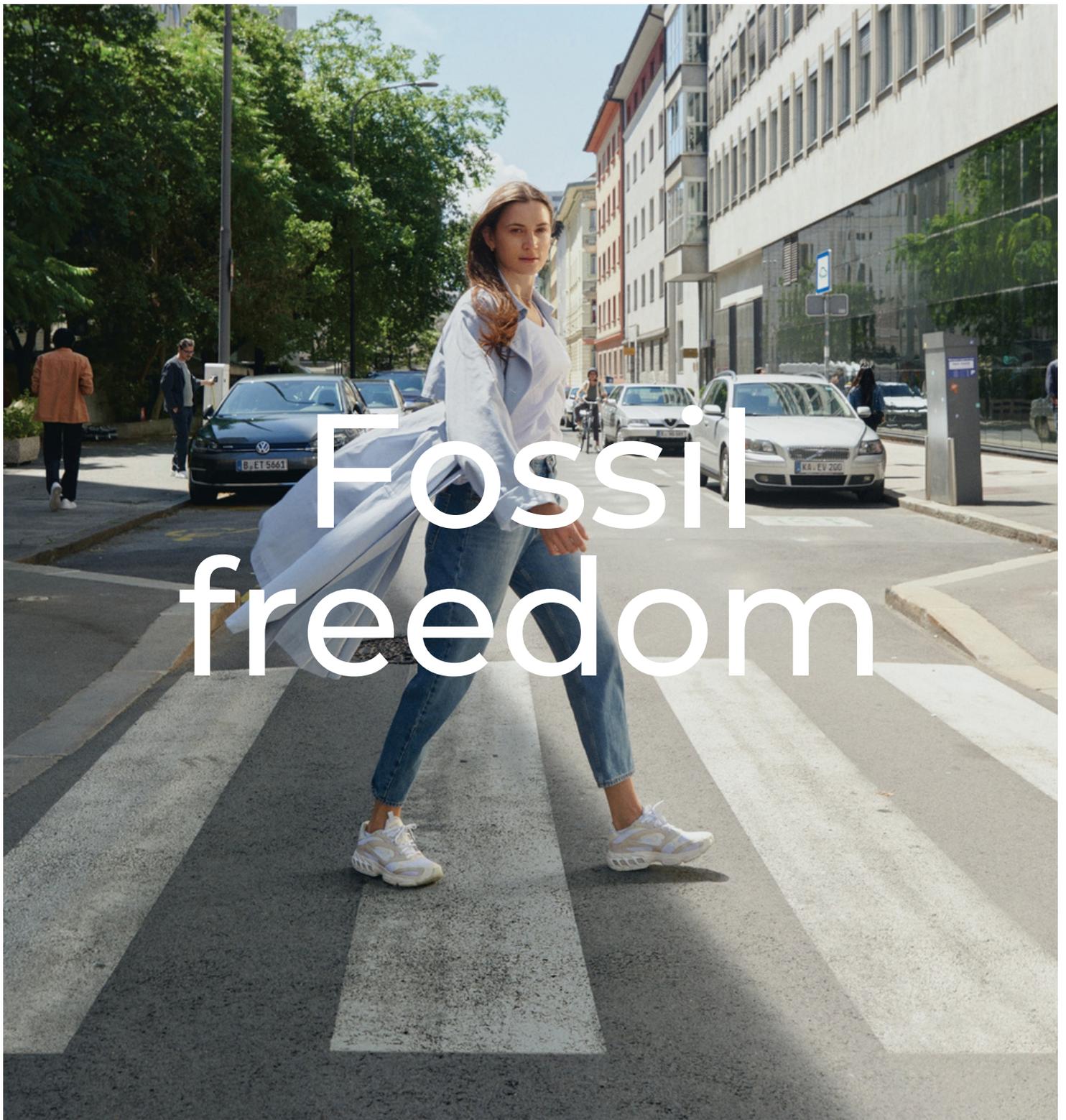




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30. NOVEMBER | FÆNGSLET I HORSENS



We're all trapped in a system that's addicted to fossil fuels. We're taking significant steps towards fossil freedom but our society is still highly dependent on fossil fuels. Industry needs to show the way forward and lead the transition. At Vattenfall we're helping society break free from this dependency. We're committed to building a future where everyone can choose fossil free ways to move, make and live. This is how we believe society can progress. We call it fossil freedom.

