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AUSTRALASIAN OIL & GAS
EXHIBITION & CONFERENCE

AOG 2019
REPORT

INDUSTRY CONFIDENCE WHITEPAPER

OIL AND GAS: THE STATE OF PLAY

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EXECUTIVE SUMMARY

Replete with natural resources, Australia is a critical player in global energy markets. While the global economic climate roils with trade tensions between China and the United States, and commodity prices are volatile, Australia's oil and gas industry is showing sustained and increasing confidence, especially through gas exports to the large powerhouse nations of Asia.

The oil and gas sector is one of the principal sources of revenue underpinning Australia's economy, generating more than \$31.7 billion in gross value add and directly employing approximately 20,900 full-time workers.¹

The most recent Resources and Energy Quarterly Update (December 2018) from the Federal Government's Office of the Chief Economist, saw an upward revision of forecast commodity export earnings beyond \$264 billion, "meaning that resource and energy commodities now represent more than half of Australia's total export value".² These export volumes have been driven in large part by "surging LNG and crude oil exports ... in the December quarter".³ The update also notes that prospective resource investment is starting to recover again after a sharp fall due to the completion of the giant LNG projects.⁴

Showing an equally positive sentiment, the 2018 National Energy Resources Australia (NERA) Sector Competitiveness Plan Update noted that: "In 2018, Australia's energy resources sector has switched course towards value creation, growth and building trust. As [2019] speeds up, the convergence of technologies and business models is disrupting the national economy and energy resources sector supply chains."⁵

But it's not just peak bodies and policymakers seeing an upswing in sentiment. The 2019 Industry Confidence Survey for the Australasian Oil & Gas Exhibition & Conference (AOG) reported strong buoyancy within the sector, with the growth of market activity behind significant current and future projects underpinning that sentiment.

The 2019 AOG Survey is the second such annual survey conducted by the AOG. Undertaken in January, it captures the views of industry leaders on the current health of the oil and gas sector, priorities across all areas of the sector, future challenges and changes, and the shifting energy mix.

A wide range of industry specialists completed the AOG Survey, with almost 700 representatives from senior and operational management participating, as well as engineers, consultants, contractors and business development managers from a range of business sizes and types. There was also a strong response from government.

The AOG Survey uncovered confidence in a number of key areas: that new large projects would drive growth; that technology advancements are beginning to have a big impact on the sector's efficiency and profitability; that demand for gas would be a key driver of growth; that based on the demand outlook and recovering oil price, there is increased investment and confidence in the sector; that there is increasing demand for clean energy; and that exploration is picking up again, leading to more production and upside.

While respondents maintained a positive outlook overall, they did nominate a number of potential headwinds, including: the costs in Australia of developing new upstream projects coupled with the modernisation of offshore plants requiring fewer skilled operators; domestic and international political and economic uncertainty; the transition to renewables disrupting the current energy market; and lingering pessimism within the market.

01 OVERVIEW

Over the next two years, the export values of oil and gas are forecast to increase substantially. In fact, the value of LNG to the Australian economy is projected to rise from \$31 billion in 2017-18 to \$49 billion in 2019-20, almost pulling equal with 2020 forecasts for the export value of both metallurgical and thermal coal combined.⁶ Similarly, crude oil export values are expected to increase from \$7 billion in 2017-18 to \$11 billion in 2019-20.⁷ With large LNG projects coming online across Western Australia, the Northern Territory and Queensland, oil and gas – particularly gas – will be Australia’s engine room for national growth.

Indeed, Australia has become the number one LNG producer in the world, overtaking Qatar. While Australia may not be able to claim this mantle for long as Qatar ramps up production and the US catches up by the mid-2020s, enormous projects from Woodside’s Pluto in WA to Ichthys in the NT and the three LNG trains in Queensland that have been under construction over the past decade are transforming the industry. Not only will this shift from the construction phase into the operations phase contribute mightily to Australia’s GDP and economic growth, it will also form the basis for ongoing optimism in the local energy sector.

According to Bernadette Cullinane, Partner, National Oil and Gas Leader at Deloitte, there is a fundamental structural shift towards gas and renewables, which is in turn creating opportunities. “Oil and gas companies in Australia and in the region are thinking ahead to what this clean narrative can mean and how that narrative will have gas playing a critical firming role in the energy mix,” she says.

“That will mean that gas is a bridging fuel that will enable the large economies in Asia to transition from coal-centric energy systems to systems that are powered by renewables and gas. It is a market area where obviously oil and gas companies have tremendous capability and are investing.”

