Press release

Denmark's CNC Onsite first to offer onsite wind turbine blade root repairs

Presentations at stand E-D54 WindEurope, Copenhagen, Denmark, 25-27 April 2023.
Blade inserts drilled out and replaced in days; reduced logistics costs, minimal downtime and environmental savings; also alternative to decommissioning; Dutch partner We4Ce to supply high-strength replacement bushings

VEJLE, Denmark, 21 April 2023 – Blade root damage to older wind turbines previously could only be repaired at the manufacturing site, leaving operators with a huge logistical task and long down time. With its new portable tool, developed to efficiently replace damaged inserts in blade roots, Danish machining tool expert CNC Onsite is the first to offer economical precision repairs on site directly in the turbine park, eliminating complex transportation and waiting times. At WindEurope 2023 at its stand E-D54, CNC Onsite will demonstrate the concept using multimedia and live commentary.

Embedded into the blade root during the manufacturing process, the threaded inserts joining the blade to the nacelle hub, can loosen over time. In older blades, microcracks allow contaminants to weaken the bonding, ultimately endangering the structural safety of the blade root and, at worst, resulting in the blade breaking away.

Blade root repaired at the wind park

With CNC Onsite's method, the rotor blade is dismounted and placed in a repair environment on site. The portable, automatic machining tool drills away the faulty inserts, matching the precise dimensions of the replacement part.

CNC Onsite and We4Ce offer full-service solution

CNC Onsite has teamed up with We4Ce, an international blade rotor and blade root connection expert, to deliver a complete repair solution focused on high-strength blade roots.

"The difficulties in replacing a threaded insert, or bushing, are centering the replacement and its bonding and we have developed inserts that consider both. This full solution offers consistent and stronger bond between the insert and the blade," explains Edo Kuipers, Engineering Manager and Co-owner of We4Ce.

Older blade designs have shorter lifetime

The green energy transition means blade manufacturers are not only running at full capacity, but older models are often phased out earlier, which means the mold has to be recreated. Blades are the most expensive components in a wind turbine, accounting for some 25 to 30 percent of the build cost, as well as one of the most fragile.

Replacing blades on older turbines is often not financially feasible. The operator may decide to keep the turbine running at reduced capacity or even decommission it. Keeping the turbines

running is important for renewable energy targets and this repair service, taking only a few days, can play an important part in extending turbine lifetimes.

The full repair service launched 2022

“From our many discussions with potential customers, it is clear there is a need for onsite repair. We look forward to presenting the repair concept at WindEurope 2023 next week in Copenhagen. We believe is the first on-site method. This will be available for all blade sizes,” concludes Kellenberger.

CNC Onsite’s blade repair solution, as well as its flange milling tool for 10-metre flanges and a patented yaw ring repair method, will be presented at stand E-D54 WindEurope, Copenhagen, Denmark, 25-27 April 2023

About CNC Onsite

Headquartered in Vejle, Denmark, CNC Onsite operates in the onshore and offshore wind sector, designing and delivering high-precision mobile machining solutions for large diameter steel flanges and blade roots. CNC Onsite also offers specialized repairs of yaw rings, blade root inserts, rotor locks, generator shafts, bearing housings and fixings.