



7TH INTERNATIONAL CONFERENCE ON SMALL AND MEDIUM WIND ENERGY

21-22 SEPTEMBER 2022

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



Nordic Folkecenter
for Renewable Energy

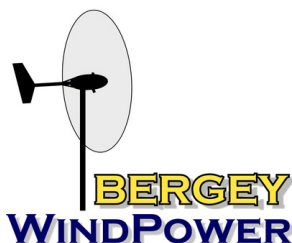


DANISH ASSOCIATION
for Small and Medium Wind Turbines



DANISH TEST AND RESOURCE CENTRE
FOR SMALL WIND TURBINES
Small Wind Test and Lab

Sponsored by:





About the Event

Nordic Folkecenter for Renewable Energy, the Danish Test and Resource Centre for Small Wind Turbines and the Danish Association for Small and Medium Wind Turbines are pleased to announce the 7th International Conference on Small- and Medium Wind Energy.

The event is the continuation of a series of six successful conferences which focused on small & medium wind and which reached hundreds of people around the world. The conferences were held in the period 2019-2021 and the proceedings (as well as the videos) can be found on www.folkecenterevents.net.

The 7th conference was held both online and in physical form and it focused on:

- **Energy prices** around the world and their implication for the Small & Medium wind sector
- **Feed-in-tariffs** as tool for strengthening the business case
- **Storage & Integration** to optimize the performances of small & medium wind turbines

**#smallwind #smallwindconference
#SMWC2022**





About Folkecenter

Nordic Folkecenter for Renewable Energy is a location known worldwide among energy experts. At the centre visitors are able to experience different renewable energy technologies and to have a complete overview on how could a transition towards a 100% renewable energy society occur.

The conference hall is located in SkibstedFjord, which is an example of innovative underground architecture. The building, with its 750 m² and its 140 places, is the ideal location for conferences on renewable energy topics, and enjoys a very pleasant indoor climate in every season.

Folkecenter also operates the Danish Test and Resource Centre for Small Wind Turbines, a reference infrastructure for the small & medium sector; at our test facilities developers can test their concepts, disregarding at which stage of development they are.

More information about Folkecenter and on the Danish Test Centre for Small Wind Turbines can be found on: <http://www.folkecenter.net/> and on <https://smallwind.dk/> respectively

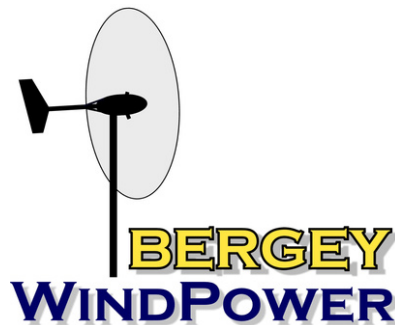
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Sponsor

We are very grateful to our sponsor for its support and for helping us in delivering this event free of charge for the participants.



Bergey Windpower is a leading manufacturer of small wind turbines for homes, farms and facilities of all types. Our new Excel 15 turbine lowers the cost of small wind and will provide years of maintenance-free operation.

Please visit www.bergey.com



The Conference

Program



View the conference recordings

Section 1: Technical Innovations

Blockchain for Economy of Scale in Wind Industry: A Demo Case

Michail J. Beliatas, Associate Professor, Aarhus University, Denmark



Telescopic tower for wind energy production with reduced environmental impact

Antonio Pantano, Professor, University of Palermo, Italy



Magnus Effect Balloons for Distributed Wind Energy

Garrett Smith, Founder, Wind Fisher, France



The rebirth of the greek sail windmill for RES - old appearance, but modern mechatronics and advanced controls

