Implications of Wage Costs on the Offshore Oil and Gas Marine Support Sector

Prepared by BIS Shrapnel for Maritime Union of Australia

SEPTEMBER • 2013

ECONOMICS

BIS Shrapnel
BUSINESS RESEARCH AND FORECASTING

Job No: E5945

BIS Shrapnel contact: Richard Robinson
BIS Shrapnel Pty Limited
Level 8, 99 Walker Street
North Sydney NSW 2060
Australia
T: +61 (02) 8458 4200
F: +61 (02) 9959 5795

Project Team: Darren Anderson, Kurt Lemke

Contents

Tables and Charts

EXECUTIVE SUMMARY

BIS Shrapnel has been commissioned by the Maritime Union of Australia (MUA) to respond the report published by Deloitte Access Economics (DAE) on August 2013 entitled, "*Analysis of the offshore oil and gas marine support sector"*. The DAE report argues offshore oil and gas marine support sector wage growth is threatening the viability of both the oil and gas marine support sector and the viability of Australia's oil and gas industry in general. Specifically, BIS Shrapnel has been asked to verify the accuracy of DAE's evidence, analysis and conclusions made within the report.

First, our critique of the DAE report reveals that the methodology that forms the backbone of its analysis – a survey of 5 out of 19 vessel operators – fails to meet accepted standards of survey methodology. While survey data can be a powerful tool to examine markets, its usefulness becomes questionable when the participants may be subject to bias in their responses. In this case the vessel operators, members of AMMA who commissioned the report, are the companies responsible for negotiating the bargaining agreements that cover seafarers (integrated ratings[1]) and would want to create an impression that they are under financial strain in order to influence the bargaining environment. A more reasonable method is to refer to previously published public data as a more reliable source of unbiased information. **Therefore, BIS Shrapnel's methodological approach for this response is based on a review of publicly available data.**

Second, we examined DAE's evidence and claims that integrated rating wage growth has easily outpaced growth in the wage price index for all workers over the last decade. However, this is not a fair comparison as the all-industries wage price index includes a heavy weighting in industries such as retail that have historically maintained thin margins and do not face skilled labour constraints. The wage price index is further weighed down by including non-resource boom states that have not experienced the same rapid growth in demand for skilled employment as the resource states. To remedy this, BIS Shrapnel compared wage growth for integrated rating workers (employees responsible for berthing and un-berthing, securing cargo, maintenance and other generalised duties) on Schedule 1 (standard) and Schedule 8 (specialist) vessels as identified in offshore enterprise agreements to industries of a similar nature and facing similar constraints such as mining and construction. **Chart I demonstrates that when placed against more relevant indexes, integrated rating wage growth has lagged behind construction and mining wage index growth over the period 2005 to 2013.**

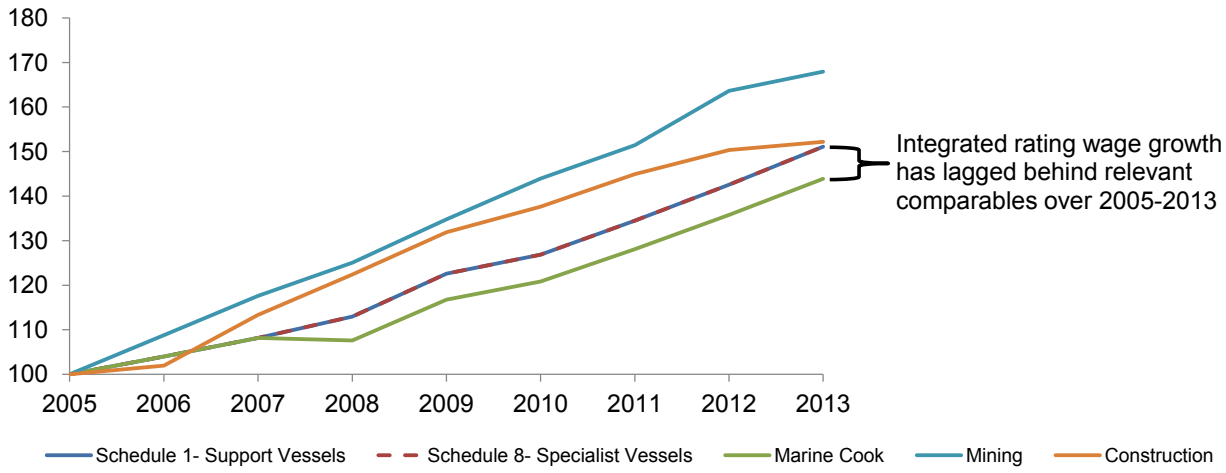
Further, we examined the accuracy of claims attributed by DAE to Gary Gray, the Federal Resources and Energy Minister, that marine cooks[2] are paid up to $230,000 per year. Our analysis of the public record finds that DAE's claim that marine cooks are paid $230,000 per year is highly exaggerated by a magnitude of 40%.

Third, a review of public data, including annual reports and official financial statements of companies engaged in the sector, reveals a different story than described by DAE. Revenue growth of over 200% compared to 32% wage growth over the same period strongly refutes the

[1] An Integrated Rating is the core non-Deck officer, non-Engineering officer occupation on ocean-going vessels. An integrated Rating is an internationally recognised occupation. An Integrated Rating must hold a Certificate Level III vocational qualification and a Certificate of Proficiency from the maritime regulator. It takes approximately 18 months training to become an Integrated Rating.

[2] A Marine Cook is a specific qualification recognised in legislation. A Marine Cook must hold as a minimum a VET Certificate Level III trade qualification.

Chart I: Integrated rating wage comparison, annual wage
Indexed 2005
Adult, Full-time ordinary earnings



claim that wage growth is outpacing revenue growth as described by DAE[3]. More importantly, profits, as demonstrated by EBITDA (Earnings before Interest, Taxes, Depreciation and Amortisation), have been outstanding over the period – EBITDA averaged 13.2% compound annual growth rate (CAGR) from 2007 to 2012. EBITDA includes the wage bill, and clearly illustrates the strong performance of the sector over the period. In summary, strong double-digit revenue and profit growth, as supported by the public record over the period from 2007 through 2012 corporate financial years, strongly refutes the assertion that the offshore oil and gas marine support sector is under economic pressure.

Fourth, we carefully examined DAE's implication that rising wages have lead Australia to price itself out of a leading edge position in the global gas development queue. Again, DAE relied on an expert source to base its analysis and conclusions. In this case, the expert source is the McKinsey (2013) report, "*Extending the LNG boom: Improving Australian LNG productivity and competitiveness".* DAE quotes:

"McKinsey (2013) estimates that a new Australian LNG project would have a cost of supply as much as 30% higher than a matching Canadian or east African project." (page vii, paragraph 2 and page 15, paragraph 3)

However, it is imperative to compare the wage bill costs for a major LNG project such as Gorgon, in relation to other costs to develop the project. According to Maritime Employees Training Ltd, the total integrated rating wage cost of a project such as Gorgon is approximately 0.25% of the total project cost as shown in Table I[4]. Clearly, the impact of wage growth, which is such a small component of the total project cost, is unlikely to present any material threat to viability.

[3] Three firms in the offshore oil and gas marine support sector provided sufficient data through annual reports and investor presentations to form estimates of revenue growth for corporate financial years 2007 through 2012. Wage growth of 32% is based on the Tidewater Marine enterprise agreements covering integrated ratings employees over 2007 through 2012.

