

The Necessary Collaboration

**Controversy over Energy Technologies: What Shapes
Community Acceptance of Wind Power?**

October 24, 2014

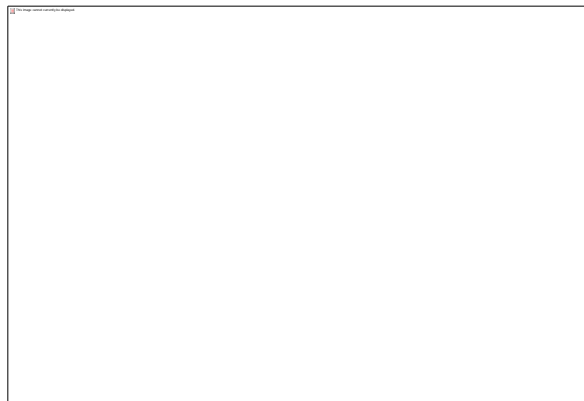
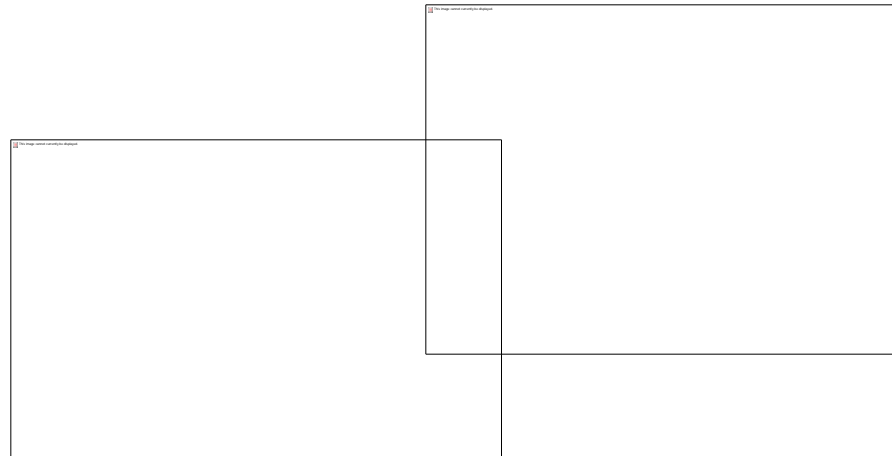
DTU Wind Energy
Department of Wind Energy

Lyngby

DTU – The technical university of Denmark

Mission

DTU skal udvikle og nyttiggøre natur-videnskab og teknisk videnskab til gavn for samfundet.



Mission

DTU will develop and create value using the natural sciences and the technical sciences to benefit society.