Dieter Schwechten, Professor, Konstanz University of Applied Sciences, Germany



Sonsight Long Blade 3.5kW Prototype Wind Turbine

Devon McIntosh, owner of Sonsight Wind, USA



Section 2: Education

Nordic Folkecenter: Forming the Next Renewable Energy Generation

Daniele Pagani, Capacity Building Coordinator, Nordic Folkecenter, Denmark



Scams, Frauds, & Flakes: Telltale Signs

Paul Gipe, Author, USA



Section 3: System Integration

Green Hydrogen - a Possible Applications for Small Wind Turbines

Galal Osman, College of Engineering, Mansoura University, Egypt



System design, calculations and commissioning for Solar and Windmill

Niels Kariil, Area sales manager for Denmark, Finland and Iceland, Victron Energy, Denmark



Section 4: Market & Economics of Small Wind

The Italian Market: Potentials & Limitations

Marco Antonio Cascini, ECOMAC, Italy



The ComRES project, updates on the REDIII and on the 2030 targets of the European Union

Dörte Fouquet, Director, European Renewable Energy Federation (EREF), Belgium





The Conference

Danish Market Overview & Testing Possibilities

Tonny Brink, CTO, Nordic Folkecenter, Denmark



Slovenian Wind Subsidies

Tomaž Robič, Energy and Climate Agency of Podravje, Slovenia



Medium Size Wind Turbines, their Size and Market

Frits Ogg, author, the Netherlands



Small Wind Power (SWP) as a Renewable Energy Source in Morocco

Anas Bentamy, Associate Professor, Al Akhawayn University, Morocco



Highlights from the 2022 Edition of the U.S. Distributed Wind Market Report

Alice Orrell, Energy Analyst, Pacific Northwest National Laboratory, USA



Distributed Wind Energy Futures Study – A look at Market Potential in the U.S.

Ian Baring-Gould, Program Manager, NREL, USA



Speakers



Michail J. Beliatis, Associate Professor, Aarhus University, Denmark

Michail (male) holds an Associate Professorship in Digitalization of manufacturing, IIoT and Business Innovation at Aarhus University. He has research experience in multidisciplinary areas including Solar cells, IoT, Mechatronics, Smart buildings, Digital Manufacturing, Printed & Hybrid Electronics, Nanotechnology, IT/OT and Industry 4 & 5. He is currently employed in Aarhus University, Herning campus, DK and he holds a PhD in Laser processed Nanoelectronics from University of Surrey, UK, an MSc in Signal processing & Telecommunications and a BEng in electrical, electronic & software engineering both from University of Newcastle upon Tyne, UK. He has many years industrial experience in manufacturing and system automation sectors. Michail is heavily involved in European FP7 and H2020 projects, as well as National projects, with involvement in Research, Innovation, Development and Technical Managements.



Daniele Pagani, Capacity Building Coordinator, Nordic Folkecenter, Denmark

Daniele Pagani, holds a B.Eng. in Global Business Engineering, a B.Eng. in Mechanical Engineering from VIA University College (DK) and a MSc. in Engineering - Technology-Based Business Development from Aarhus University (DK). His main research interests are related to sustainable mobility and to applications of hydrogen in the industrial and agricultural sector. Currently, he is the responsible for education in Folkecenter.



Garrett Smith, Founder & CEO, Wind Fisher, France

Garrett Smith is an innovator and leader. He is an aerospace engineer who shares his unbridled passion and energy for ambitious projects such as Wind Fisher. He has extensive experience managing employees, negotiating contracts, improving governance and effecting organizational change in both companies and associations. He has developed a detailed understanding of aerospace vehicles throughout his career: working for Boeing and Airbus; actively promoting suborbital spaceflight; and, developing airborne wind energy. His extensive industry research and networking with professionals gives him unique insight into resolving the technical, economic and regulatory challenges faced by such a unique business opportunity. He is co-inventor of the Wind Fisher power balloon, using Magnus effect kites with cylindrical wings, which efficiently harnesses wind energy at several times the hub height of traditional wind turbines of equivalent rated power