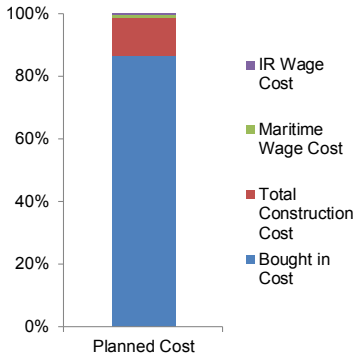
[4] The Computerised Interactive Workforce Planning and Prediction Tool (CIWPAPT) model is designed to work out how many people need to be trained, in what classifications, and when. It uses information supplied by industry, AMSA, Seacare and to some extent the ABS.

The CIWPAPT model uses formulae to calculate the all-up cost of employing workers based on a basic across-industry pay rate, plus on-costs plus other costs such as PPE gear, training, travel and allowances.

Table I: Gorgon Project Cost Estimates

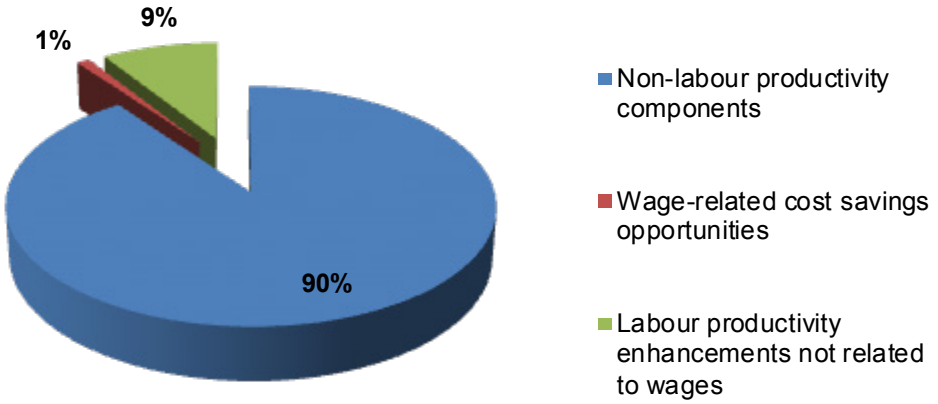
	US$Billion	Share of Project Cost
Bought in Cost	37.63	87.50%
Construction Cost (ex IR)	5.27	12.26%
IR Wage Cost	0.11	0.25%
Planned Cost	43.00	100%

Source: Maritime Employees Training Ltd, CIWPAPT model



Further, a thorough review of the McKinsey (2013) report shows that DAE misinterpreted the report and its implications. BIS Shrapnel found that wage-related issues accounted for less than 1% of the potential recommended cost improvement opportunities available to Australian-sourced LNG projects.

Chart II: Relative recommended contributions to cost improvements
Exchange rate fixed at US$1.0285



Source: McKinsey (2013), BIS Shrapnel analysis

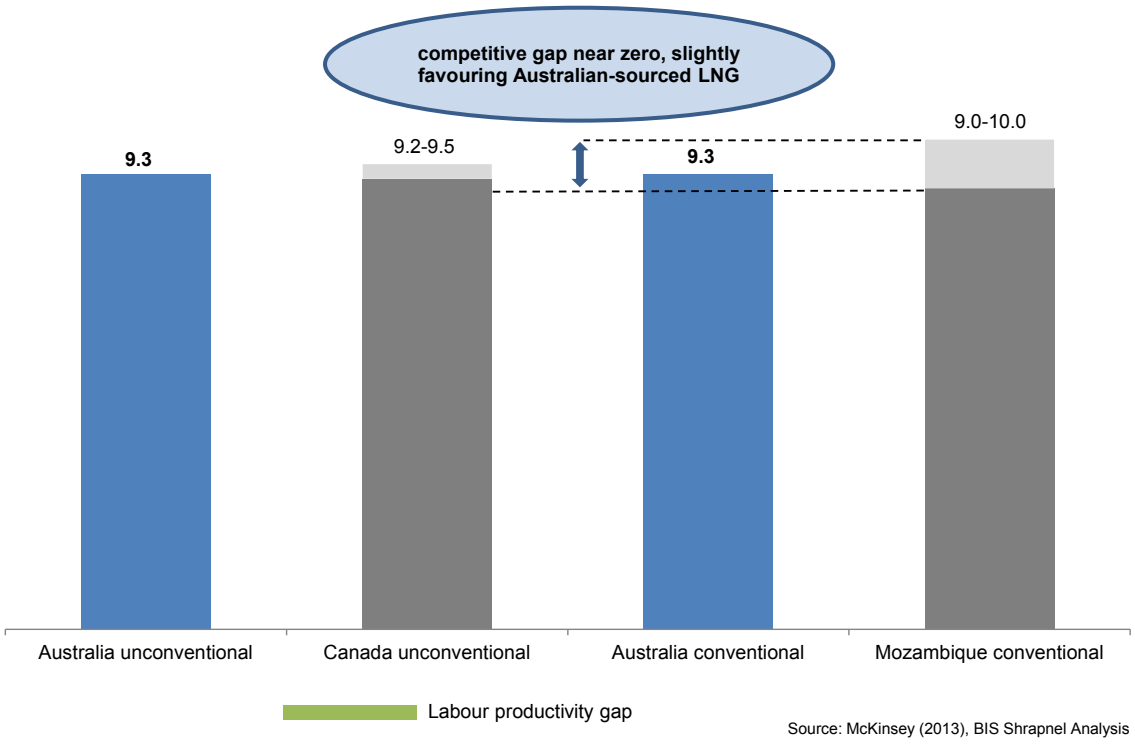
This analysis shows that wages are not the driver of the competitive gap that DAE and the AMMA are proposing. In fact, if Australia is seeking to improve its competitive position in the LNG gas development market queue, its energies are best focused on areas other than wages.

Finally, we found that competitive differences used by DAE and McKinsey (2013) employed a fixed exchange rate of US$1.0285. As of the time of this writing, the Australian dollar has already fallen to $US0.91, and is forecast by both BIS Shrapnel and DAE to fall towards $US0.80 by 2017-2018. Therefore, we tested the competitive gap between Australian-sourced LNG projects relative to competitors under three different exchange rate scenarios that are more in alignment with current and future macroeconomic conditions. The tests reveal that under current conditions, the competitive gap is already reduced by approximately 50-56% and will be essentially eliminated by the time the Australian dollar reaches $US0.80.

The all-up cost of employing a maritime worker in the offshore oil and gas sector is estimated to be $197,761 per annum.

The CIWPAPT model uses the gross value of offshore oil and gas projects and works backwards from that to calculate the number of workers required.

Chart III: Labour productivity contribution to landed LNG competitive cost gap
Break even landed costs in Japan in US$/mmbtu, Exchange rate US$0.80



Source: McKinsey (2013), BIS Shrapnel Analysis

1. INTRODUCTION

BIS Shrapnel has been commissioned by the Maritime Union of Australia (MUA) to respond to the Deloitte Access Economics (DAE) report entitled, "*Analysis of the offshore oil and gas marine support sector"*. The DAE report argues that offshore oil and gas marine support sector wage growth is threatening the viability of both the oil and gas marine support sector and the viability of Australia's oil and gas industry. Specifically, BIS Shrapnel has been asked to verify the accuracy of DAE's evidence, analysis and conclusions made within the report.

The DAE argument is fundamentally based on two themes: 1) the offshore marine support sector is unable to sustain wage increases as revenue and profits have deteriorated over the period 2007-08 to 2011-12 and 2) rising wages have lead to Australia pricing itself out of its leading edge position in the global gas development queue. We begin by examining the methodological approaches employed by DAE and its recommended solutions, followed by a critical assessment of the accuracy of each of these fundamental arguments in turn.

