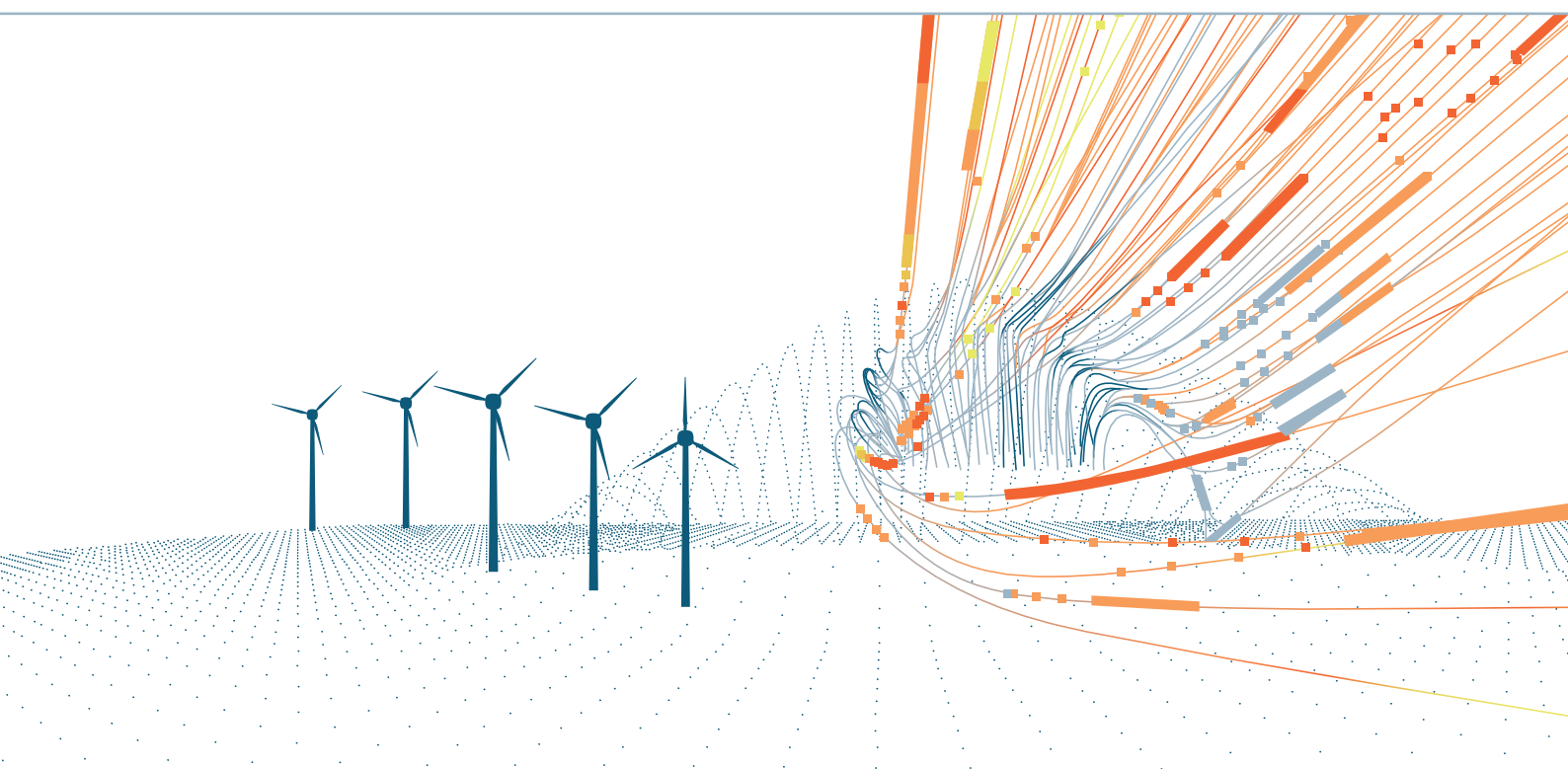


# WIND

IS WIND POWER

# KNOWLEDGE



## CONSULTING SERVICES

*windsim*

Software | Consulting | Forecasting



\*Sample references

## FROM WINDSIM MANAGEMENT



**ARNE REIDAR GRAVD AHL**  
 CTO & Founder



**JOHN OLAF RØMME**  
 CEO

### SUSTAINABILITY – The obvious choice

The idea of sustainability stems from the concept of sustainable development set forth at the World's first Earth Summit in Rio in 1992. Today sustainability is a part of everyone's vocabulary. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. We are proud of working towards a sustainable energy supply - The obvious choice for the future.

