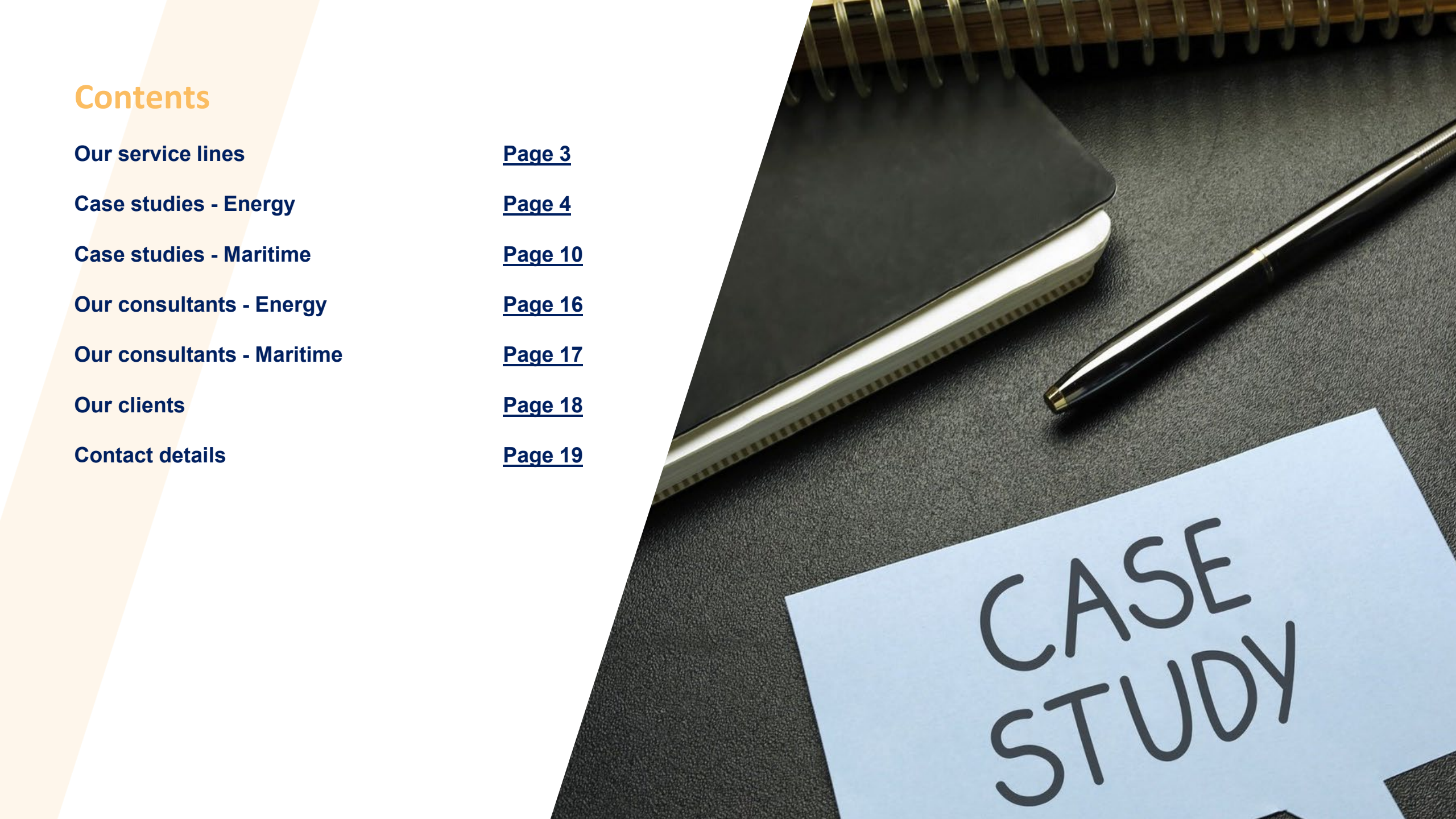




Drake /
**ENERGY & MARITIME
CONSULTING**

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CASE
STUDY

Our services lines

Drake Energy & Maritime Consulting specialises in advising clients in the energy and maritime sectors.