2. METHODOLOGICAL REVIEW

With assistance from the Australian Metals and Mines Association (AMMA), DAE conducted a survey of 5 out of 19 vessel owner-operators servicing the Australian market. The purpose of the survey was to reveal the financial performance of vessel operators by collecting cost and revenue information for the period 2007-08 to 2011-12.

While survey data can be a powerful tool to examine markets, its usefulness becomes questionable when the participants, vessel operators, may be subject to bias in their responses. In this case the vessel operators, members of AMMA who commissioned the report, are the companies responsible for negotiating the bargaining agreements that cover seafarers (integrated ratings) and would want to create an impression that they are under financial strain in order to influence the bargaining environment. A more reasonable method is to refer to previously published public data as a more reliable source of unbiased information.

Therefore, BIS Shrapnel's methodological approach for this response is based on a review of public data. To address the claims regarding wages (such as cooks earning $230,000 per year) and wage growth, we examined four offshore oil and gas marine support sector enterprise bargaining agreements (EBA):

- Tidewater Marine Australia Pty Ltd Integrated Ratings, Cooks, Caterers, and Seafarers (Offshore Oil and Gas) Enterprise Agreement 2010
- Tidewater Marine Australia Pty Ltd Integrated Ratings, Cooks, Caterers, and Seafarers Agreement 2006-09
- Compass Group – Woodside (Goodwyn, North Rankin & Angel) Enterprise Agreement 2010
- Compass Group & AWU - Transocean (offshore drilling rigs) Enterprise Agreement 2011-13

The results of our research regarding wages paid and wage growth is found in Chapter 3.

With respect to the financial health of the offshore oil and gas marine support sector, we investigated publicly available annual reports, official financial statements and investor presentations from among companies that presumably participated in the DAE survey. For efficiency, we identified the top 12 firms based on the number of employees the company engaged in ratings occupations in 2012[5]. Of the top 12 firms, only 3 firms provided enough publicly available financial data over the period 2007 through 2012 to create estimates of Australian-level financial performance in the offshore oil and gas marine support sector. In aggregate, the three operators analysed accounted for 38% of total rating staff employed in 2012.

Unfortunately, the data extracted from annual reports and corporate financial statements do not separate out revenue, costs and margins between manning personnel and vessels in the sector. This is not truly problematic however, as vessels cannot operate without personnel. **Therefore, it is preferred to assess the performance of the sector as it is treated within the annual reports and financial statements (and certainly how an investor would view the performance).** Further, in some cases, firms operate internationally without country level performance, and when possible estimates have been provided. The results of our examination of the public record with respect to the financial performance of offshore oil and gas marine support service firms are found in Chapter 4.

Further, DAE has quoted expert sources to either support, or entirely construct its conclusions. In the case of comments from Gary Gray, the Federal Resources and Energy

[5] Employment source Unison membership database managed by the MUA.

Minister, and the research referenced to McKinsey (2013), **BIS Shrapnel has relied on the public record and a deeper analysis of the referenced research.** The results of the public record regarding Gary Gray's comment is found in Chapter 3, and the results of our deeper analysis of the cited McKinsey research is found in Chapter 4.

Finally, while the DAE report acknowledges the importance of the Australian dollar as a key driver of international competitiveness for oil and gas projects, it conveniently omitted its forecast for the Australian dollar in its assessment of present and future pressures on the LNG sector. To rectify this error, we have undertaken a re-evaluation of the competitiveness of Australian oil and gas projects, using McKinsey (2013) data, under three different exchange rate scenarios. To provide context to the scenarios, we provide forecasts for the exchange rate over the next five years from both BIS Shrapnel and Deloitte Access' Economics *Business Outlook*. The details of this analysis are found in Chapter 4.

3. DAE – INTEGRATED RATING WAGE GROWTH HAS EASILY OUTPACED GROWTH IN THE WAGE PRICE INDEX FOR ALL WORKERS OVER THE LAST DECADE

To arrive at this conclusion, DAE compared its limited survey estimates (likely biased) of wages and wage growth for integrated ratings schedules 1 and 8 for the past decade compared to the growth of the wage price index for all industries in Australia over the same period[6]. Further, DAE quoted an expert source to support its conclusions:

"The situation was aptly surmised by Gary Gray, the Federal Resources and Energy Minister when commenting on the Maritime Union of Australia's claim for cooks to be paid up to $230,000 a year." (page vii, paragraph 3)

First, to assess the validity of claims regarding wages paid to integrated ratings workers on Schedule 1 and Schedule 8 vessels, we performed a time series analysis of the Tidewater Marine Pty Ltd Integrated Ratings, Cooks, Caterers, and Seafarers (Offshore Oil and Gas) Enterprise Agreements covering the time period 2005 to 2013. The Tidewater agreements address wages specifically for the offshore oil and gas sector, and cover construction. The Tidewater agreements clearly state the annualised wages to be paid each year to the relevant integrated rating schedules 1 and 8. Table 1 illustrates our findings:

Table 1: Tidewater Marine Australia EBA wage rates

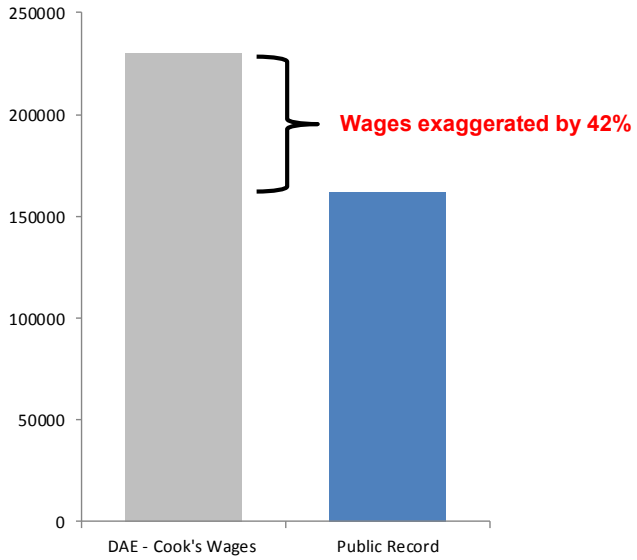
Year	Schedule 1- Support Vessels integrated rating	Schedule 8- Specialist Vessels integrated rating	Schedule 8- Specialist Vessels CIR/CTA/Cook
2005	$91,596	$107,167	$112,525
2006	$95,259	$111,454	$117,026
2007	$99,069	$115,912	$121,708
2008	$103,477	$121,068	$121,068
2009	$112,273	$131,359	$131,359
2010	$116,202	$135,957	$135,957
2011	$123,175	$144,113	$144,113
2012	$130,565	$152,761	$152,761
2013	$138,399	$161,927	$161,927

Source: Fair Work Australia, BIS Shrapnel

[6] We have inflated the annualised wages found in the enterprise bargaining agreements by adding 13% superannuation over the entire data series. However, taxi fares and work specific clothing items to the wage bill were not added. However, it is unlikely taxi fares and work clothing would account for the large wage differences between our review of the public record and results reported by DAE.

Further analysis of other EBAs, including those covering integrated ratings in the offshore oil and gas sector for Woodside and Transocean, provide similar results[7]. In short, our analysis of the public record finds that DAE's claim that cooks are paid $230,000 per year is highly exaggerated. **As shown in Chart 1, compared to the Tidewater agreement covering cooks after July 2012, DAE's claim is exaggerated by approximately 40%**.

