JEJU ENERGY CORPORATION (JEC)

Romax helps Korea's fastest growing wind power company to increase its annual capacity factor by 4%

Client

Jeju Energy Corporation (JEC) is a leading renewable energy company in Korea. It currently operates four onshore wind farms in Jeju Island, Korea.

Challenge

JEC wind farms suffered under-performance and frequent major failures. Korea's fastest growing wind power company needed to implement a preventative maintenance strategy in order to ensure the best possible results for their wind farm capacity factor and availability.

Solution

Turnkey performance improvement service from Romax Technology, with a team of Romax experts dispatched to the wind farm for four months to trouble shoot 239 under-performance issues.

Benefits

The performance improvement service provided by Romax experts resulted in a 4% improvement of the wind farm annual capacity factor and a 10% increase in machine net-availability, as well as the implementation of a preventative maintenance strategy for a confident wind farm future.

Jeju Energy Corporation (JEC), one of the largest wind energy providers in Korea, had problems with repeated breakdowns and under-performance of its assets, Haengwon and Shinchang wind farms. The farms have been in operation for over 12 years. It was therefore imperative to tackle the repeated breakdown issue and to make improvements to enable better power performance.

Romax previously undertook a phase 1 major component service project in 2012. Four wind turbines were down for many months due to the major component failures including main bearing, gearbox and blade damage. Romax successfully performed trouble shooting, and all four turbines were back to normal operation by the end of the project.

Following this success, Romax was chosen by JEC to undertake a four month performance improvement project, with the aim of improving the wind farm capacity factor and availability.

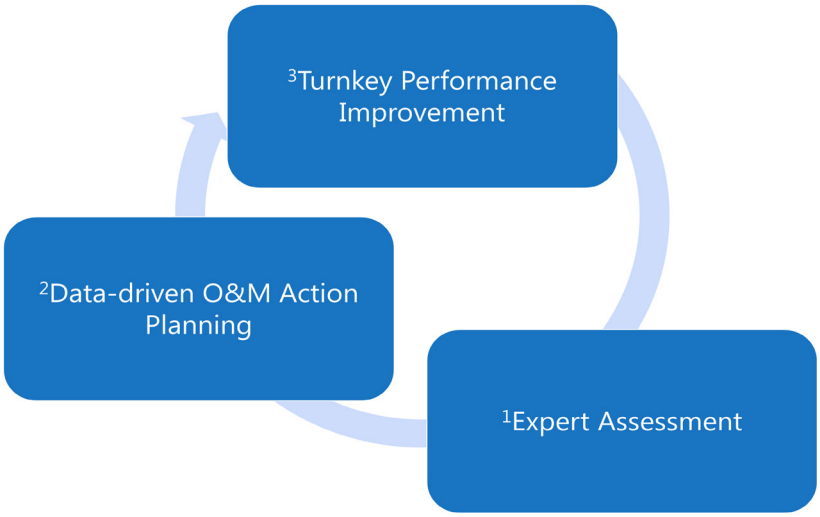
Romax TECHNOLOGY

3-phased performance improvement with preventive maintenance strategy:

i. Expert assessment - Full vibration analysis, grease and oil analysis, and endoscope inspection to spot any impending and hidden damages

ii. Data-driven O&M action planning - Focus on major components, taking into consideration the urgency, parts' supply lead-time, crane preparation, etc.

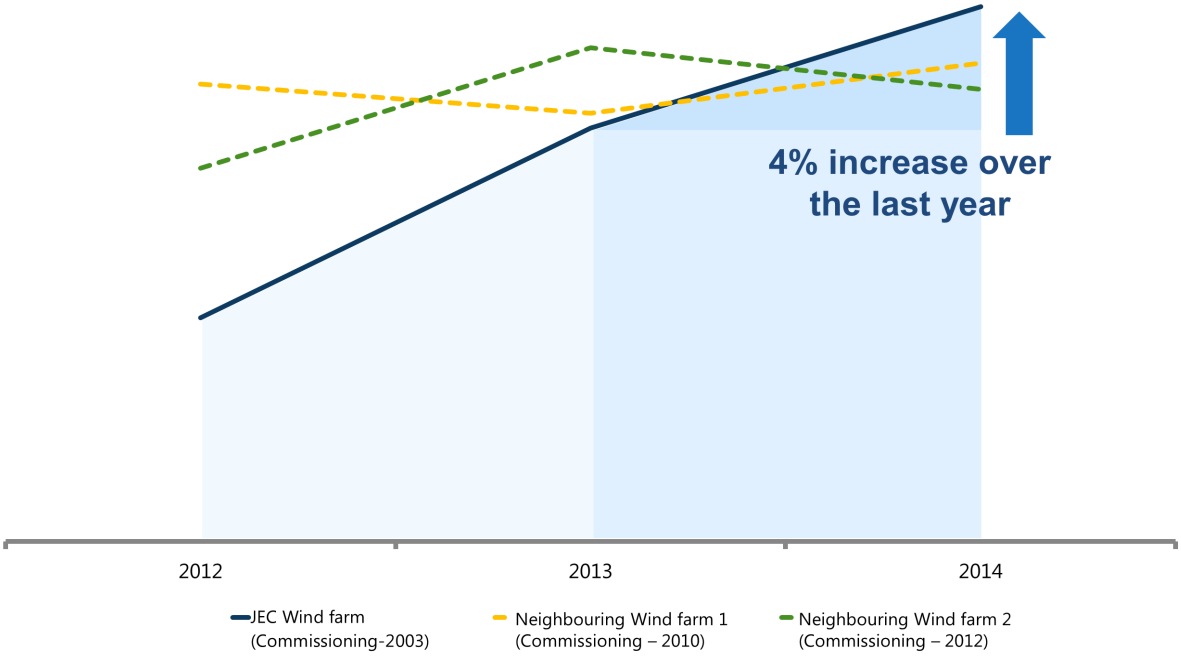
iii. Turnkey performance improvement - Improvements delivered included major component replacement, part sourcing, crane mobilization, part refurbishment and part reconditioning



During this project, 239 non-conforming issues requiring correction were found by the Romax experts, as a result of their independent and reliable inspection and analysis techniques. A combination of corrective and preventative actions was applied to the wind farms, in accordance with their priority level.

Upon Romax' implementation of a preventive maintenance scheme, the power performances of the turbines in the Haengwon and Shinchang wind farms saw remarkable improvement. Following the Romax project, the annual capacity factor increased by 4% over the previous year, the highest that JEC have ever achieved in any of their wind farms. The machine net-availability (including the service time) has also increased by 10% at the end of the project.

Comparison of Annual Capacity Factor



"We achieved the target to increase the capacity factor by 4% and availability by 10% with the high quality, systematic preventative maintenance strategy implemented by Romax experts."

Jeju Energy Corporation

Romax TECHNOLOGY

To find out more

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