The Conference



Dieter Schwechten, Professor, Konstanz University of Applied Sciences, Germany

Born in Hamburg and grown-up nearby, Dieter studied Mechanical Engineering at the University Braunschweig and specialized early in Process Engineering, graduated at the University Clausthal and became a specialist in Particle and Separation Technology during 14 years in industry. In 2001, Dieter followed the call as professor for mechanical engineering and machine design in the course Environmental and Process Technology for bachelor and master students. Later he changed to Particle Technology again, but still was highly interested in mechanical design. Since 2010, he focussed more and more in the field of recycling and renewables and started 2015 with the concept design of the wind turbine SAILWIND. Since early days, he is a sailor, so fluid dynamics became one of his favourites in teaching and practice. Naturally, the combination of sails on a wind turbine was fascinating him. Since 2020, Dieter is retired, but still enjoys working on the project with students and colleagues from the university on a sustainable, long-lasting design and optimization of SAILWIND in mechatronics, controls and aerodynamics..



Galal Osman, College of Engineering, Mansoura University, Egypt

Prof. Dr. Eng. Galal Osman has a MSc. in Engineering (1971) and a PhD in Engineering (1974) from the University of Cairo, Egypt. Throughout his career, he has been involved in many works related with renewable energy and education. Currently teaching at the College of Engineering, Mansoura University, he is internationally involved in promoting renewable energy, being the president of the Egypt Wind Association (since 1986) and the vice president of the World Wind Association (since 2002). Additionally, he has participated to all the World Wind Energy conferences and he is board member of different global renewable energy institutes.



Marco Antonio Cascini, Lawyer, ECOMAC, Italy

Lawyer Cascini was born in Vico Equense on 28.09.1982 and graduated with top marks at the University Federico II of Naples on 20.04.2005 after having carried out cultural project exchanges both in Spain (with the Erasmus Project) and in America, and more precisely in Boston where he participated in various CELOP courses at Boston University where he deepened his knowledge of English legal language.

As soon as he had completed his university course and deepened his knowledge of foreign languages (including English and Spanish), Avv. Cascini embarked on his professional experience by starting to collaborate with a number of 'International' law firms and undertook various professional experiences, among which we would like to highlight:

- The Law Firm Watson Farley & Williams, starting in 2005, working closely with the Italian Managing Partner Avv. Eugenio Tranchino and collaborating in the definition of a series of transactions in the Italian wind market between the IVPC companies and the companies referable to the Matrix Securities Limited Group headed by Messrs. Rupert Lywood and Paul Williams.
- Studio Grimaldi e Associati in Rome in 2006, working directly with Avv. Francesco Novelli and, in particular, following the transactions, again in the wind market, of Oreste Vigorito, a wind power pioneer in Italy and owner of the Italian Vento Power Corporation.
- Italian Vento Power Corporation (IVPC) since 2006, with which in 3 years, from 2006 to 2009, more than 450 MW of wind power was realized and project financing of more than EUR 900 million closed.
- Responsible in ANEV (an environmental protection association that brings together around 90 companies operating in the wind energy sector and more than 5,000 subjects, including producers and operators of electricity and technology, plant designers, engineering and environmental studies, electrical traders and developers) of the small wind energy working group and part of the board of arbitrators.

Finally, in 2011, wanting to start his own business in the sector where he has always worked and deepened his knowledge, Avv. Cascini established M.C. Consulting S.r.l., which has gained considerable experience in the field of renewable energy over the years.



Dörte Fouquet, Director of EREF and Partner of Counsel at Becker Büttner Held, Belgium

Dr. Dörte Fouquet specialises in EU law and international legal relations with a focus on competition, infrastructure, energy and environmental law. She provides legal advice, in particular, to companies, financial institutions, associations, governmental agencies in Germany and other EU Member States, EU institutions and at international level.



Niels Kaarill, Area sales manager for Denmark, Finland and Iceland, Victron Energy, Denmark

Niels Kaarill have been working with Offgrid solar energy for 20 years, the last 25 Years for Victron Energy there is one of the world leaders brands in Offgrid and ongrid solar systems there are supplied worldwide.

