SAFER, SMARTER, GREENER

DIGITAL SOLUTIONS

SYNERGI™ GAS

Advanced hydraulic modelling solutions for network assets
Comprehensive modelling package
System planning and maintenance is an intense and complicated process. You need to anticipate and apply variables over short- and long-term planning periods. Simulation is aimed at taking the guesswork out of system planning and maintenance, and for years DNV GL has prided itself on the world’s most powerful steady-state modelling engine.

Synergi Gas helps companies leverage the link between planning, maintenance, and operations through a robust hydraulic analysis tool.

Synergi Gas offers enhanced functionality and updated modules that let you generate fast, accurate simulation results. Synergi Gas provides an efficient steady-state solver that offers robust and reliable volumetric, thermal and compositional balance capabilities. Synergi lets you model large, complex integrated multi-pressure level systems and gives you full control over gas constraints (gravity, heating value and viscosity), equations of state, friction factor calculations and heat transfer constants.

When it comes to complicated system planning and maintenance analysis, productivity can be fleeting. You want reliable results, with less effort. Synergi Gas accommodates your daily demands by putting a straightforward yet comprehensive modelling interface at your command. Synergi incorporates robust functionality into your daily routine. From our user-friendly and intuitive model explorer to enhanced analysis tools, Synergi helps you generate fast, accurate results.

Synergi Gas benefits include:
- Comprehensive commercial-off-the-shelf software
- World-class technical support and training
- Unrivalled program configurability and flexibility
- Strong industry partnerships
- Extensive selection of powerful “snap-on” modules
- Capable of handling the largest models in the industry
- Models gathering, transmission and local distribution systems
- Integration with GIS, CIS, and other important systems
- Over 44 years of industry-leading modelling experience
- Open model data formats always ensure data access

Robust modules to meet expanding client needs
Synergi Gas has extensive core steady-state modelling functionality out of the box, but sometimes more is needed. To meet expanding client needs, Synergi Gas has 13 modules that work seamlessly.

Leading companies in the natural gas industry are constantly searching for better solutions to streamline expenditures, maximize productivity, and optimize asset performance.
- **Model Builder**: GIS integration for rapid, automated model building
- **Unsteady-State Module**: Two types of transient analysis methods for managing line-pack and more
- **Time-Varying Module**: Extends the robust steady-state analysis engine to include a time component
- **Regulator Station Module**: Complements Synergi’s powerful regulator station modelling with over-pressure protection analysis capabilities for regulatory compliance
- **Multi-Phase Module**: Enables multi-phase modelling through the user-friendly Synergi Gas interface
- **Automated Design Module**: Creates low cost designs based on user-defined hydraulic boundaries
- **Area Isolation Module**: Used to create contingency plans based on emergency system scenarios
- **Customer Management Module**: Integrates with your Customer Information System (or customer billing system) to calculate temperature-dependent and base load factors and assigns these loads to the model
- **Optimization Module**: Optimizes both compressor fuel consumption and system throughput for more efficient transmission system operations
- **Facilities Management Module**: Used for rapid comparison and management of multiple models
- **Leakage Minimization Module**: Calculates required pressure settings to satisfy minimum required pressures while reducing overall system leakage
- **Cost of Service Module**: Determines pipe costs associated with service provision, customer by customer
- **Estate Design Module**: System design tool that includes load diversification calculations as established in the United Kingdom

**GIS engine under the hood**
Synergi Gas uses ESRI’s world-leading Geographic Information System software to bring powerful geospatial capabilities to your fingertips. Out of the box, Synergi Gas allows the import of various backgrounds and pictures. Basemaps with layers of facility information can be quickly converted into hydraulic models with pipes, valves, and regulators.

**An intuitive user interface**
- A wide variety of colour-bys, map contours, annotations, labels, and reports, including customizable reports, are available to make modelling results clear
- Data can be imported and exported quickly and easily via exchange files
- Flexible Find and Multiple Edit make navigation easy
- Gas composition, thermal tracking, temperature tracing, and source tracing are easily accessible features that complement the core hydraulic analysis

**Compressor and regulator station modelling**
- Regulators can be modelled as simple theoretical stations or complex detailed stations
- Complex regulator stations with operators and monitors, series and parallel paths can be built quickly and easily
- Ten industry-recognized regulator equations are available to choose from
- Compressor stations can be modelled as simple theoretical stations or complex detailed stations
- Detailed reciprocating compressors as well as centrifugal compressors are available
- Synergi imports compressor data directly from ACI Services’ eRCM Viewer™ program
- Recycle lines, coolers, and complex configurations can be modelled flexibly
About DNV GL

DNV GL is a global quality assurance and risk management company. Driven by our purpose of safeguarding life, property and the environment, we enable our customers to advance the safety and sustainability of their business. Operating in more than 100 countries, our professionals are dedicated to helping customers in the maritime, oil & gas, power and renewables and other industries to make the world safer, smarter and greener.

Digital Solutions

DNV GL is a world-leading provider of digital solutions for managing risk and improving safety and asset performance for ships, pipelines, processing plants, offshore structures, electric grids, smart cities and more. Our open industry platform Veracity, cyber security and software solutions support business-critical activities across many industries, including maritime, energy and healthcare.