

Basic Engineering

Customer: Naturgass Vest

Services Provided

- Process selection and optimisation
- Front end engineering and detailed design

Benefits to Customer

- Plant Design Report based on the highest standards of safety and environmental protection
- Identification of the capital cost, schedule and project strategy to build the largest LNG production plant in Europe

Project Description

- Following completion of a conceptual process study, Costain undertook the basic engineering of a 120 tonne per day LNG plant.
- Process concepts and technical decisions evaluated in the earlier study were revisited, particularly to confirm that the nitrogen double-expander design was optimal on a life-cycle basis. Alternatives for acid gas removal were also evaluated, with particular attention to the effect of feed gas oxygen content. The process design was optimised against a range of feed gas conditions to produce LNG of low propane plus content so as to be suitable for use in gas engines.
- LNG storage options were evaluated in detail to confirm that a vacuum insulated system (more commonly used for industrial gas) offered full containment. This approach has subsequently become the conventional solution for small and medium scale storage of LNG.
- All aspects of plant design were checked and confirmed by the client using LNG specialists and QRA consultants, with particular focus on safety, hazard identification and mitigation and on reduction of environmental emissions.
- A full basic engineering package was generated by Costain along with the lump sum cost and schedule for executing the design, supply, procurement and installation of the complete facility.