Victron Energy is a 48-year-old family owned company from Netherland, now with second generation in charge for the company.



The Conference



Antonio Pantano, Professor, University of Palermo, Italy

Antonio Pantano is full professor at the Engineering Department of the University of Palermo (Italy). He earned his M.S. in Engineering Mechanics in 1999 and his Ph.D. in Engineering Mechanics in 2002 from Michigan State University. Until 2004 he was Postdoctoral Associate at the Massachusetts Institute of Technology. At MIT he was in a research group working in the CMI (Cambridge-MIT Institute) Project on Carbon Nanotube Enabled Materials. In 2004 he moved to the Department of Mechanics, University of Palermo, where he was professor "Rientro dei Cervelli", a position for promoting the coming back of outstanding scientist working abroad. From 2007 he is a Professor, first associate and later full, at the Engineering Department of the University of Palermo. His current research interests include: computational mechanics, mechanical design, NDE, composites, biomimetic, compliant mechanisms, wind turbines.



Frits Ogg, author & Co-chair WWEA small wind, O2G Sustainable Energy Solutions, the Netherlands

Frits Ogg, born in Maastricht 1954 now living in Nijmegen (Netherlands) is a guest lecturer, investigating journalist and consultant in the field of water and energy conservation, sustainable energy and automation. He was Co-founder of the Dutch organisation for sustainable energy (ODE) in 1978. Frits Ogg specialises in sustainable emergency energy supply, small bio-gas, photo-voltaics, small wind and community wind. He was formerly editor in chief of WindNieuws (in Dutch) and has a degree in education (electrical), industrial marketing and industrial engineering. He worked for the largest wind cooperation in the Netherlands "De windvogel" and writes for several Dutch industrial magazines and in the English language for Windtech-International and the WWEA (wwindea.org). As a HAM radio operator he is on the air with the call PA2LIA. More can be found on his LinkedIn page and under @fishfrog on Twitter.



Tonny Brink, CTO, Nordic Folkecenter for Renewable Energy & Test Site Manager, Danish Testand Resources Center for Small Wind Turbines, Denmark

Educated as a Marine Engineer, he is Folkecenter's Chief Technical Director. He has got 35 years of experience in the international wind industry, working for Vestas Wind Systems A/S and Folkecenter. This has provided him with broad knowledge in service and maintenance site management and construction and operational project management. Hold positions and responsibilities (among others): Travel Technician, Site Manager, Logistics Coordination, Area Service Manager, Technical After Sales/Customer Reporting, Technology Transfer, Project Management and Execution Leader.



Alice Orrell, Energy Analyst, Pacific Northwest National Laboratory, USA

Alice Orrell is an Energy Analyst at the U.S. Department of Energy's Pacific Northwest National Laboratory. She provides renewable energy resource assessments and wind energy project development support for federal agency clients and distributed wind market research and analysis for DOE. Alice is the lead author of the annual Distributed Wind Market Report.

Alice is a Professional Engineer in the State of Washington and worked in the power industry prior to joining PNNL. She received a Bachelor of Science degree in Mechanical Engineering from the University of Vermont and a Master of Business Administration degree from the University of Washington.



Devon Rocky McIntosh, owner of Sonsight Wind, USA

Rocky McIntosh is the owner of Sonsight Wind, a small US company originally founded to help apply his interest in electromagnetic interactions to problems related to energy efficiency and renewable energy. Rocky has a PhD in physics from Howard University in Washington DC with a focus on superconductivity and has worked on various R&D projects in defense and others involving optical waveguides and electromagnetic scattering. However, more recently his work at Sonsight has been focused on the various multidisciplinary issues involved in developing a better small wind turbine.