The AOG Survey confirmed this generally positive mood about the state of the industry. Asked about the current health of the Australasian oil and gas industry, the clear majority thought it was either stable or improving. For the health of the production and processing phases, more than nine out of 10 respondents were neutral or positive, with eight in 10 respondents similarly optimistic about field development. Even with major projects coming online and fewer large fields actively being sought, 76 per cent of respondents nonetheless believed exploration would remain the same or improve.

Looking ahead, just 8 per cent of respondents believe the Australian oil and gas industry will decline in the mid-to-long term, with the remaining 92 per cent believing it would improve or remain

the same. Interestingly, when looking solely at the long-term prospects for oil and gas (two-to-five years), almost 70 per cent of respondents said the industry would improve.

As one respondent explained, in two-to-five years, “most approvals in the ‘pipeline of activities’ should be done, while a sustained higher oil price will be supportive over the longer term. There is [also] quite a bit of mining and processing activity ramping up, so local energy supply requirements will help drive the longer term.”

Helping to fuel this positivity is a new generation of projects that will be less capital intensive and less complex than those built in the region previously. The shift away from large-scale, capital-intensive projects means projects will have greater ability to access stranded fields and supply customers with smaller, shorter and more flexible volumes. “There are still some mega projects, in North America, Qatar, Russia and potentially Africa,” says Cullinane, “but the industry which was once defined exclusively by its mega projects is going to embrace, in terms of opportunities for growth, lower-capital intensive projects and smaller-scale projects.”

The end of the oil and gas project life-cycle is an area that will drive another investment cycle in the sector – decommissioning. Operators in the Asia-Pacific are facing substantial decommissioning liabilities given that dozens of platforms and hundreds of fields, the majority offshore, are expected to cease production in the next 10 years. “This is a whole wave of activity that is starting to kick off that will have an impact in the region,” says Cullinane.

INDUSTRY SENTIMENT

PRODUCTION AND PROCESSING

9 in 10

NEUTRAL OR POSITIVE

FIELD DEVELOPMENT

8 in 10

NEUTRAL OR POSITIVE

EXPLORATION

3 in 4

REMAIN SAME OR IMPROVING

MID-TERM SENTIMENT

1-2 YEARS

92%

IMPROVE OR REMAIN SAME

8%

DECLINE

LONG-TERM SENTIMENT

2-5 YEARS

72%

IMPROVE

18%

SAME

10%

DECLINE

Source: AOG Survey

One of the major challenges in sustaining and creating the industry's health and subsequent growth, however, is a predicted era of volatile and potentially lower oil prices, with flow-on effects for LNG sold largely on oil-linked contracts. A December 2018 opinion piece in *Forbes* summed up this sentiment with the headline, "A 2019 oil forecast? Like 2018, or worse".⁸ According to this article, the wild swings at the end of 2018 heralded an unprecedented level of volatility. The uncertainty around global geopolitical and economic trends against a backdrop of technical advancements is pushing down price sentiment.

More factors influencing the price include the shale revolution in the United States, meaning the US is now a net crude oil exporter, Qatar's exit from OPEC, the political crisis in Venezuela and ongoing tensions in the Middle East. Fears of an unruly Chinese slowdown are also weighing on the price.

According to Miranda Taylor, CEO of National Energy Resources Australia (NERA), companies that have learned to live with low oil prices need to keep this mantra in the new operating reality of "lower prices for longer" with far lower margins. In this environment, companies must maintain a far higher level of cost discipline than in the past.

This is especially true in Australia, which is a relatively high cost environment due to factors such as geography and scale. "Companies will also need to run a tight ship and be lean and agile to survive in the face of rapidly changing technologies," says Taylor. "They will need to find and adopt digital technologies, use artificial intelligence, data analytics and all of these emerging automation technologies to drive efficiency and productivity improvements, create new value and produce more while wasting less."

One AOG Survey respondent echoed Taylor's sentiments about maintaining a focus on cost. "As the industry is cyclical, it will take companies a little longer to realise this [oil price] is the new

'norm' and they will eventually work out how to move forward at the current oil price ... the boom and [prices] over \$100/barrel made everyone sloppy and they've forgotten how to run more efficiently."

Another respondent believed that exploration, field development, production and processing had "all seen great improvement in recent times due to the life-extension programs in operation on ageing assets, as well as the impending results we will see from the new Shell and Inpex facilities when they start producing. The development of the Scarborough field will see another rise in production and no doubt a further improvement in the processing technologies in use."