Energy service line

Our services include advising on:

- ❖ infrastructure investments over the investment lifecycle for gas pipelines, gas power stations, small-scale LNG infrastructure and renewables
- ❖ emerging renewable hydrogen opportunities
- ❖ the impact of the transition to net zero emissions on our clients' strategy and operations
- ❖ gas market design and gas market analysis
- ❖ best practice engagement with stakeholders and communities.

Maritime service line

Our services include advising on:

- ❖ port development and trade growth strategies
- ❖ the impact of the transition to net zero emissions on our clients' strategy and operations
- ❖ best practice environmental and emergency management
- ❖ maritime issues.

Our core team of consultants are experienced in servicing clients across both sectors. We also sub-contract to trusted specialist consultants to assist in the delivery of specialised services, where required.



Case study - energy

Client Allgas Energy (a Marubeni, NSW State Super and APA JV)

Year Current

Drake Energy & Maritime Consulting has undertaken several studies for Allgas Energy on a small-scale renewable hydrogen plant. The hydrogen plant will injection renewable hydrogen into a section of the gas network to create a hydrogen / natural gas blend.

Allgas Energy engaged Drake Energy & Maritime Consulting to provide ongoing support as the project is progressed towards a Final Investment Decision.

- ❖ **Site acquisition**
- ❖ **Scoping requirements for FEED**
- ❖ **Development approval**
- ❖ **Managing partnerships to deliver the project**
- ❖ **Stakeholder engagement**
- ❖ **Renewable certification**
- ❖ **Electricity connection application**