Chart 1: Wages exaggerated



Second, DAE compared integrated wage growth for Schedule 1 and Schedule 8 (including construction) to the growth of the wage price index covering all industries in Australia. This is not a fair comparison as the all-industries wage price index includes a heavy weighting in industries such as retail that have historically maintained thin margins and do not face skilled labour constraints. The wage price index is further weighed down by including non-resource boom states that have not experienced the same rapid growth in demand for skilled employment as the resource states. To remedy this, BIS Shrapnel compared wage growth for integrated ratings wage growth on Schedule 1 and Schedule 8 vessels to ordinary, full-time adult earnings for mining and construction wage growth.

Chart 2: Integrated rating wage comparison, annual wage
Indexed 2005
Adult, Full-time ordinary earnings

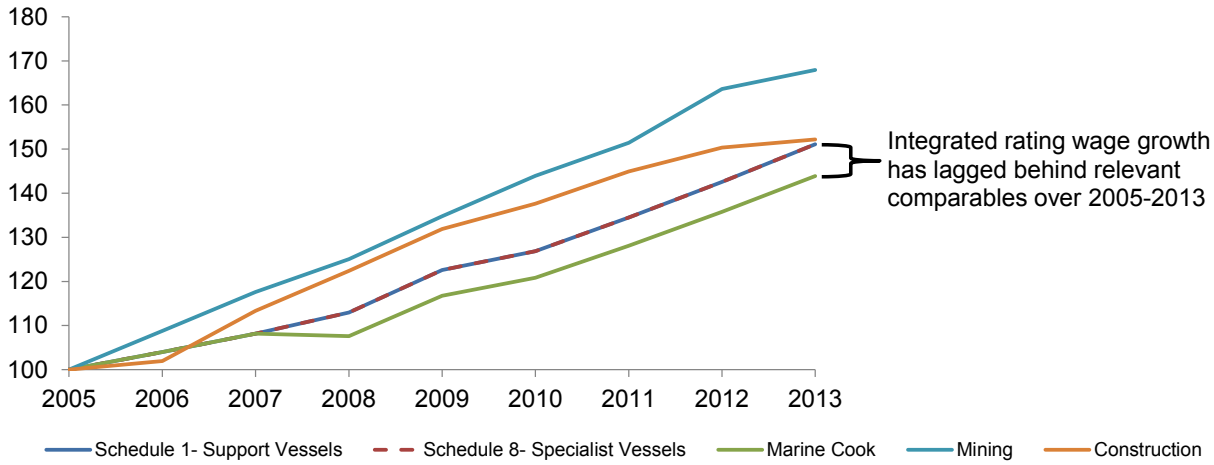


Chart 2 demonstrates that when placed against more relevant indexes, integrated rating wages growth has lagged behind construction and mining wage index growth over the period 2005 to 2013.

[7] The enterprise agreements referenced are the Compass Group – Woodside (Goodwyn, North Rankin & Angel) Enterprise Agreement 2010 and the Compass Group & AWU - Transocean (offshore drilling rigs) Enterprise Agreement 2011-13

4. DAE – THE OFFSHORE OIL AND GAS MARINE SUPPORT SECTOR IS UNABLE TO SUSTAIN WAGE INCREASES AS REVENUE AND PROFITS HAVE DETERIORATED OVER THE PERIOD 2007-08 TO 2011-12

The following statements made by DAE within the report state their position:

- "More recently, however, cost pressures in the sector – including labour costs – have increased notably. That is presenting substantial challenges, eroding the competitiveness and profitability of the offshore oil and gas marine support sector." (page iv, paragraph 3)
- "However, there are limitations on the capacity of employers in the sector to meet demands for sustained wage growth which is disproportionate to broader wage and price measures." (page x, paragraph 1)
- "With assistance from AMMA, Deloitte Access Economics has undertaken a survey of vessel owner-operators servicing the Australian market. The survey was undertaken to reveal the financial performance of vessel operators by collecting cost and revenue information for the period 2007-08 to 2011-12. The survey was completed by companies who are active participants in the Australian offshore oil and gas marine support industry, and is presented here in aggregate form. The total combined revenue from Australian vessel operations of the survey participants is estimated to have been approximately $600 million in 2011-12." (page x, paragraph 3)
- "The survey shows that the profitability of vessel operators has been squeezed in recent years. The cost of labour has been rising sharply, while revenue growth has been more muted. The split between labour cost and revenue growth has had a significant effect on vessel operator profits." (page x, paragraph 4)
- "Both total expenses and wages have increased by around 40% since 2007-08 on a per vessel basis, while revenue has increased by only 8%." (page xii, paragraph 1)
- "Chart 4.5 presents estimated growth in key financial variables over the survey period from 2007-08 to 2011-12. The chart shows that while wages and total expenses have doubled over the last five years, revenue has increased by only around 50% in the same period. As a result, profits in 2011-12 were some 26% lower than in 2007-08." (page 24, paragraph 7)
- "The chart also highlights the volatility the sector has experienced over the past few years, and also how the sector's financial position has deteriorated since the global financial crisis. Across 2008-09 and 2009-10 the sector's profits fell by 27% while at the same time wages costs grew by around 19%." (page 24, paragraph 8 and Chart 4.5)
- "The sector's profitability has declined consistently since 2008-09, and expenses have continued to rise. In other words, every year since 2008-09 has placed more strain on the industry's profitability than the preceding year." (page 25, paragraph 1)

4.1 BIS Shrapnel analysis- The offshore oil and gas marine support sector is thriving

While survey data can be a powerful tool to examine markets, its usefulness becomes questionable when the participants may be subject to bias in their responses. In this case the vessel operators, members of AMMA who commissioned the report, are the companies responsible for negotiating the bargaining agreements that cover seafarers (integrated ratings) and would want to create an impression that they are under financial strain in order to influence the bargaining environment. A more reasonable approach is to refer to previously published public data as a more reliable source of unbiased information.

A review of public data, including annual reports and official financial statements of companies engaged in the sector, **reveals a different story than described by DAE**. This data and information shows a story of strong revenue and profitability, with the sector portrayed as most likely to enjoy generous returns for shareholders in the future.

Unfortunately, the data extracted from annual reports and corporate financial statements do not separate out revenue and margins between manning personnel and vessels in the sector. This is not truly problematic however, as vessels cannot operate without personnel. Therefore, it is preferred to assess the performance of the sector as they are treated within the annual reports and financial statements (and certainly how an investor would view the performance).

- **Offshore oil and gas marine support service operators continue to experience double-digit revenue growth.** Reviewing 3 of the 19 offshore oil and gas marine support sector's public records revealed estimated aggregate revenues of $860 million in 2012 corporate financial year, a 200% cumulative increase over five years compared to aggregate revenues of $413 million in 2007[8]. The average Compound Annual Growth Rate (CAGR) of revenues for the offshore oil and gas marine support sector, for the limited sample, is 14.1% per annum over the period 2007 through 2012. Granted, the sample is small, but the three firms accounted for 38% of total rating staff employed in 2012[9]. **Revenue growth of 200% compared to 32% wage growth over the same period strongly refutes the claim that wage growth is outpacing revenue growth as described by DAE.**
- **More importantly, profits, as demonstrated by EBITDA (Earnings before Interest, Taxes, Depreciation and Amortisation) have been outstanding over the period.** EBITDA estimates were obtained for the same 3 firms we examined. The average EBITDA CAGR is estimated to be 13.2% per annum from 2007 to 2012. EBITDA includes the wage bill, and clearly illustrates the strong performance of the sector over the period.

In summary, strong double digit revenue and profit growth, as supported by the public record over the period from 2007 through 2012, strongly refutes the assertion that the offshore oil and gas marine support sector is under economic pressure.

[8] The remaining firms in the oil and gas marine support sector either are private firms that are not required to publicly disclose annual financial results, or are multi-national firms with reporting disclosure that make it difficult to assess individual country and sector performance.

