



# Steam Path Upgrade

## Advanced Steam Path for AEG Kanis & Wesel steam turbines

Based on its broad knowledge on Industrial Steam Turbines, GE offers an Advanced Steam Path (ASP) upgrade for AEG Kanis and Wesel machines.

### Performance Improvement

GE has developed a variety of service solutions ranging from minor and major overhauls, spare parts, repair or replacement of damaged steam path hardware, upgrades/retrofits and MYA's.

The Advanced Steam Path (ASP), as referred in here, is an attractive offering for those operators which are interested in improving their unit in terms of capacity, power output, efficiency, availability, reliability and lifetime extension.

### Background

The modern power sector is increasingly putting challenges to industrial power plants: process changes often lead to demand for higher production capacity as well as adaptation of mechanical power needs. On this regard, asset replacements require significant investment, hence cost effective alternatives are requested.

Therefore, operators are being encouraged to improve performance of their machines while maintaining profitability by means of extended lifetime.

### Solution

GE benefits from the latest steam turbine technology to offer fast and cost-effective solutions (investment is about 50% if compared to asset replacement). The full steam path Upgrade features the replacement of the inner module (Fig. 1), but tailored solution are also possible:

- New rotor
- Stationary and rotating blades (all stages)
- Sealing

### Benefits

- Increased capacity (up to +20%)
- Efficiency uplift (up to +5%)
- Improved availability and reliability
- Lifetime extension (additional 20-30 years)

### Applicability

The Advanced Steam Path upgrade is applicable to all the Siemens steam turbines based on the SST 200/300/400 AEG Kanis as well as SST 500/600 Wesel building block layout.

### References

GE has successfully delivered over 1,300 retrofitted cylinders worldwide, of which near 400 installed on non-GE units. Among them, near 10 for AEG Kanis and Wesel fleets, including two recent retrofits executed in Tomsk (Russia, 2009) and Gubakha (Russia, 2006).

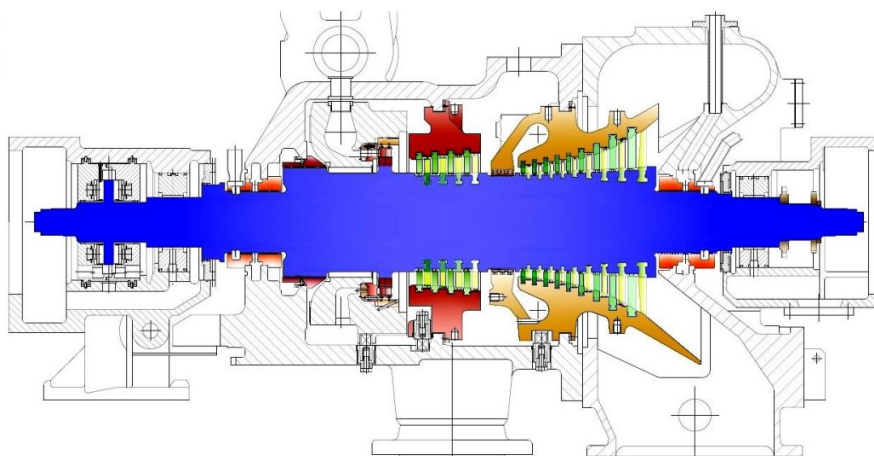


Fig. 1: Advanced Steam Path for Wesel steam turbine