Value chain



Renewable Energy



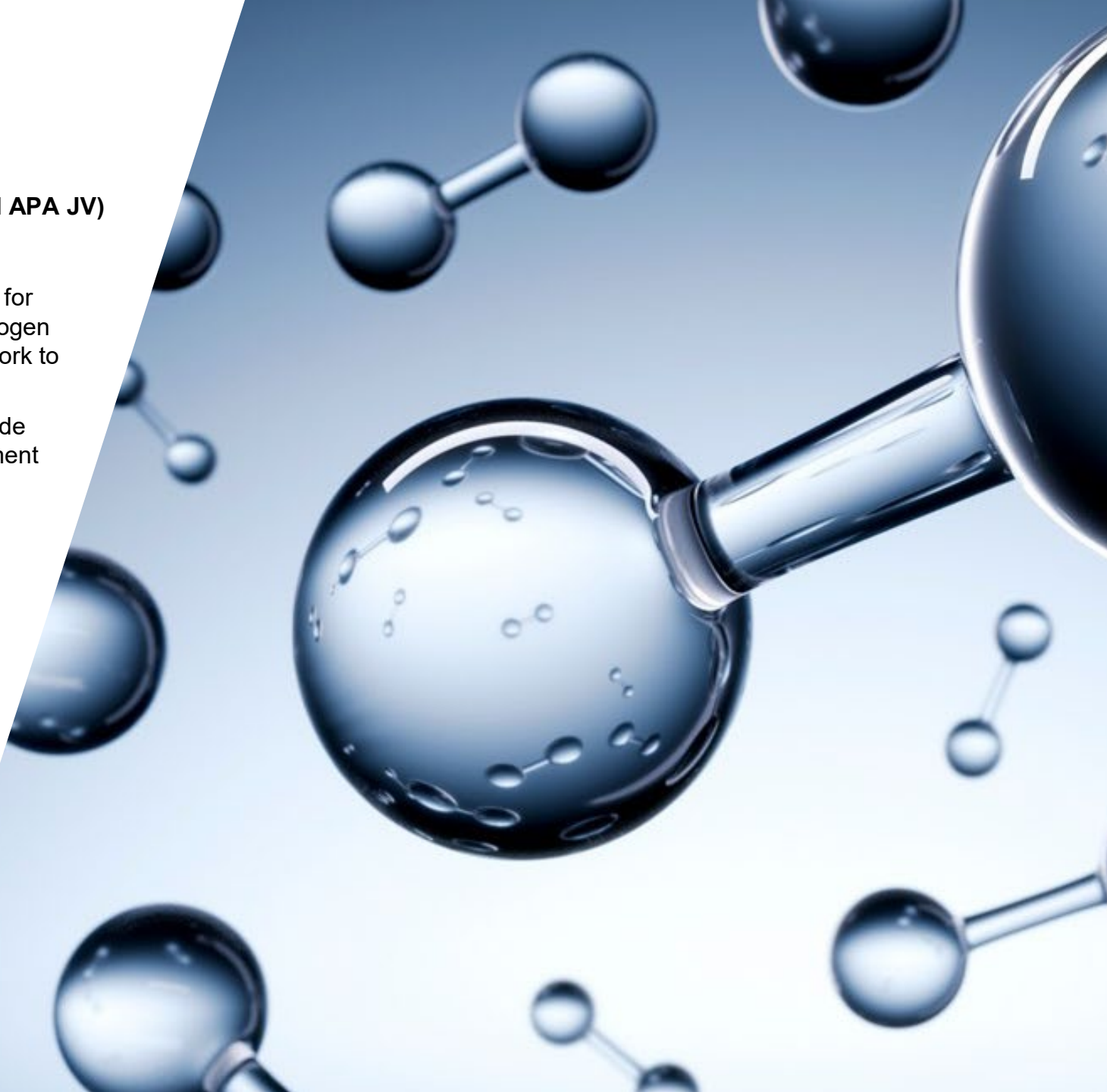
H₂ Production



H₂ Ready
Network



Consumers



Case study - energy

Client Allgas Energy (a Marubeni, NSW State Super and APA JV)

Year 2023

Drake Energy & Maritime Consulting prepared a pre-feasibility study for a proposed small-scale renewable hydrogen plant that will inject renewable hydrogen into the Allgas network.

Drake Energy & Maritime Consulting provided Allgas Energy with a comprehensive development team capability for this project.

The study included the concept design for the project, selection of a site in Brisbane, an assessment of the integration of the hydrogen plant with the gas network and a comparison of the potential for onsite solar power generation with sourcing electricity from a retailer.

- ❖ **Commercial strategy**
- ❖ **Site selection and approval pathways**
- ❖ **Stakeholder engagement**
- ❖ **Plant concept design**
- ❖ **Financial modelling**
- ❖ **Economic regulation**
- ❖ **Renewable electricity**

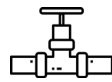
Value chain



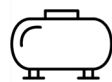
Renewable Energy



H₂ Production



H₂ Pipeline



H₂ Storage



Case study - energy

Client Allgas Energy (a Marubeni, NSW State Super and APA JV)

Year 2022

Allgas Energy engaged Drake Energy & Maritime Consulting to provide ongoing support as Allgas investigates the opportunity to develop a small-scale renewable hydrogen plant. The proposed plant is to be used to inject renewable hydrogen into the network.

Drake Energy & Maritime Consulting consulted with State Government and Council departments and held discussions with potential project partners. This included preliminary discussions concerning behind the meter electricity supply.