[9] Employment source Unison membership database managed by the MUA.

5. DAE – RISING WAGES HAVE LEAD AUSTRALIA TO PRICE ITSELF OUT OF A LEADING EDGE POSITION IN THE GLOBAL GAS DEVELOPMENT QUEUE

- "McKinsey (2013) estimates that a new Australian LNG project would have a cost of supply as much as 30% higher than a matching Canadian or east African project." (page vii, paragraph 2 and page 15, paragraph 3)
- "The situation was aptly surmised by Gary Gray, the Federal Resources and Energy Minister when commenting on the Maritime Union of Australia's claim for cooks to be paid up to $230,000 a year:

  "*We've got to get things into proportion…Everyone needs to be careful that the costs that are placed on industry through these sorts of wage demands don't kill the golden goose.*" (page vii, paragraph 3)

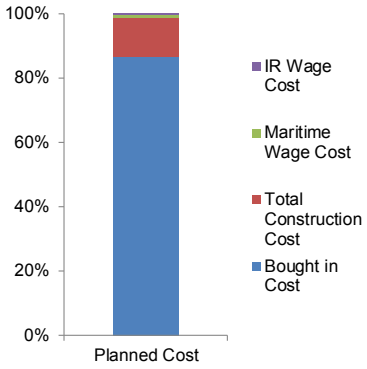
5.1 BIS Shrapnel analysis – integrated rating wages represent 0.25% of total LNG project costs in Australia

According to Maritime Employees Training Ltd, the total integrated rating wage cost of a project such as Gorgon is approximately 0.25% of the total project cost as shown in Table 2. Clearly, the impact of wage growth of such a small component of the total project cost is unlikely to present any material threat to viability. The total maritime wage bill is estimated to represent **less than one per cent** of the total project cost, even when taking into account the entire workforce, which includes integrated ratings, engineers, deckhands and officers.[10] .

Table 2: Gorgon Project Cost Estimates

	US$Billion	Share of Project Cost
Bought in Cost	37.63	87.50%
Construction Cost (ex IR)	5.27	12.26%
IR Wage Cost	0.11	0.25%
Planned Cost	43.00	100%

Source: Maritime Employees Training Ltd, CIWPAPT model



[10] The CIWPAPT model is designed to work out how many people need to be trained, in what classifications, and when. It uses information supplied by industry, AMSA, Seacare and to some extent the ABS.

The CIWPAPT model uses formulae to calculate the all-up cost of employing workers based on a basic across-industry pay rate, plus on-costs plus other costs such as PPE gear, training, travel and allowances. The all-up cost of employing a maritime worker in the offshore oil and gas sector is estimated to be $197,761 per annum.

The CIWPAPT model uses the gross value of offshore oil and gas projects and works backwards from that to calculate the number of workers required.

5.2 BIS Shrapnel analysis – wages represent 1% or less of potential opportunities to close the competitive gap

Further, a thorough examination of the referenced McKinsey (2013) report that forms the foundation argument that Australia is facing a substantial competitive gap in the LNG gas development queue, reveals a different view:

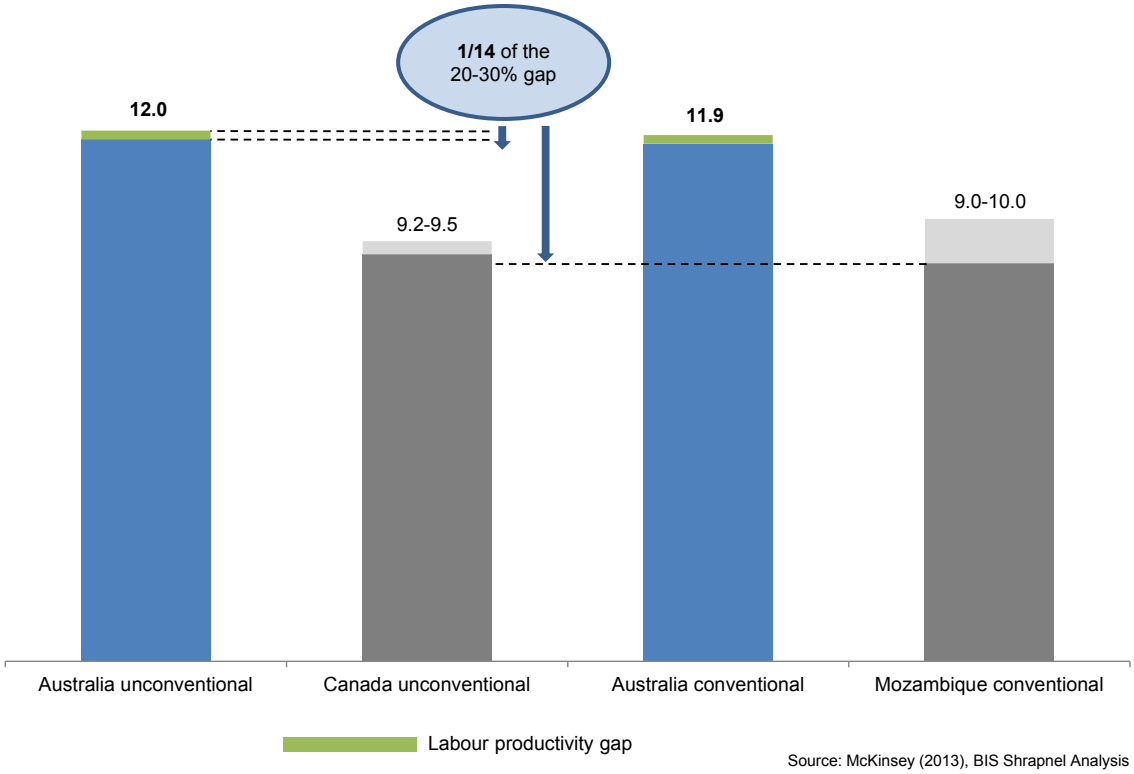
- **Non-labour productivity issues account for 90-93% of the competitive gap between the landed costs in Japan of Australian-sourced LNG compared to a matching North American or East African project.** McKinsey (2013) found that the expected landed costs in Japan in US$/mmbtu of Australian-sourced LNG would be approximately US$12/mmbtu for either a greenfield onshore unconventional project or an offshore conventional project. A matching Canadian-sourced onshore unconventional project is estimated to have landed costs in Japan of between US$9.2-9.5. Similarly, a matching East African-sourced LNG offshore conventional project is estimated to have landed costs in Japan of between $9.0-10.0. Thus, when facing the nominal landed costs in Japan, an Australian-sourced LNG project contends with a competitive disadvantage of approximately US$2.0-US$3.0/mmbtu. This competitive gap is what forms the basis for the quoted 20-30% competitive disadvantage for a new Australian-sourced LNG project. However, this assumes the Australian dollar is fixed at US$1.0285. As of the time of this response, the Australian dollar has already declined to US$0.91, eliminating 50% to 75% of the disadvantage. Moreover, according to the McKinsey (2013) report, labour productivity, which includes wages as well as other productivity factors, is estimated to only represent US$0.20 of the $2.0-$3.0 nominal cost gap, or approximately 7-10% of the competitive gap. In other words, non-labour productivity issues account for 90-93% of the competitive gap between a matching Australian-sourced LNG project and a matching North American or East African project.

