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WIND ENERGY BENCHMARKING SERVICES

YOUR INDUSTRY NEEDS YOU!

Anonymised operator benchmarking for wind farm production, operations and reliability data

WEBS are seeking active members to our industry scale operational wind asset benchmarking service and we would like to invite you to become a subscriber.

The benchmarking system compares the operational performance of leading wind farm operators, helping your company identify improvement opportunities for cost optimisation and performance.

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Benchmarking is widely recognised as a critical tool in developing an effective improvement strategy within mature industries and by benchmarking your wind farm with WEBS, you will get an enhanced asset-level performance analysis; comparative rankings to show your assets position against your industry peers and leading performers.

This information can be used as a boardroom dashboard, operational portfolio or analytical reporting tool to help drive performance and efficiency.

Benefits of
Benchmarking

By subscribing to our independent, anonymised, benchmarking programme, your company will be able to work smarter by:

- Developing targeted operational improvement plans and actions

- Optimising costs by recognising more efficient practices

- Increasing effectiveness through lessons learned

- Enhancing understanding of asset management practices in wind energy

Benchmarking onshore wind farms

Our extensive database contains performance data from leading international onshore wind farms. This is the first system of its kind and will provide unparalleled insight into the operational performance of your wind farm assets.
Our multi-disciplinary benchmarking team, provide a robust and high quality benchmarking service to our clients. Our team have significant experience of developing operations and maintenance key performance metrics and measurement standards in addition to wind farm operations and servicing.

Confidential and safe

We recognise the commercial sensitivity and security requirements of operations and maintenance data and have developed several layers of data protection and security measures. The cloud based service meets industry standard security protocols and data protection requirements, practices and procedures. Benchmarks are all subject to business rules which ensure no benchmark will be produced if there is a possibility (mathematical) of breaching anonymity.

Who is WEBS?

WEBS is an independent performance benchmarking company. We apply a suite of web-based tools to assist wind farms owners and operators around the world to improve performance and reliability whilst driving down the cost of asset operations and maintenance.
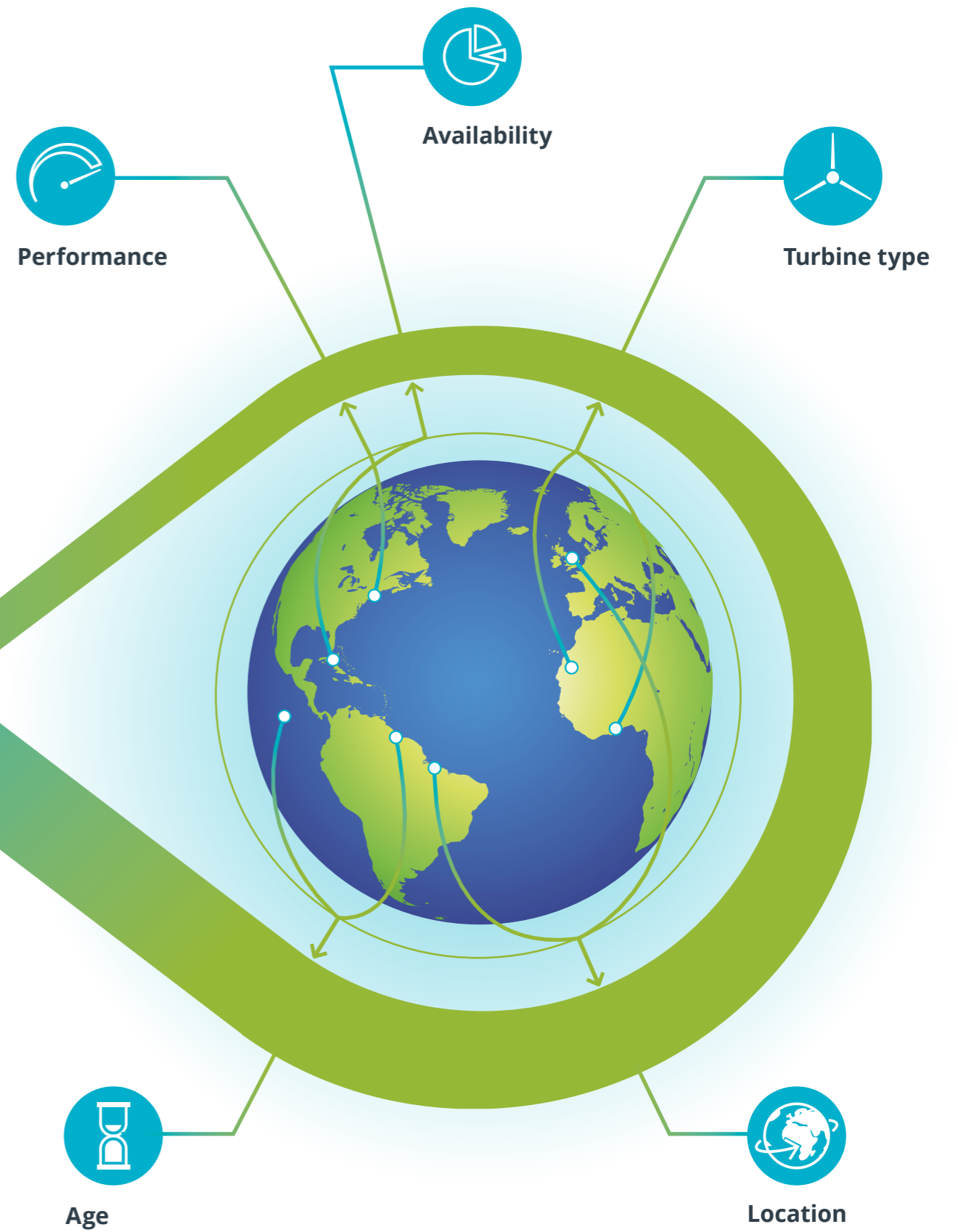
WEBS provides a secure, anonymised, industry level, independent web-based benchmarking service for wind farms across several key performance indicators. The company helps to demonstrate performance credentials.