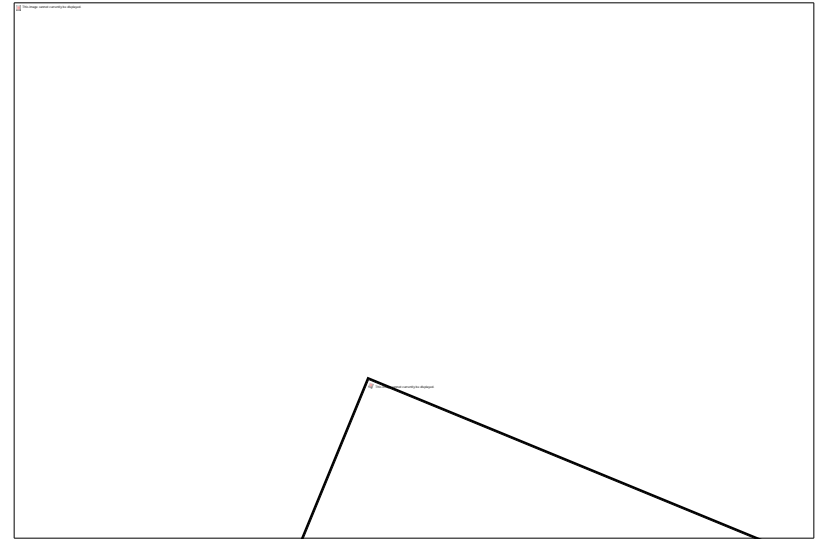
DTU Wind Energy



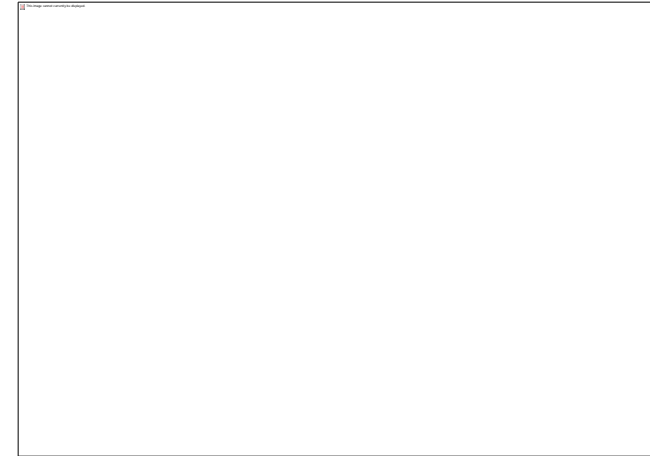
– a mission-oriented university department

Mission:

- To **develop new opportunities and technology** for global and Danish exploitation of wind energy **and improve the competitiveness** compared to other energy sources
- To develop **technical-scientific knowledge** and competencies in key fields, which are central for the development and use of wind energy and provides the basis for advanced education at DTU
- To **facilitate the implementation and exploitation of research results** through research-based consultancy and services to industry and the public sector, innovation and education at DTU and training courses

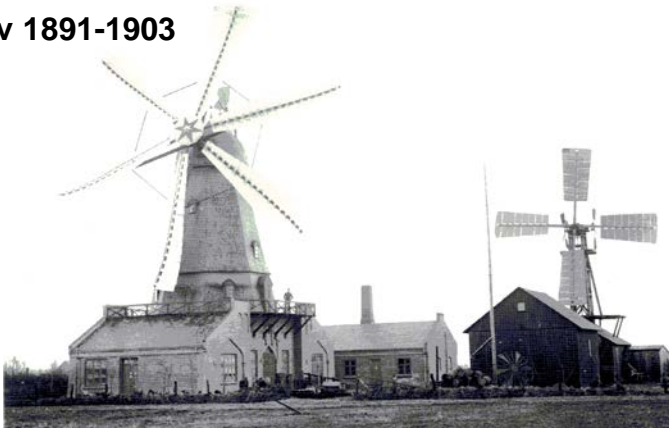


Wind Power in Denmark



Development of the electricity producing wind turbines in Denmark since 1890

Askov 1891-1903



Gedser Wind Turbine 1957

Risø 1979



Testcenter Østerild 2012



Research Priorities Address Barriers to Success

- Technology innovation and hardware
- Resource characterization
- Policy mechanisms/ economic incentives
- Planning authorities & consent process
- Utility integration
- Environmental concerns
- Cost of energy

Research Priorities Develop to Reflect New Uncertainties

- Technology performance standards
 - Tests and measurements
- Micro-meteorology, forecasting, new hardware and software
- Large-scale utility integration and new infrastructure needs
- Cumulative offshore wind environmental impacts and benefits
 - Comparative environmental effects
 - EU protected areas and endangered species
- New legal and financial incentives

A Research Gap Not Addressed

- Understanding the dynamics of public acceptance
 - Requires recruitment of new experts in the social sciences arena
 - Limited capabilities in the wind community today
 - Lessons learned from other energy facility siting
 - Ramp up needed
- Significant research gaps and uncertainties
 - Defining views of stakeholders and communities
 - Comparing controversies from wind and other energy siting experiences

Turning Point This Year

- Wind 2050 Project
 - Researchers across disciplines and universities
 - PhD students and Post-Docs
- New EERA Sub-programme on social and economic aspects of wind energy
 - DTU Wind Energy leading a task on public engagement

Moving Forward



- Recognition that social acceptance research is now urgent
- A reservoir of public acceptance is not an option - it's essential
- More collaboration across disciplines is needed
- Recruitment of experts into the wind community to work with core engineering/scientific strengths
- Important role for universities and government – representing independent, peer reviewed, 3rd party views
- Continued and increased collaboration between DTU Wind Energy and DTU Management Engineering