Table 3: Landed cost for Australian-sourced LNG relative to competitors
Break even landed costs in Japan in US$/mmbtu
Exchange rate fixed at US$1.0285

	Onshore Unconventional	Offshore Conventional
	US$/mmbtu	US$/mmbtu
Australian-sourced LNG project	12	11.9
Canadian-sourced LNG project	9.2-9.5	NA
East African-sourced LNG project	NA	9.0-10.0
Competitive Gap	2.5-2.8	2.0-3.0
Competitive Gap (%)	26%-30%	20%-30%
Labour Productivity Share of Gap	0.2	0.2
Labour Productivity Share of Gap (%)	**7%-8%**	**7%-10%**
Non-Labour Productivity Share of Gap	**92%-93%**	**90%-93%**

Source: McKinsey (2013), BIS Shrapnel analysis

Chart 3: Labour productivity contribution to landed LNG competitive cost gap
Break even landed costs in Japan in US$/mmbtu, Exchange rate US$1.0285



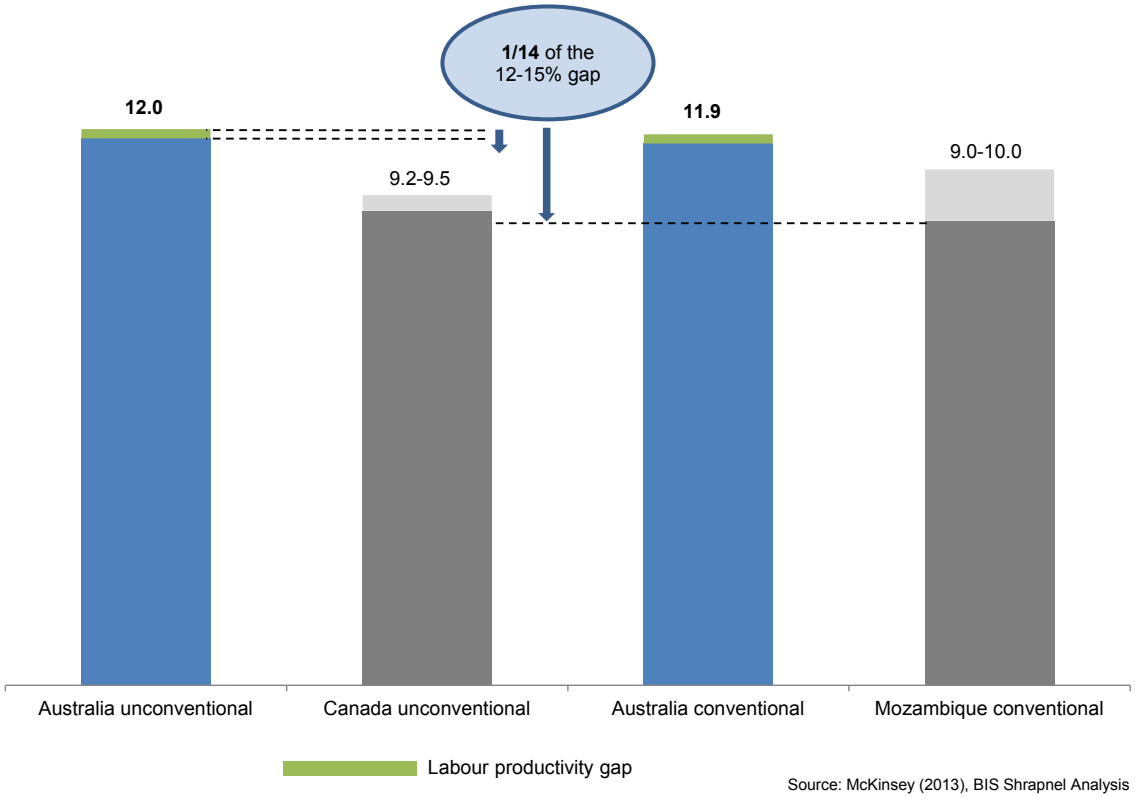
Source: McKinsey (2013), BIS Shrapnel Analysis

Table 4: Landed cost for Australian-sourced LNG relative to competitors
Break even landed costs in Japan in US$/mmbtu
Exchange rate fixed at US$0.91

	Onshore Unconventional	Offshore Conventional
	US$/mmbtu	US$/mmbtu
Australian-sourced LNG project	10.6	10.5
Canadian-sourced LNG project	9.2-9.5	NA
East African-sourced LNG project	NA	9.0-10.0
Competitive Gap	1.1-1.4	0.5-1.5
Competitive Gap (%)	**12%-15%**	**5%-17%**
Labour Productivity Share of Gap	0.18	0.18
Labour Productivity Share of Gap (%)	7%-8%	7%-10%
Non-Labour Productivity Share of Gap	92%-93%	90%-93%

Source: McKinsey (2013), BIS Shrapnel analysis

Chart 4: Labour productivity contribution to landed LNG competitive cost gap
Break even landed costs in Japan in US$/mmbtu, Exchange rate US$0.91



Source: McKinsey (2013), BIS Shrapnel Analysis

- **Non-wage related labour productivity enhancements represent 95% of the recommended labour productivity improvement opportunities.** Based on data supplied in the McKinsey (2013) report, our analysis shows that the vast majority of labour productivity improvement opportunities are related to site productivity improvements (including lean construction). Specifically:

  "improving management processes and systems to assure equipment and materials are available on time, by insuring adequate supervision, and by fully removing waste in activities with a focus on compressing the critical path. Improving training for supervisors and project managers is a must to capture increased productivity."(page 19, paragraph 5)

By implementing the above suggestions, it is estimated that labour productivity could improve by US$0.8-US$1.40. McKinsey goes on to say that, in aggregate, labour productivity improvements (including slower wage growth) could yield a labour productivity landed cost reduction of US$0.9-US$1.60. In other words, non-wage related labour productivity enhancements represent 88% of the recommended labour productivity improvement opportunities. Meanwhile, improvements in wage growth could account for approximately 4-5% of potential labour productivity improvement opportunities.

Table 5: Labour Productivity Landed Cost Savings Opportunities
Exchange rate fixed at US$1.0285

	Cost Savings
	US$/mmbtu
A) Aggregate labour productivity land cost reduction potential	0.9-1.6
B) Residential proximity to work sites	0.03-0.06
C) Shift Pattern enhancements	0.03-0.06
D) Site Productivity opportunities (non-wage related)	0.8-1.4
E) Wage related productivity opportunities (E=A-B-C-D)	0.04-0.08
F) Wage related productivity cost saving share % (E/A)	5% or less
Non-Wage related productivity improvement opportunities (1-F)	**95%+**

Source: McKinsey (2013), BIS Shrapnel analysis

Chart 5: Labour productivity landed LNG cost savings opportunities
Low scenario, US$0.90 in savings

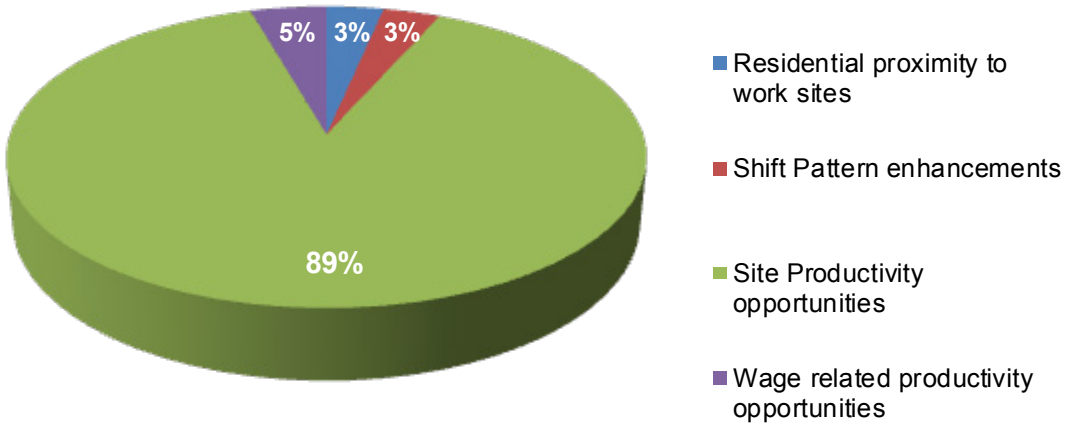
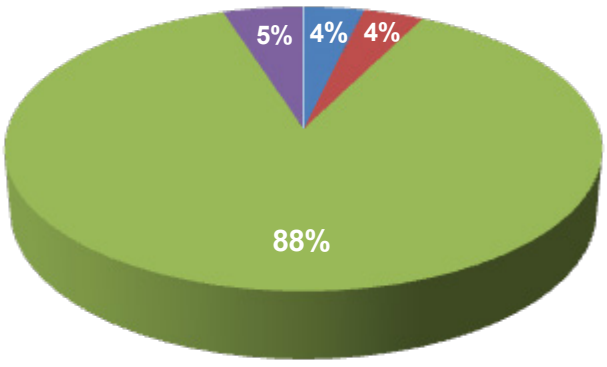


