

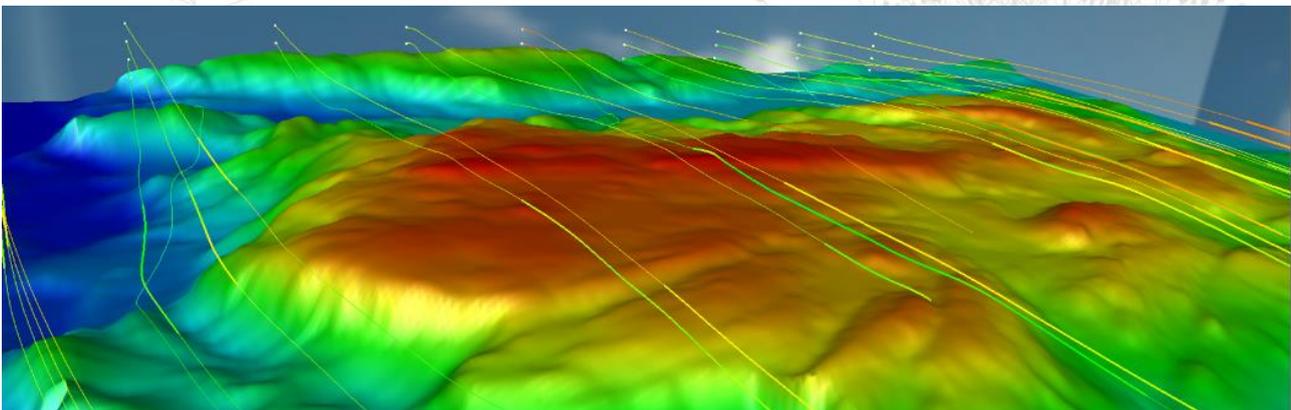
Have your wind and site analyses performed by CFD experts

Meventus' wind and site analysis services are based on nearly 10 years of CFD modelling experience, ensuring the highest quality assessment for all types of terrain and climate.

There are many wind and site analysis providers in the market today, so why pick Meventus? While we feel the answer to that is quite simple, Quality, it is best explained by describing the unique advantages of how we became who we are today, and how that will benefit you.

Our analysis team started as the wind and site department of a large Norwegian energy utility with a sizable portfolio of wind projects under development. Together, our focus was simple – provide the most value out of our wind projects as possible.

The challenges were formidable. Our projects all had the following characteristics: large project size, extremely complex terrain, and measurement masts rarely higher than 50m. Extrapolating wind measurements over large distances was a necessity; vertically as turbine hub heights continued to increase, and horizontally because of the large park sizes. The combination of these factors put an extremely high reliance on quality flow modelling. As traditional linear models have known limitations in complex terrain, we committed early to using CFD modelling – well before CFD became widely accepted in the industry, and well before most, if not all of our competitors.



CFD modelling in extremely complex terrain

As a measurement provider, one of the great advantages we have is access to years of measurement data from various locations and climate types. This data allows us to assess our flow models, enabling continuous improvement based on the latest industry trends and experience. We supplemented our mast measurements with remote sensing, executing research projects (Lidar in Complex Terrain, Lidar in Complex Flow) to better understand

the interaction between measurements and modelling and contributed valuable input to IEA Task 32 (Wind Lidar Systems for Wind Energy Deployment).



Holistic measurement designs and wind analyst with hands on experience

While an accurate model is crucial to properly simulate the flow, the value of a project is derived from the quality of the layout. After we determined the available layout optimization software was inadequate in complex terrain, we developed our own (ParkDesign). This software, which is now sold as a module in Windsim, guarantees a global optimum layout based on a wind resource file, and has helped many of our customers increase the value of our projects without increasing loading.

As our reach spread throughout the Nordics and central Europe, we expanded our team to include experts in icing and cold climate (previously participating in IEA Task 19 (Wind Energy in Cold Climates)), and further improved our modelling techniques in more flat and heavily forested terrain.

What is the result of all of this? Meventus has fine-tuned a breadth of wind and site services that help our clients maximize the value of their projects. We typically outperform our competitors in flow model accuracy, including some of the industry's most well-known consultants. Our turbine layouts provide greater production with less loading.

So here is the real question you should ask yourself. Why hire a consultant to give you an assessment when you can have one that can improve your project.

Please contact Meventus for more detailed information, client references and how you could benefit from our expertise in wind power.



Norway (Headquarter)
Meventus AS · Kongsgårds Allé 59
4632 Kristiansand
Tel.: +47 91-184324
kyle@meventus.com

Sweden
Meventus AB · Döbelnsgatan 24
11352 Stockholm
Tel.: +46 70-4223111
thilo@meventus.com

www.meventus.com