

## Executive Summary

Australia Pacific LNG (APLNG) is a joint venture converting unconventional Coal Seam Gas (CSG) to liquefied natural gas (LNG). As the largest producer of natural gas in eastern Australia and a major exporter of LNG to Asia, the organisation's ability to accurately forecast knock-on effects from infrastructure constraints, as well as define and react to market opportunities is critical to maintaining delivery and maximising value.

APLNG is owned by Origin Energy (37.5%), ConocoPhillips (37.5%) and Sinopec (25%). The gas fields are operated by Origin Energy, and the LNG facility is operated by ConocoPhillips.

APLNG has undergone significant organisation development of its planning and scenario analysis capacity specifically within the realm of processes, systems and reporting through their Business Optimisation Process Modelling (BOPM) project.

The BOPM project focused on the development of appropriate enhancements to processes, procedures and systems, the implementation of enterprise software modelling platform and the integration of data visualisation tools. The enterprise software model includes the world's first instance of stochastic probability distribution functions and correlations applied as inputs to a full field, flow constrained, surface network model, applied within unconventional CSG to LNG.

This cloud based, modelling platform offers greatly enlarged scale, scope and sophistication for analysis than a traditional approach of comparing simplified deterministic scenario outputs based upon spreadsheet based forecasting models. It provides capability to produce more accurate forecasts, identify previously unknown possible outcomes and provide better insights for risk mitigation planning and decision making.

The inclusion of surface network stochastic analysis within the model builds upon typical risk analysis where only sub-surface reservoir modelling is stochastically analysed, irrespective of surface limitations. The model works within an integrated system including information ownership, workflow processes and data visualisation, which together allows for improved management decision capacity regarding investment selection, timing and strategy, enabling more efficient allocation of capital, higher value for stakeholders and the opportunity to mitigate safety and community execution risks.

The BOPM project has enabled APLNG to demonstrate engineering excellence, meet and exceed best practices and set new benchmarks for the management decision making and planning challenges within the unconventional gas industry. These improved capabilities have been key to building and maintaining confidence in APLNG's execution capacity, to safely and efficiently manage the operational, maintenance, commercial, development and exploration planning challenges.



With BOPM, APLNG is forging ahead with enhanced clarity of the nuances of their full field network.