

SynerGEE Gas Optimization Module

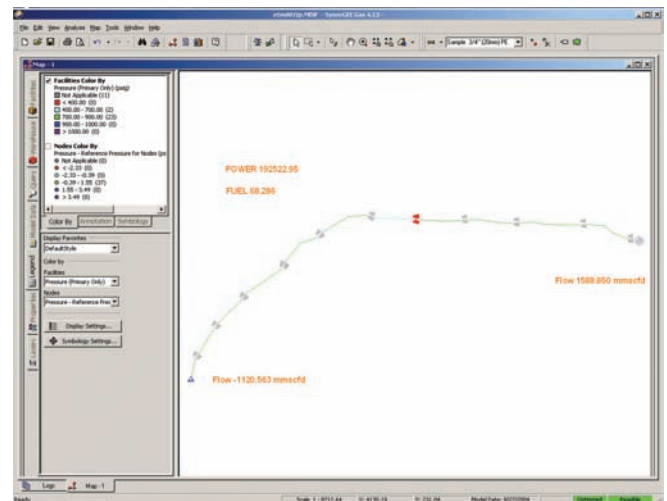


Optimize Asset Potential

SynerGEE® Gas's Optimization Module (Optimizer) extends the functionality of the core steady-state network analysis software by conveniently combining the SynerGEE 3.x Energy Minimization Module (EMM) and Economic Transport Module (ETM) software into the SynerGEE 4.x architecture.

Optimizer is a separately licensed module of SynerGEE geared toward gas transmission pipeline companies. It provides the analytical capability to help understand and plan for the complex dynamics between pipeline operation and pipeline economics.

Built in the user-friendly SynerGEE desktop environment, Optimizer provides fuel and cost of fuel optimization capabilities that allow you to minimize system-wide volumetric fuel consumption or system-wide fuel cost. Optimizer can calculate maximum throughput in various sections of your pipeline network and can select the most cost-effective mix of contracts when given access to contracts and transportation agreements.



Optimizer incorporates a state-of-the-art optimization engine that has been developed and enhanced over more than 20 years. The optimization engine uses a suite of linear and non-linear techniques to find the optimum operating mode based on your objective, whether fuel, fuel cost or throughput. The mathematical engine not only performs the optimization, but also completes it within the constraints of pipeline hydraulics to ensure operational integrity of the network.

The optimization engine considers the details of your system, including:

- Compressor operating envelopes
- Compressor discharge temperatures
- Minimum and maximum delivery pressures
- Maximum allowable operating pressure
- Regulator set points
- Receipt and delivery volumes

Optimizer determines the optimal combination of receipts and deliveries that maximizes capacity consistent with contractual and deliverability constraints. The economic and contractual components of system capacity are evaluated by reviewing revenues and costs associated with individual system sales, supply and transportation transactions on a bulk or individual contract basis.

Optimizer applications include throughput analysis and maximizations, transport feasibility and system bottleneck analysis. Optimizer is also used by pipeline facility groups to improve pipeline designs, expedite the design process and refine operational procedures.

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