

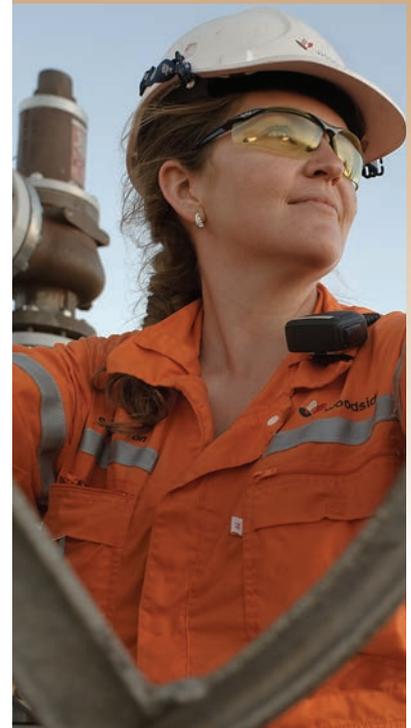
OIL AND GAS

SNAPSHOT

MARCH 2015

The Resources Industry Training Council (RITC) is a state government funded joint venture between The Chamber of Minerals and Energy of Western Australia (CME) and the Australian Petroleum Production and Exploration Association Ltd (APPEA). It represents training and workforce interests of Western Australia's mining, oil and gas and downstream process manufacturing industries. A major function of the RITC is to work with key stakeholders to develop and implement innovative solutions to address skill shortages, changing workforce needs and vocational education and training policy issues.

The RITC produces annual workforce development plans which provide an overview of the RITC industries from the perspective of training and workforce development. Each industry plan highlights issues impacting on the industry environment, identified training and workforce issues, current and emerging skill shortages, and offers responsive training and workforce development policy solutions for industry. This document is a snapshot of the information contained in the 2013-14 industry workforce development plan.



RESOURCES

INDUSTRY

TRAINING

COUNCIL



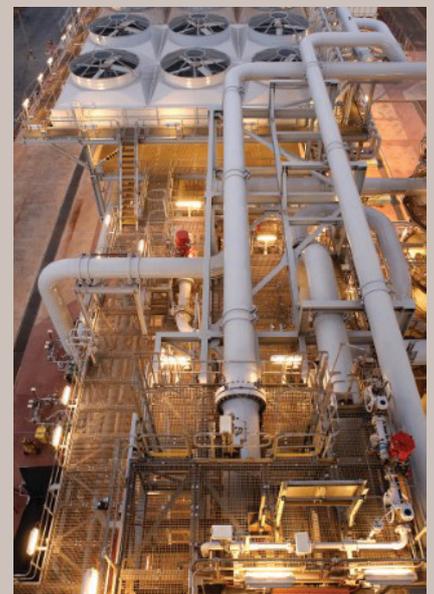
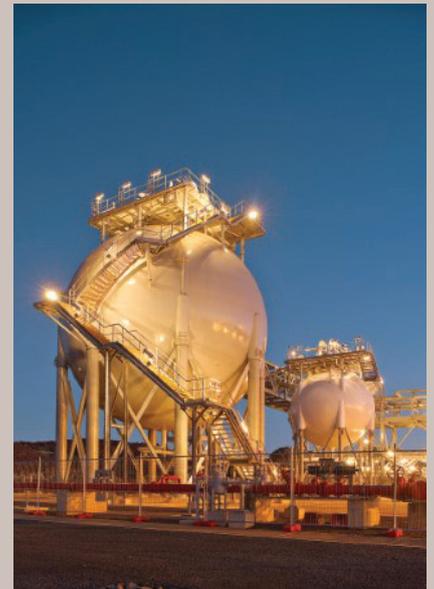
## OVERVIEW

The Australian and Western Australian economies have benefited from high levels of activity in the resources sector over the past decade. For the oil and gas industry, Western Australia hosts significant reserves of natural gas, holding a reputation for reliability in both production and export of liquefied natural gas (LNG). Chevron's Gorgon and Wheatstone projects and Shell's Prelude floating LNG (FLNG) project have brought significant investment and direct and indirect employment into Western Australia, growing its stature as an LNG producing state. Currently, with up to ten LNG projects nationwide either already in operation or moving to production within the next three years, the oil and gas industry is in a process of transition from construction to production.

Alongside the shift towards production, the first quarter of 2015 has seen oil prices cut by half, moving the industry into a cost constrained environment. The lower Australian dollar has buffeted the impact of lower oil prices for many resource sector exporters. However, coupled with the industry's capital intensiveness, declining productivity,

higher project costs, delays in project completions and increased global production, LNG producers are faced with added pressure to contain costs and boost productivity. This has led industry to focus on improving efficiency, with companies actively seeking to lower input costs by improving workforce productivity and mobility. Emphasis has also shifted towards maintenance cycles, asset integrity and the associated workforce skills capable of satisfying operational and maintenance demands.

As construction winds down in the oil and gas sector and operations focus on costs, industry will see changes in employment levels and the skills mix. As projects move closer to an operational phase, the technical and specialised nature of the industry will shift its focus towards highly experienced engineers and technical personnel while continuing to address the highly competitive need for a process operator/technician and electrical/instrumentation skills base. It is projected that over the next five years the occupational profile of the industry will see significant changes with over half of the workforce holding management or professional roles.



## INDUSTRY ACTIVITY

Recent years have seen unprecedented levels of investment in the oil and gas sector. Increased volumes and a weaker Australian dollar saw the value of Western Australia's mineral and petroleum industry reach a record of \$121.6 billion in 2013/14<sup>1</sup>. Oil and gas extraction in Australia accounted for \$48.3 billion in revenue (70 per cent of which came from Western Australia), 2.7 per cent of Australia's GDP and \$32.4 billion in exports. As at September 2014, the annual growth rate of 7.7 per cent was predicted for the period between 2010 and 2015.

