

Australia's Offshore Oil & Gas

Session 4: Industry Technology Initiatives

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19 March 2013

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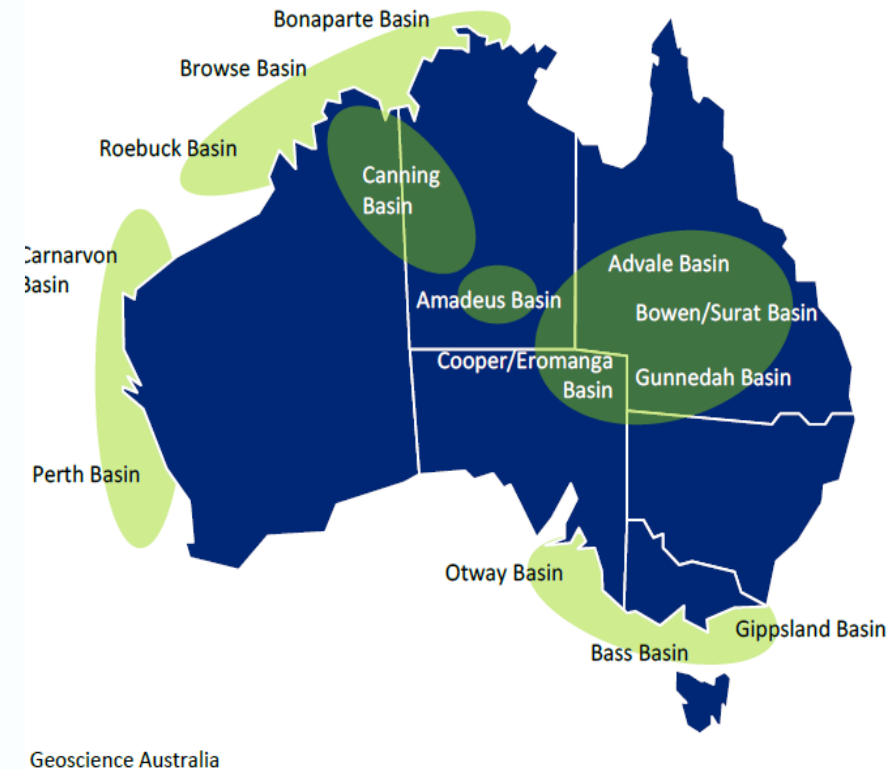
Technology development in offshore oil & gas

Exploration (De-risking)

- 3D & 4D Seismic imaging
- Hydrocarbon seep detection
- New techniques for development of basin models

Production (Enhancement and Environmental)

- Drilling
- Recovery enhancement (WAG, CO₂)
- Contaminants management (RPM, Sand Mngt, Hg, H₂S)
- Facility FLNG

