

MONDAY 6 FEBRUARY



OUTSIDE SESSION ROOMS

09:15	Departure from Stadshollet
09:35–13:00	Pick up at the airport
13:00–17:00	Field trip
17:00–19:00	Arrival back to Stadshotellet
18:00–20:00	Registration Poster set up

FESTVÅNINGEN

- IEA Task 19 workshop – Ice throw,** Rolv Erlend Bredesen, Kjeller Vindteknikk, Norway (52)
- IEA Task 19 workshop on Ice throw,** Dag Haaheim, Statkraft, Norway (53)

TUESDAY 7 FEBRUARY



08:00–10:00	Registration
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10:00–11:30 SESSION 1 • VERANDAN

Inauguration and keynote 1

Chairs: Jeanette Lindblad and Göran Ronsten

- **Global status and future outlook of renewable energy with a focus on wind,** Christine Lins, REN21, France (11)
- **High-resolution simulations of freezing drizzle and freezing rain events and comparisons to observations,** Gregory Thompson, National Center for Atmospheric Research, USA (22)
- **IEA Task 19 – Long-term visions for cold climate,** Ville Lehtomäki, VTT, Finland (23)

11:30–13:00 LUNCH

12:30–12:55 POSTER PRESENTATIONS

- **A review of MERRA-2 data in Scandinavia,** Gemma Daron, DNV GL, United Kingdom (43)
- **Internet of Things gives cost effective monitoring solutions,** Patrik Jonsson, Combitech, Sweden (21)
- **Changing the oil in a cold climate – OBV 4406,** Larissa Lärneklev, Energiservice Skellefteå, Sweden (55)

13:00–14:30 **SESSION 2–4**

VERANDAN

Forecasting, cloud physics, aerodynamics

Chairs: Nadine Rehfeld & Gregory Thompson

- **Numerical simulation of ice accretion on an airfoil**, Matilda Ronnfors, Lund University, Sweden (15)
- **ICE CONTROL – Measurements and probabilistic forecasting of icing events in Austria and Germany**, Lukas Strauss, University of Vienna, Austria (20)
- **Cold climate requirements compared to other non-standard markets**, Jos Beurskens, SET Analysis, The Netherlands (56)
- **A novel approach for combining measurements and models for icing predictions**, Emilie C. Iversen, Kjeller Vindteknikk, Norway (37)

FESTVÅNINGEN

HSE

(Health, Safety and Environment)

Chairs: Hannele Holttinen & Dag Haaheim

- **Experimental investigation of risk from ice throw and ice shed**, Markus Drapalik, University of Natural Resources and Life Sciences Vienna, Austria (3)
- **ICETHROWER – mapping and tool for risk analysis**, Jenny Lunden, Pöyry Sweden (13)
- **IEA Task 19 – IceRisk: Review of current knowledge and the way forward in risk assessments associated with ice throw from wind turbine blades**, Rolv Erlend Bredesen, Kjeller Vindteknikk, Norway (28)

BOVIKEN

Operational experience

Chairs: Kristina Conrady & Ville Lehtomäki

- **New recommended practises for low temperature and icing climate conditions**, Kai Freudenreich, DNVGL Renewables Certification, Germany (12)
- **IEA Task 19 – Low temperature compliance testing of wind turbine applications**, Pieter Jan Jordaens, SIRRIS / OWI-Lab, Belgium (10)
- **Modeling the dynamic behavior of wind farm power generation**, Beanán O'Loughlin, AWS Truepower, USA (41)
- **Estimating icing losses at proposed wind farms**, Till Beckford, DNV GL, United Kingdom (27)

14:30–15:30 **BREAK**

15:00–15:25 **POSTER PRESENTATIONS**

- **WlceAtlas public website**, Simo Rissanen, VTT, Finland (35)
- **Comparison of icing measurements from nacelle-mounted and blade-mounted ice sensors with icing simulations on a wind turbine blade**, Tatu Muukkonen, Labkotec, Finland (38)
- **Hotspot resistant blade heat system**, Greger Nilsson, Blade Solutions, Sweden (25)

15:30–17:00 (17:30) **SESSION 5–7**

Wind turbine manufacturers

Chairs: Christine Lins & Sven-Erik Thor

- **Introduction for Dongfang low-temperature wind turbine**, Ke Chen, Dongfang Electric Corporation, China (1)
- **ENERCON – reliable energy production during the winter months**, Katharina Roloff, Enercon, Germany (45)
- **Siemens – Improving performance and reliability in cold climate**, Lennart Frølund, Siemens Wind Power, Denmark (7)
- **Nordex Anti-Icing System on N131 wind turbines – development and validation**, Konrad Sachse, Nordex Energy, Germany (48)
- **Vestas R&D within cold climate**, Brian Daugbjerg Nielsen, Vestas Wind Systems, Denmark (51)

De-/anti-icing including ice detection & control

Chairs: Carla Ribeiro & Emilie C. Iversen

- **Measuring in cloud water droplets – the real cause of icing**, Timo Arstila, University of Oulu, Finland (18)
- **Standardizing ice detector tests in icing wind tunnel**, Tuomas Jokela, VTT, Finland (17)
- **So where exactly is the ice – how many sensors does a turbine need?**, Michael Moser, eologix sensor technology, Austria (42)
- **IEA Task 19 – Evaluation of ice detection systems for wind turbines – first experiences from field test**, Saskia Bourgeois, Meteotest, Switzerland (8)