Ian Baring-Gould, Technology Deployment Manager & Senior Engineer Distinguished Members of Research Staff, NREL, USA

Ian Baring-Gould graduated with an MSME from the University of Massachusetts in 1995 and started working at the National Renewable Energy Laboratory. Ian's work focuses in domestic and international applications engineering for Renewable Energy technologies, assistance in Renewable Energy deployment and educational outreach, primarily wind. Ian is the Technology Deployment Manager for wind and water technologies at NREL, overseeing the Department of Energy's wind focused stakeholder engagement, outreach, and workforce development activities, and coordinates the NREL's Distributed Wind portfolio of research activities. Ian has also worked extensively in understanding and implementing programs to expand wind workforce development.

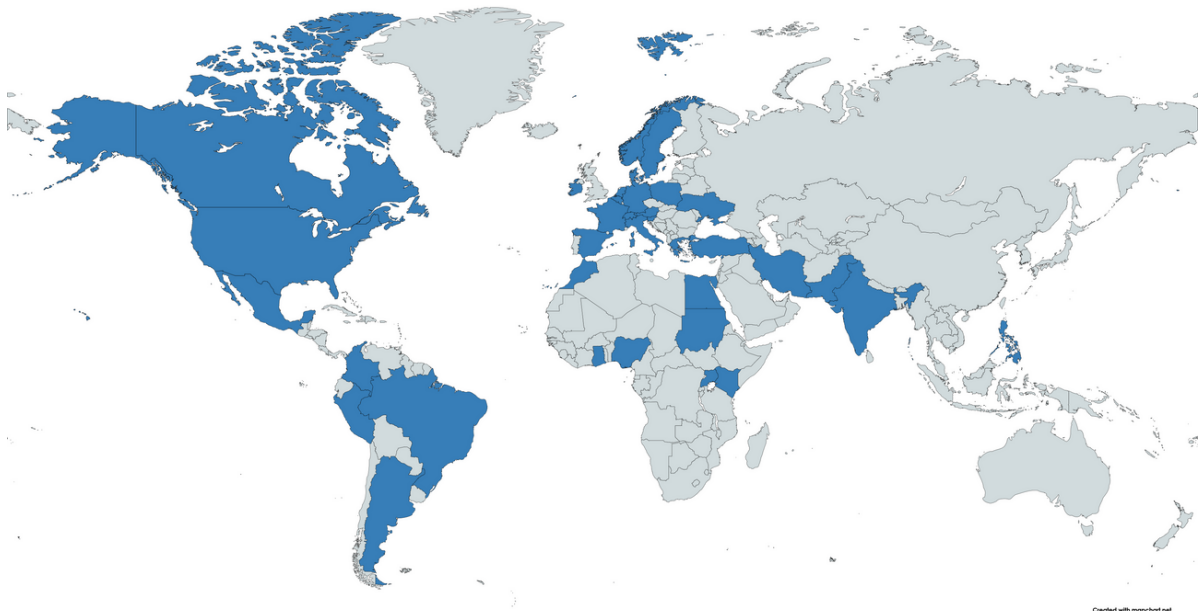


The Conference



Paul Gipe, Author, USA
(Text coming soon)

Countries Represented



| | | | | | |
|-----------|----------|---------|-----------------|-------------|---------|
| Argentina | Colombia | India | Morocco | Philippines | Türkiye |
| Austria | Egypt | Iran | the Netherlands | Poland | Uganda |
| Belgium | France | Ireland | Nigeria | Slovenia | Ukraine |
| Brazil | Germany | Italy | Norway | Sudan | the UK |
| Canada | Ghana | Kenya | Pakistan | Sweden | the US |
| Catalonia | Greece | Mexico | Peru | Switzerland | |



