MONDAY APRIL 19

12:00 Exhibition break

13:00

OPENING SESSION (1)
Moderator: Stefan Gsänger

13:05 TBA

13:15 Record 2020 masks mounting onshore wind challenges, **Isabelle Edwards**, Bloomberg, GB **(12)**

13:35 Climate resilience vs. low cost renewables, **Rosemary Barnes**, Pardalote, AU **(43)**

13:55 Announcements

14:00 Exhibition break

14:30

IMPROVEMENTS (2)

14:35 Wear resistane multi-composite coating for wind power blades, JUN CHEN, Lulea University of Technology, SE **(34)**

14:50 Yaw optimisation, Thomas van Delft, DNV, UK **(17)**

15:05 Q&A

14:15 – 15:30
WORKSHOP: STANDARDS & EXHIBITION BREAK EXHIBITION BREAK WARRANTIES (3)

- IEA Wind Task 19: Standardization of pre-construction icing loss assessment in upcoming IEC 61400-15 standard, Ville Lehtomäki, Kjeller Vindteknikk, FI **(23)**
- Performance warranty guidelines for wind turbines in icing climates,Helena Wickman, Vattenfall, SE **(29)**

Workshop

Conclusions

15:15 Exhibition break

15:45

MODELLING ICE (4)

15:50 On-site estimation of effective liquid water content, Patrice Roberge, Université Laval, CA **(35)**

16:05 Operational icing forecast with a probabilistic approach, Jesper Thiesen, ConWx, DK **(20)**

16:20 Q&A

ICE PROTECTION SYSTEMS (5)

15:50 The evaluation of state-of-the-art anti-icing surface solutions using a large scale icing test set-up. , Joey Bosmans, Sirris, BE **(24)**

16:05 Assessment of ENERCON blade heating performance in various conditions, Gilles Boesch, ENERCON Canada, CA **(27)**

16:20 Q&A

16:30 Exhibition break

17:00

MODELLING ICE ON WT (6)

17:05 Icing impact on trailing edge noise in wind turbines, **Timo Karlsson**, VTT Technical Research Centre of Finland, FI **(28)**

17:20 A complete model chain for icing of wind turbines, Johan Revstedt, Lunds Universitet, SE **(8)**

17:35 Q&A

ICING AND ITS CONSEQUENCES (7)

17:05 Development and calibration of state-of-the-art icing loss estimatesusing a new meteorological dataset, Øyvind Byrkjedal, Kjeller Vindteknikk, Norconsult, NO **(33)**

17:20 Towards improving wind energy in cold climate: how to quantify the use of alternative operationalstrategies, André Bégin-Drolet, Université Laval, CA **(32)**

17:35 Q&A

17:45 Exhibition break/Mingle 45 min

18:30 End of day

TUESDAY APRIL 20

13:00

SESSION (8) - LOAD CONTROL

13:05 6D inertial sensing on the blade surface - know the moves of your blade's surface, Theresa Loss, eologix sensor technology, AT **(10)**

13:15 Improving turbine annual energy production (AEP) and reducing O&M costs with real-time blade airflow quality monitoring and quantification under all environmental conditions and levels of blade contamination, John Maris, Marinvent, CA **(13)**

13:35 Blade intelligence - Combined ice measurement and load monitoring, Nils Lesmann, Pheonix Contact, DE **(2)**

13:55 Q&A

14:00 **Exhibition break**

14:30

DETECTING ICE - SENSORS (10)

14:35 From turbines to farms: Using distributed ice detection to increase safety and accessibility, Theresa Loss, eologix sensor technology, AT **(9)**

14:50 Tackling ice throw risks by using sophisticated algorithms of bladebased ice detection, Bastian Ritter, Wölfel Wind Systems, DE **(16)**

15:05 Q&A

15:15 **Exhibition break**

15:45

MAPPING ICE (12)

15:50 Atmospheric icing on offshore wind farms in Northern Europe – a risk map, Carla Ribeiro, Wood Thilsted, UK **(1)**

16:05 Validation of a wind turbine icing model for site assessment, Noemi Tölg, Fraunhofer IEE (Research Institute), DE **(31)**

16:20 Q&A

16:30 **Exhibition break**

17:00

KEYNOTE SESSION (14)