The same respondent also thought there would be continued improvement in exploration as the technology utilised in the oil and gas industry and market developed, alongside a recovery in the oil price. "In the mid-term, I do not see any dramatic changes in the market or industry as the price of oil hovers between the mid-\$50 and mid-\$60 range," the respondent wrote. "However, long term I expect to see the oil price plateau at approximately \$70-\$80 and maintain that price for an extended period of time. This should see a return of large-scale capex projects and further hook-up and construction works as Scarborough moves into its final stages."

FUTURE SKILLS AND JOBS

Miranda Taylor, Chief Executive, NERA

"I think the public debate on future skills has somehow got overly complicated. My view is that the oil and gas workforce has always had to adapt to emerging technologies, is generally highly skilled and will continue to adapt, but the one key change is that the way we work will be different.

"With the move to digitally integrated operations, our workforce in the future will operate not in siloed jobs but in multi-disciplinary and integrated teams and evolving tasks. For example, those working on the operator control processes will increasingly be working in teams and be trained on predictive data analytics and how they operate and maintain sensors.

"The way we train people will also evolve to focus less on bulky qualifications and more on continuous and adaptive learning and skills acquisition through, for example, online courses delivering

micro credentials. But, as has always been the case, it will continue to include inhouse immersive training. Technology will also enable safer and faster learning environments through the use of real-time simulations and industry will partner with universities and training organisations to provide real industry examples and scenarios to ensure young people are prepared for the working environment.

"For the next generation recruitment, the industry is starting to look to different sources and different skill sets to bring into the mix, as well as the traditional sources such as university graduates. Other skills we will increasingly be looking for in the future include data and problem-solving, robotics and gaming, entrepreneurial and creative as well as personal attributes such as being collaborative and team-oriented."

Deploying digital technologies to help drive growth was a strong thread running through the AOG Survey responses. It is also one of the five global oil and gas megatrends identified by the CSIRO.⁹ In its report, *Oil and Gas: A Roadmap for Unlocking Future Growth Opportunities for Australia*, the five megatrends the organisation believes will have a significant impact on the development and success of the Australian sector over the next two decades are: energy hungry; carbon constrained; socially concerned; more complex and costly; and digitally enabled.

“Rapid improvements in digital technologies hold the promise to dramatically improve the way businesses operate ... [through] tools that improve how they create, deliver and capture value,” the CSIRO report notes. “The challenge for this sector is the integration of multiple technologies to capitalise on the next wave of the digital-enabled future.”¹⁰

The AOG Survey found that increasing investment in new technology and innovation was the highest priority for the respondents’ organisations over the next three years (narrowly followed by increasing collaboration with other industry organisations). Almost 45 per cent of respondents classified new technology investment as either a high priority or their highest priority, with just 23 per cent considering it a low or non-existent priority.

Emerging digital technologies such as machine learning, artificial intelligence and data analytics will help production and improve productivity by allowing companies to produce more with less, in turn helping keep costs under control. According to the World Economic Forum,¹¹ digital transformation initiatives have the potential to bring \$US1.6 trillion in value to the oil and gas industry, its customers and wider society between 2016 and 2025. If “operational constraints are relaxed and ‘futuristic’ technologies” are considered, the World Economic Forum estimates the value of digitalisation could rise to \$US2.5 trillion (see Digitalisation Breakout).

However, as Paul Limpitlaw, Director of Industry Sales Development, Oil and Gas at Siemens notes, the industry needs to throw off some of its reluctance to embrace these new ways of working. “The oil and gas industry is a conservative industry,” he says. “It doesn’t change anything unless it absolutely needs to change anything, and what happened in 2014 forced that change. Now operators are looking at technologies such as digitalisation, artificial intelligence and predictive maintenance to ensure that their facilities can continue to run with fewer stoppages and no downtime.”

The rise of technology is also coinciding with the end of the exploration and construction phases of many of the region’s large projects. As one AOG Survey respondent noted: “Australia is now the world leader in LNG production. We have moved into the operations and maintenance phase which will last for decades. Now is the time to invest in new technologies, business models and innovation.”

Beyond implementing the separate technologies, the oil and gas industry is also moving into “Industry 4.0”, or integrated operations. Put simply, Industry 4.0 (also known as the Fourth Industrial Revolution) is the ability to combine data sets from different activities to enable interoperability and optimisation of each stage of the process. While integrated data and open process control technology is in its infancy, these new operations will allow a single, multidisciplinary team to oversee the entire process chain.

