CASE STUDY

CUSTOMER
Wind Generator OEM

SECTOR
Power Generation

SERVICE
Winergy generator

Generator Repair

As an ever increasing number of wind turbines reach the end of their OEM warranty period and approach major service intervals, independent service providers with experience in generator maintenance are being called upon to offer specialist support to strengthen the supply chain.

When a Winergy generator failed (found to have a fault during planned maintenance inspection) Houghton International supported the operator of the turbine in the UK by repairing and overhauling the generator and provided future maintenance recommendations based on its experience. Compared with the existing supply chain, based in Europe, Houghton International was able to reduce the lead time and provide a more responsive service.

WHY HOUGHTON INTERNATIONAL?

- **Strategically located in Newcastle upon Tyne in North East England, Houghton International has convenient access to all major transport links including road, sea and air.**
- **Short turnaround times or emergency service requirements can be facilitated with a multiskilled workforce which can operate flexibly to meet demand.**
- **Independent of OEMs, Houghton International is experienced in providing support for all brands of rotating machines**

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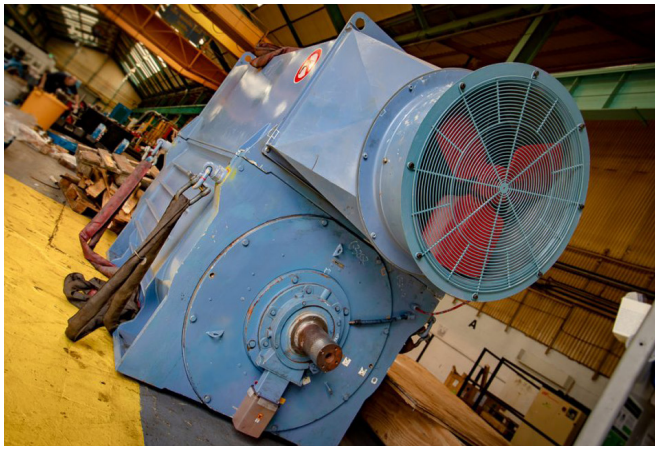
Houghton International
Electro mechanical innovation

THE SOLUTION

Houghton International received a 2245kVA Winergy generator into its Newcastle upon Tyne works. The generator was dismantled and tested, followed by a detailed inspection of the internal parts.

A full range of Baker tests were carried out, consisting of Insulation Resistance (IR), coil resistance, HiPot, interturn surge and Polarisation Index (PI) testing, to identify any signs that could indicate issues within the stator windings.

Visual inspections identified several observations to be addressed. A high level of carbon deposits were found in the brush gear slip ring enclosure and excessive carbon debris had also caused an ingress of carbon particles into the stator windings. Houghton International engineers advised to monitor this in future, as this pattern of wear could result in a premature break down of the coil insulation in the future. It was also advised to monitor the brushes, which showed signs of uneven wear.



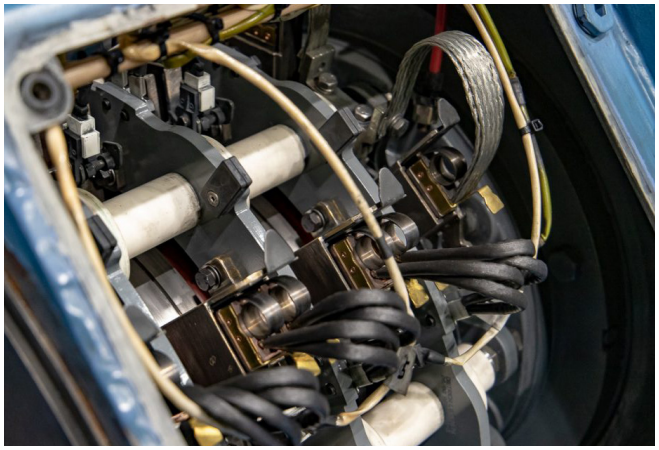
THE RESULT

Following inspection and testing a full report, including recommendations for overhaul and further monitoring, was supplied to the customer. Once approval was received a full overhaul was carried out, including overhaul of the cooler fan motors, replacement of the brushes and bearings and overhaul of the brush gear. Houghton International advised changes to the brush gear maintenance plan going forwards to include full removal of all of the brushes and periodic deep clean of the inner brush gear enclosure.

On Houghton International's recommendation, the stator was revarnished in order to manage the effects of the carbon deposits and protect the worn areas of the wedges by re-coating the porous areas, helping to protect from moisture ingress.

The generator was reassembled, including a light test run to check temperature and vibration, and coolers refitted, ready to be stored until dispatch was required.

In addition to reports and testing documentation, real-time video updates were provided via Houghton Exchange, Houghton International's video communication platform, to ensure clear, timely communication throughout the process.



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