

ARE YOU LOOKING TO IMPROVE YOUR ASSETS' PERFORMANCE OR RELIABILITY?

Natural Power can help you to get a greater insight into the health of your assets.



Our performance engineering services deliver a range of health checks & cost of energy optimization for operational wind farms and portfolios.

Based on Natural Power's deep experience and exposure to the realities of wind farm operations, our flexible and integrated suite of performance engineering services are designed to fit with your needs:

- Turbine and component inspections and integrity review services
- Turbine performance benchmarking, analysis and improvement
- Turbine reliability analysis and optimization advice
- Monitoring of wind speed and flow conditions using cutting-edge turbine mounted lidar technology
- Engineering solutions, turbine set-up optimization

WE CAN PROVIDE:

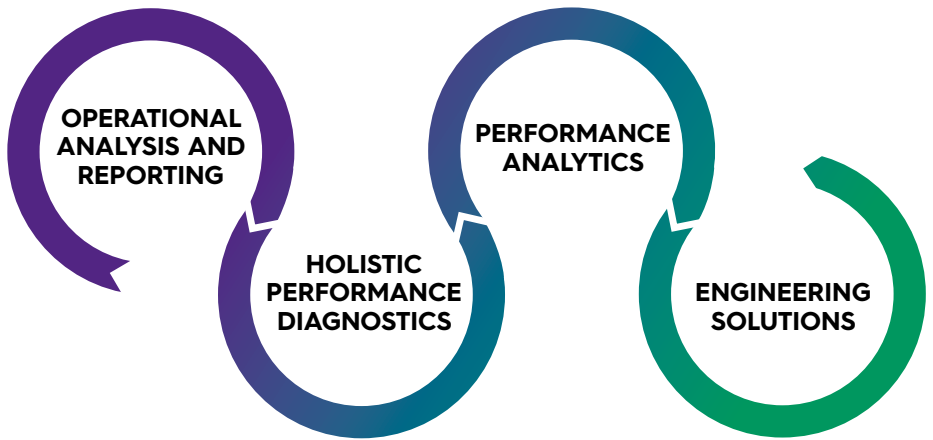
- On-going project evaluation and operational management
- End Of Warranty and routine inspection
- Power curve and yaw misalignment analysis
- Periodic performance monitoring
- Root cause analysis and failure investigation
- Due diligence

HELPING YOU TO ACHIEVE:

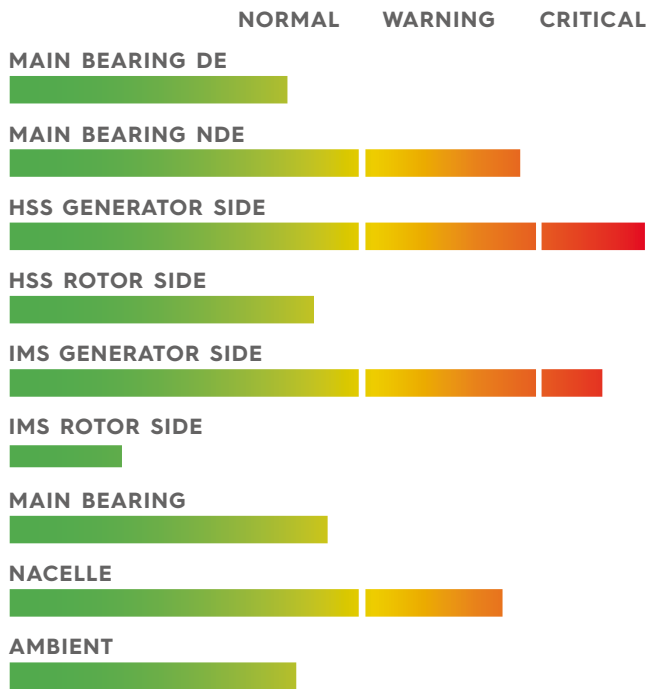
- Increased annual energy yield
- Advanced awareness of potential issues affecting asset performance
- Optimal solutions to maximize performance and reliability, reducing OPEX and minimize unplanned asset downtime
- Baseline and tracking of wind farm performance

PERFORMANCE ENGINEERING & ANALYTICS

Our experience managing over 5.5GW of wind assets has allowed us to develop meaningful KPIs which can alert clients, site managers and maintenance teams to the first signs of asset under-performance. By tracking numerous signals across turbines, wind farms, or portfolios we can give you the confidence required to make maintenance and inspections decisions. Whether you are looking to optimize performance for the long run or get the most out of the turbines short-term, our specialized tools give you the information to ensure you make the right decisions.



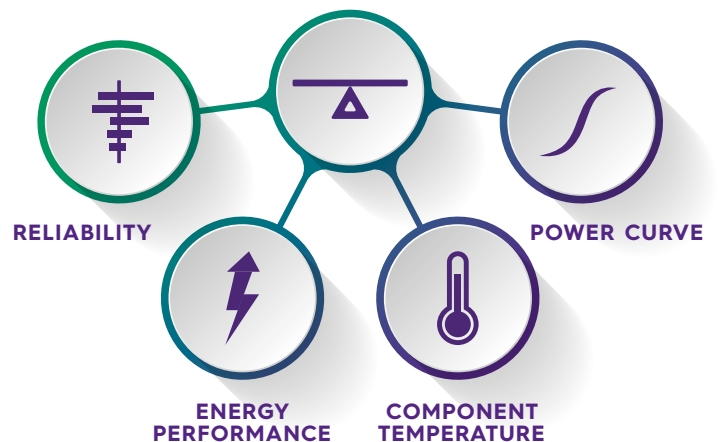
COMPONENT TEMPERATURE COMPARISON SAMPLE



WHEN TO USE PERFORMANCE BENCHMARKING:

- Alongside monthly operational reporting for the most comprehensive understanding of your assets' performance
- Prior to end-of-warranty inspections to ensure at-risk turbines are thoroughly evaluated
- During the development of targeted maintenance schemes to ensure your most valuable assets are your healthiest
- To pro-actively monitor aging assets, preventing component failures before they happen

INDUSTRY LEVEL BENCHMARKING





mackenziet@naturalpower.com
MACKENZIE TOCCO
 PROJECT ENGINEER