Chart 6: Labour productivity landed LNG cost savings opportunities
High scenario, US$1.60 in savings



Source: McKinsey (2013), BIS Shrapnel analysis

*Totals in charts may exceed 100% due to rounding

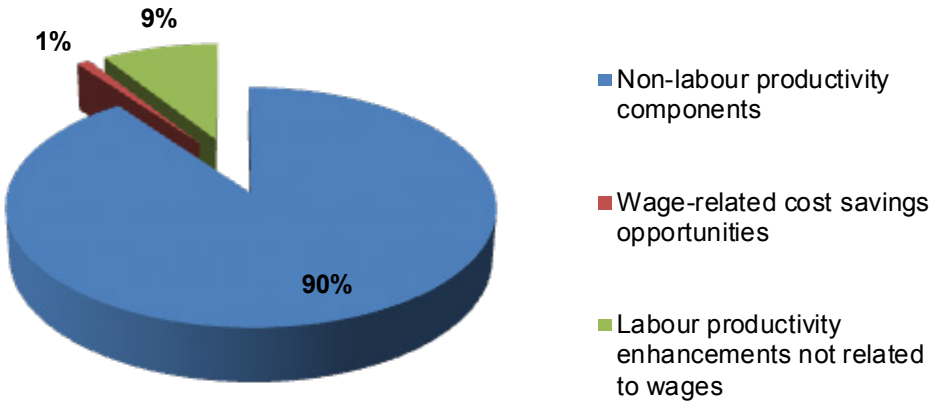
- **The combined result implies that non-wage related competitive improvements account for more than 99% of the potential recommended cost improvements when comparing an Australian-sourced LNG project to a matching North American or East African project.**

Table 6: Relative recommended contribution to Cost improvements
Exchange rate fixed at US$1.0285

	Cost Savings
A) Labour productivity Share of Gap (Table 2)	7%-10%
B) Wage-related productivity opportunities (Table 3)	<5%
C) Wage-related landed cost in Japan savings share (C=A*B)	**<1%**
D) Non-wage related landed cost savings opportunities (1-C)	**>99%**

Source: McKinsey (2013), BIS Shrapnel analysis

Chart 7: Relative recommended contributions to cost improvements
Exchange rate fixed at US$1.0285



Source: McKinsey (2013), BIS Shrapnel analysis

This analysis shows that wages are not the driver of the competitive gap that DAE and the AMMA are implying. In fact, if Australia is seeking to improve its competitive position in the LNG gas development market queue, its energies are best focused on areas other than wages.

6. THE EXCHANGE RATE IS FORECAST BY BOTH DAE AND BIS SHRAPNEL TO CLOSE THE COMPETITIVE GAP BY 2017 TO 2108

Finally, BIS Shrapnel concurs that the exchange rate is a key driver of Australian LNG competiveness. The highly quoted 20-30% higher landed cost in Japan of LNG supply in Australia compared to a matching Canadian or East African project assumes the Australian dollar is **fixed at US$1.0285.** As of the time of this writing, the AUD has already fallen to **US$0.91** and is expected to continue to trend towards historical averages as the wider investment boom eases and the United States economy continues to strengthen. **At US$0.91, Australian LNG projects have already closed the highly-touted 20-30% gap by approximately 50% to 56% for an Australian unconventional gas project compared to an unconventional Canadian project (used by McKinsey as a proxy for North America).** Based on the McKinsey (2013) report data, the gap in competitiveness will be eliminated when the Australian dollar reaches approximately $US 80 cents, assuming all other factors are held constant.

BIS Shrapnel makes several key points in relation to the exchange rate, which are a key driver of international competitiveness:

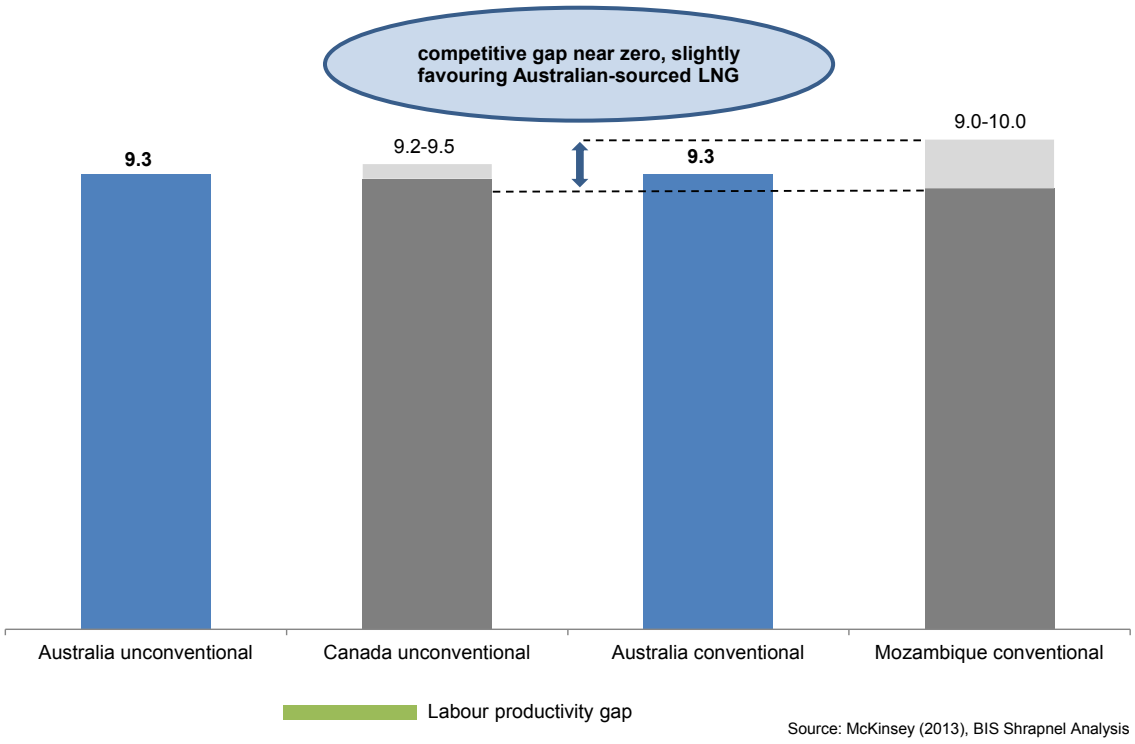
- **The Australian dollar is already 14% weaker** than the assumptions used in the Mckinsey (2013) report
- **The competitive gap** between an unconventional Australian LNG project and an unconventional Canadian project **has been reduced from 20-30% to 12-15%** through recent exchange rate movements alone
- **The competitive gap is estimated to be eliminated when the AUD reaches US$0.80, all else remaining constant**
- **BIS Shrapnel's forecast is for the exchange rate to fall to US$0.80 by 2017/18 and average US$0.80 over the following five years to 2023.**
- **Movements in the exchange rate can easily outweigh the impact of other competitive factors**