> **Join the growing number of smart wind farm operators by subscribing to WEBS**

WEBS are compliant with the **American Productivity & Quality Center (APQC) Benchmarking Code of Conduct.** The APQC is the world's foremost authority in benchmarking best practices, recognised across 48 countries.

APQC®

Benchmarking scope

The benchmarking is focused on the operational performance and reliability of wind farm assets. We can benchmark more than 120 performance, availability, reliability and maintenance metrics across a range of dimensions, such as regional geography, turbine type and age. Thereby, providing a detailed analysis of your current performance against your peers to enable identification of areas for cost optimisation and increased productivity. Benchmarks are updated monthly, providing the most comprehensive and current cross sector view of wind farm operations KPIs on the planet.

Availability

Performance

Turbine type

WEBS online interface

Age

Location

Our **approach**

Key activities include:

1 **Preparation and planning**

A kick off meeting is held with all new clients, during which the purpose, scope, and methodology will be reviewed. Metrics are discussed with participants to ensure benchmarking results are refined to meet the client's needs. Full system and process training is provided to all companies before data collection begins.

To ensure the integrity of the service and maintain data quality levels, a data validation and process verification is undertaken with new clients. The processes used to determine the input metrics for the wind farm from the client's source systems are reviewed with the client, any process or system related recommendations are provided to new clients.

2 **Data collection and validation**

Data can be input to WEBS manually via the services online secure upload facility. Alternatively, for larger portfolio owners, the process of uploading data can be automated by using the WEBS Application Programming Interface (API). All data input by the user will be checked and any nonconforming data will be rejected.

3 **Benchmark and reporting**

WEBS run a monthly refresh of all the benchmarks for all clients. Graphical visualisations of key performance, availability, reliability and maintenance metrics are available to users through the service.

4 **Analysis**

- Identify leading practices
- Interrogate and understand performance gaps
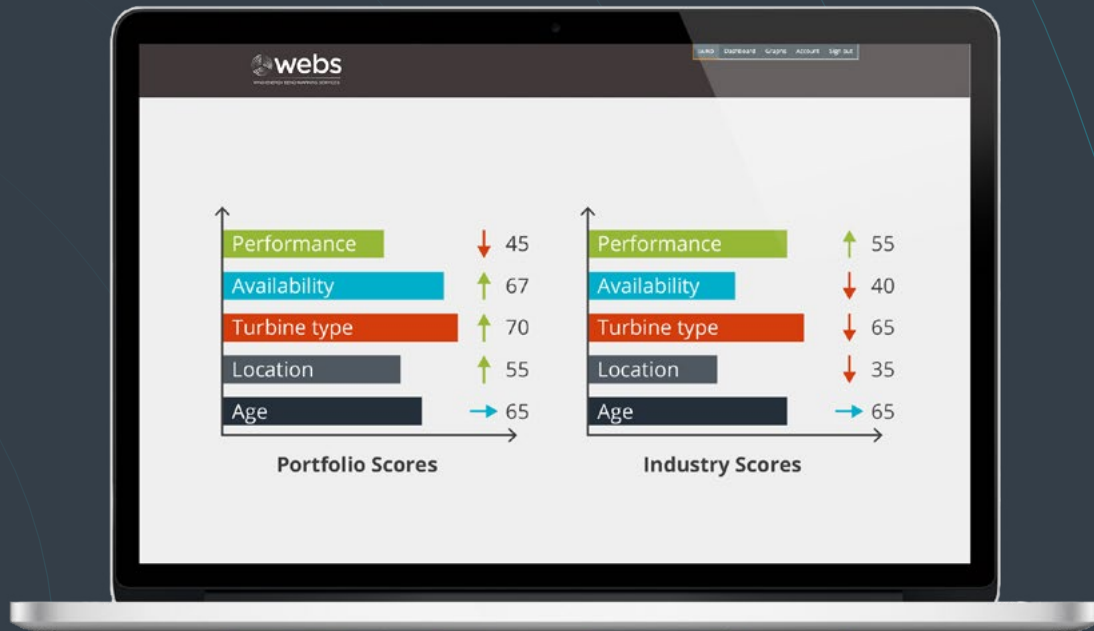- Develop a performance improvement action plan

Key activities

Analysis **4**

Preparation and planning **1**

3 **Benchmark and reporting**

2 **Data collection and validation**

Data standards

The metrics and the derivation calculations are defined in our metric handbook. The metric handbook provides detailed definitions of all the metrics gathered by WEBS and describes best practice associated with the production of these metrics from source systems such as SCADA and Work/Asset Management platforms.

WEBS also provide subscribers with a quarterly analysis of the data under management. This "state of the nation" for wind farm operations and maintenance will provide periodic reports into trends and patterns across the performance, availability reliability and maintenance domain.

Subscribers also have the option of requesting additional analyses from the WEBS team. This "ask the advisor" service provides subscribers with the ability to request bespoke analyses.

WEBS subscriber / sponsor

Monthly Benchmarks
(Subscriber)

Quarterly Reports
(Subscriber, Quarterly Report Subscriber, One Off Purchase)

Ask the Analyst
(Subscriber)

Advisory Services
(One Off Purchase)

Annual Subscriber Meeting and Best Practice Council
(Subscriber)

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