

## REFERENCE PROJECT

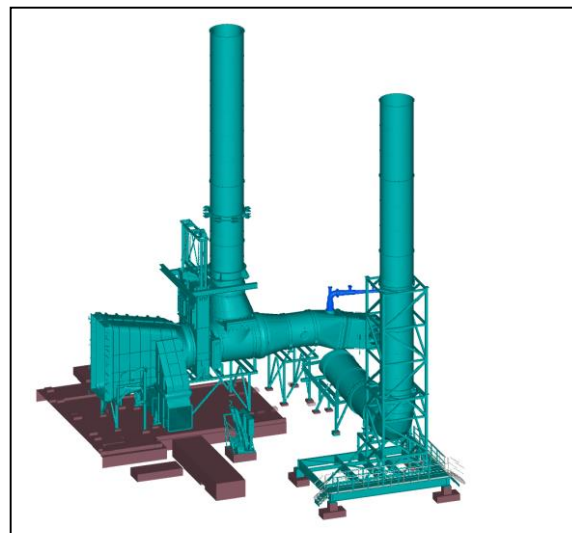
### Kårstø Gas Terminal - Boiler Plant Overhaul

Location:	Onshore Gas Terminal at Kårstø, near Haugesund - Norway
Project :	Overhaul of 2 Gas Turbine heated and supplement fired Steam Boiler Plants
Scope of supply:	Redesign / Engineering / Fabrication and Installation of all equipment downstream Gas Turbine exit to inlet existing Steam Boiler

#### The Plant:

The Kårstø Gas terminal is receiver of Natural Gas from several Offshore Fields and is exporting treated. Gas to Europe Part of the gas treatment prior to export requires large amount of heat. This heat is generated in several Steam boiler plants at the Kårstø plant. Two of the main Boiler Plants, named the "Aalborg Boilers", are heated by hot exhaust gas from 2 Gas turbine driven compressor trains. In addition to the turbine exhaust gas heat, the 2 plants are equipped with gas fired burner panels. The 2 Aalborg Boiler plants were set into operation in 2005. The challenging environment and the high temperature occurring in supplementary is demanding for the equipment, and the plant owner GASSCO decided to renew all hot gas ducting systems located between the Gas Turbine and the Steam Boiler. Mjørud was awarded the EPC contract for improving and renewal of all Exhaust Gas related equipment, including:

- Gas Turbine Exhaust gas Collector
- Silencer section
- Multi louvre Exhaust gas Damper
- By-Pass Stack
- Gas tight Guillotine shutter
- Gas Burner panel
- Gas Burner Combustion Chamber



#### Project execution:

Some of the main challenges for the petroleum related industries are challenges related to outages of essential equipment. Reduced production are very costly, - and operators are trying hard to keep such production cuts to a minimum. By introducing a concept that includes the installation of a temporary Exhaust gas By-Pass stack, the plant offline period was reduced from 13 weeks to 2 weeks. Even with the increase of project costs due to introduction of temporary equipment, the Temporary Stack concept always pays off very well.

Over the years, Mjørud has been working with temporary stack concepts on a number of projects, and we have gained valuable experience. The effects of the Mjørud temporary Stack Concept (MTC) has saved our customers for large production losses.