

3<sup>RD</sup>  
**INTERNATIONAL  
CONFERENCE ON SMALL  
AND MEDIUM WIND  
ENERGY**

**ONLINE**

27 - 30 APRIL 2020

**NORDIC FOLKECENTER FOR RENEWABLE ENERGY**  
Kammersgaardsvej 16, Sdr. Ydby, 7760 Hurup Thy (DK)

Hosted by:



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# Introduction

## 3rd International Conference on Small and Medium Wind Energy

This four-day event online event gathered international experts from all over the world and it focused on micro- and small-wind turbines (up to 5 m<sup>2</sup> swept area), but also on larger models (up to 500 kW, or 1,000 m<sup>2</sup> swept area). Some of the topics which were covered during the event were legislation, testing & certification according to ISO standards, labelling, CE marking, possibilities of using power from micro turbines, storage and optimization through controllers, just to mention some.

The discussion also focused on the new grid codes for small wind turbines which are now arising in Europe, and on how they will affect the market and the manufacturers. From the market point of view, attention was put on the opportunities and the challenges that the manufacturers will find by expanding to extreme-weather regions and rural areas and on how tested and certified stand-alone systems can play a role in this transition. Throughout the whole event a special attention was put on the importance of education.

All the presentations and the videos can be found [here](#)





# The Conference

## Program

### Monday 27 April

**16:00:** Welcome by Jane Kruse, Director, Nordic Folkecenter for Renewable Energy

**16:15:** Speech by Ms. Anne Paulin, Member of the Danish Parliament for Social Democrats (IA), spokeswoman on Climate, Energy and Utilities

**17:05:** Aspect of current energy situation from an educational point of view, Peter Hauge Madsen, Head of Department, DTU Wind Energy, Denmark

**17:25:** Aspects of the energy situation related to renewable energy technologies and energy efficiency, Preben Birr-Pedersen, Director, House of Energy, Denmark

**17:45:** Green Deal Director Dr. Dörte Fouquet, European Renewable Energy Federation, EREF Bruxelles, Belgium



# Program

## Tuesday 28 April

**09:00:** Small Wind society, Jean Daniel Pitteloud, Coordinator on the Small Wind Sector, WWEA, Germany

**09:20:** Open Source in Microwind, Sven Ruin, Engineer and Author, Sweden

**09:40:** Research and Education at Department of Energy Technology, Aalborg University, Lennart Petersen, Industrial Ph.D. Student, Aalborg University, Denmark

### **10:00: Break**

**10:20:** Educating sustainable electrical engineers, Finn Jensen, Assistant professor, ASE, Aarhus University, Denmark

**10:40:** The New Small Wind Turbines Catalogue Published by Folkecenter, Anna Krenz, Creative Member, Nordic Folkecenter

**11:00:** Necessity of Education in Renewable Energy systems, Preben Birr- Pedersen, Director, House of Energy, Denmark

**11:20:** Consumers/prosumers, Rasmus Grøn Skammelsen, DENFO, Denmark

### **11:40: Break**

**12:10:** The market for small wind turbines in Germany, Otto Reinke, TWE-Tandem Wind Energy GmbH, Germany

**12:30:** Implementation of Power Supply Systems in Remote and Isolated Areas of Russia, George Kekelidze, Director, Eurosolar Russia



# Program

**12:50:** Design, fabrication and control of a PMSG as a part of a Small HAWT, Ioannis Skondrianos, Electrical Engineer, Greece

**13:10:** Wind Energy for your Home, Micha Sörgel, former Folkecenter trainee, Germany

**13:30: Break**

**14:00:** Market Challenges in USA, Peder Hansen, Chief Eng. Windharwest, USA

**14:20:** Doubling-down on rooftop wind, Brooke Spreen, Anergdy, Germany

**14:40:** The Onipko rotor with high Efficiency, Nizar Al-Rifai, Design & Communication at Onipko Group, Ukraine

**15:00: Networking**



# Program

## Wednesday 29 April

**09:00:** An overview from the RNP exercise and the link to the Green deal and the State Aid Guideline, Dr. Dörte Fouquet, Director, European Renewable Energy Federation

