

## Energy in Cold Climates IEA Task 19

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The markets for wind energy in cold climates are growing rapidly. While the adaptation of technologies to low temperatures has been successful, icing of turbine blades has remained a road block. Starting in 2002 International Energy Agency (IEA) set up an international co-operation that collects and evaluates information that covers all aspects of turbine operation in cold climate and icing conditions e.g. site assessment, economic and safety issues, mitigation strategies, etc.

This international collaboration, Task 19, has gathered information about wind turbine operation in icy and low temperature environments since 2002. The present participants include Finland, Norway, Switzerland, USA, Canada, Sweden, Austria and Germany. The most recent report that summarized the available adapted technology and its current state was published in 2009 . The best practice guidelines report, Wind Energy Projects in Cold Climates , that summarises the recommended practices was published in the fall 2009.

Due to the positive market development in recent years and still existing unsolved cold climate specific technical, economical and policy related challenges, various R&D projects which aim at lowering the costs of cold climate wind energy deployments are under way in participant countries. The common aim of those projects is to reduce the risk and thereby the cost of wind electricity produced in cold climates. More reliable production estimates to lower the investor risk, new technology solutions for anti- and de-icing, statistical information on operation of cold climate wind turbines and market information for the cold climate technology are among other things under development.

The presentation for IWAIIS 2011 will give an overview of cold-climate wind energy developments and an introduction to the on-going cold-climate R&D activities in member countries of IEA Task 19.