

ENERGY INTEGRATION SOLUTIONS FOR ONSHORE GAS PLANTS



Introducing:
Fuel Free Power Generation

GasFac I

Gas Export Compression Unit

- Lean gas from the ethane recovery units is compressed in order to achieve the pressure required by the pipeline, 91 bar.
- Six trains are working in (5+1) configuration.
- One common header delivers the lean gas to the compressor trains.

Target:

Process Integration Idea:

Machinery Engineering Idea:

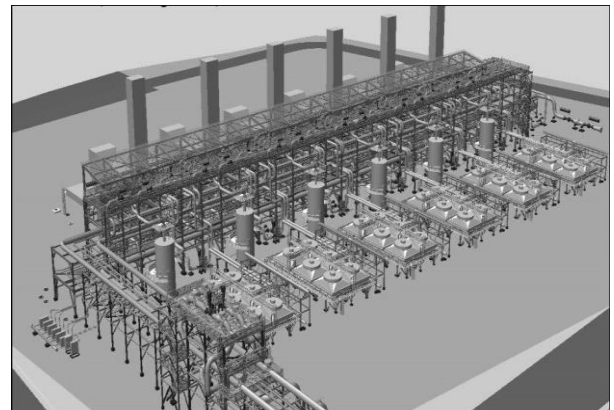
Gas Processing Facilities

Heat Recovery Steam Generation

Combining Power Generation and
Mechanical Drive

Case Study

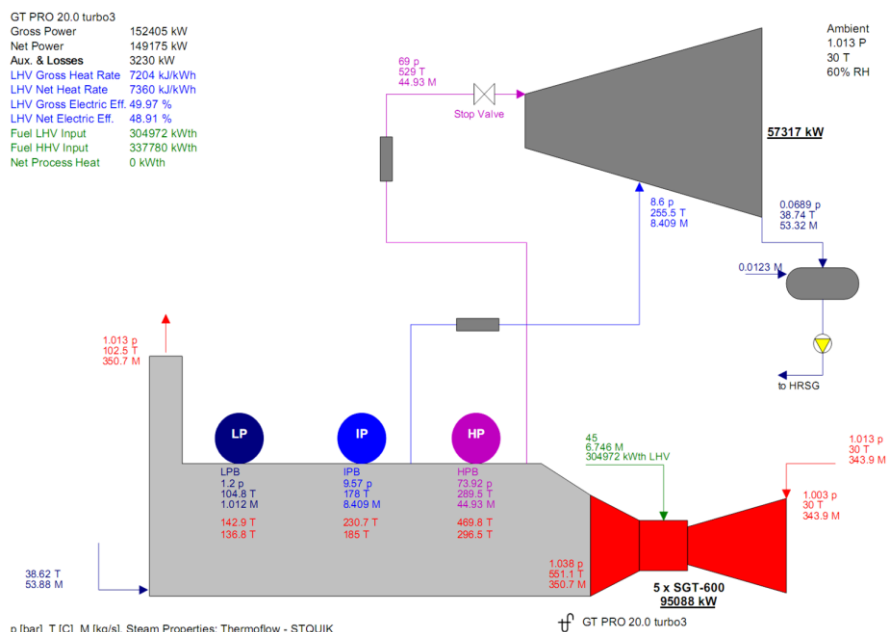
- A 2.1 PJ/day Gas Plant
- Regular Design:
 - 6 × Turbocompressor (Gas Export Unit)
 - 4 × GT-Generator (Power Gen. Unit)
- Fuel Free Power Generation:
 - 6 × Turbocompressor
 - 1 × ST-Generator
 - Steam Cycle Infrastructure
- **Fuel Consumption Reduction $\approx 40\%$**
- **Fuel Gas Saved ≈ 12 PJ/year**
- **Added Capital Cost ≈ 0**



Other Solutions

- ST Driven
Compressors
(GasTEC I: CCSD)
- Elec. Motor Driven
Compressors
(GasTEC III: ICSD)
- Power Generation
+ Water Desalination

GT PRO 20.0 turbo3
Gross Power 152405 kW
Net Power 149175 kW
Aux. & Losses 3230 kW
LHV Gross Heat Rate 7204 kJ/kWh
LHV Net Heat Rate 7360 kJ/kWh
LHV Gross Electric Eff. 49.97 %
LHV Net Electric Eff. 48.91 %
Fuel LHV Input 304972 kWh
Fuel HHV Input 337780 kWh
Net Process Heat 0 kWh



Combined Gas Export & Power Generation Unit

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