2-3 September 2025, London

London Croydon Aerodrome Hotel, London, Croydon, UK

6th International Conference on Offshore Renewable Energy

CORE 2025

Conference Program

05-08-2025

About the Conference

CORE 2025 international conference on offshore renewable energy, will come to London for its fifth year, and will offer delegates an unparalleled opportunity to network with researchers, technology developers, industrial players, and supply chain partners. It will address the latest developments and strategies in offshore renewable energy, potential investors from public funds and government support funding, wave and tidal energy resources.

One of the aims of this conference is to create a framework for knowledge sharing and to develop a roadmap for research activities in the context of offshore renewable energy that are a relatively new and challenging field of interest. In particular, the conference will enable research activities leading towards innovative, cost efficient and environmentally benign offshore renewable energy conversion platforms for wind and wave energy resources.

CONFERENCE THEMES

- Wave and tidal energy resource
- Offshore wind power
- Technological developments
- Mitigating risk on the
- road to commercialization
- Monitoring, operation and maintenance of wind farms
- Technology management
- assessment of marine renewable energy
- Developing a commercial scale tidal energy array
- Latest development of
- large-scale offshore wind turbine
- Device development and testing — tidal
- Developing a viable ocean energy supply chain
- Rules, regulations and recent policy
- developments
- Innovation and recent projects in the offshore renewable energy sector
- Offshore Solar Energy

Organising Committee

Professor (redt.) Purnendu Das, *ASRANet Ltd, UK*

Mr. George Alex Vanaraja,

MA Marine Consultants LTD

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Dr. Debabrata Karmakar, NIT Suratkal, India

Dr Deepak Kumar, Indian Institute of Technology Madras, India

Dr. Ramesh Kumar, Anakata Wind Power, UK

Mr. Krzysztof Mackojc, Fathom Group, UK

Dr. Constantine Michaildes, Int Helenic University, Greece

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Mr Rushikesh Sapdhare, OW Ocean winds, UK

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Dr. Yulin Si, Zhejan University, China

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Mr Chris Thornton, Lloyds Register, UK

Prof Venki Venugopal , University of Edinburgh, UK

Dr Arne Vogler, ORE Catapult, UK

Prof Kai Wang, Sun Yat-sen University, China

Dr Yang Yang, Ningbo University, China

Dr. Yuquan Zhang, Hohai University, China

CONFERENCE PROGRAMME DAY ONE:
2nd September 2025

08:15 Registration

08:50-09:00 Welcome: Dr. R.V.Ahilan

Chief Energy Transition officer, ABL Ltd, UK and Royal Academy of Engineering Visit ing Professor, Power & Energy Engineering, King's College London

Chairs: Dr. Madjid Karimirad, Prof. Yang Yang.

09:00-09:25 Keynote Lecture "*Experimental Assessment and Numerical Analysis of Floating Solar Dy namics "*

Dr. Madjid Karimirad , Queens University Belfast, UK

09:25-09:50 Keynote Lecture *"Challenges of Scour and Scour Protection for Offshore Engineering"*

Prof. Tiago Fazeres Ferradosa, University of Porto, Portugal.

09:50-10:15 Keynote Lecture "*Micrositing and Cable Routing for Offshore Wind Farms"*

Prof. Mingwei Ge, North China Electric Power University, China.

10:15-10:45 Tea Break

10:45-11:10 Keynote Lecture *"Health monitoring of Offshore Structure"*

Prof. Deepak Kumar , IIT Madras, India

11:10-11:30 Invited Paper *"Comparison of accuracy and performance of METHOD frequency domain fully coupled floating wind solver vs OpenFAST time domain solution"*

Mr. Kristopher Mackojc & Prof. Nigel Barltrop Fathom Group, UK

11:30-11:55 Keynote Lecture *"Fully coupled analysis of floating offshore wind energy systems "*

Prof. Yang Yang, Ningbo University, China

11:55-12:15 Invited Paper *"Simulation of an Oscillating Wave Surge Converter using Dual SPHysics solver"*