## THE VALUE OF WINDSIM FOR WIND PROJECTS

WindSim delivers accurate and proven simulation software and consulting services that help the wind energy industry worldwide design and operate more profitable wind farms.

- Maximize production and wind farm performance while minimizing risk, downtime and maintenance cost.
- Using WindSim from early concept evaluation, through engineering to operation, secures overall capital and operating cost effectiveness.
- Successful design and operation of wind farms rely on detailed understanding of the wind field. WindSim provides solutions through accurate modeling of true dynamics.
- Advanced simulations maximizing energy production for every type of terrain, from the simplest to the roughest locations.



WE WANT TO LEAVE THE WORLD  
**BETTER THAN WE  
FOUND IT**

## TESTIMONIALS

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*"We are delighted to cooperate with WindSim for wind resource assessment, building on successful collaboration between our companies in several projects in globally. Throughout the wind farm planning phase, we have been impressed both with the high technical standard and the scientific approach demonstrated by WindSim."*

**Peter Schelander**

Project Manager, Senior Renewable Energy Consultant, Poyry

### Multiconsult

*"WindSim collaborated with us to offer complete due diligence on behalf of a German investment bank on Egersund Wind Farm in 2014. WindSim conducted the wind resource assessment with innovation and the drive for excellence, and lead to the project success and satisfaction."*

**Jan Olav Øderud**

Head of Renewable Energy, Multiconsult



*"They have promptly resolved all the crucial issues that we have encountered, and their response has been both professional and insightful. Their willingness to assist in developing our projects in the complex terrain of Greece is really appreciated."*

**Vasiliki Katsirou**

EOLFI Wind Hellas SA



*"Cutting edge CFD technology in the hands of experienced wind analysts. This is why we have chosen Windsim"*

**Andrea Gaspari**

Head of Engineering

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# SERVICE LIST

## FEASIBILITY STUDY

WindSim helps to identify a suitable site and evaluate its opportunity and challenges. We produce a ranked list with essential parameters for decision making through screening large regions for attractive sites. Our field engineers could work with your team or provide guidelines to verify the screening and risks. We collect everything together, conduct a feasibility study report and present the monitoring campaign design.

## VIRTUAL MET MAST

Virtual met mast time series and statistics are designed to help optimize the placement of a real met, long term correlation, or when met mast is unattainable. Together with UK Met Office, we combine meso-scale and micro-scale models, providing one of the best options available on the market.

## MET MAST

With experienced engineers' design for a wind monitoring campaign, we aim to help you to achieve a great balance between the cost and the uncertainty in the energy production estimation process. Together with one of the largest met mast providers in the world, we cover a wide range of tower heights and instruments with high quality and competitive cost, ensuring that all the procedures follow IEC standards and are well documented.

## BANKABLE ASSESSMENT

Our assessment provides you the proof for mitigating risk and building confidence amongst prospective partners and financial providers. WindSim has built a strong reputation for integrity, accuracy and cost-and-time efficiency among

the wind energy community. Utilizing thorough inspections, bullet proof procedures and advanced techniques for temporal and spatial expansion, we generate reliable wind and energy production estimations. WindSim consultants are highly flexible to provide service tailored to your specific needs, helping you with the financing of new projects or acquisition of existing wind farms.

## SITE SUITABILITY

With the help of advanced CFD modelling, a thorough analysis on site conditions helps you choose the most appropriate turbine and achieve the lowest cost of energy. This enables you to have solid evidence while negotiating with turbine manufactures on O&M terms. We work together with you to determine the most appropriate turbine technology and help you understand the environmental conditions of the site.

## DUE DILIGENCE

WindSim works with our partners to offer independent due diligence reports. These include; review and analyses of the wind resource, layout and AEP, site compliance, grid and construction contracts review, and review of permit environmental study and infrastructure, financial analysis and project timeline schedules.

## PERFORMANCE EVALUATION

As an independent assessment provider, we provide you with potential performance capability estimations for commissioning, budgeting or refinancing a wind energy project. These are based upon actual operational data and advanced analysis techniques. We quantify the losses and bring down the uncertainty, providing crucial predicted energy production; P50 and P90 for your refinancing or budgeting processes.



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WindSim pioneered the use of CFD (Computational Fluid Dynamics) technology to optimize wind turbine placement, and offers CFD software, training, independent technical and engineering services to the wind industry.

Headquartered in Norway, and with a global presence in over 20 countries, WindSim has for a long time been the thought leader and expert on CFD within the wind industry.