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Your guide to finding cross-sectoral solutions of the entire value chain

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Kentish Flats
Barrow
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Horns Reef 2
Avedøre Holme
Gunfleet Sands 1&2
Gunfleet Sands 3
Walney 1&2
Anholt
Lincs
London Array
West of Duddon Sands
Borkum Riffgrund 1
Westermost Rough
Block Island
Burbo Bank Extension
Formosa 1, phase 1
Formosa 1, phase 2
Gode Wind 1
Gode Wind 2
Race Bank
Walney Extension
Borkum Riffgrund 2
Hornsea 1
Borssele 1&2
Hornsea 2

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Conference program

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Program

	Main stage	Track 1	Track 2	Innovation scene
9.00-9.45	Registration and coffee			
9.45-10.35	Opening session: Headwind or tailwind for energy innovation?			
10.25-10.40	Break			
10.40-11.20	Energy Security in a Complex World	Sustainability: The Blade Waste Value Chain	The Battle of the TRLs across Industry & Universities with input from the InnoMissions	Digi Wind
11.20-11.50	Coffee break			
11.50-12.30	Making Energy Islands Cost Competitive	The Innovators Dilemma: Turbine Technology for Global Competitiveness	Big scale Power-to-X: how many 'chicken and the egg' problems do we need to solve?	Decomblades: Full circularity for wind turbine blades
12.30-13.30	Lunch			
13.30-14.10	How can and will AI influence the energy sector?	Ports to the Green Transition	From Cost to Value – A New Paradigm for Wind Power Development	Green Power to be Stored in Molten Salt
14.10-14.40	Coffee break			
14.40-15.20	Can Innovation Save the European Wind Industry?	Common Equipment in the Wind Industry	Wind resource estimation: updates from academia and industry	
15.20-17.00	Networking and reception			

WIND ENERGY DENMARK 2023



Main stage

Opening session: Headwind or Tailwind for Energy Innovation?

09.45-10.25

Denmark is considered a frontrunner in the green transition – a small country with a large impact globally. But are we on the right track? Can we scale the infrastructure, materials procurement, and production capacity to meet our ambitious targets?

Wind Energy Denmark 2023 invites the innovative companies RWE, Siemens Energy, and Aegir Insights to a discussion of the current framework for innovation within the energy industry, global competition and tomorrow's sustainable value chains.



Rikke Winther Nørgaard
CCO & Co-founder
Aegir Insights



Lisbeth Bæk
Head of WTG Engineering
Vattenfall



Betina Jørgensen
Head of Renewables Business
Development Denmark
TotalEnergies

Moderator:



Christina Aabo
Owner
Aabo Energy

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Main stage

Energy Security in a Complex World

Session 1

10.40-11.20

How do we protect our critical infrastructure?

In a time where our dependence on energy is stronger than ever before, and as we continue to face complex threats and significant technological advancements, the question of energy security is more urgent than ever. This exclusive panel discussion delves into the heart of energy security, exploring the intricacies of our energy infrastructures and challenging the status quo. From discussing who should be responsible for the security of our energy systems to exploring the balance between physical and cybersecurity, our panel of experts will challenge existing paradigms and explore solutions when it comes to protecting critical infrastructure.

Topics to be covered:

- Protection of our energy system: How do we balance the protection of vital units with our national and global energy supply needs?
- Governance structures and decision-making: Discussing challenges and opportunities in decision-making and governance within energy security.
- Cybersecurity in the energy sector: From threat to possibility.
- Exploring the consequences of failures and threats to critical infrastructure.

Join this session to hear more from our panel of experts who will share their insights and discuss essential aspects crucial for maintaining security in the energy sector. Our moderator will also encourage questions from the audience to ensure an interactive and informative debate.



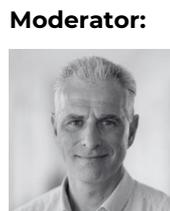
Klaus Winther
Vice President System Operations
Energinet



Martin Méchali
Head of Project Development &
Commercial Europe
Ørsted



Carsten Bryder Thejls
CEO
NI



Moderator:

Jørgen S. Christensen
CTO
Green Power Denmark

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Track 1

Sustainability: The Blade Waste Value Chain

Session 1
10.40-11.20

With only 2 years to a sector recommendation for a landfill ban on End-of-Life (EoL) blades in Europe, alternative solutions to handling blade waste are needed.

This session will focus on the waste value chain for blades with a couple of technology solutions followed by a discussion on hurdles and opportunities for different technologies.

Vestas will present their new technology that separates resin and glass fiber enabling reuse of both. Continuum will present their plans for a new production facility in Esbjerg that will convert EoL blades and other glass fiber composite into components for the building sector.