Moderator: Stefan Gsänger

17:05 Comparison of four blade-based ice detection systems installed on the same turbine, **Paul Froidevaux**, Meteotest, CH **(18)**

17:20 IEA Wind Task 19: Cold climate wind market study, Timo Karlsson, VTT Technical Research Centre of Finland, FI **(21)**

17:35 Q&A

17:45 **Exhibition break/Mingle 45 min**

18:30 **End of day**

12:15 – 14:15
WORKSHOP: RISK OF ICE FALL (9)

- TRiceR, a cloud-based web application for supporting risk-based decisions associated with ice falling from wind turbine blades, Xavier VANWIJCK, Tractebel, BE **(3)**
- Timeseries-based approach for volume risk assessment, Enrico Sindici, Natural Power, GB **(4)**
- Challenges and opportunities in the communication of risk from Ice Throw, Karl Ove Ingebrigtsen, Norconsult, NO **(15)**

13:05 – 13:15
Break. 10 minutes

Workshop

Conclusions

REPAIRS (11)

14:35 Structural blade repair in artic climate, Resistive Vacuum Infusion, Greger Nilsson, Blade Solutions, SE **(19)**

14:50 Cost effective de-icing blade repairs, Morten Handberg, Wind Power LAB, DK **(25)**

15:05 Q&A

ICE PROTECTION SYSTEMS (13)

15:50 Linnovation concepts for operation and service in cold climates, Sven-Erik Thor, Lindskog Innovation, SE **(39)**

16:05 IPS retrofit for complex blades, Daniela Roeper, Borealis Wind, CA **(40)**

16:20 Q&A

WEDNESDAY APRIL 21

13:00

INTERESTING ODD TOPICS (15)

13:05 Protection and lifetime improvement for bearings and gears by using silicon-based additive technology, Stefan Bill, Croda, DE **(38)**

13:15 Synergies between icing on wind turbines and UAVs, Richard Hann, Norwegian University of Science and Technology (NTNU), NO **(11)**

13:35 Re-use of wind turbine blade for construction and infrastructure applications, Alann André, RISE Research Institutes of Sweden, SE **(37)**

13:55 Q&A

14:00 **Exhibition break**

14:30

ICING LOSSES (17)

14:35 Modelled icing losses with WICE: A blind test in France, Stefan Söderberg, DNV, SE **(30)**

14:50 Uncertainties of modelled production losses due to Icing, Marie Pedersen, EMD International, DK **(6)**

15:05 Q&A

EXPERIENCES OF ICING (18)

14:35 Lesson in winterisation from the UK, David Armour, Natural Power, GB **(7)**

14:50 Skellefteå Kraft:s experiences of operating wind turbines in cold climate and the need of a physical testing, Krister Efverström, Skellefteå Kraft, SE **(36)**

15:05 Q&A

15:15 **Exhibition break**

15:45

FINAL SESSION (19)

Moderator: Stefan Gsänger

15:50 Combining ensemble icing forecasts with real-time measurements for power line and wind turbine applications, **Bjørn Egil Nygaard**, Kjeller Vindteknikk, part of Norconsult, NO **(22)**

Comparison of wind's fatalities to that of other Industries, **Paul Gipe**, Windworks, US **(44)**

16:20 Q&A

16:30 **Exhibition break**

17:00

17:00 – 19:00
WORKSHOP: THE ENVIRONMENT (20)

- A road map for the wind energy industry: taking a proactive approach to the biodiversity challenge, Tove Hägglund, Ecogain, SE **(41)**
- Digital business and collaboration platform for local anchoring and collaboration, Charlotte Larson and Oskar Ahlman, Vindkraftcentrum and Umeå University, SE **(42)**

18:30 **End of conference**

12:15 – 14:15
WORKSHOP - HSE (16)

- Safe turbine operation in icy conditions, Eva Sjögren, ENERCON GmbH, SE **(26)**
- Return on experience: Working on a wind farm in icing conditions, Charles Godreau, Nergica, CA **(14)**
- Simple rules-of-thumb for ice fall/throw safety distances, Alexander Stökl, Energiewerkstatt, AT **(5)**

13:05 – 13:15
Break. 10 minutes

Workshop

Conclusions