



DIGITAL SOLUTIONS

SIMULATION AND OPTIMIZATION

Consulting

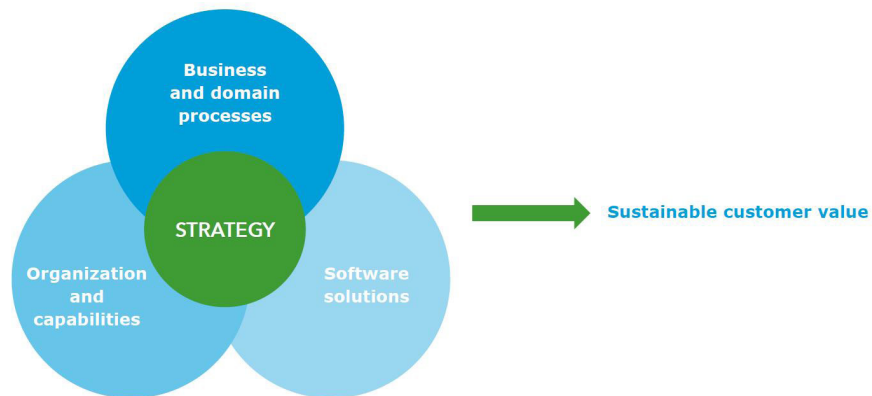
Analytical solutions for the energy and utility industries

DNV GL - Digital Solutions Consulting provides analytical solutions for a wide range of energy and utility industry related problems. Our services enable our clients to obtain maximum business benefit from large and diverse datasets by applying advanced analytical techniques.

We provide advice and develop tools to improve and support business processes and decisions, both for short term operations and for longer term planning and investment decisions. Our software capability allows us to deliver a range of solutions from spreadsheet models to enterprise systems, including cloud-based solutions.

Our analytical services and tools can provide benefit in the following areas:

- Improved operational efficiency and decision making
- Improved planning and investment decisions
- Reduced risk
- Improved automation and integration
- Auditability and financial compliance
- Regulatory compliance



The Simulation and Optimization team have many years of experience in the field of data mining and predictive analytics, together with detailed domain knowledge.

Examples of our services include:

Forecasting

Synergi Forecaster is a solution based on over 20 years of gas demand forecasting expertise. It generates accurate short term gas demand forecasts 24/7 which are vital in supporting the efficient operation of the UK gas transmission and distribution networks. Synergi Forecaster is deployed operationally to receive live network flow and weather data to provide the most accurate forecast possible for network control room staff. Accurate forecasting provides benefits through more efficient network operation, improved trading decisions and through the current forecasting incentives schemes.

Statistical modelling

Creation of a detailed and flexible statistical modelling solution to accurately estimate gas demand patterns at all levels, from single loads to full networks, and taking into account all potential influencing factors and conditions. The application of these models to off-peak conditions supports network verification and maintenance decision-making. Modelling peak conditions is a highly complex area requiring novel techniques for handling diversity and linking different pressures tiers of the wider gas system, and is used to improve network planning and investment decisions.

Scenario analysis and simulation

Assessment of the impact of future energy technologies on UK and European energy networks to support long term network infrastructure investment planning and inform the UK energy policy debate.

Impact assessment

Analysis of large-scale historic Offtake Profile Notification datasets to give a detailed assessment of the impact on the upstream and downstream gas system of changing the network code rules regarding allowable offtake flow rate changes

Industry support and consultancy

We provide services as industry experts for the quantification and allocation of Unidentified Gas (UG) between market participants. A methodology was developed based on a large and diverse set of industry data including all GB meter read data for a period of 6 years (>300m records). Accurate allocation of Unidentified Gas contributes to efficient competition and helps the industry to target Unidentified Gas reduction.