Mie Elholm Birkbak
Specialist - Innovation & Concepts
Vestas Wind Systems



Hülya Ucar
Materials and Recycling Specialist
Continuum Composite Recycling

Moderator:



Anja Pedersen
Senior Advisor
Green Power Denmark

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Track 2

The Battle of the TRLs Across Industry & Universities With Input From the InnoMissions

Session 1
10.40-11.20

The InnoMission Roadmaps were published medio 2021 and set the direction within each InnoMission towards the 2030 and 2050 climate goals. Since the beginning of the InnoMissions, there has been debates about the balance of funding going to different levels of technology readiness level.

On stage, university and industry will battle out the issue in discussion with the partnership directors of the InnoMissions one and two.



Karina M. Søgaard
Partnership Director
INNO-CCUS



Per Hesselund Lauritsen
Offshore Research Manager
Siemens Gamesa



Carina Jensen
Partnership Director
MissionGreenFuels



Mattias Andersson
Senior Executive Adviser
DTU

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Innovation scene

Digi Wind

Session 1

10.40-11.20

The Digiwind project aims to develop interdisciplinary programmes for MSc, Master and life-long learning to future-proof the careers of STEM professionals in the energy sector. Join this interactive session to learn about Digiwinds Specialised Education Programmes for advanced digital skills in areas such as High-Performance Computing, AI, Cybersecurity and other emerging technologies.

This interactive session will include the introduction of the DigiWind project and collection of interest in 'digital training' from the participants of the session.

The Digiwind project is funded by the Digital Europe Programme.



Tuhfe Göcmen
Senior Researcher
DTU Wind and Energy Systems



Claus Riekehr Møller
CEO and Founder
CADPeople

Moderator:



Karsten Kryger
Senior Executive Officer
DTU Wind and Energy Systems

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Main Stage

Making Energy Islands Cost Competitive

Session 2
11.50-12.30

Integrating large amounts of offshore wind into the grid requires a novel approach to constructing and managing offshore wind power systems. In 2021, the Danish Government announced ambitious plans to construct an artificial island in the North Sea and establish an energy Island at Bornholm. Since then, the development has been delayed due to cost concerns, and the Danish government and stakeholders are now re-assessing how energy islands can be a cost-effective way to support the installation of gigawatts of wind power in Danish waters.

This session discusses how Energy Islands can be delivered in a cost-effective way.



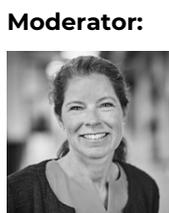
Hanne Storm Edlefsen
Vice President for Energy Islands
Energinet



John Ammentorp
Country Market Director
Rambøll



Samuel Magid
Associate Partner
CIP



Moderator:

Camilla Holbech
Head of Department, Renewable
energy and collaboration
Green Power Denmark

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Track 1

The Innovators Dilemma: Turbine Technology for Global Competitiveness

Session 2
11.50-12.30

This session dives head into the question of how European turbine manufacturers and their supply chain can stay competitive under current financial circumstances and facing steep competition on prize from especially Chinese companies.

The continued development of wind turbine technologies with focus on cost reduction, risk reduction and industrialization are crucial for the efficient and fast energy transition to green energy with wind as the backbone. To ensure a continued strong Danish industrial position, new turbine technology development combined with a strong focus on the entire design, development and supply chain can be the needed lever to mitigate the challenge from low-cost Chinese competition.

Join the session to learn from the speakers and participate in this vital discussion for the future of the European wind turbine industry.



Kasper Roed Jensen
Next Generation Concepts and Partnering
Vestas Wind Systems



Christian Bak
Professor
DTU Wind and Energy Systems



Lisbeth Bæk
Head of WTG Engineering
Vattenfall



Moderator:
Kenneth Thomsen
Head of Division for Wind Turbine Design
DTU Wind and Energy Systems

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Track 2

Big scale Power-to-X: How Many 'Chicken and the Egg' Problems Do We Need to Solve?

Session 2

11.50-12.30

What does it take to deliver big scale Power-to-X? And even if we solve one 'chicken and the egg' problem after the other, will we be able to source enough raw materials for the planned capacity in due time?

This session tries to address the challenges of scaling up in a world of financial risk and political whims. We investigate questions like: which business models can spread the risk and improve the business case? Do we need to solve some of the challenges by tying the wind industry and the Power-to-X supply chains closer together? How will the development look like globally, on a European level, and locally?

Setting the scene, Professor Henrik Lund Frandsen, Department of Energy Conversion and Storage at DTU, will take us through a short introduction to the challenges ahead and his take on the Danish chances of pioneering and succeeding with Power-to-X as we did with the wind turbines.