“This is probably a 10-year transition,” says Cullinane. “Pockets of the industry are very, very good and getting some great results. Woodside, for example, has started to use artificial intelligence for knowledge management in both engineering and operations. But the industry has not yet moved to deploy that AI in an integrated way.”

Digital-services packages, from connectivity and software to simulations and web systems, will also benefit the oil and gas industry by enabling more efficient completion of projects. This is especially true with the development of “digital twins” for new projects. Using digital technology, an artificial digital twin can be created and used remotely for training, commissioning and start up. “Siemens, for example, has created a virtual walk-through of a new plant,” Limpitlaw says. “So from a training and operating point of view, workers and operators can become familiar with the facility even before it’s commissioned. From concept to completion, I think that time is going to be greatly reduced as these digital services grow value into the customer solution.”

COLLABORATION AS A PRIORITY



Source: AOG Survey

No matter how the productivity question is answered here in Australia, there is also the need to consider how we integrate with the global market and avoid unnecessary “bespoke” local solutions that might impede innovation, competitive performance and trade. Wherever possible, local oil and gas companies should look to collaborate to achieve a greater level of standardisation and collectively apply international standards locally. “We need to facilitate our supply chain and help innovative small businesses enter global markets, as Australia is too small on its own. We operate in a global market,” says Taylor, “and therefore wherever possible, we should adopt international standards. Our supply chain should see the world as their market not just the local oil and gas industry. This need is further highlighted by the fact that digital data and automation technologies are increasingly facilitating operations beyond borders.”

THE VALUE OF DIGITALISATION



Benefits worth about US\$640 billion for wider society



US\$170 BILLION

OF SAVINGS FOR
CUSTOMERS



US\$10 BILLION

OF PRODUCTIVITY
IMPROVEMENTS



US\$30 BILLION

FROM REDUCING
WATER USAGE



US\$430 BILLION

FROM LOWERING
EMISSIONS

Environmental benefits include:



**REDUCING
CO2 EMISSIONS**

BY APPROXIMATELY
1,300 MILLION TONNES



**SAVING
800 MILLION**

GALLONS OF WATER



**AVOIDING
OIL SPILLS**

EQUIVALENT TO ABOUT
230,000 BARRELS OF OIL

Source: World Economic Forum¹²

Along with investment in innovation, the AOG Survey clearly showed an increasing appetite for better partnerships within the industry. When asked about their organisation's likely priorities over the next three years, respondents ranked increasing collaboration with other industry organisations as a very close second behind digital investment. This keenness to enhance sectoral relationships significantly beat out the other options, including: increasing employment; increasing investment in research and development; navigating government controls; and managing mergers and acquisitions.

Some 42 per cent of AOG Survey respondents ranked collaboration as either a high priority or the highest priority for their organisation over the next three years, compared with just 21 per cent who ranked it as a low priority or not a priority. The remaining 37 per cent considered it to be a moderate priority. In a separate question, half of the respondents said collaboration was necessary to drive growth within the oil and gas industry.

Industry experts reinforce the AOG Survey results around collaboration. Much like the proverb that goes "If you want to go fast, go alone; but if you want to go far, go together", there is agreement that the industry's future hinges on the capacity of the players to come together and co-operate. And these players are not just confined to the extractive companies. "Collaboration is key," says Cullinane. "This is collaboration between the producers as well as intra-industry collaboration with universities, local businesses and governments."

Collaboration will not only help build Australian competitiveness in the sector, it will allow the industry to more fully capitalise on its strengths, especially in the LNG market. Examples of current collaborations include the Perth-based centres of excellence Chevron Global Technology Centre and IBM Natural Resources Solution Centre. The Chevron venture aims to "partner universities, operators, industry bodies and research institutions to grow research capabilities and deliver technological advancements needed to help secure Australia's energy future".¹³ The IBM venture is similarly aligned with local research and development enterprises. A practical outcome of these partnerships was a collaboration between the University of Western Australia, Woodside and Chevron that developed a new sub-sea engineering technology for offshore oil production.

A focus on developing tertiary skills within the non-university sector is also crucial, so that TAFE students, for example, can come into the industry with the full suite of skills necessary to become modern oil and gas operators. "We need to think about the skills of the future," Cullinane says. "We must equip students to be successful in the digital era and working at the man-machine interface."

