

MODERN GAS TRANSMISSION SOLUTIONS



Introducing:

4th Gas Transmission Engineering Concept

GasTEC IV

"Modern Gas Transmission Solutions" are

- Technologies developed to transform classic gas transmission systems in order to enhance gas transmission performance, reducing
 - Fuel Consumption
 - Operational Costs
 - Carbon Emission
- Targeting all gas transmission system components:
 - Gas Compressor Station
 - Gas Pipeline
 - Gas Pressure Reduction Station
- Developed by extension of Machinery Engineering and Process Integration experiences in Gas Processing Facilities, LNG Plants, Power Stations and Utility Plants to gas transmission systems
- Comprise of five Gas Transmission Engineering Concepts (GasTEC)

GasTEC IV: TEPR (Turboexpander Equipped Pressure Reduction)

Target:

Gas Pressure Reduction Stations

Process Integration Idea:

Pressure Energy Recovery in Expansion

Machinery Engineering Idea:

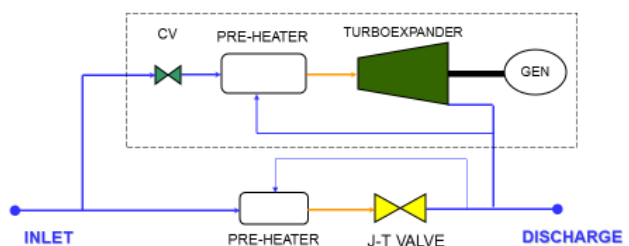
Pressure Reduction by Turboexpander

Case Study

- A 4 PJ/day Gas Compressor Station (inlet gas @ 70 bar)
- (3+1) × Turbocompressor → 2.84 kg/s Fuel Gas @ 25 bar
- Classic Design:
 - Pressure Reduction in Expansion Valve
- TEPR (Based on GasTEC IV):
 - Pressure Reduction in Turboexpander
 - Electrical Power Generation in Turboexpander-Generator
- **Fuel Gas Saved ≈ 37 TJ/year**
- **Added Capital Cost ≈ US\$ 1.9 Million**
- **Payback Period ≈ 5 Years**

Other GasTEC

- GasTEC I: CCSD
Combined Compressor Station Design
- GasTEC II: OPD
Optimal Pipeline Design
- GasTEC III: ICSD
Integrated Compressor Station Design
- GasTEC V: UGT
Ultimate Gas Transmission Solution



A Typical Arrangement

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