**09:20:** Energy Harvesting with very small wind turbines, Frits Ogg, author, the Netherlands

**09:40:** Follow up on micro wind, Morten Victor Petersen, Senior Consultant, Danish Test and Resource Center for Small Wind Turbines, Denmark

**09:50:** Country report for Poland, Dr. Ing. Maciej Karczewski, Windtak, Poland

**10:10:** Controlling, monitoring and supporting small wind, Niels H. Jakobsen, CEO, Orbital, Denmark

### **10:30: Break**

**11:00:** Small Wind Local Energy Buffering, Niels Martin Jørgensen, CEO, CIRKEL Energi A/S, Denmark

**11:20:** ThyWindpower: a hybrid solution, Flemming Grønkjær, Thy WindPower, Denmark

**11:40:** Power production comparison on a certified SWT in a complex terrain and a rooftop, Luis Cano Santa Barbara, Wind Energy Technical Researcher, CEDER-CIEMAT Spain

**12:00:** Storage Hybrids, Rune Eilertsen, Director, Hybridgenerator ApS, Denmark



# Program

## **12:20: Break**

**12:50:** Lowering the Cost of Small Wind for Homes and Farms, Mike Bergey CEO, Bergey Windpower Co, the US

**13:10:** Modern Blades, Troels Ette, CEO, Olsen Wings, Denmark

**13:30:** Updating in services Danish Test and Resource Center for Small Wind Turbines can provide, Anker Mardal, Data Responsible, Nordic Folkecenter for Renewable Energy, Danish Test and Resources Center for Small Wind Turbines, Denmark

**13:50:** Lessons learned from the SWTOMP Project, Luis Arribas, Researcher at the Wind Energy Unit, CIEMAT, Spain

**14:10:** Education in renewable Energy in African Countries, Prof. Dr. Eng. Galal Osman, Egypt

## **14:30: Networking**



# Program

## Thursday 30 April

**09:00:** General updating on grid connection rules and latest news in the development in standards and certification of small and medium sized wind turbines. Tonny Brink, Test Site Manager, Nordic Folkecenter for Renewable Energy, Danish Test and Resources Center for Small Wind Turbines, Denmark

**09:20:** Future Certification Goals, Peggy Friis, Senior Windpower Expert, Denmark

### **IEA TPC Task 41 Wind**

**09:40:** Welcome, overview and introduction, Anca Hansen, DTU, Denmark

**09:50:** IEA Task 41 presentation, Anca Hansen, DTU, Denmark

**10:10:** DW research at DTU Wind Energy:

- DW Standards, Witold Skrzypinski (DTU)
- DW Integration, Kaushik Das (DTU)
- DW Open data sharing, Anna Maria Sempreviva (DTU)

**11:00:** Presentation of breakup DW stakeholders' sessions, Tom Cronin, (DTU)

**11:05:** Break

**11:20:** Breakup DW stakeholders' sessions:

- DW Standards, Witold Skrzypinski (DTU)
- DW Integration, Tom Cronin (DTU)
- DW Open data sharing, Anna Maria Sempreviva (DTU)





# Program

**12:20:** Wrap-up in plenum

**12:35** Final remarks, Anca Hansen (DTU)

**12:50:** REGEDIS. New initiative to spread the small wind knowledge into the Iberoamerican region, Ignacio Cruz, CIEMAT, Spain