Ms. Bahareh Mehrmousavi, John Samuel, , Bonaventura Tagliafierro, Salvatore Capasso, Dr. Giacomo Viccione, University of Salerno, Italy

Dr. Madjid Karimirad, Queens University Belfast, UK

12:15-12:40 Keynote Lecture *"Control Co-design of a Wave Energy Converter with Active Mechanical Motion Rectifier"*

Prof. Lei Zuo , University of Michigan – Ann Arbor, USA

12:40-13:05 Keynote Lecture *"Modelling wake effects of turbines and farms"*

Prof. Tim Stallard , University of Manchester, UK

13:05-14:00 Lunch

Chairs: Prof. Silvio Simani, Dr Anastasios Georgoulas

14:00-14:25 Keynote Lecture *"A computational framework for crack simulations of a wind turbine blade subjected to fluid-structure interaction effects"*

Dr. Shunhua Chen, Sun Yat-Sen University, China

14:25-14:50 Keynote Lecture *"Analysis on Heave Motion of Floating Tidal Stream Turbine Using Actu ator Line Method "*

Dr. Yuquan Zhang, Hohai University, China

14:50– 15:15 Keynote Lecture *"Transitioning the Marine and Offshore Sector to Renewables: The Role of Advanced Computational Methods and Multiphase Thermofluids "*

Dr. Anastasios Georgoulas, Liverpool John Moores University, UK

15:15– 15:45 Tea Break

15:45– 16:10 Keynote Lecture *"Dynamic analysis and power performance of the Septon semi submersible floating wind turbine integrated with WECs"*

Dr. Debabrata Karmakar, National Institute of Technology, Karnataka, India.

16:10– 16:35 Keynote Lecture *"Innovations in Shared Mooring Systems for Offshore Renewable Energy "*

Dr. Zhiya Jiang, University of Agder, Norway

16:35– 17:00 Keynote Lecture *"Sustainable Control of Wind Turbines: Robust Data-Driven and Model Based Strategies"*

Prof. Silvio Simani, Ferrara University, Italy

17:00– 17:20 Invited Paper " *Structural Health Monitoring of Offshore Wind Structures*"

Mr. Rushikesh Sapdare, Ocean Winds, UK

17:20– 17:45 Keynote Lecture "*Floating Offshore Wind update and technology***"**

Dr. Alex Argyros, BP, UK

18:00– 19:30 Networking Session, London Croydon Aerodrome Hotel

CONFERENCE PROGRAMME DAY TWO:

3rd September 2025

Chairs: Prof. Lei Zuo , Prof. Shiqiang Yan

08:20-:08:40 Invited Paper "*From Design to operations: Enhancing Offshore Wind through Integrated Digital Workflows and Collaborative Intelligence***"**

Mr. Kristopeher Mackojc, Fathom , UK

Mr. W Werochowski, Industria, Poland

Mr. Pawel Gajewski, MEWO, Poland

Mr. Mariusz Leszcynski, GuD, Poland

08:40-:09:00 Invited Paper *"Analysis and testing of FORCYS concrete Floating Offshore Wind Turbine"*

Dr. Constantine Michaildes, Int Helenic University, Greece

09:00-09:25 Keynote Lecture *" The Life extension of Offshore Wind Farms"*

Mr. Ashutosh Thanvi, DNV UK Limited, UK

09:25-09:50 Keynote Lecture *"Unlocking Wind Power's Role in Maritime Emissions Reduction"*

Dr. Yaqing Shu, Faculty of Maritime and Transportation, Ningbo University, Ningbo, China

09:50-10:15 Keynote Lecture *"Health-Aware Control of Renewable Energy Systems"*

Prof Vicenç Puig, Universitat Politècnica de Catalunya Barcelona, Spain

10:15-10:45 Tea Break

10:45-11:10 Keynote Lecture *"The influence of power-take-off control on the dynamic response and power output of floating wind turbine and wave energy converter hybrid systems. "*

Dr. Yulin Si, Zhejiang University, China

11:10-11:30 Invited Paper *"Hydrodynamic Characteristics of Horizontal-Axis Tidal Turbine Arrays under Combined Focusing Wave-Current Conditions "*

