by Dr. Denja Lekou, CRES (GR)
The objective of the sub-programme on Structures and Materials is to reduce the uncertainty in the design of structural load carrying components as well as machinery components in order to increase cost efficiency and reliability and allow for optimization, innovations and up scaling of future wind turbines.

Sub-programme 4: Wind Integration coordinated by Dr. Kurt Rohrig, FhG IWES (DE)
The objective of the sub-programme on Wind Integration is to do pre-competitive research laying a scientific foundation for cost effective wind power production and integration.

Sub-programme 5: Offshore Wind Energy coordinated by Dr. John O. Tande, SINTEF (NO)
The objective of the sub-programme on Offshore Wind Energy is through pre-competitive research to lay the scientific foundation for industrial development of more cost effective offshore wind farms and enabling large scale deployment at any seas.

Sub-programme 6: Research Infrastructure coordinated by Dr. Felix Avia, CENER (ES)
The objectives of the sub-programme on Research Infrastructure are to develop agreements for access to the research facilities, coordination of access and contribute to the development of new joint research activities and programmes.

Sub-programme 7: Economic and Social aspects of Wind Integration, coordinated by Prof. Poul Erik Morthorst, DTU (DK)
The objectives of the sub-programme are to explore major economic and social challenges for wind energy and to investigate how they can be addressed and mitigated. In addition, research activities will be aligned in the area of economic and social aspects of wind integration to lay a scientific foundation for the long term cost-effective development of wind energy and its successful deployment in energy systems.