DNV·GL

INDUSTRY

GAS SUPPLY NETWORK

Maros - Optimizing integrated gas development planning

Strategic gas planning requires a balance to be achieved between successfully satisfying consumer gas demand, whilst minimizing costs both in terms of capital and operational expenditure.

Strategic gas planning
Maros and Taro software gives the user the ability to carry out realistic up-to-date predictive analysis to optimize integrated gas development planning for gas supply developments and future operations. From the customers' perspective, gas supply is quite different compared to an oil supply scenario.

Gas customers typically require their gas feeds continuously with limited scope for providing storage to compensate for upstream outages. The consequences of not delivering the demanded gas can not only result in economic damage, but can be further exacerbated by possible penalty payments and loss of reputation.

How do you benefit from a Maros and Taro study?
The gas must be delivered to the consumer today not tomorrow.

Hence the gas supply to customers - whether they are domestic consumers, desalination plants, power plants, or LNG plants – needs to be very high (if not 100%).

Maros and Taro gives you the ability to:
- Quantify the gas network's ability to meet contractual requirements over a pre-determined time period (e.g. 5, 10 20 years)
- Quantify potential under-deliveries or shortfalls in terms of frequency and volume to customers. Assess impact for each gas delivery agreement/customer, for both un-interruptible and interruptible contracts.
- Quantify impact from potential load shedding philosophy on customer under-deliveries.
- Rank contributors to production and contractual shortfalls (typically by plant, pipeline, equipment systems and type).

- Quantify impact from recovery operations such as linepack volumes and temporarily boosting production.
- Quantify impact from different supply and/or demand scenarios.
- Enable "what-if" analyses to aid the decision making process covering network configuration, engineering design, maintenance strategy, operations strategy, and sales strategy
- Provide quantitative performance figures (e.g. revenue streams, variable Operational expenditure from unplanned maintenance activities) for different scenarios to input to cost benefit and Net Present Value (NPV) analyses

What parameters to take into account?

In order to correctly forecast the gas supply, all assets, from the wells through facilities and pipelines, to the customer delivery point must be considered while accounting for parameters such as: equipment reliability, maintenance response issues including spares, plant configuration, pipeline reliability, linepack amongst many others.

Adding all these parameters to associated gas sources, further complexity must be included to account for flaring restrictions (zero flaring targets) and potential effect on oil production from loss of gas facilities.

Maros and Taro enable key parameters affecting security of supply to be included in gas network analysis:

- Gas reservoir profiles
- Facilities reliability
- Pipeline reliability
- Operations and maintenance strategy
- Production recovery (e.g. linepack, boosting)
- Catastrophic events
- Demand profiles
- Future changes (configuration of facilities and pipelines, variation of gas reservoirs feed, and future gas demand rates)