



Winterwind

INTERNATIONAL WIND ENERGY CONFERENCE



Conference Program 2013

Cold climate wind energy solutions
Research and application under one roof

Visit our poster exhibition

Open on the **second floor** throughout the conference. See the program for poster sessions, when the authors will be available by their posters to answer questions.

Mapping and forecasting

- **Experimental investigation of ice accretion on wind turbine blades**
– Adriana Hudecz, Technical University of Denmark
- **Challenges of data logging in Arctic conditions**
– Attila Sukosd, Zsuatt
- **Numerical prediction of ice accretion based on LES and LPT**
– Robert Szasz, Lund University
- **Estimation of production losses due to icing based on an improved synoptical algorithm**
– Sebastian Haym, Graz University of Technology
- **Indirect detection of icing on wind turbine blades**
– Timo Karlsson, VTT
- **System concept of a smart icing sensor network on wind turbine blades**
– Michael Moser, Graz University of Technology
- **Empirical modeling of wind power production during winter season**
– Muhammad Bilal, University of Tromsø, Norway

ANTI-icing and DE-icing technologies

- **Ice preventive coatings evaluation tests at VTT**
– Jeroen Dillingh, VTT
- **TURBICE – the turbine blade icing model, and its further development via a new interface**
– Saygin Ayabakan, VTT
- **Differential boundary layer model for wind turbine blade icing code TURBICE**
– Saara Huttunen, VTT
- **Designing coatings for application in fields at risk of icing**
– Cornelia Pfaffenroth, ZHAW
- **De-icing testing and development of ultrasonic wind sensor for cold climate**
– Shigeo Kimura, Kanagawa Institute of Technology

Market potential, pro and cons, financing

- **Assessment of wind energy production penalties due to cold climate in Canada**
– Antoine Lacroix, Natural Resources Canada
- **Lessons learned from public cold climate wind power statistics**
– Ville Turkia, VTT
- **Estimating wind power production losses due to icing**
– Esbjörn Olsson, SMHI

Standards and certifications

- **Preliminary results from project IcedBlades – Modelling of ice accretion on rotor blades in a dynamic overall wind turbine tool**
– Ville Lehtomäki, VTT

Operations and maintenance

- **An opportunistic condition-based maintenance strategy for offshore wind turbine blades under cold weather conditions**
– Mahmood Shafiee, Chalmers University of Technology and University of Gothenburg

See the map of the exhibition area on

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Program

- 18.30 **Mingle at Triventus offices, Köpmangatan 22**
– Get a head start and meet the participants before the conference officially opens! Triventus invites you for a drink. The event starts at 18.30 and you are welcome to drop in at any time during the evening.

11
FEB

- 8.30 – **PB-SALEN**
Registration and breakfast

- 9.00 – **Sponsored event in SONATEN!** Wind Energy in Canada – market developments and research projects

12
FEB

- 10.30 –12.15 **PB-SALEN**
Opening session Chairs: Anna Jivén and Göran Ronsten
– **Welcome back to Winterwind 2013!** Fredrik Lindahl, Chairman of the Board of the Swedish Wind Power Association
– **Jämtkraft – a driving force in the development of energy from renewable sources** Anders Ericsson, CEO Jämtkraft
– **Harnessing the potential of cold climate wind energy on a 4 degree warmer earth** Lawrence Jones, Alstom Grid
– **NCAR's Wind Power Forecasting System** Luca Delle Monache, NCAR
– **The Chinese Wind Turbine Market** Sebastian Meyer, Azure

12.15–13.00 LUNCH 13.00–13.30 POSTER SESSION

- 13.30–15.00 **PB-SALEN**
Detection, mapping and forecasting of icing
Chairs: Adriana Hudecz and Patrik Jonsson
– **Creating an icing climatology using typical months** Petra Thorsson, Uppsala University
– **Creating an icing climatology using downscaling techniques – results from Vindforsk project V-313** Hans Bergström, Uppsala University
– **Mesoscale modelling of icing climate: Sensitivity to model and model setup** Stefan Söderberg, WeatherTech Scandinavia AB
– **Forecasting production losses at a Swedish wind farm** Neil Davis, DTU Wind Energy

- ARNLJOT**
How to create black numbers from wind in cold climate in short term view
Chair: Anna Jivén
– **How to handle the financial risks during periods of crisis as of today?** Fredrik Bergström, Business Manager Sweden, Danske Commodities
– **On the uncertainty in the AEP estimates for wind farms in cold climate** Øyvind Byrkjedal, Meteorologist, Kjeller Vindteknikk, Norway
– **Securing financing for cold climate projects** Justin Jeffs, Head of Investment and Economics, Triventus Consulting, Sweden

15.00–15.30 COFFEE BREAK

- 15.30–17.00 **PB-SALEN**
De-Icing, Anti-Icing and Ice Management
Chairs: Maja Vernström and René Cattin
– **Anti-icing coatings and de-icing technical approaches and status** Stephan Sell, Fraunhofer IFAM
– **Challenges and concepts how to design and operate a turbine in cold and icy climates** Lea Kirsch, REpower Systems
– **Operating experience with anti-icing systems in Nordex turbines** Astrid Löwe, Nordex Energy
– **25 years of experience with turbines in cold climate** Finn Daugaard Madsen, Siemens Wind Power