- ❖ **Government engagement**
- ❖ **Electricity procurement**
- ❖ **Financial modelling**
- ❖ **Approval pathways**
- ❖ **Partnerships**
- ❖ **Site selection**

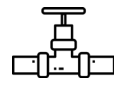
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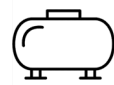
Renewable Energy



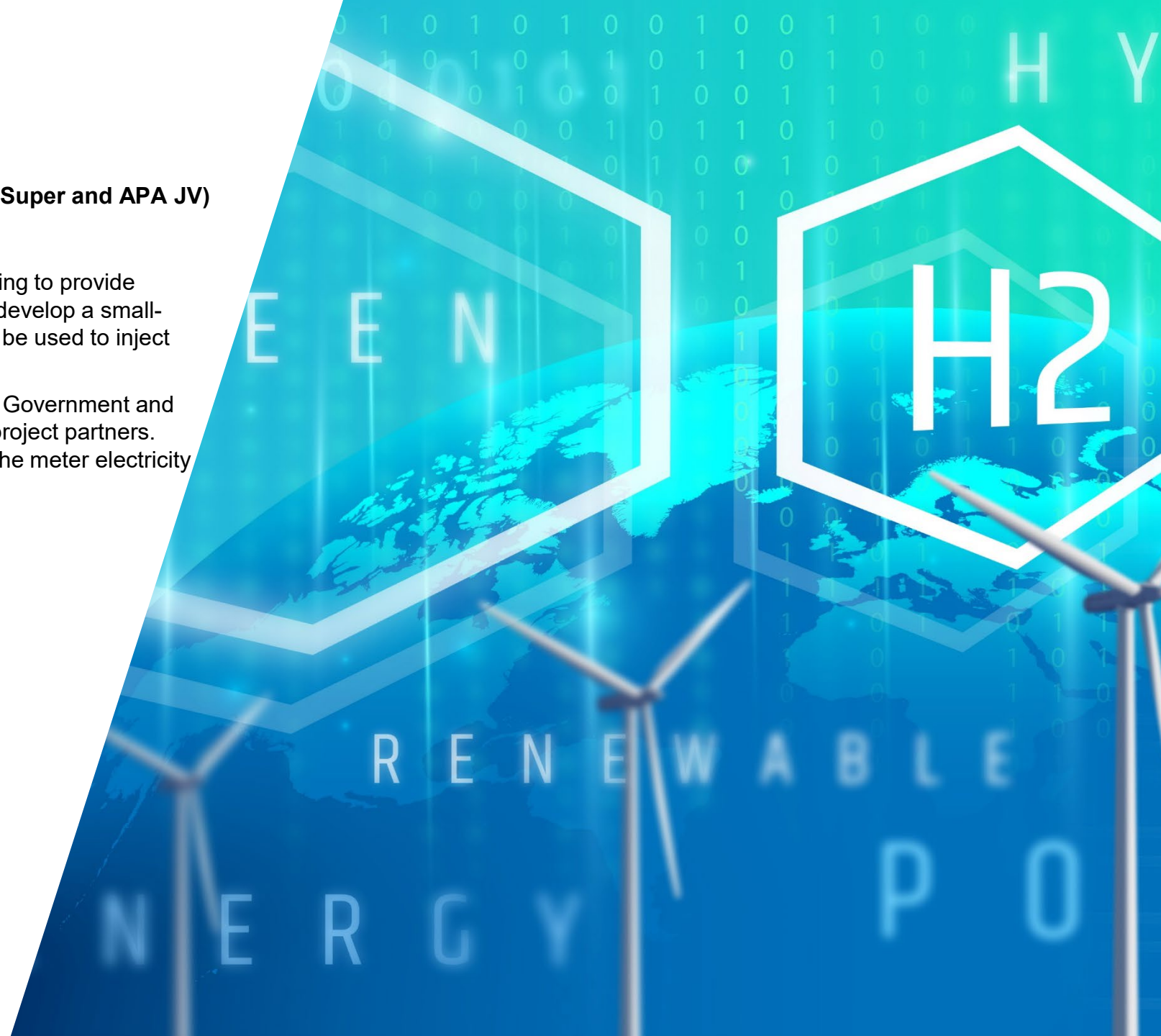
H₂ Production



H₂ Pipeline



H₂ Storage



Case study - energy

Client Allgas Energy (a Marubeni, NSW State Super and APA JV)

Year 2022

This project involved a strategic analysis of the potential role of renewable hydrogen in the decarbonisation of the Allgas Energy gas distribution network and the value chain required to replace natural gas at scale. This included both a 20-year horizon and a shorter-term horizon. For the shorter-term horizon, Drake Energy & Maritime Consulting prepared a concept study for a small-scale renewable hydrogen plant to inject renewable hydrogen into the gas distribution network.

