

## **Analogue Play Statistics for Improved Pre-Drill Risking**

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### **ABSTRACT**

Analogue play statistics are fundamental to calibrating and sense-checking the risking of conventional exploration prospects. Richmond Energy Partners (REP) has risked over 1,000 wells pre-drill since 2012, using analogue play statistics to inform commercial chance of success assessments. Whilst technical success rates have been maintained, the analysis suggests that the industry has been systematically over-estimating the commercial chance of success in high-risk plays. Hence, it is time for the industry to take a hard look at its risking methodology, particularly to recognise earlier, cognitive bias and fatal flaws in the commercial potential of certain plays where technical discoveries are being made. The gap between commercial success rate and technical success rate was greatest for the highest risk wells. In the 233 wells assigned a less than 20% chance of commercial success pre-drill by REP, the actual technical success rate averaged 30%, but the commercial success rate was only 5%, i.e. only around 1 in 6 of the discoveries made had the potential to be commercial. For the 91 wells assigned a greater than 50% chance of commercial success pre-drill, the actual technical success rate was 78% and the commercial success rate was 59%. Commercial success rates in a number of mature plays have deteriorated since 2008, complicating analogue risking. For example, average commercial success rates declined from 54% in 2008-12 for the Norwegian Sea Middle Jurassic to just 9% in 2013-16. The North Sea Upper Jurassic saw a decline in commercial success rates from 24% in 2009-11 to just 9% in 2013-15. The paper considers the main causes of prospect failure on a play-by-play basis and how these have varied through time. The analysis shows how the quality of prospect inventory in certain key plays has degraded over time and that calibration of risking through analogue statistics can help in the quality control of prospect evaluations.