

Full engineering capability across all project phases with patented technology for high recoveries at minimum cost.

Challenges

Natural gas processing is typically required to meet pipeline hydrocarbon dewpoint specifications. Deeper recovery of natural gas liquid (NGL) components can be justified based on their higher value as separate products compared with their value as sales gas.

Saturated and higher value unsaturated hydrocarbons from refinery and petrochemical off gas streams can also be recovered to reduce flare gas and provide additional products or feedstocks with attractive payback times.



“ Gas processing expertise and experience through all aspects of gas conditioning and liquids recovery, for maximum performance. ”

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Grant has over 20 years' experience in the delivery of projects in international gas processing and cryogenics.

Our approach

We offer comprehensive capability ranging from basic design packages and technology licensing agreements to detailed engineering, procurement, construction management and operational technical support. We have developed effective processes integrating NGL extraction with cryogenic nitrogen rejection as well as recovering NGL from liquefied natural gas. We have completed projects worldwide ranging from hydrocarbon dewpoint control to almost total propane recovery and deep ethane extraction. Our cryogenic technologies ensure highly efficient process integration, offering outstanding liquids recovery whilst minimising power consumption.

Our services

- Our processes are customised to suit our clients' particular feedstock, product requirements and energy costs.
- We can apply our processes to revamp and debottlenecking projects to cater for changes in feed conditions or achieve increased liquids recovery.
- We offer cryogenic turbo-expander and mechanical refrigeration technologies with lower capital cost and reduced operating costs.

In addition to NGL recovery, we also supply:

- Downstream fractionation of liquids to produce a range of hydrocarbon products
- Removal of contaminants (e.g. sulphur) to meet product specifications
- Separation of ethane from carbon dioxide.
- Storage facilities
- Licensing of patented technologies.

Benefits

- Our portfolio of patented technology includes high propane recovery (up to 99%) and ethane recovery with high CO₂ tolerance.
- Modular design maximises prefabrication, minimises onsite construction and provides improved health and safety control.
- Our customisation of processes ensures optimised plant design and reduced lifecycle costs.

Example project experience

PX Ltd, Teesside, UK – NGL recovery and fractionation

Delivery of an 800 MMSCFD gas plant including inlet facilities, dehydration, NGL recovery, fractionation, utility systems and infrastructure.

Solution

Conceptual studies, front end engineering design, detailed design, procurement, commissioning and construction management support.

Outcome

- The only UK plant with the flexibility to switch between hydrocarbon dewpointing and optimised NGL recovery.
- Can switch between low (25%) and high (80%) propane recovery.
- Robust and efficient operation with turbo-expander technology to cater for revised operating conditions.



Global Process Systems, Australia – NGL recovery

Ultra high recovery of propane and butane from Santos Mereneie central treatment gas plant low pressure gas stream and the eastern satellite station high pressure gas stream.

Solution

Feasibility studies to identify optimal process for ultra high NGL recovery, technology evaluation, selection and integration based on our patented cryogenic gas processing technology.

Outcome

- Utilisation of refrigeration and JT process technology.
- 98.4% C3+ recovery and over 99% butane recovery in feed streams, including nitrogen and sulphur management.



Statoil Kårstø, Norway – NGL recovery & fractionation

Processing of 1300 MMSCFD North Sea natural gas at Kårstø onshore terminal for NGL recovery.

Solution

Advisory and conceptual studies for two NGL recovery trains: ethane/CO₂ separation and new ethane extraction train. Further study for enhanced ethane recovery achieved >95% ethane.

Outcome

- High recovery (>99% of feed NGL) at Europe's largest natural gas processing plant.
- Optimisation of Costain's cryogenic technology – integrated turbo-expander, for deep recovery.
- Optimal NGL recovery at low cost, maximising business returns.



Credit: Øyvind Hagen / Statoil

United Gas Derivatives Company, Egypt – NGL recovery, fractionation & storage

Delivery of 1100MMSCFD NGL extraction and fractionation plant for UGDC (BP, Eni and GASCO JV), with associated storage of refrigerated propane for export.

Solution

Technical services including pre-FEED consultancy services and conceptual studies involving evaluation of process licensors, safety and environmental assessments and process options evaluation.

Outcome

- Plant designed for over 99% NGL recovery.
- Independent review of third party technologies for process plant, propane storage, export facilities and interconnecting pipelines.