**13:10: Follow up, declaration**

**14:10: Online networking**



# List of Participants

Abdelhalim Ibrahim, Arab Consulting Office  
Abhinav Anand, TU Munich  
Abhishek Dasgupta  
Aeishwarya Baviskar, Denmark Technical University  
Ahmed ElGhandour  
Anca Hansen, DTU Wind Energy  
Andres Zappa, INTI  
Anh Dao, University of Warwick  
Anker Mardal, Nordic Folkecenter  
Anna Krenz, Nordic Folkecenter  
Anna Maria Sempreviva, Wind Energy Department, Technical University of Denmark  
Anne Paulin, Danish Parliament  
Anton Salazar, 3D Impact Group  
Arzu Huseynov, Solar & Wind Partners  
Atilla Öztürk, Windagrotech  
Ayad Hanna, Aarhus University School of Engineering  
Benjamin Palau, SRH Berlin University  
Bjarne Pedersen  
Bjarne Nyborg, Nordic Folkecenter  
Bo Nielsen  
Bose Sumantraa, Eindhoven University of Technology  
Boye A. Robertson, Monrovia City Corporation (MCC)  
Brent Summerville, ICC-SWCC  
Brooke Spreen, Anergdy AG  
Carlos Robles, DIS  
Cathy Suo, DTU Wind Energy  
Christian Grant, OctoMar ApS  
Christopher Biermann, SINN Power  
Chrysanthi Zioga  
Cliff Locks, Investment Capital Growth  
Cristian Pons-Seres de Brauwer, Technical University of Denmark  
Daniel Dyrberg, Aarhus University  
Daniele Pagani, Nordic Folkecenter  
Darius Ašmiechowski  
David Schnieders  
Dörte Fouquet, EREF  
Ebba Dellwik, DTU Wind Energy  
Estefania Santamaria  
Felipe Gutierrez Garcia, GAIA  
Finn Jensen, ASE, Aarhus University  
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Frits Ogg, O2G Sustainable Energy Solutions  
Galal Osman, Egypt Wind Energy Association  
George Kekelidze, EUROSOLAR Russia  
Ginio Franker, ESGWATCH  
Göran Bryntse, SERO  
Hans A. Pedersen, House of Energy  
Hemangi Borole, ABB  
Ignacio Cruz, CIEMAT  
Immanuel Dorn, Erni e.V.  
Ioana Costea  
Ioannis Skondriakos  
Isabel Löffler



# List of Participants

Jane Kruse, Nordic Folkecenter

Javier De la Cruz, INEEL

Jean-Daniel Pitteloud

Jean-Pierre Jeronimo

Jennifer Clemons, Delaware Technical  
Community College

Jens Bischoff, Enapter GmbH

Jens Rassmann

Johan Christensen, Aarhus

Ingeniørhøjskole

Johanne Duus

Jörgen Lillo, Sunwind Energy

Josué Zárate, CIATEQ JALISCO

Kaushik Das, Technical University of  
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Khai Dang, HASPAC

Khubaib Arshad, Allied Bank Ltd

Krisztina André, Bündnis

Bürgerenergie eV

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Laura Schultz, Orbital A/S

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Lennart Petersen, Aalborg University

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Linus Unmüßig, ERNI / deltaEmpower

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Lukas Ferber, WindKit

Maciej Karczewski, Windtak sp. z o.o.

Mariano Amadio, INTI

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Mert Sugür

Mette Larsen, House of Energy

Micha Sörgel, Windpower GmbH

Michael Jørgensen, Carl C. A/S

Mike Bergey, Bergey Windpower

Mike Wastling

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Braunschweig

Niels Erik Hagelqvist, Nukissiorfiit

Niels H. Jacobsen, Orbital A/S

Niels Martin Jørgensen, CIRKEL Energi

Nikolaos Tarsounas

Nizar Al-Rifai, Ukrainian Academy of  
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Oral Kaya, Troya Environmental  
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Oscar Saborio-Romano, DTU Wind  
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Otto Reinke, TWE-Tandem Wind Energy  
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# List of Participants

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Per Stubberup Pedersen, DIS / CREADIS  
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Peter Hauge Madsen, DTU Wind Energy  
Pierre Victor  
Piotr Jurkiewicz, OW SARP  
Piotr Wiklak, Windtak  
Pirouz Ebrahimi Garakani  
Preben Birr-Pedersen, House of Energy  
R.Jagadeesan Rangasamy  
Raghavan Veerasamy  
Rajiv Karn, Aalborg University  
Rasmus Grøn, DENFO  
Reinhard Lonsing  
Rikke Jespersen  
Rober Preus, National Renewable Energy Lab  
Rohit Prasad, Enapter  
Rolf Sloth, Nukissiorfiit  
Ronja Schwenkler, Technical University Braunschweig  
Rune Ejlertsen, Hybridgenerator ApS  
Salah Ibrahim, Arab Consulting office  
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Zahid Safdar, Allied Bank Limited