The difficult question of sharing infrastructure is another piece of the collaboration puzzle. Taylor believes that there are already positive signs of emerging discussions around shared infrastructure and gas gathering systems in Australia, but the local oil and gas industry needs to find a way to collaborate and share infrastructure in a way that has not occurred in the past. Driving the need to collaborate is the view that the era of multiple large greenfield projects is at an end. With the need to secure ullage over the lifetime of existing projects, the focus has turned to monetising smaller projects, and these can often hinge on shared assets to make them economic.

"We are beginning to collaborate better as an industry but we are nowhere near the levels of collaboration you see in the North Sea, for example, where there is a lot more infrastructure collaboration and sharing than there is here," says Taylor. "While the North Sea is a very different environment, and it is not always helpful to make direct

comparisons, nevertheless there is real opportunity in the north-west of Western Australia, where there are a lot of resources remaining that could be stranded if we are unable to effectively collaborate."

Collaboration is also all about "external innovation partnerships", and therefore fits hand in glove with the greater use of innovative technologies to drive efficiencies and reduce waste. Taylor believes that for the oil and gas sector, most immediately, there is huge potential for the majors to partner with local SMEs, innovators and researchers to co-create innovation and solutions to industry challenges.

FUTURE INVESTMENT OPPORTUNITIES

Key oil and gas investment opportunities are:

- Subsea and Marine
- Unconventional Gas
- Operations & Maintenance
- Engineering Design & Fabrication
- Logistics & Transport
- Emergency Response & Safety
- Research & Innovation

Source: Western Australian Department of Jobs, Tourism, Science and Innovation (JTSI)

"I think this shift to external collaboration is a big thing," she says. "But it is not easy. However, the tide has turned and there are definitely signs of changed business models based on greater use of 'performance rather than procurement' contracts between oil and gas operators and their supply chain, where the focus is on the ongoing delivery of value, performance and innovation rather than just buying a technology or service and that being the end point.

"There are also signs of increasing economic confidence across the sector and some new projects on the table. Though there is a lot to celebrate as we go into 2019, I would say this is still predominantly a year of turning. We don't as yet have all those projects signed, sealed and delivered. In summary, the signs are good but there remains a high level of uncertainty for the next year. And in uncertain times we need to be agile and work together."

Taking the mantle as the global LNG leader will require Australian researchers, operators and companies to work together, and leverage our position as a world leading exporter of gas. "We are number one and we should really stamp our reputation as the LNG centre of excellence through digital technology, applied innovation and enhanced collaboration but also through infrastructure sharing, gas supply deals and tolling arrangements," says Cullinane. "These things are happening but they've only just started. We need to make this thinking part of our DNA as an industry and act on those plans."

SHIFTING PORTFOLIOS TOWARDS RENEWABLES

The transition to a carbon-constrained future in which renewables play a larger role in the energy mix provides both challenges and opportunities to the Australasian oil and gas industry. The AOG Survey found that 81 per cent of respondents thought the oil and gas industry's movement into new energy sources (such as renewables, remote energy sources, and alternatives to traditional energy sources and fossil fuels) was a positive. A mere 7 per cent believed it wasn't positive, while the remaining 12 per cent were unsure of the impact. Many respondents noted that becoming involved with and utilising renewable sources of energy provided future avenues of growth.

However, the associated comments showed a degree of uncertainty about how the shift would play out. One respondent noted that the "[oil and gas] price is too unstable, [there are] too many political uncertainties, before you add in the disruptive power of pushing for renewables". Another said that future growth will come from "population growth, infrastructure and renewable energy targets", while another commented that "renewable wind and solar is only a partial solution – until nuclear steps up, we still need oil and gas".

At a global level, the oil and gas industry has already moved to act on renewables and a carbon-constrained future. The Oil and Gas Climate Initiative (OGCI) was formed to "reduce and mitigate carbon dioxide and methane emissions [of the oil and gas industry], while supporting actions that help other energy and industrial companies to reduce theirs."¹⁴

The OGCI has three main aims: reducing the energy value-chain footprint, including a policy of reducing global methane emissions by a third by the end of 2025; accelerating low-carbon solutions; and enabling a circular carbon model. With members including most of the supermajor companies from Equinor and ExxonMobil to BP, Chevron and Shell (covering 30 per cent of global oil and gas production), the OGCI has seen the explicit recognition of the Paris Agreement and \$US6.3 billion of investments in low-carbon technology and R&D.¹⁵