The Conference

List of Participants

Adrian Chan, Nordic Folkecenter for Renewable Energy, Canada
Alice Orrell, Pacific Northwest National Laboratory, US
Alistair Munro, Ryse Energy, UK
Anas Bentamy, Al Akhawayn University, Morocco
Andreas Okholm, Kitex, Denmark
Andrés Zappa, INTI, Argentina
Andrew Auruku Auruku, Youth and Women for Opportunities Uganda-YWOU, Uganda
Antonio Pantano, Università degli Studi di Palermo, Italia
Behlke Rico, Kongsberg Satellite Services, Norway
Brent Summerville, NREL, US
Camila Vélez, Trainee, Colombia
Chris Harrison, DNV, UK
Chris Connor, Northern Power Systems, US
Christinia Marc Marc, Primo Energy Inc, US
Corneliu Barbu, Aarhus University, Denmark
Daniel Clunies, Windurance, US
Daniele Pagani, Nordic Folkecenter for Renewable Energy, Italy
David Gaya, Wind Spain.com, Spain
Dieter Schwechten, University of Applied Sciences HTWG Konstanz (Emeritus), Germany
Edward McMahon McMahon, Primo Energy Inc, US
Emil Petersen, INNOVENTUM, Sweden
Faribourz Baghshomali, AMarkPower BP, Iran
Ferozuddin Bunyadi, German
Dörte Fouquet, Becker Büttner Held PartGmbH, Belgium
Frido Stutz, NewGreenTec, Switzerland
Frits Ogg, World Wind Energy Association, the Netherlands
Galal Osman, World Wind Energy Association, Egypt
Garrett SMITH, Wind Fisher SAS, France
Ghanshyam jadhav Jadhav, Ghanshyam, India
Godfrey Katiambo, INNO-NEAT ENERGY Solutions, Kenya
Hadi Shahgholi, AMarkPower, Iran
Hassan Mousa, Triple M, Austria
Hatem Romy, Triple M, Egypt
Hitesh Gupta, MANIT Bhopal, India
Ian Brownstein, XFlow Energy, US
Ignacio Cruz, Ciemat, Spain
Igor Gomes, Universidade Federal do Pará, Brazil
Ilaria Pellegrini, Aria Srl, Italia
Imad Eldin Saeed, Sudan
Isaac Felix Edimu, Youth and Women Empowerment Initiative Uganda, Uganda
Jan Hynneke, Drone365, Denmark
Jesper Sand, Ucn, Denmark
Joaquín Alfredo Velázquez Olvera, IPN, Mexico
Josh Carlson, Ambor Structures, US
Juan Alberto Extremera Lopez, Urbaning, Spain
Julian Parramore, Denmark
Julian Kaj Eichler, Denmark
Justus Munyoki, Kenya
Kamila Kazimierczuk, Pacific Northwest National Laboratory, US
Karthikeyan N, Vestas, India
Ken Visser, Ducted Wind Turbines, Inc, US
Ketter Foutz-Ulrich, PRIMUS WIND POWER INC, US
Liam Griggs, Ryse Energy, UK
Lindsay Sheridan, Pacific Northwest National Laboratory, US
Lisa Daniels, Windustry, US
Luis Cano, CIEMAT, Spain
Luis Arribas, CIEMAT, Spain
Luis Cordova, Peru
Luiz Justino, Federal University of Western Bahia (UFOB), Brazil
Marianne Mamdouh, Egypt
Markus Drapalik, University of Natural Resources and Life Sciences, Vienna, Austria
Martin Stahl Stahl, Denmark
Maruf Mohammed, Green Focus Africa, Ghana
Matias Sanabria, Argentina
Mehmet Buğra Budak, Türkiye
Michael Bergey, Bergey Windpower Co. LLC, US
Michail Beliatas, Aarhus University - BTECH, Denmark
Mohab Hatem Romy, Triple M., Egypt
Mohamed Awad, Egypt
Mohammad Mohsen Haghighi, AMarkPower ApS., Iran
Mohannad Hatem Romy, Triple M, Egypt
Morten Petersen, Danish Association for Small and Medium Wind, Denmark
Moses Oladepo, Nigeria
Muhammad Mubashar Ashraf, Virginia Tech, Pakistan
Nestor Cardona, Colombia

