



AIR-COOLERS CASE STUDY

GAS STORAGE DEBOTTLENECKING SOLUTION



In 2015, Kelvion Thermal Services were contacted by a French Gas Storage site, who were facing cooling capacity issues with their Gas Cooler, especially during summer time when ambient temperatures are extremely high.

After performing a site audit to measure the actual performance of the Gas Cooler, the following was observed by Kelvion Thermal Services:

- Airflow was found to be 25% lower than design,
- Coolers were designed for relatively low ambient temperature (30°C versus a maximum of 37°C for this region),

Kelvion Thermal Services modified the Gas Cooler by upgrading the following parts :

- ◆ Complete fan set,
- ◆ New motor and gearbox,
- ◆ New fan shaft with top and bottom bearings,
- ◆ New anti-rotating device,
- ◆ New electrical cabinet.

Results :

After upgrading the coolers, new site measurements showed that airflow was increased by **35%** and the outlet process temperature decreased by **4°C - 5°C**.

End-user was fully satisfied with the revamp, being able to operate the coolers without any issues during the summer time.

Key figures :

	Before revamp	After revamp
Heat Duty	1 943 kW	2 331 kW
Airflow	62.8 m ³ /s	87.9 m ³ /s
Ambient temperature	30°C	30°C
Delta T across the cooler	31.0°C	35.5°C