Dr. Minwei Yin, Prof. Renqing Zhu, Dr. Renwei Ji, Jiangsu University of Science and Technology

11:30-11:50 Invited Paper *"Condition-state Inspection of Decommissioned Wind Turbine Blades for Re purposing"*

Ruane Kieran[1,2], Dr. Vesna Jaksic[1], Paul Leahy[3] and Prof. Vikram Pakrashi[2]

1. Munster Technological University, Cork, Ireland

2. University College Dublin, Ireland

3. University College Cork, Ireland

11:50-12:10 Invited Paper *"Optimal tower sizing and performance of TMD-equipped IEA 15MW mono pile offshore wind turbine"*

Hisham Tariq, Prof. Agathoklis Giaralis, George Mylonakis , Khalifa University, UAE,

Jean-Christophe Gilloteaux, INNOSEA, ABL Group, France

Dr. Tim Camp, OWC, ABL Group, UK

12:10-12:35 Keynote Lecture *"Hybrid PE-ML method for nonlinear wave structure interactions"*

Prof. Shiqiang Yan & Prof. Qingwei Ma ,City St George's, University of London, UK

12:35-12:55 Invited Paper *"Hydrodynamic Analysis of an FPV system"*

Prof. Elif Oguz, Middle East Technical University, Turkey.

13:00– 14:00 Lunch

Chairs: Prof. Horst Schulte, Prof. Yuquiang Zhang

14:00– 14: 25 Keynote Lecture *" Modular power supply deign for offshore energy storage system."*

Prof. Amin Hajizadeh, Aalborg University, Denmark

14:25– 14:50 Keynote Lecture *"Fast Power Control of Offshore Wind Turbines for Auxiliary Services in Wind Farms"*

Prof. Horst Schulte, HTW Berlin - University of Applied Sciences, Germany

14:50– 15:15 Keynote Lecture *"Comparision of promising control design approaches for energy harvest ing in Wave Energy Converters"*

Mr. Paul Christian Tesso Woafo, Prof. Alessandro Casavola and Mr. Francesco Tedesco, University of Calabria, Italy

15:15– 15:45 Tea Break

15:45– 16:10 Keynote Lecture "*Large Scale Offshore Wind – Challenges to take the Next Leap Forward"*

Dr. Alberto Morandi, GustoMSC, USA

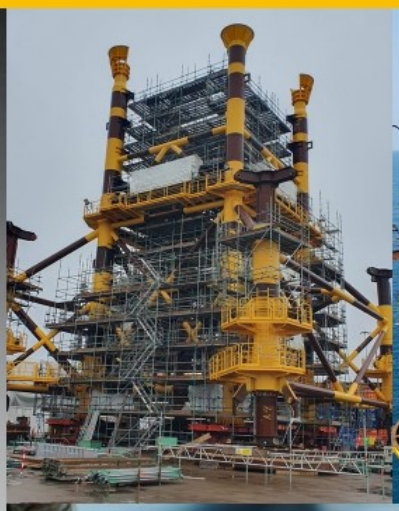
16:10– 16:30 Invited Lecture *" 2024 revision of the recommended practice DNV-RP-C203 Fatigue Design of Offshore Steel Structures: Focus on bottom fixed wind foundations "*