Table 7: Landed cost for Australian-sourced LNG relative to competitors
Break even landed costs in Japan in US$/mmbtu
Exchange rate fixed at US$0.80

	Onshore Unconventional	Offshore Conventional
	US$/mmbtu	US$/mmbtu
Australian-sourced LNG project	9.3	9.3
Canadian-sourced LNG project	9.2-9.5	NA
East African-sourced LNG project	NA	9.0-10.0
Competitive Gap	~0	~0
Competitive Gap (%)	**~0**	**~0**
Labour Productivity Share of Gap	~0	~0
Labour Productivity Share of Gap (%)	**~0**	**~0**
Non-Labour Productivity Share of Gap	~0	~0

Source: McKinsey (2013), BIS Shrapnel analysis

Chart 8: Labour productivity contribution to landed LNG competitive cost gap
Break even landed costs in Japan in US$/mmbtu, Exchange rate US$0.80



Source: McKinsey (2013), BIS Shrapnel Analysis

How relevant is it to entertain an exchange rate of $US0.80?

Given that both Deloitte Access Economics and BIS Shrapnel have recently published that the Australian dollar is expected to decline towards $US0.80 by 2017 to 2018, the exchange rate is highly relevant.

Table 8: Exchange rate forecasts 2013–2018
$US per $A, June Qtr

	2013	2014	2015	2016	2017	2018
Deloitte Access Economics	1.043	0.926	0.896	0.847	**0.816**	**0.802**
BIS Shrapnel	0.928	0.89	0.9	0.89	**0.83**	**0.78**

Source: Deloitte Access Economics *Business Outlook* (June 2013), BIS Shrapnel *Long Term Forecasts 2013-2028*

This implies that both DAE and BIS Shrapnel are forecasting that competitive gap on the landed cost of Australian-sourced LNG in Japan will likely be eliminated within the next five years through exchange rate movements alone.

7. CONCLUSION

BIS Shrapnel's critique of Deloitte Access Economics (DAE) report entitled, "*Analysis of the offshore oil and gas marine support sector"* has found the report misrepresented, misinterpreted, or completely omitted relevant information to reach its conclusions.

Our critique of the DAE report reveals that the methodology that forms the backbone of their analysis, a survey of 5 out of 19 vessel operators, fails to meet accepted standards of survey methodology. While survey data can be a powerful tool to examine markets, its usefulness becomes questionable when the participants may be subject to bias in their responses. In this case the vessel operators, members of AMMA who commissioned the report, are the companies responsible for negotiating the bargaining agreements that cover seafarers (integrated ratings) and would want to create an impression that they are under financial strain in order to influence the bargaining environment. A more reasonable method is to refer to previously published public data as a more reliable source of unbiased information. Therefore, BIS Shrapnel's methodological approach for this response is based on a review of publicly available data.

Second, we examined DAE's evidence and claims that integrated rating wage growth has easily outpaced growth in the wage price index for all workers over the last decade. However, this is not a fair comparison as the all industries wage price index includes a heavy weighting in industries such as retail that have historically maintained thin margins and do not face skilled labour constraints. The wage price index is further weighed down by including non-resource boom states that have not experienced the same rapid growth in demand for skilled employment as the resource states. To remedy this, BIS Shrapnel compared wage growth for integrated ratings wage growth on Schedule 1 and Schedule 8 vessels to industries of a similar nature and facing similar constraints such as mining, and construction. BIS Shrapnel's analysis found that when placed against more relevant indexes, integrated rating wages growth has lagged behind construction and mining wage index growth over the period 2005 to 2013.

Further, we examined the accuracy of claims attributed by DAE to Gary Gray, the Federal Resources and Energy Minister, that cooks are paid up to $230,000 per year. Our analysis of the public record finds that DAE's claim that cooks are paid $230,000 per year is highly exaggerated by a magnitude of 40%.

Third, a review of public data, including annual reports and official financial statements of companies engaged in the sector, reveals a different story than described by DAE. Revenue growth of 200% compared to 32% wage growth over the same period strongly refutes the claim that wage growth is outpacing revenue growth as described by DAE. More importantly, profits, as demonstrated by EBITDA (Earnings before Interest, Taxes, Depreciation and Amortisation) have been outstanding over the period. BIS Shrapnel's analysis of available public data found the average EBITDA CAGR over the five years to 2012 was approximately 13.2%. EBITDA includes the wage bill, and clearly illustrates the strong performance of the sector over the period. In summary, strong double-digit revenue and profit growth, as supported by the public record over the period from 2007/08 through 2011/12, strongly refutes the assertion that the offshore oil and gas marine support sector is under economic pressure.

Fourth, we carefully examined DAE's implication that rising wages have lead Australia to price itself out of a leading edge position in the global gas development queue. Again, DAE relied on an expert source to base their analysis and conclusions.

However, it is imperative to place the wage bill costs for a major LNG project such as Gorgon, in relation to other costs to develop the project. According to Maritime Employees Training Ltd, the total integrated rating wage cost of a project such as Gorgon is estimated to comprise only 0.25% of the total project cost. Clearly, the impact of wage growth of such a small component of the total project cost is unlikely to present any material threat to viability.

Further, a thorough review of the McKinsey (2013) report shows that DAE misinterpreted the report and its implications. BIS Shrapnel found that wage related issues accounted for less than 1% of the potential recommended cost improvement opportunities available to Australian-sourced LNG projects.

This analysis shows that wages are not the driver of the competitive gap that DAE and the AMMA are implying. In fact, if Australia is seeking to improve its competitive position in the LNG gas development market queue, its energies are best focused on areas other than wages.

Finally, we found that competitive differences used by DAE and McKinsey (2013) employed a fixed exchange rate of US$1.0285. As of the time of this writing, the Australian dollar has already fallen to $US0.91, and is forecast by both BIS Shrapnel and DAE to fall towards $US0.80 by 2017 to 2018. Therefore, we tested the competitive gap between Australian-sourced LNG projects relative to competitors under three different exchange rate scenarios that are more in alignment with current and future macroeconomic conditions. The tests reveal that under current conditions, the competitive gap is already reduced by approximately 50-56% and will be essentially eliminated by the time the Australian dollar reaches $US0.80.

REFERENCES

BIS Shrapnel (2013), *Long Term Forecasts Australia 2013–2028: 39th Edition*, July 2013,

Compass Group – Woodside (Goodwyn, North Rankin & Angel) Enterprise Agreement 2010

Compass Group & AWU - Transocean (offshore drilling rigs) Enterprise Agreement 2011-13

Deloitte Access Economics (2013), *Analysis of the offshore oil and gas marine support sector*, commissioned by the Australian Mines and Metals Association, August 2013

Deloitte Access Economics (2013), *Business Outlook: Construction cliff looms*, June 2013

McKinsey & Company (2013), *Extending the LNG boom: Improving Australian LNG productivity and competitiveness*, May 2013

Tidewater Marine Australia Pty Ltd Integrated Ratings, Cooks, Caterers, and Seafarers (Offshore Oil and Gas) Enterprise Agreement 2010

Tidewater Marine Australia Pty Ltd Integrated Ratings, Cooks, Caterers, and Seafarers Agreement 2006-09