### Project Activity

The vast majority of projects either under construction or committed in Australia are based in Western Australia. Approximately 50 per cent of planned total capital expenditure is accounted for by the state's projects. There are approximately \$145 billion of oil and gas projects under construction in Australia, \$67 billion of which is in Western Australia. By 2018, Australia's installed LNG capacity is expected to reach around 86 million tonnes, representing a 61.8 million tonne increase (254.3 per cent) over the 2013/14 LNG production level of 24.3 million tonnes. With three LNG plants currently operating in Australia as at the end of 2014 (two of which are in Western Australia) and an additional four LNG projects moving into production between 2015 and 2018, the oil and gas sector is set to increase LNG exports. By 2019, Japan is expected to account for nearly 50 per cent

of Australian LNG exports (40 million tonnes), followed by China (18 million tonnes) and South Korea (13 million tonnes).

### Employment and Workforce

While the overall oil and gas direct workforce size is relatively small, particularly in a project's operational and maintenance phase, it is highly skilled and technologically advanced. According to the 2011 Census of Population and Housing 81 per cent of direct employees in the oil and gas sector worked in oil and gas extraction, 37 per cent being professionals and 20 per cent working in technician and trades occupations. Reportedly, over 20 per cent of the current workforce is aged 50 years and above with the industry directly employing 26 per cent females. As projects transition to operations, tradespersons and technicians will play an increasingly important role in the oil and gas industry and are projected to comprise approximately 20 per cent of operations workforce by 2018. Approximately 72 per cent of the oil and gas workforce is aged 25-49 years, reflecting the industry's preference for skilled workers with experience and well-developed safety behaviours. In the transition to operations, the technological sophistication of the oil and gas sector will mean demand for electrical and instrumentation tradespeople and process operators will remain high. Demand will focus on maintenance skills and experience linked to LNG operations and shutdown schedules. As global competition for experienced oil and gas workers continues, it is likely a highly specialised



contract shutdown skilled labour capability will be formed in Australia, being mobilised from state to state to perform shutdown work on LNG projects. The 62.5 per cent increase in the number of apprentices and trainees in the Australian oil and gas industry (27.6 per cent in Western Australia)<sup>2</sup> with 50 per cent being technicians and trade workers between 2010 and 2014 will not relieve the strain on the availability of experienced, skilled labour in the industry driving companies to explore different ways to produce capable and well-skilled operators in the shortest possible time. Combined with the current cost constrained environment, the challenge for industry is not just to source, up-skill and retain a workforce capable of meeting current and future industry labour demands but to maximise labour productivity and control cost to remain globally competitive.



<sup>1</sup> Department of Mines and Petroleum, Mineral and Petroleum Industry 2013/14 Review

<sup>2</sup> Analysis of NCVER VOCSTATS data on apprentices and trainees in the Western Australian oil and gas industry

## KEY ISSUES AND PRIORITY ACTIONS



### Workforce Participation

Promoting employment opportunities in the oil and gas sector is critical to raise awareness of the industry's technological sophistication and recruitment potential. In order to attract a new wave of workers it is critical to continue to promote careers in the oil and gas industry to young people, coordinators of VET programs in schools and those seeking to make career decisions. Skill shortages can also be addressed by identifying key policy issues and drivers influencing gender diversity and implementing initiatives that help champion the role of women in the oil and gas industry.

### Lack of STEM Focus

A significant number of technical and professional occupations within the oil and gas industry require well-developed science, technology, engineering and mathematics (STEM) skills. These skills are fundamental to the sector and efforts must be made within the school system to address a lack of emphasis on STEM subjects and promote career pathways in demand by the Western Australian oil and gas sector.

### Skilled Operating Workforce

Given the remoteness of oil and gas operations, it is essential that a policy environment exists which provides work choice options.

Similarly, to assist with local skill shortages, companies seek a flexible skilled migration program. The 457 visa process is currently seen as onerous, unnecessary and costly, compounded by the already costly recruitment, validation, employment and relocation requirements.

### Quality and Flexibility of Delivery

Currently, industry lacks confidence in the capacity of the vocational education and training (VET) sector to successfully develop the skills required of the oil and gas workforce. Concerns raised focus on issues around relevance to industry, quality and depth of the VET provider market. Vocational training provision and delivery must be relevant, flexible, innovative and industry-led. These issues can be addressed by developing greater partnerships between industry and training providers in this highly technical sector.

### Skill Sets and Funding

Current qualification structures and funding guidelines may discriminate against more flexible and innovative training solutions that are applicable to the oil and gas sector context. Training and workforce development requires flexible, innovative and fit for purpose training models to respond to skill demands of the industry. A flexible, responsive and resilient apprenticeship and traineeship

system may mean a greater focus on skill sets.

### Productivity and Collaboration

As industry transitions from construction to operations, it focuses on maximising productivity and effectively managing costs. There is a general recognition that existing skills development regimes are not optimised and result in inefficiencies across operating companies, variable outcomes and duplication. There is an appetite to explore alternative models to create a skills development market that better meets the needs of industry. Identifying existing training collaborations in the oil and gas industry may result in models being adopted throughout the sector to ensure access to the skills required during the operations phase of project developments. Collaborating and exploring consistent application of processes across the industry to ensure verification of competency may also provide an opportunity for reduced cost and greater productivity for companies.

### Electrical Licensing

The Western Australian resources sector needs access to a relevant engineering based electrical qualification that will meet electrical regulator requirements for issuance of an electrician's licence. Collaboration is required to ensure appropriate professional development and support for the new Metals and Engineering (MEM) Training Package qualification is made available to training providers in Western Australia servicing the resources sector.

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