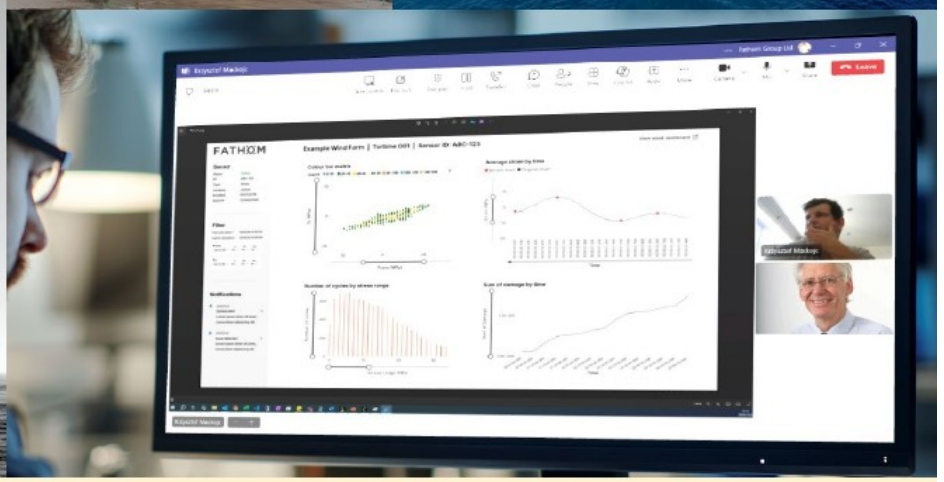
Dr. Ashish Aeran, DNV UK Limited, London, UK

Dr. Arne Fjeldstad, DNV AS, Oslo, Norway

16:30 Closure

FATHOM





At **Fathom Group**, we bring clarity and confidence to complex offshore projects. Since 2018, we've helped clients successfully navigate challenges across the energy sector - from life extension of North Sea infrastructure, to floating wind concept development, and foundation installation systems.

Whether delivering a complete solution or supporting a specific project phase, our team adapts to what's needed - combining deep technical expertise, creative thinking, and a practical, results-driven approach.

Our engineering software - including a **physics-based Digital Twin for offshore wind farms** - is designed to enhance decision-making, streamline analysis, and drive long-term value from offshore assets.

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- Can connect to solar

AceOn Li-on ESS PES2000/3600
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30kW 80.6kWh

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- Scalable – 24/60kW 48-120kWh)
- Integrated EMS.
- LFP battery technology.
- 3 phase AC coupled system.
- On/Off grid capable.
- Modular Assembly

Stack BESS for C&I
24-60kW 48-120kWh Modular Energy Storage System (AC)

C&I Battery Storage

- Integrated battery and inverter
- Outdoor rated IP55 cabinet.
- Scalable – up to 5 cabinets (500kW 1075kWh).
- Plug & Play system.
- LFP battery technology.
- 3 phase AC coupled system.
- On/Off grid capable.
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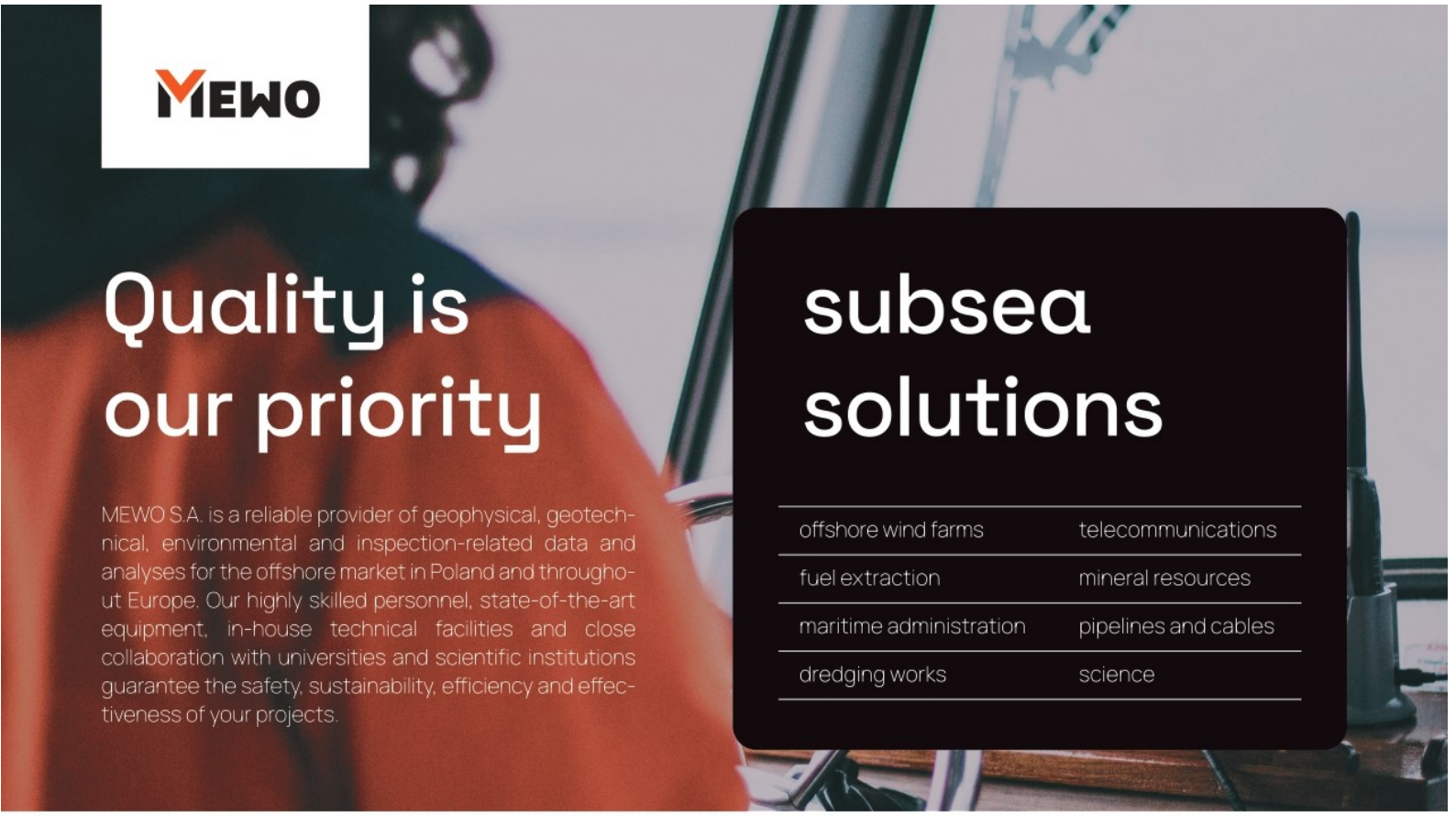