The OGCI has also engaged in technical and policy studies that "help shape its member companies' strategic approaches to climate and low-carbon technology" and "help to significantly improve contributions to the energy transition". Along with this, the OGCI is "actively investing in promising carbon-reduction technologies, business models and deployment through OGCI Climate Investments, a \$1 billion investment vehicle with its own dedicated team of venture and technical professionals".¹⁶

Likewise, Australasia has many opportunities for testing and developing new technologies. Energy companies are looking at how they can partner with renewable energies to optimise the mix of oil and gas and renewables. This includes hybrid technologies and deployment of renewables at offshore facilities, such as Woodside's installation of a 1MWh battery storage technology on its Goodwyn A offshore platform. It is believed to be the first time such technology has been integrated into an offshore asset and will reduce the fuel gas used by more than 2000 tonnes per year.¹⁷ Woodside and Santos, as well as other major oil and gas companies, are also combining gas turbines and solar and battery storage solutions. "I think that companies are taking steps to responsibly prepare for a decarbonised future," says Cullinane.

The Western Australian Department of Jobs, Tourism, Science and Innovation (JTSI) believes there is also interest in the sector in linking

natural gas to the hydrogen industry to leverage renewable energy. "There are also opportunities such as using LNG or compressed natural gas (CNG) to fuel cargo vessels, tankers and ore carriers," a JTSI spokesperson says. "These are cleaner fuel alternatives for the marine industry."

However, echoing the more cautious remarks by AOG Survey respondents, there is still considerable debate about how much renewable energy can add to the mix and just when the various technologies might be cost-effective and deliver consistent ongoing energy. "Integrating renewables is definitely important," Limpitlaw says. "But I think there is a long way to go before renewables reach those levels of efficiency and parity compared to traditional fossil fuels. Having said that, a lot of power plants are converting from coal to gas, taking advantage of the fact that using gas is much cleaner than burning coal."

FEELINGS ON A MOVE INTO RENEWABLES



Source: AOG Survey

Predicting how the transition will occur is naturally fraught; however, it's fair to say there is confidence within the industry that renewables will, over time, produce a net benefit to the sector. A JTSI spokesperson recalls a speaker at the 2018 AOG Conference posing the question of whether oil and gas would become the next Kodak. For the JTSI, the answer is a resounding "no".

"A strategy where industry can decarbonise through the use of LNG and carbon capture and capitalise on renewables such as hydrogen, solar and battery power will still see the oil and gas sector continue to play a very significant role in 10 years' time," the spokesperson says.

"In the future, it will be a linked energy industry with fossil fuels increasingly used in the more lucrative chemicals and lubricant industries that offer greater returns for volume of gas used, while LNG and lithium will contribute to a cleaner energy source of distributed energy."

06 CONCLUSION

The Australasian oil and gas industry is well positioned globally, especially as the energy market evolves. Despite clear uncertainties in geopolitical forces, commodity prices, increasing competition and new technologies, there is a general consensus that demand for oil and, in particular, gas, will increase and continue to play a key role in the region's economy.

On a global scale, Australia's oil and gas sector will need to maintain strong cost discipline in a highly competitive energy market. This, combined with improved energy efficiency and carbon abatement should, however, ensure a healthy future. Key challenges remain around maintaining and continually improving

operations through digitalisation, collaboration and supporting and integrating operations with local economies. Impacts on the environment and heritage also need to be understood and addressed so that communities can be confident these safely co-exist with industrial development.

With world-class universities, a highly skilled population and strong links to the burgeoning Asian economies, the Australasian oil and gas industry is perfectly positioned to embrace a shifting energy market.

THE EFFECT OF REGULATION

Bernadette Cullinane, Partner and National Oil and Gas Leader, Deloitte

"Eastern Australia is a very uncertain playing field for oil and gas investors and companies. Oil and gas companies don't mind working in difficult regimes – with technical, economic or political challenges – but what they don't like is uncertainty and change. A recent Fraser Institute study found that the states of Victoria and New South Wales were among the world's most unattractive places for oil and gas investment, rubbing shoulders with countries like Yemen, Libya, Iraq and Venezuela.

"There are mixed energy policy signals on moratoria and there is no magic bullet or quick fix. However, more concise and considered regulatory requirements that are harmonised between the state and federal governments would introduce far more certainty. Having more consistency in investment signals and regulatory signals is important."

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