

Key Product Features
The GasAssure computational core is fully optimised, providing an even faster solution for integrated asset modelling of gas networks
Data Management features enable easy mass data entry, QC and editing in a single window
Gantt charts show online event timelines
Products, components, units and properties are unique to each GasAssure .pgi file. This enables easy handling of multiple projects with different unit settings
New custom reports have been added
The External Network node handles large networks in separate files
All input data, including data tables, is time variant providing flexibility in handling operational requirements.

Reservoir
Reservoirs can be initialized with production history to correct starting pressure
Prediction of water encroachment using an extended reservoir description
Volume depth tables may be specified for accurate setting of Gas In Place
Fully Compositional
Tank
Multiples tanks with cross-flow
Gas-water contact tracking
Transient aquifer coupled to single reservoirs
Numerical transient aquifer attached to multiple reservoirs
Coupled numerical reservoir simulation
Coupled numerical simulation with compositional well-stream
Condensate dropout effect on reservoir composition
Decline curves
Reservoir voidage of oil, water and gas
Simulator profiles
Multiphase component tracking for gas-cycling and re-injection
Gas sales product allocation back to reservoirs
Gas sales product-in-place reporting

Completions
Multiple / crossflow
Inflow models

Coning correlation
Water Inflow

Wells
Decline curves and typecurves can now be defined at well level as well as platform level. This allows GasAssure to easily handle the 1000s of wells required for unconventional gas reservoir modelling
Maximum water level for perforations can be defined
Tubing lift tables can be plotted to allow easy QC
Downtime can be specified at well level
Tubing lift correlations 2 phase
Eclipse VFP tables
Automatic recompletion controls on well constraints
Condensate dropout effect on wellstream composition
Liquid lift correlation
Erosion velocity calculation
Vertical
Inclined
Horizontal

Supply Sources
Arbitrary supply sources
Supply source ranking

Platforms
Typecurves have been upgraded with the following options for handling time based decline curves and cumulative based reservoir production. <ul style="list-style-type: none"> - Qpotential Vs Cumulative Production - Qpotential Vs time - Qpotential – Qaverage Vs time - Qpotential – Qaverage Vs Cumulative Production
Downtime can be specified at platform level to handle unplanned maintenance
Platform controls
Daily platform capacity
Well operation controls
Water minimisation

Surface Network
Arbitrary circular and looped network
Optimised allocations
Multiple delivery points
Arbitrary gas sales products
Optimised product yields
Back-out analysis (pressure interference)
Licence pressure flagging

Facilities
Processing Plant Constraints
Can be defined in one of the three following ways:
<ol style="list-style-type: none"> 1. Total Flow Rate constraint (Max Rate) 2. Product Constraint (CO₂, H₂S, LNG, N₂ etc) <ul style="list-style-type: none"> – Product rate constraint (Max Rate) – Product composition constraint Fraction of Product recovered (also used as a splitting rule) 3. Inlet pressure constraint
Pressure constraints can be specified
Production recovery and destination tables can be varied independently over time
Additional compressor models based on pressure equations and performance curves
Compression models
Compressor manufacturer curves
Downtime factoring (series vs. parallel)
Required compression calculation
Compression suction constraint
Meters
Fuel and flare
Multiphase flash by EOS
Multiple product yields by rate dependent tables
Complex gas plant models
Gas plant product quality optimisation
Arbitrary facilities models
Peak stream day constraints

Links/Pipelines

Pressure drop tables now include pressure equations. Pressure drops can be expressed as the relationship between inlet, outlet pressure and flow rate. The equation is quadratic, helping to design accurate pressure drop description

Pipeline flow can be time variant enabling flow through different branches over network life

Sources and Groups

Sources are group of platforms which may or may not be physically connected but source control provides the ability to control rates based on maximum, minimum and targets

Sources may be ranked for optimal production allocation

Groups are formed by combining sources, providing an additional level of flexibility to control flow through different nodes in the network

Field Development and Scheduling

Automatic Wells

Automatic Line looping

Automatic compression

Markets

ACQ and swing rates

Daily and monthly peak day statistics

Downtime and commitment peak constraints

MDQ calculation

Stream day constrained facilities

Tied multiple product contracts

Associated product yield maximisation

Specification ranges (Wobbe, GHV, RVP, CO₂, etc)

LNG model

Product storage (injection and production)

Contract ranking

Product & flare allocation to each platform/wellsite

Fuel allocation to each platform/wellsite

Allocate product from same platform

Mandate production to single contract

History Matching and Tuning

Well and tubing
Surface network
Compressor curves
Stand-alone ACQ forecast
ACQ forecast in shared production systems
MDQ matching

Reliability Analysis
Well and plant uptime
Event downtime
Discrete event simulation
Probabilistic market deliverabilities

Optimisation
Market allocations
Well operation
Product yields
Whole lifecycle analysis

Other
Fully transparent input for review or audit
Internal macro language
Project economics
Path gas summary
Allocation optimisation
Full debug output for material balance audit
Solution transparency (for technical audit)
Restarts
Merge models
Automatic merge of multiple separate timelines
GUI
Oil & Gas production modelling
Linepack calculation