Following this, a panel of Danish experts with hands on experience will discuss how we increase our chances to succeed, and which bricks we need to build our future energy system.



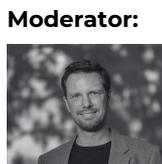
Henrik Lykke Sørensen
Head of PtX Competence Center
Eurowind Energy



Ryan Nielsen
CEO
Eltronic PtX



Lars Henrik Riis
Sales and Business Development
Manager
Siemens Energy



Moderator:

Henrik Lund Frandsen
Professor
Department of Energy Conversion
and Storage - DTU

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Innovation scene

Decomblades: Full Circularity for Wind Turbine Blades

Session 2
11.50-12.30

The DecomBlades innovation project has an overall goal: To establish the basis for sustainable, cost-efficient, and viable value chains for recycling of wind turbine blades. The consortium behind the project will engage and commit key industry players from the different parts of the value chain to identify potential next steps for DecomBlades.

This session is an opportunity to affect tomorrow's innovation projects focusing on recycling of wind turbine blades. At the same time, you will get the latest insights and results from the innovation project, e.g., from a current experiment that focuses on pyrolysis as a means to prepare fibers for remelting.

Join us for the latest updates from the DecomBlades innovation project – and join tomorrow's circular wind industry.



John Korsgaard
Senior Director
LM Wind Power and Chair of
DecomBlades Consortium



Asger Bech Abrahamsen
Senior Researcher
DTU Wind & Energy Systems



Irene Bach Velling Villadsen
Project Manager
MAKEEN Energy



Moderator:
Thomas Vohs-Ahlers
Head of Membership & Sales
Energy Cluster Denmark

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Main stage

How Can and Will AI Influence the Energy Sector?

Session 3
13.30-14.10

Data extraction, data analysis and smart use of data from production units has been a central focus for companies in the energy sector for many years.

With the emergence of Chat GPT and other AI solutions new elements and opportunities have appeared on the scene. How has this changed the playing field for data handling, and can the use of AI help solve the severe shortage for competences in the energy sector? Hear views from industry and energy sector in a lounge setting.

This session may also address the following questions:

- What are the main challenges that the energy sector is facing when it comes to AI, data handling and processing?
- What tools are already applicable and what tools do we need to develop to exploit the possibilities of computer technology?
- What role does Google play in the energy sector a mere large end user of electricity or a problem solver in the green transition?
- How big is cyber security in this context?

Moderator:



Christina Aabo
Owner
Aabo Energy



Jonas Sødergran
Sustainability Solution Manager
Google



Lars Bonderup Bjørn
CEO
EWII

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Track 1

How can and will AI influence the energy sector?

Session 3
13.30-14.10

Power-to-X production, shipment of blades, green bunkering and charging, logistics, recycling, space and more. Ports are key as green hubs in the transition to a carbon free future – but what defines a green port and European ports of the future?

In this session, experts from European ports will present their view on the green ports of tomorrow. Do we have the amount of space needed? Is the political framework fit for climate friendly ports and what is the need for innovation and new technologies for ports and port logistics?

Join us in this session where we debate challenges, partnerships, and potential of European ports, development of new and existing value chains and more.



Dennis Jul Pedersen
CEO
Port Esbjerg



Jan-Jaap Cramer
Harbour Director
Vordingborg Port

Moderator:



Glenda Napier
CEO
Energy Cluster Denmark

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Track 2

From Cost to Value – A New Paradigm for Wind Power Development

Session 3
13.30-14.10

For over a decade, Levelised Cost of Energy (LCoE) was the innovation driver for wind power development in the ambition to make renewables competitive with fossil fuels. Today, wind and solar offer the cheapest forms of electricity generation, having surpassed fossil fuel alternatives in many locations. The scale-up of renewable energy sources to achieve net-zero targets requires a more holistic approach to assess not only the cost but also the value of wind power.

In this session, three experts will discuss what the shift from cost to value means and how policy makers and society translate this insight into a more holistic approach to renewable energy.



Rikke Winther Nørgaard
CCO & Co-founder
Aegir Insights



Lena Kitzing
Head of Section for Market and Policy
DTU Wind and Energy Systems

Moderator:



Lars Landberg
Vice President for Renewables R&D
DNV

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Innovation scene

Green Power to Be Stored in Molten Salt

Session 3
13.30-14.10

Innovative partners are currently developing and building the first MW-scale thermal energy storage facility based on molten hydroxides in the world. A commercial facility will be able to store green power in molten hydroxide salt heated to up to 700 degrees Celsius at GWh-scale.