- ARNLJOT**
Laboratory and field tests
Chairs: Stefan Ivarsson and Sven-Erik Thor
– **Savings with use of de-icing technology for wind turbine blades in cold climate** Hans Gedda, H Gedda Consulting AB
– **Measurement of contact angle at sub-zero temperatures and implication for ice formation** Golrokh Heydari, KTH
– **The use of a large climate chamber for extreme temperature testing & turbine component validation** Pieter Jan Jordaens, Sirris / OWI-Lab

- SONATEN**
Market potential
Chairs: Jos Beurskens and Johanna Olesen
– **Blade heating – is there a slot for 3rd party solution providers in the wind power supply chain?** Esa Peltola, VTT
– **Icing map of Sweden** Øyvind Byrkjedal, Kjeller vindteknikk
– **Ice profile classification based on ISO 12494** Matthew Wadham-Gagnon, TechnoCentre Éolien
– **Vibration and load measurements of two MWscale turbines operating in icing conditions** Ville Lehtomäki, VTT & Matthew Wadham-Gagnon, Technocentre Éolien

19.00–01.00 MINGLE AND DINNER

08.30–10.00

PB-SALEN

Tests and results from cold climate turbines

Chair: Stefan Ivarsson

- **Lessons learned and commercial findings or results? What has the Canadian market concluded so far?** Frédéric Côté, Technocentre Éolien
- **Progress for plans in the Nordic region** Stefan Ivarsson, Scandinavian Wind
- **SEU operation and maintenance experiences of wind turbines in cold climate** Thomas Mannelqvist, Skellefteå Kraft
- **Panel discussion**
Karl Bendtsen, Siemens AB, Energy Sector, Head Sales & Proposals, Wind Power SE, Sören Plagborg Vestas, VP Turbines & R&D, Eva Sjögren, Sales Officer, Enercon, Kurt Stürken, Managing Director, REpower Systems Scandinavia AB

ARNLJOT

Health and safety (WORKSHOP)

Chair: Johanna Olesen

- **Numerical investigation on the noise generation of iced wind turbine airfoils** Richard Hann, Institute of Aerodynamics and Gas Dynamics, University of Stuttgart
- **The applications of ice throw modeling to risk assessment and planning in cold climates** Gail Hutton, RES Group
- **The effect on noise emission from wind turbines due to ice accretion on rotor blades** Peter Arbinge, ÅF Sound & Vibration
- **Challenges for the service technician in cold climate conditions** Marcus Carlström, YH-vindkraftteknikerutbildning/ Nätverket för vindbruk
- **Panel discussion**
Authors and Bengt Göransson

SONATEN

TIDBITS

Chairs: Åsa Elmquist and Stefan Söderberg

- **Sjösjka Wind Farm – a wind farm in roadless country close to the Arctic Circle** Tommy Borgh, Jämtkraft
- **Temperature and wind influence on power transmission capability of power lines in the vicinity of cold climate wind farms – case studies in Finland** Sanna Uski-Joutsenvuo, VTT
- **Smart Charging matches the needs from EV's and PHEV's** Mikael Hagman, Jämtkraft

Small WT

- **Hybrid wind-diesel system with compressed air storage for remote Nordic areas** François Tremblay, Technocentre Éolien

10.00–10.30 COFFEE BREAK

10.30–12.00

PB-SALEN

Forecasting and performance

Chairs: Esbjörn Olsson and Inga-Lill Olsson

- **Modelling of production losses due to icing for individual turbines in a wind farm – development of techniques for forecasting and site assessment** Magnus Baltscheffsky, WeatherTech Scandinavia AB
- **Assessment of “ground truth” for icing events and product evaluation** Ben C. Bernstein, Leading Edge Atmospheric, LLC – Longmont
- **An investigation into turbine performance and wind flow modelling under cold weather driven atmospheric conditions** Carla Ribeiro, GL Garrad Hassan

ARNLJOT

Standards and Certifications

Chair: Bengt Göransson

- **Remote sensing devices in cold climates** Iain Campbell, RES Group
- **Recommended practices for wind energy in cold climates – resource assessment and site classification** Tomas Wallenius, VTT,
- **Towards standardization considering cold climate needs** Petteri Antikainen, VTT
- **The Havsnäs pilot project – cold climate and high hub heights** Alan Derrick, RES Group

12.00–12.30 LUNCH 12.30–13.00 POSTER SESSION

15.30–17.00

PB-SALEN

What to expect at Winterwind 2014 and beyond?

Chairs: Frédéric Côté and Fredrik Lindahl

- **CFD simulation and reduced order modelling of atmospheric icing for accurate wind energy resource assessment** Thomas Reid, Newmerical Technologies International
- **Sven-Erik's and Jos' reflections** Sven-Erik Thor and Jos Beurskens
- **What to expect at Winterwind 2014 and beyond? Panel discussion with Linda Vikström**
Proposed participants: Thomas Reid, Sven-Erik Thor, Jos Beurskens, Frédéric Côté, Fredrik Lindahl and Finn Madsen
- **Welcome back to Winterwind 2014 in ...!** Fredrik Lindahl

07.30–15.00

Field trip to Havsnäs wind park

- **Experience wind power in cold climate and mingle with staff members and scholars from Nordisk Vindkraft and RES**