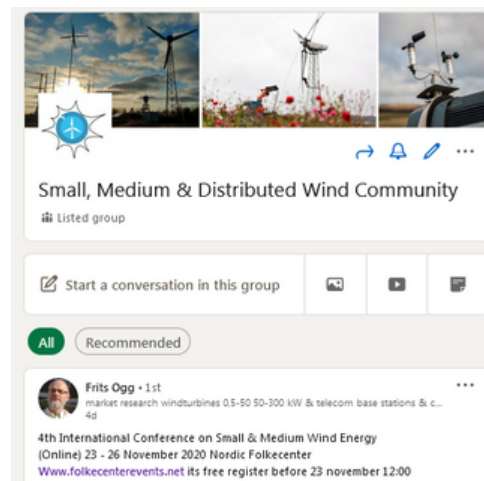


The Conference

Niels Olsen, Private, Denmark
Niels Kaarill, Victron Energy B.V., Denmark
Nikolaos Stefanatos, CRES, Greece
Nikolaus Tarouquella-Levitan, Fundacja
Perspektywa, Germany
Oral Kaya, Troya REScoop, Türkiye
Otto Reinke, TWE-Tandem WindEnergy GmbH,
Germany
Patrick Jones, Ryse Energy, UK
Paul Gipe, wind-works.org, US
Pep Puig I Boix, eolpop, Catalonia
Peter Lundager, Danmark
Prami Dubey, India
Quentin Gargan, Turbotricity Ltd, Ireland
Raheemat Mojisola Olukoya, student, Nigeria
Ramakant Sharma, Individual, India
Richard Victor, SIRT, India
Robert Wills, Intergrid, US
Robert Preus, US
Rocky McIntosh, Sonsight Wind, US
Salah Ibrahim, ACO, Egypt
Santosh Chuvan, Manit Bhopal, India
Sean Smith, Canada
Slava Movchan, Uk Engineering LLC, Ukraine
Sofia Pavlatou, Greece

Soren Jegsen, Solid Wind Power Europe ApS,
Denmark
Surykant Kumar, Manit Bhopal, India
Şüheda Saydam, Türkiye
Tarique Anwar Qureshi, Manit Bhopal, India
Thorstein Midttun, Vannhandel, Norway
Tod Hanley, Bergey Windpower Co, US
Tomaž Robič, Energy and Climate Agency of
Podravje, Slovenia
Tonny Brink, Nordic Folkecenter for Renewable
Energy, Denmark
Ulrich Høgenhaven, Viking Wind ApS, Danmark
Uygur Tayan, Türkiye
Varad Chitransh, Manit, India
Victor Martinez, Italy
Vilas Warudkar, Maulana Azad National Institute of
Technology, India
Vilas Warudkar, Maulana Azad National Institute of
Technology, India
Waseem El Hefnawy, Triple M Constructions, Egypt
Weam Shokr, Triple M Construction, Egypt
Xiangqiang Wu, Aalborg University, Denmark
Yasir Baig Baig, MANIT Bhopal, India

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Medium & Distributed
Wind? Join our LinkedIn
group!



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Don't Miss



40-year Anniversary Conference

We are glad to inform you that in 2023 it will be 40 years since Folkecenter was established. To celebrate that, we will organize an international conference, where renewable energy experts from all over the world will join. The event will take place on 21-23 June 2023 and everyone is invited!

More news and detailed program will follow.



8th International Conference on Small & Medium Wind Energy

If you enjoyed this event, you will glad to hear that we will host a 8th edition of the conference on **20-21 September 2023**. We expect the event to be both physical and online.

If you wish to be one of the speakers, please submit your proposal on [this link](#). The deadline for proposal submissions is 04 May 2023.

Register your interest on www.folkecenterevents.net

Nordic Folkecenter for Renewable Energy

Working for a world running on 100% renewables since 1983



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