This session at Wind Energy Denmark 2023 is your opportunity to hear about the MOSS project, where Hyme, DIN Forsyning and other partners will build a new energy storage facility in the autumn of 2023 in a warehouse at Semco Maritime in the Port of Esbjerg.

This technology will play a significant role in the energy transition by enabling industry and utilities to replace fossil fuels with green power for heat and steam production. Heat consumption is equivalent to half of global energy consumption and accounts for 40% of global carbon emissions.

Following the work on the demonstration plant in Esbjerg, the plan is to commercialise the solution in 2026.



Karine Blandel
Senior Business Developer
Hyme



Rune Kirt
CEO
Kirt x Thomsen



Claus A. Nielsen
Business Development Manager
DIN forsyning



Moderator:

Gitte Wad
Project Manager
Energy Cluster Denmark

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Main stage

Can Innovation Save the European Wind Industry?

Session 4

14.40-15.20

Inflation, increased costs, and competition from companies backed by state-aid is challenging the entire wind industry's ability to establish a financially sustainable business model. The situation could not have come at a worse time. The industry needs to massively ramp up capacity to meet the demands for wind power backed by increasingly ambitious political targets.

How can innovation contribute to alleviating the challenges and ensure financial viability for companies and society, jobs for citizens, and strategic autonomy for Europe?

Join us for this session where thought leaders from industry and academia will discuss how innovation can help power a sustainable business model for the European wind industry.



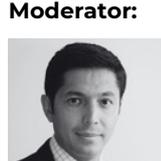
Jacob Edmonds
Head of Innovation
Ørsted



Jan Hylleberg
Deputy CEO
Green Power Denmark



Anders Nielsen
CTO
Vestas Wind Systems



Moderator:

Ivan Piñeda
Director of Innovation
WindEurope



Morten W. Jeppesen
Head of Department
DTU Wind and Energy Systems

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Track 1

Common Equipment in the Wind Industry

Session 4

14.40-15.20

Vestas and Siemens Gamesa Renewable has already made common guidelines for execution of lifting operations and design of installation equipment for offshore wind with the rest of the supply chain.

It has been proven that it is possible to make a joint design for tower transport equipment and put it into production. Now the partners are ready to start realizing the potential for common equipment and increased utilization that is a natural next step towards a more mature and efficient industry. Sea fastening that fits both OEM's components is up first.

Come and join us for a session about the new collaboration process between the OEM's and the entire supply chain. This is also an opportunity for you to present your view on what equipment has the greatest potential to be used across the supply chain.



Lars Nørregaard Olsen
Senior Specialist, Offshore, Global
Procurement
Vestas Wind Systems



Christian Munk Jensen
Project Manager
Energy Cluster Denmark



Jesper Møller
Chief Engineer Offshore Execution
Siemens Gamesa Renewable Energy

Moderator:



Glenda Napier
CEO
Energy Cluster Denmark

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Track 2

Wind Resource Estimation: Updates From Academia and Industry

Session 4
14.40-15.20

Again this year you will get to hear about the latest developments within wind resource estimation from the academic side as well as the industry. Topics we will cover include very high resolution forecasting models and using climate data for energy analysis.

- Modeling Energy Flow through Wind Turbine Rotor Areas: Leveraging Climate Data for Sustainable Energy Analysis
- Weather1st: A new idea for how to forecast weather and wind at very high resolution



Ebba Delwik
Senior Scientist
DTU Wind



Nicolai Nygaard
Senior Lead Specialist
Ørsted



Mark Zagar
Senior Specialist
Vestas

Moderator:



Lars Landberg
Vice President for Renewables R&D
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Important dates

Remember the upcoming events

DTU

6-8.2.2024 5th International Symposium of
Leading Edge Erosion of Wind Turbine
- Risø

Green Power Denmark

11.4.2024 Industriforums årsmøde

14-16.5.2024 EL & TEKNIK'24

23.5.2024 Topmøde 2024 & generalforsamling

Energy Cluster Danmark

5.12.2023 Soft funding i energisektore (webinar)

2.5.2024 Energy Cluster Denmark årsmøde
(Save the date) - Copenhagen

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EnVentus™ platform

V162-7.2MW™ V172-7.2MW™

Designed to deliver optimised energy production in Danish wind and climate conditions.

Both V172-7.2MW™ and V162-7.2MW™ improve Annual Energy Production by 7% to 12% in low to medium wind as well as Danish climate conditions through enhancements in powertrain and power conversion systems.

Designed and manufactured in Denmark, the turbine development and production is based on excellent capabilities ensuring a high quality and sustainable value chain.

Read more at
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