

visplöre

User Success Story:

How an operator of many distributed energy wind turbines monitored and optimized his plant operation.



Problem: Ensuring optimal long-term operation of many distributed wind turbines

An operator was challenged to ensure the reliable and efficient operation of over 120, mainly remote wind turbines of different types. As the operator, he had access to comprehensive operational and weather data.

In addition, he regularly received an expected energy production forecast for each of his wind turbines from an external contractor. Due to the large number of wind turbines and operational data, it was difficult to keep track of the operation with his existing SCADA.

Need: Monitoring and optimizing the operation of over 120 wind turbines

The operator needed an in-house solution to monitor the operation of his wind turbines beyond the SCADA and short-term alarming system. To ensure a reliable and efficient operation, he was required to analyze changes like degradations over time and to compare the wind turbines' operations to each other.

For example, the operator had to monitor how and when the power of each turbine deviated from its expected performance. This was necessary for optimizing operational performance and planning for interruptions for maintenance purposes regularly.

Highlights



Advanced operation monitoring of 120 turbines



Optimized operation and maintenance through analytic insights



Used Visplöre as powerful addition to SCADA

Benefits



Operation engineers were enabled to work with large datasets themselves



Reduced external contractor costs by approximately 50%



Increased digital competences in-house and faster innovation cycles



Solution: Rapid in-house identification of deviations in wind turbine operation

Visplore visualized trends and deviations for all 120 wind turbines in a condensed, normalized heatmap. This facilitated comparisons between wind turbines of different capacities. The heatmap allowed easy interaction by zooming into problematic areas and selecting individual wind turbines for details.

Further functionalities enabled the operator to analyze root causes quickly. For example, he could do powerful correlation analyses and comparisons of periods with very few clicks. Individual reports and analyses were saved and could regularly be used to check the current data from the database.

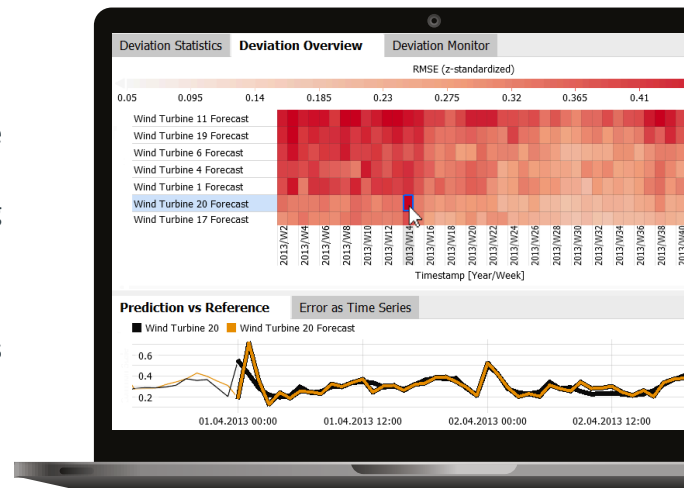
“Thanks to its ease of use and high performance, Visplore has established itself as a valuable tool for monitoring and analyzing the performance data from our wind park.”

Head of Operation Management

Result: Increased reliability and in-depth insights to remote wind turbine operation

Visplore’s ready-to-use cockpits lowered the barrier to perform the majority of analysis in-house by their own operators. This facilitated efficient monitoring, leading to important insights for preventing problems in time and for optimizing the operation of the wind turbines.

Furthermore, the digital competencies of the company’s engineers could be increased, and the costs of an external data-related contractor were reduced by about 50%.



visplore – Fast visual analytics for energy experts

- ✓ Monitoring Plant Operation
- ✓ Start-up and Ramp-up Optimization
- ✓ Building Physically Plausible Digital Twins
- ✓ Modelling for Condition-Based Monitoring
- ✓ Troubleshooting of Complex Energy Systems