- ❖ **Strategy**
- ❖ **Market analysis**
- ❖ **Electricity procurement**
- ❖ **Financial modelling**
- ❖ **Economic regulation**
- ❖ **Approval pathways**
- ❖ **Plant concept design and capital cost estimation**
- ❖ **Site selection**

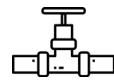
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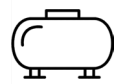
Renewable Energy



H₂ Production



H₂ Pipeline



H₂ Storage



Case study - energy

Client EDL

Year 2020

Drake Energy & Maritime Consulting advised EDL on a concept study for the development of a pipeline in Queensland through the Bowen Basin coal mining region to connect mines to the east coast gas pipeline grid to deliver renewable gas.

The study included a high-level economic analysis and regulatory impact assessment on the implications of the gas pipeline capacity trading reforms and gas trading mechanisms.

- ❖ **Commercial analysis**
- ❖ **Analysis of government regulations**
- ❖ **Industry analysis**
- ❖ **Strategy**
- ❖ **Pipeline concept development**
- ❖ **Fatal flaws analysis**
- ❖ **Development pathway**

Value chain



Renewable Energy



Gas Processing



Gas Pipeline



Case study - energy

Client COAG Energy Council

Year 2018

Rod Johannessen was appointed as the technical and commercial adviser to the COAG Energy Council Gas Market Reform Group in relation to gas pipeline capacity trading reforms. This included providing advice on a range of issues that impacted the implementation of the capacity trading reform package.

The purpose of the reforms was to improve the efficiency and competitiveness of gas markets by trading unutilised pipeline capacity.

- ❖ Risk analysis
- ❖ Pipeline operations
- ❖ Energy sector trends
- ❖ Industry engagement
- ❖ Economic regulation
- ❖ Legislation and regulation drafting



Case study - maritime

Client North QLD Bulk Ports

Year 2023

Drake Energy & Maritime Consulting assessed the opportunity at the Port of Mackay to develop container handling infrastructure and to increase break bulk trade. This included analysis of the potential market for port services for a range of products, assessing the supply chains within the region supported by the Port of Mackay and assessing the shipping, wharf and landside (eg. “port to pit”) supply chain required to deliver on the opportunities.

Drake Energy & Maritime Consulting engaged with external stakeholders on behalf of North QLD Bulk Ports.

- ❖ **Market sizing**
- ❖ **Landside supply chain analysis**
- ❖ **Shipping analysis**
- ❖ **Infrastructure gap analysis**
- ❖ **Strategy development**
- ❖ **Economic analysis**
- ❖ **Stakeholder identification and engagement**

Value chain



Ships



Port



Logistics



Importer /
Exporter



Case study - maritime

Client National Offshore Petroleum Safety & Environmental Management Authority (NOPSEMA) and Commonwealth Department of Industry Science & Resources

Year 2023

In 2021 to 2023 Drake Energy & Maritime Consulting advised the Australian Government on the offshore petroleum spill preparedness and response (OSPR) framework.

The final report presented a cost benefit analysis of the potential changes to the elements that implement the Australian oil spill preparedness and response framework.

Drake Energy & Maritime Consulting also facilitated a workshop on behalf of NOPSEMA and the Department of Industry Science & Resources. The workshop included stakeholders from industry and government agencies.