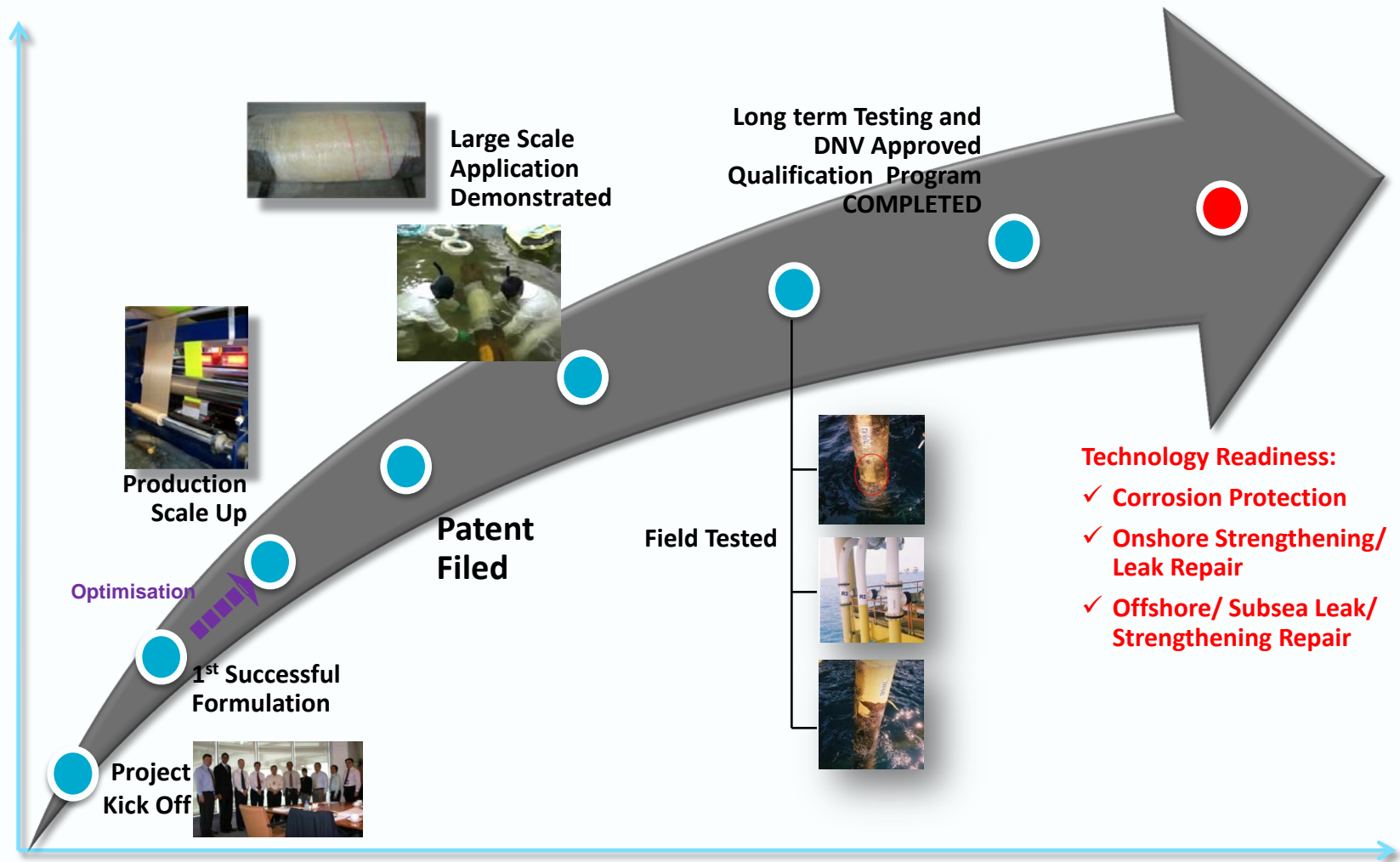


Cost and resources required to advance technology in offshore E&P in Australia

- Australia has a lot of capability and resources and an innovative culture
- Types of cooperation's that exist:
 - Government – Industry
 - University – Industry
 - Industry – Industry
- Successful technology development occur were collaborations between all players in the value chain is established upfront
 - R&D Providers
 - Service Companies
 - Operators and
 - Manufacturers



Example of successful technology collaboration



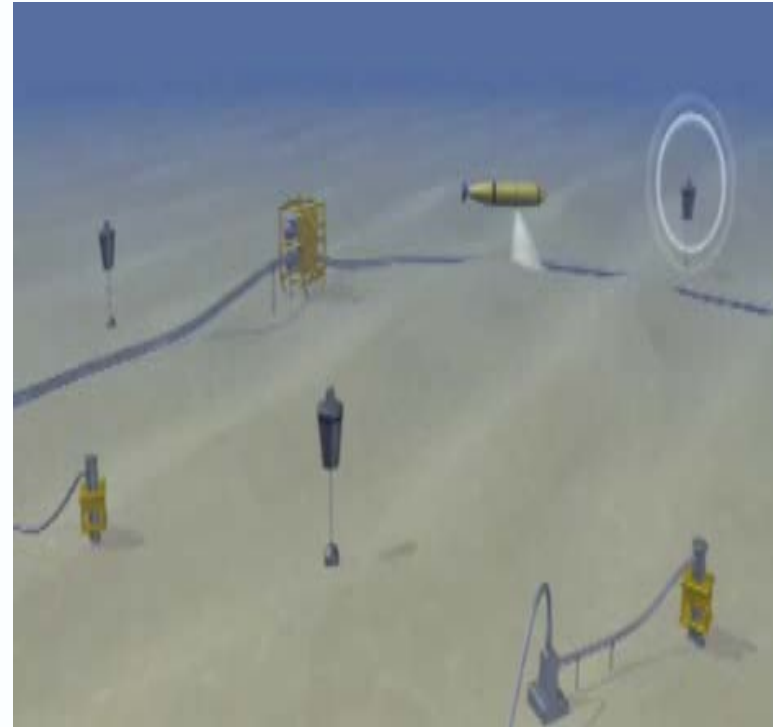
Floating FLNG

- FLNG is emerging as a viable option for monetising stranded offshore gas assets
- FLNG could be a cheaper option (lower Capex costs upfront but higher Opex costs)
- There are still a number of challenges that will need to be overcome (environmental impact, technical (extremely large))



CSIRO's technology outlook

- Well performance and productivity
 - Downhole separation (oil/gas/water)
 - Downhole treatment (RPM, sand management, etc)
 - Smart wells
- Subsea and downhole technologies
 - Intelligent autonomous systems
 - Hydrate management
- Unconventional resources
 - Water treatment
 - Production enhancement (hydraulic fracturing, microbial enhancement)
 - Fugitive Emissions



Thank you

CSIRO Energy Flagship – Petroleum Exploration & Production

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