

# LASER CLADDING TURBINE REPAIR

## Challenge

The client identified severe erosion damage on the inner casing of a low pressure steam turbine. The impact of small water droplets, which develop during the operation of a turbine, had caused the wall thickness to deteriorate to an extent that it was unsafe to operate.

Traditional repair methods are costly and require substantial asset downtime. The asset owner approached Stork for an alternative solution after learning about the innovative laser cladding repair method that the company developed and successfully deployed at another power station in Germany.

Laser cladding applies a hard facing, wear resistant layer to repair, prevent further damage and extend an asset's lifetime for years to come.



## Solution

Stork's laser cladding team deployed the innovative technology and performed the repair onsite on a 24/7 basis. After three weeks of non-stop activity, four large sections of the casing were repaired and the installation was taken back into operation shortly after.

Stork's repair solution saved the customer significant costs and reduced the asset downtime to a bare minimum.

An end-of-warranty inspection was conducted after three years and the new layer was in good condition. Due to the high wear resistance of the new layer, no new damage had occurred.

The asset owner was very pleased with the result and has indicated that the remaining turbines will be repaired with the same solution.



## Client benefits

### Cost saving

Laser cladding reduced project costs by approximately 30-50% compared with traditional methods, such as rebushing or renewing the housing

### Preventing future damage

The high wear resistance of the cladded layer prevented any future damage from the water droplets

### Safe service delivery

The project was delivered with no incidents, injury or harm to the environment

## Project fast-facts

**Project:** Turbine casing repair

**Client:** Major utility company

**Location:** Germany

**Service:** Laser cladding

**Date:** 2011-2014