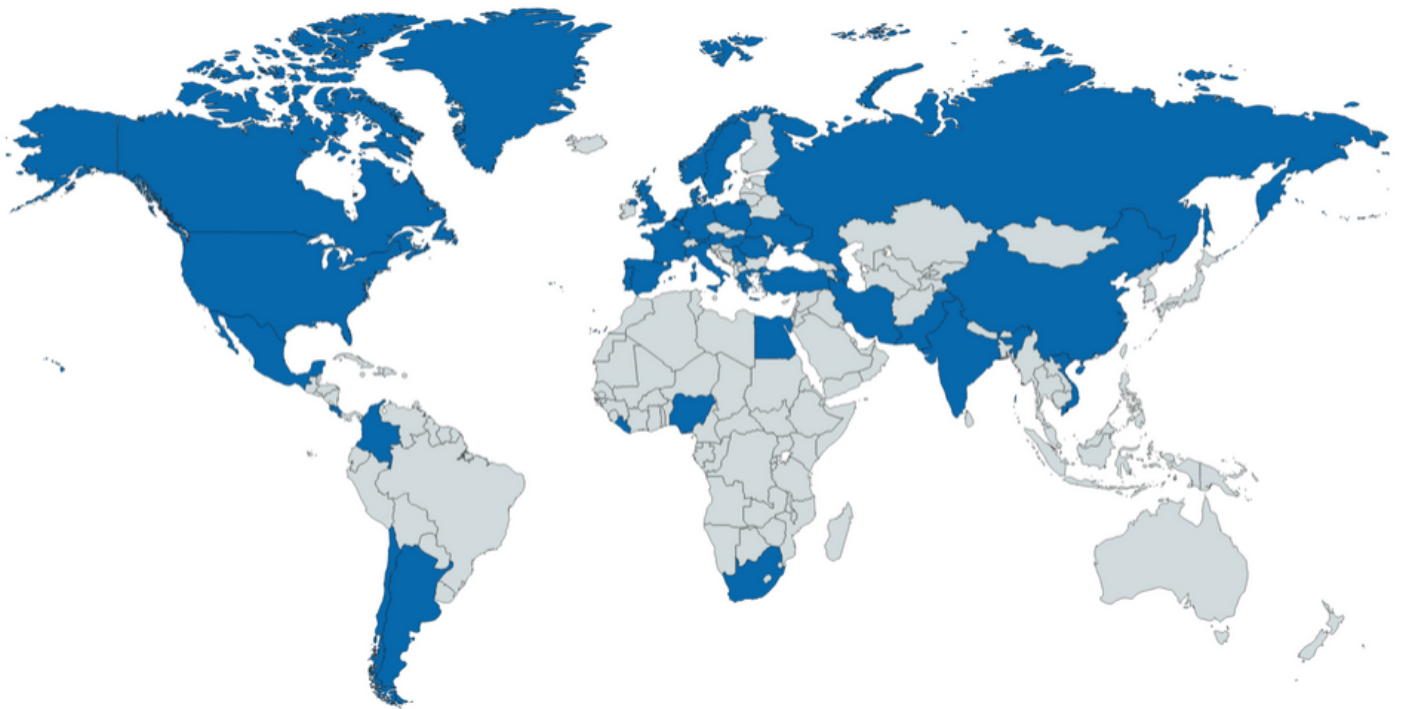
# Participant Map

In an international conference it is important that many countries are represented. So it was in this case!

The organizers are very satisfied that the event -and its key messages- reached so many people. The map below show where did the participants came from (35 nations in total).

We hope to see you soon in our future events!

Folkecenter Team



Find out more events on  
[www.folkecentererevents.net](http://www.folkecentererevents.net)



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