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## BANKABILITY

As an independent renewable energy consultancy and services provider with more than 12 years front line project experience, WindSim provides expertise for over 120 projects, in 30 countries, at every stage of the project lifecycle: from feasibility, development, to operations and re-powering, and through all elements of due diligence.

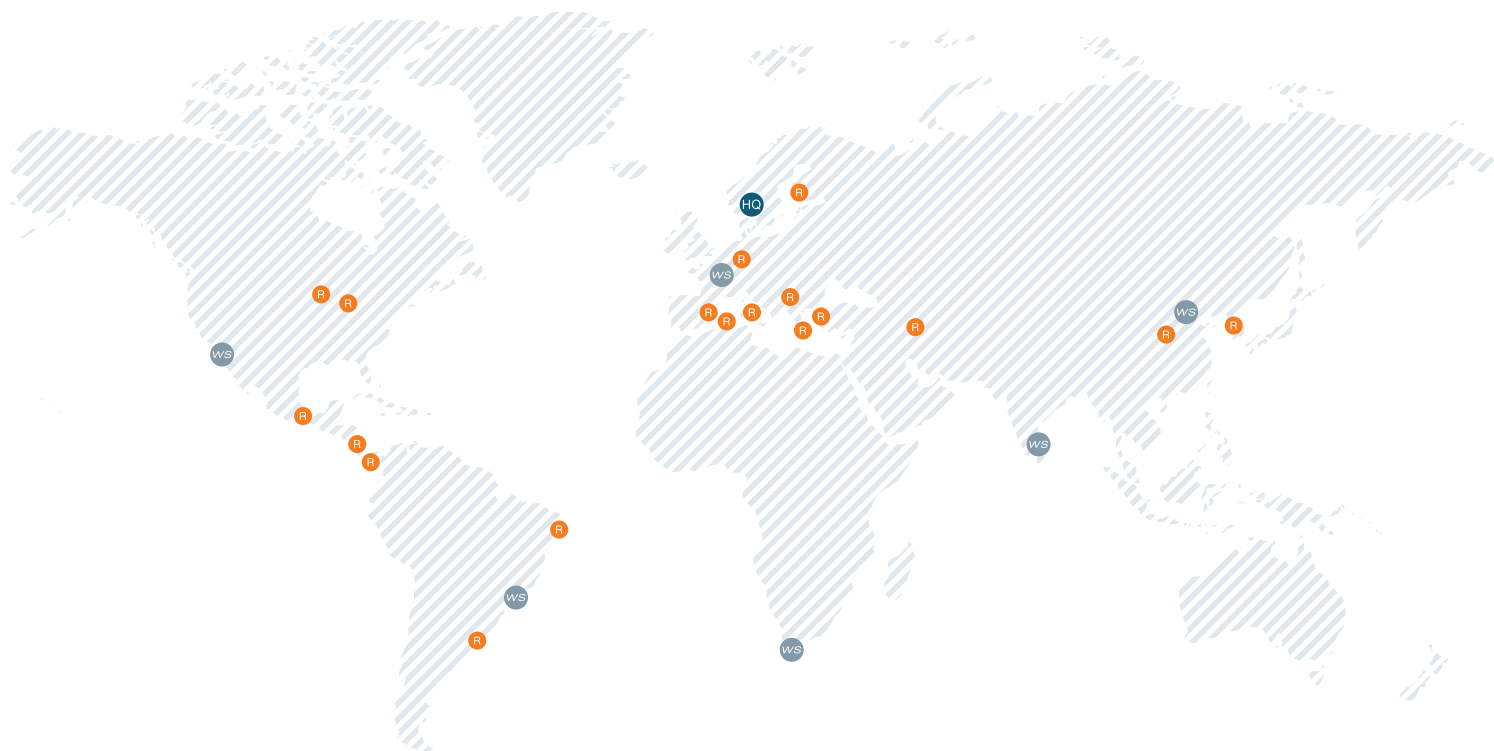
We are committed to enhancing standards through continuous quality improvement practices and have a dedication to the provision of technical excellence.

WindSim software as tools has been used by over 300 companies worldwide, for more than 20% of the world installed capacity, trusted by developers, utility, manufactures, investors and academic institutes.

## CFD TECHNOLOGY

Advanced CFD wind flow modeling offers significant benefits on accuracy and confidence. This technique is widely applied to reduce the error and uncertainty in spatial prediction of wind flow across the site.





Argentina | Brazil | Canada | China | Costa Rica | Finland | France | Germany | Greece | India | Iran | Italy | Korea | Mexico | Norway | Serbia | South Africa | Spain | Turkey | USA

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