- ❖ **Economic analysis**
- ❖ **Stakeholder engagement**
- ❖ **Analysis**
- ❖ **Global best practice**
- ❖ **Government regulation**
- ❖ **Framework comparison**



Case study - maritime

Client National Offshore Petroleum Safety & Environmental Management Authority (NOPSEMA) and Commonwealth Department of Industry Science & Resources

Year 2023

This project assessed the viability of the elements (as identified by Drake Energy & Maritime Consulting in an earlier project) that implement the OSPR frameworks in the United Kingdom, Norway and the United States to be adapted to the Australian context. This assessed the relative strengths and limitations of the international elements and the mechanisms for regulatory oversight and the coordination arrangements.

Drake Energy & Maritime Consulting is pleased to have been supported by United States based consultants PCCI Inc and Polaris Applied Sciences on this project.

- ❖ **International research**
- ❖ **Analysis**
- ❖ **Global best practice**
- ❖ **Government regulation**
- ❖ **Framework comparison**



Case study - maritime

Client National Offshore Petroleum Safety & Environmental Management Authority (NOPSEMA) and Commonwealth Department of Industry Science and Resources

Year 2022

This project compared the existing Australian framework for OSPR and its associated service delivery models against other international jurisdictions. The report included recommendations on which elements of the international frameworks represent global best practice and could be adapted to Australia.

Drake Energy & Maritime Consulting interviewed representatives of stakeholders in the United Kingdom, Norway and the United States including oil & gas companies, oil spill response service providers, regulators and government maritime response organisations.

This report formed the basis of a third project undertaken by Drake Energy & Maritime Consulting for NOPSEMA and the Department of Industry Science and Resources.

- ❖ International research
- ❖ Analysis
- ❖ Global best practice
- ❖ Government regulation
- ❖ Framework comparison



Case study - maritime

Client National Offshore Petroleum Safety & Environmental Management Authority (NOPSEMA) and Commonwealth Department of Industry Science Energy and Resources

Year 2021

This study assessed the impact that changes in the structure of the petroleum production industry in Australia and globally would have on the risk landscape for offshore petroleum production in Australia and for the effectiveness of oil spill preparedness and response arrangements.

Offshore oil production makes a significant contribution to the Australian economy. The value of oil (crude and condensate) production in 2020/21 was A\$10 billion and the offshore industry employs approximately 5,000 people.

- ❖ Risk analysis
- ❖ Energy sector trend analysis
- ❖ Industry engagement
- ❖ Analysis of regulations
- ❖ Industry analysis



Case study - energy and maritime

Client Newcrest Mining

Year 2018

Drake Energy & Maritime Consulting advised Newcrest Mining on a feasibility study for the supply of LNG using small-scale LNG infrastructure (LNG carrier, options for onshore and floating LNG receive storage and regasification facilities).

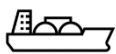
The project included the management of an expression of interest (EOI) process to obtain proposals for the supply of LNG, time charter for small-scale LNG carriers and LNG storage regasification. The EOI was used to determine the cost of LNG supply for comparison against the cost of heavy fuel oil.

- ❖ **Supply chain analysis**
- ❖ **LNG market analysis**
- ❖ **Shipping**
- ❖ **Industry engagement**
- ❖ **Risk analysis**
- ❖ **Commercial management**

