

CASE: HUGE SAVINGS CHANGING FROM FIRE FIGHTING TO PREVENTIVE MAINTENANCE

-Root cause treatment stopping an unhealthy cycle of frequent gear oil change

A major wind turbine operator in the North Sea region revealed gear oil sludge in the entire gearbox system. This operator is by far not the only operator experiencing sludge in the wind turbine gear oil system.



▲ Onsite investigation revealed a greasy substancy all over the gearbox insides

The Challenge:

Oil Change every three Months

The on-shore wind turbines needed an acute maintenance – again. Every three months the operator have engaged a third party service provider to change the entire oil in the gearbox:

The operator describes the challenge:

“Severe contamination as discussed, visible tar and staining covering internals of the gearboxes. Excessive amounts of tar accumulating in the gearbox filters when changed on the maintenance. Oil black and very thick.”



▲ During the purification process, samples were tested for cleanliness level

The Solution:

Up-Tower Flushing

400 liters of thickened tar spread all over the gearbox area had to be drained through a 41 mm drain valve.

Up-tower flushing was run over two days, only interrupted by a chemical filtering overnight. The system was considered clean reaching ISO 4406 16/14/11 secured by our on-site analyst placed at the foot of the tower who, during the 2-day purification, performed hourly analysis on the cleanliness level reached.

The process finished with a patented oil-based hydrojetting integrated into the up-tower gearbox oil flushing, and final insertion of new gearbox filters.



▲ After: The pipes after the chemical purification were not only cleaner, but it also created a full extent of the opening.

The Result:

Efficient Production at lower Maintenance Costs.

It is imperative for the Ocean Team Windcare culture to remove the root cause catalysts for such contamination. This leaves our clients with a reduced preventive maintenance cost for the future, if they understand to proceed operations while avoiding cross contamination, also when performing future oil changes.