Quality is our priority

MEWO S.A. is a reliable provider of geophysical, geotechnical, environmental and inspection-related data and analyses for the offshore market in Poland and throughout Europe. Our highly skilled personnel, state-of-the-art equipment, in-house technical facilities and close collaboration with universities and scientific institutions guarantee the safety, sustainability, efficiency and effectiveness of your projects.

subsea solutions

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fuel extraction	mineral resources
maritime administration	pipelines and cables
dredging works	science

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- Hydrometeorological surveys
- Hydrological surveys

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- Construction works support
- Cable and pipeline monitoring
- Cable tracking
- Emergency tasks

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- Preparation of reports and resultant maps

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- Geotechnical surveys in shallow and deep waters
- Sediment sampling
- Static CPT sounding
- Geotechnical drilling
- Preparation of comprehensive administrative documentation

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Monopile foundation of a met mast.

On safe ground

A safe foundation for offshore wind turbines is possible at almost any location. However, this requires a detailed knowledge of the soil and experience also in difficult conditions. As geotechnical experts we offer full services in all questions related to geotechnical engineering and structural mechanics for the foundations of offshore wind turbines.

- site investigation and laboratory testing
- foundation expertise and consulting
- feasibility and desk top studies
- geotechnical and structural design of foundations
- soil investigation reports
- design of foundation systems
- structural health monitoring (SHM) for foundations
- drivability studies
- dynamic pile tests
- continuous monitoring of the driving process
- determination of pile driving fatigue
- quality assurance and supervision

Cyclically analyzed

The cyclic loading represents a very important issue of offshore foundations. The characteristic wave load accompanied by the loads of the power production of the wind turbine put high demands on the design. In line with our project involvement we take part in research programs and developed special analysis methods for foundations, which were included in current codes and standards. This ensures an economical and safe foundation design for our clients.

- analysis of deep and shallow as well as special foundations
- in house developed analysis procedures for cyclic loading
- cyclical laboratory testing
- quality assurance concepts