Pre-construction site assessment

Chairs: Jenny Longworth & Kai Freudenreich

- **Probabilistic long term correction of production losses due to icing**, Magnus Baltscheffsky, WeatherTech Scandinavia, Sweden (29)
- **IEA Task 19 - Blind icing map validation**, René Cattin, Meteotest, Switzerland (9)
- **IEA Task 19 – IceLoss – 10 years of experiences with calculation of production losses caused by icing**, Øyvind Byrkjedal, Kjeller Vindteknikk, Norway (32)

17:30–19:00 **MINGLE AND POSTER PRESENTATIONS IN EXHIBITION HALL**

19:00– **DINNER AND ENTERTAINMENT**

WEDNESDAY 8 FEBRUARY

08:30–10:00 **SESSION 8 • VERANDAN**



Keynote 2

Chairs: Saskia Bourgeois & Göran Dalén

- **Wind Energy in Cold climates – one of many niche markets requiring technical adaptations**, Jos Beurskens, SET Analysis, The Netherlands (56)
- **Grid challenges to wind deployment**, Hannele Holttinen, VTT, Finland (14)
- **Wind power in cold climate in the global energy landscape**, Stefan Gsänger, World Wind Energy Association WWEA, Germany (47)

10:00–10:30 **BREAK – POSTER PRESENTATIONS**

- **How to extend the life time of wind turbine gearboxes**, Stefan Bill, REWITEC, Germany (31)
- **Features of design of high-penetration wind-diesel power plants for villages in the Arctic regions of Russia**, Elistratov Viktor, Peter the Great St.Petersburg Polytechnic University, Russia (44)
- **Application of a SCADA data monitoring methodology**, Bojan Alavanja, Nordex Acciona Windpower, Sweden (50)

10:30–12:00 **SESSION 9–11**

VERANDAN

Market, research, offshore

Chairs: René Cattin & Øyvind Byrkjedal

- **IEA Task 19 - Cold climate wind power market study 2016–2020**, Timo Karlsson, VTT, Finland (24)
- **Site specific simulations of sea ice and wave loads on offshore wind turbine support structures**, Simo Rissanen, VTT, Finland (33)
- **Overview of challenges associated with offshore wind farms in cold climates**, Pieter Jan Jordaens, Sirris / OWI-Lab, Belgium (34)
- **New Swedish Energy Agency research programme within wind energy**, Pierre-Jean Rigole, Swedish Energy Agency, Sweden (49)

FESTVÅNINGEN

De-/anti-icing including ice detection & control

Chairs: Katharina Roloff & Rolv Erlend Bredesen

- **Identification of ice build-up and corresponding control optimisation**, Oscar Hugues-Salas, DNV GL, United Kingdom (19)
- **A novel meteorological conditions monitoring system for icing detection purposes on wind turbines: operational experience in Canada**, André Bégin-Drolet, Université Laval, Canada (6)
- **Recent ice wind tunnel test results and correlations with surface characteristics**, Nadine Rehfeld, Fraunhofer IFAM, Germany (4)

BOVIKEN

Environmental Impact Assessment (EIA)

Chairs: Jenny Lunden & Fredrik Lindahl

- **Experience with de-icing systems, noise and vibrations evoked by ice accretion**, Daniel Brenner, Weidmüller Monitoring Systems (WMS), Dresden, Germany (39)
- **Impact of snow on sound propagating from wind turbines**, Kristina Conrady, Uppsala University, Sweden (16)
- **Acoustic monitoring for ice detection and wind park maintenance**, Timo Mämmelä, APL Systems, Finland (40)

12:00–13:15 **LUNCH**

12:45–13:10 **POSTER PRESENTATIONS**

- **Detection of atmospheric icing conditions via cloud information**, Juha Paldanius, Vaisala Oyj, Finland (54)
- **Uncertainty quantification for wind power forecasts in cold climates**, Jennie P. Söderman, Uppsala University, Sweden (26)

13:15–15:00 **SESSION 12 • VERANDAN****GRAND FINALE – The way forward**Chairs: **Willy Silberstein**

- **Stefan Gsänger**, Secretary General of World Wind Energy Association (WWEA), member of the steering group of the IRENA Coalition for Action and adviser to governments and international organisations.
- **Tomas Kåberger**, Professor at Chalmers Univ of Technology, Göteborg and Executive Board Chairman of Renewable Energy Institute, Tokyo
- **Christine Lins**, Executive Secretary of REN21, the Renewable Energy Policy Network for the 21st Century. Secretary-General of European Renewable Energy Council (2001–2011)
- **Ville Lehtomäki**, VTT Technical Research Centre of Finland. Operating Agent of International Energy Agency (IEA) Wind Task 19 “Wind Energy in Cold Climates” and coordinator of cold climate sub-committee in the revision of IEC 61400-1 ed3->ed4 “Design requirements for wind turbines” standard.

14:15–14:35 **Summary of Conference**

- **Hannele Holttinen**, VTT
- **Gregory Thompson**, UCAR

14:35–14:45 **WWEC2017 presentation and final words**

- **Ulla Hedman Andrén**, Director of Operations Swedish Windpower Association and Project Manager Winterwind International Wind Energy Conference. Member of WWEC2017 organizing committee.