

The Curtin University Oil and Gas Innovation Centre Well Decommissioning Research Strategy 2018 - 2023



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Summary

This report proposes a strategy for the Curtin University Oil and Gas Innovation Centre (CUOGIC) to be the regional independent leader in well decommissioning research, collaboration and innovation. The strategy has been developed based on a review and assessment of well decommissioning practice, standards and regulatory guidelines to determining both the current challenges and potential innovation opportunities.

In summary the key well decommissioning challenges in the Australian context are:

- Limited quantification and sharing of well decommissioning cost and risk data within the oil and gas industry; restricts the understanding of the key drivers, hinders the comparison with international best practice and prevents the establishment of a cost and risk metrics and forecasts - hence identification of improvement opportunities.
- Uncertainty of well and completion condition data, at end of field life, impacts well decommissioning program – what improvements can be made if the risk was better defined and quantified?
- Wells which were plugged, abandoned and handed back to the Government some time ago, using technology and practices of the day – what are their long term integrity risks and what uncertainties need to be resolved?
- How do the regional approaches to risk management differ, have they been objectively quantified and compared to determine what is “better” – establish best practice and assess what approaches are best for the Australian context.
- Last 3 year reduction in oil and gas prices (revenue), along with an increase in volatility, has placed numerous producing assets under financial stress. Neither the Operator nor the Government wish to accelerate cessation of production – need innovation from all areas of cost/risk/fiscal to maximise value of the existing asset
- How can innovation opportunities (i.e. new materials, P&A methods, risk assessment techniques, new standards) be efficiently and safely implemented?

In consideration of the above challenges a total of six major innovation focus areas, or “innovation channels”, have been identified with a selection of topics within each. These channels include: 1) legal, commercial and cost, 2) knowledge and risk, 3) environment and subsurface, 4) well decommissioning design, performance and operations, 5) techniques and tooling and 6) materials. A range of technologies have also been identified which could be applied to each of the channels and at the various phases of a well decommissioning program. The details of these are captured in Section 4 along with a technology guide providing 23 items, their qualitative relative value and prioritisation over the next 5+ years (see Figure 5.3).