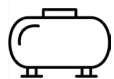
Value chain



LNG Supply



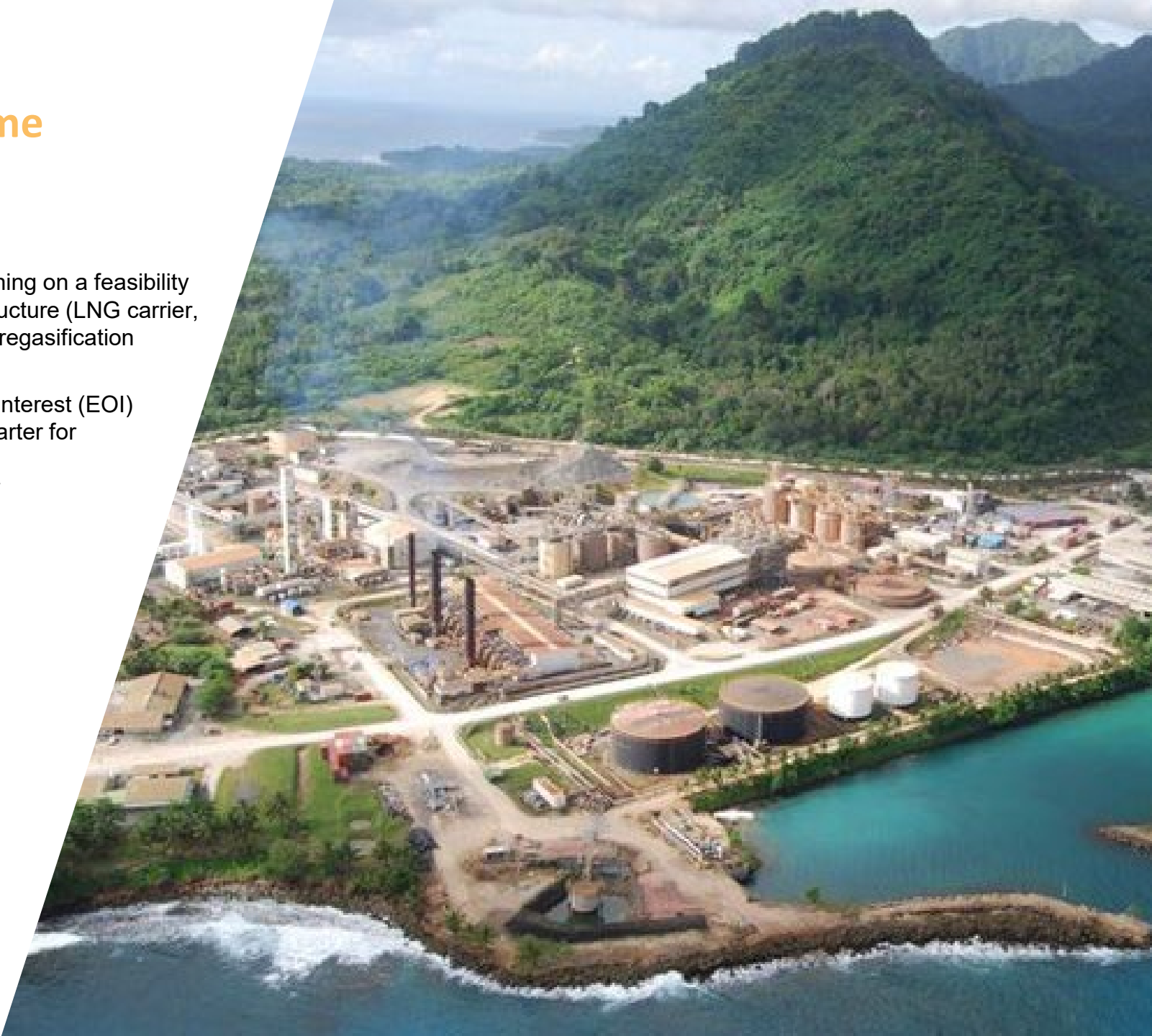
Shipping



LNG Storage



Regasification



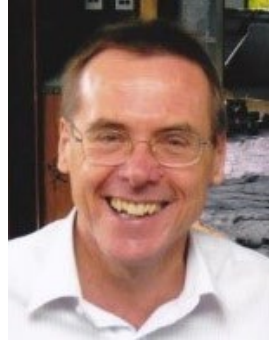
Our consultants - energy



Rod Johannessen



Kim Lawrence



Peter Crittall



Nick Behrens



Nicole Ireland



Sukhy Bansal



Our consultants - maritime



Rod Johannessen



Captain Steve Barron



Frank Mueller



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Clients



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